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REVIEW OF THE IMPACT OF FEED COSTS ON THE LIVESTOCK INDUSTRY

HEARING

BEFORE THE

SUBCOMMITTEE ON LIVESTOCK, DAIRY, AND POULTRY

OF THE

COMMITTEE ON AGRICULTURE
HOUSE OF REPRESENTATIVES

ONE HUNDRED TENTH CONGRESS

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HEARING TO REVIEW THE IMPACT OF FEED COSTS ON THE LIVESTOCK INDUSTRY

THURSDAY, MARCH 8, 2007

HOUSE OF REPRESENTATIVES,
SUBCOMMITTEE ON LIVESTOCK, DAIRY AND POULTRY,
COMMITTEE ON AGRICULTURE,
Washington, DC.

The Subcommittee met, pursuant to call, at 10:00 a.m., in room 1302 of the Longworth House Office Building, Hon. Leonard L. Boswell [chairman of the Subcommittee] presiding.

Members present: Representatives Boswell, Kagen, Holden, Baca, Cardoza, Lampson, Donnelly, Costa, Mahoney, Peterson (ex officio), Hayes, King, Schmidt, Smith, Walberg, and Goodlatte (ex officio).

Staff present: Chandler Goule, Scott Kuschmider, Rob Larew, John Riley, Sharon Rusnak, April Slayton, Debbie Smith, Kristin Sosanie, John Goldberg, Alise Kowalski, Josh Maxwell, Pam Miller, Pete Thomson, and Jamie Weyer.

STATEMENT OF HON. LEONARD L. BOSWELL, A REPRESENTATIVE IN CONGRESS FROM THE STATE OF IOWA

Mr. BOSWELL. We will call the meeting to order and I see we have got quite a gallery out there today that we welcome, and there is so much going on today, you may be a little bit chagrined about where is everybody? Well, there is more stuff going on, whether it is Walter Reed or here or wherever and it is quite a bit of activity. And as you know, everything is recorded and available to our members and they will have access to what you have to say and what the give and take will be and so on. But I just want to start off with welcoming you here, Mr. Secretary, and I am going to make a few comments and then of course we will call on my friend and colleague, Mr. Hayes, as the ranking member, to share and then we will hear what you have to say and go from there.

But I appreciate everybody for being here. It is a challenging time and I find when I go back to my district across the country and talking to people at USDA, as I have before and now and we will continue this, and talking with dairy farmer, who is going on the next panel, Mr. Wonderlich is here and I have been to his farm. He is doing things quite a bit different than my dairy experience, but we will talk about that later. We did it the way we did it in those days, but it has changed. The feed costs have gone up so dramatically and as expected, it has got us all stirred up. People out there wonder how in the world they are going to be able to make it work and et cetera and so on. So we just felt like it was appropriate talking with Congressman Hayes about this. It kind of helps

for me and I think, for him. I will let him speak for himself, of course, but we are friends. We have sat together in the cockpit a time or two and we will do it, I am sure, in the future. We have set out and took a shot at a bird together a time or two. We have sat on the Aviation Committee together and other things and we are friends and so we are going to make every effort to work together and make this bipartisan. And I would hope that we are so good at it that when people come in and visit our committee, they won't know who are the Republicans and who the Democrats are, because we are working together. That is my goal.

But the issue on the feed costs is causing quite a stir and it would be interesting to hear what you have got to say about it as feeders and producers. Many people that are producing also invested in ethanol plants, I find, and so it will be interesting how we discuss that today. I think all will agree that renewable energy and having a chance to grow it out of the ground and do it the way we do it, that a lot of people, including myself, have been working on this for years. And I will just share this with you. I was wearing the uniform and still in the service in Portugal in the early 1970s when we had the first fuel crisis, and good people that I have known for a long time, just watching what happened in the community, and I don't think their community is different than ours, what chaos took place when they couldn't get gas to run their car or the truck or delivery wagons and so on. It was unbelievable and it made me realize for the time that we are, in fact, in bondage in the grasp of OPEC and I have been thinking about that ever since. That was back in the early 1970s. Well, a lot of States, and mine included and others, have done a lot of work on it.

So we are coming to this new era in agriculture and it seems to me that we have got a situation that is certainly a challenge, but I think it is a good challenge in the sense that it is causing us to sit down and figure out how we get this all sorted out and that is why we are here today. I think there is light at the end of the tunnel, it will work out, but we want to do it as painlessly as we possibly can and we want to be aware and responsive as best we can to the needs of everybody that is involved in this, because we are in the agriculture business together.

And there is just one other last thought before I turn it over to Robin that I wanted to share with you. I would spend a lot of time with, and I know Robin does too, with my colleagues from the city, if you will. Good friends. New York, Los Angeles, Dallas, Houston, wherever. They too, in a sense, are involved in agriculture because we have got to eat and I find it interesting when I talk to people about the subsidies or the benefits or whatever, the program, if you will. Oh, you farmers. And I say hold everything. Just reflect a little bit and if you don't know this you need to know it, because it affects everybody in your community and your constituency, and that is the cost and the availability and the safety of food. And I know, Mr. Secretary, you may have figures, I am not asking for them, but you might have. The last time I checked, the percentage of disposable income for food that is the safest and most plentiful in the world and the biggest variety, is the least in this country than anywhere else in the world. It has been that way for quite a while. It runs 14 to 17 percent, as you put all the populations to-

gether. Compared to modern Europe over there, and I have spent a lot of years over there and some of you have, too, I am sure, it is 25 percent more. Up to the undeveloped countries, it is 100 percent. So you know, Congressman or Congresswoman from the big city, you are invested in agriculture. And so it is not just those producers out there, it is all of us, as a population, that should and must have an interest in this and if we do it by doing a good farm bill, the things we are called on to do, then we all are better off.

So I think that that is important for us. It is a continuing education thing and I am going to keep it up and I know that my colleague and partner here will too, and others and we have just got to all remember this. But today we wanted to start with the Secretary here and the Department telling us about the impacts of high feed costs and how we may look at ways to increase production or deal with the challenge of the problem. So I look forward to those comments and at this time, I would like to recognize my Ranking Member, Mr. Robin Hayes from North Carolina.

STATEMENT OF HON. ROBIN HAYES, A REPRESENTATIVE IN CONGRESS FROM THE STATE OF NORTH CAROLINA

Mr. HAYES. Thank you, Mr. Chairman, and I thank all of you all for being in here. Leonard and our very good friends enjoy working together. I look forward to being here this morning, being and working with him on a mutually important project and again, it is a lot more fun when you really work well together and I appreciate his kind words. I want to thank all of our witnesses for making the great effort to be here today. I particularly want to thank Matthew Herman from Monroe, North Carolina, for being able to come and testify and making his way through the snow yesterday. Matthew is an 8th District constituent and serves as Complex Manager for Tyson Foods. I look forward to hearing from you and the others to get a better understanding of the impact that feed costs are having on livestock production in North Carolina and across the country.

I can assure you that I have heard from many of my constituents and producers about the effects of feed costs on the livestock producers' bottom line. The district is one of the top poultry producing districts in the Nation. I have heard a great deal from pork producers as well, and turkey, chickens, hogs, not able to utilize the ethanol byproducts as efficiently as cattle and dairy cows. There are serious concerns in the livestock sector that need to be heard and taken into consideration.

Furthermore, I want to commend the North Carolina pork industry and the North Carolina poultry industry for taking proactive steps to consider various technologies that may convert waste into energy. Folks, times have changed. We are now converting excess animal nutrients into energy and let us don't forget those changes because it is important. With pork and poultry being the largest livestock sectors in North Carolina, it is important for the constituents to have access to and utilize all these technologies which add value. I know more needs to be done in the area, but again, I appreciate the industry looking ahead to the future and how they can play a role as America strives for energy independence, which has a tremendous positive impact on our foreign policy as well as our everyday lives.

Well, I look forward to hearing from you all to get a better national perspective and also sympathize with you on other important issues your industry may face that could dramatically increase your cost of production. This farm bill will be important for all of America's producers and my goal is to ensure that we do not place costly burdens and mandates on our livestock producers. But again, Leonard and I are committed to making sure that government, in its nimble way of doing things, does not put those costs on you that are really hard to get back. If you look at the costs associated with such issues as mandatory country of origin labeling, ban on packer ownership and onerous environmental regulations, the industry has many volatile issues at the forefront that could have a major impact on production costs and the livelihood of the industry. Certainly, we sympathize with your concerns about production costs that you face today and the hurdles that you will face in the future.

Mr. Chairman, again, thank you for holding this hearing and allowing the livestock industry to be heard on this issue. I look forward to working with you on this issue and others, since the farm bill is on the near horizon. I look forward to today's testimony and the insight that each witness will provide on this issue. I appreciate all of you being here so we can learn more about the effects on each sector of the industry and again, having the chance to meet some good folks I have not known before and the fine gentleman from Iowa. That you all are so important to our industry and our future and our economy, I charge the Secretary with providing the balance and he can do it. To some it is a cost, to some it is a price. We are in the same bin together. I want to take those perceived differences and instead of being price and cost, let us be value, how we can add value to the industry and the producer in a sustainable upward movement that is good for everyone. Folks pay very, very little for the food that they eat. If you live in Washington, you pay a lot more, but in Iowa or North Carolina, it is not quite as bad. But thank you all for being here.

Mr. BOSWELL. Thank you, Congressman Hayes. Just a little bit for us up here. As I told you earlier in my opening comments, we are scattered all over this campus today for the various things going on and there will be people coming and going. I will have to repeat this to our committee, but it is sort of a housekeeping thing. We are going to run the thing in this way if everybody is cooperative and I know they will be. But when we gavel in, by seniority, whoever is here, that is who we will recognize in that order and as they come in the order they come. And we are always very appreciative when we have the ex-officios here, if you will, and that is of course the chairman, who is present with us today, and the ranking member. And so when they come, we are honored to have them here and we will of course offer them an opportunity to say what they would like to say. As far as the rest of the panel is concerned, I am going to request that you address the questions when the time comes and not make lengthy opening remarks, unless something is really burning inside of you. Then you, of course, come and talk to us and we will consider. But we certainly want your written comments and questions and it will be part of the record. So having said that, I would like to, at this point, recognize

our committee chairman, Mr. Peterson, if he wants to make any comments.

STATEMENT OF HON. COLIN PETERSON, A REPRESENTATIVE IN CONGRESS FROM THE STATE OF MINNESOTA

Mr. PETERSON. Well, I thank the chairman and thank you for providing the leadership on this committee and on this issue, and also Ranking Member Hayes, for holding this hearing today, and I appreciate the Deputy Secretary and Dr. Glauber for being with us today, as well as all of the folks that have an interest in this issue and to share their views with the subcommittee.

One of the biggest developments that agriculture in rural America has seen in many years has been the growing demand and expanding market for agriculturally-based energy sources such as ethanol and biodiesel. This demand for ethanol continues to grow and it is supported, not just in farm country, but by those in the suburbs and the cities who are overwhelmingly in favor of utilizing homegrown renewable fuels as a way to reduce our Nation's dependence on foreign energy once and for all. This demand has highlighted the issue of feed costs and their impact on the livestock industry, as corn prices have climbed near historic high levels. And I think it is important to look at corn prices and their effect on livestock with some historical perspective. When corn was under $2 a bushel, that low price had an effect on beef and poultry and pork industries, just as high prices do today. Those industries were able to benefit, not only with major input costs being priced low and a lot of times below the cost of production, but also with the Federal farm safety net for grains, like corn and soybeans, that allowed us to have this kind of a system. The 2007 Farm Bill our committee will consider this year will maintain this safety net, but it will also include an energy title that will help us meet the growing demand for the next generation of ethanol beyond corn and that is cellulosic ethanol and also work on feed stocks for biodiesel. Federal loan guarantee programs that we hope to get in place will speed up the commercialization of cellulosic ethanol and biodiesel, which can take the pressure off of corn and I believe that this is a real key moving forward, not only to achieving energy independence, but to stabilize this whole situation.

One issue that will come up as the farm bill, the way it progresses, is the idea of removing acres from the popular CRP and placing them into production. We are looking at this issue. I think that some people have overstated the amount of acres that are actually available and one of the things that I don't want to have happen is for us to put acres into production that are going to cause more disaster problems, more crop insurance problems, and so I think I we need to be very careful. And also understand that CRP has been a great boon to wildlife and you know, it has protected a lot of this marginal and highly erodable land that probably shouldn't have been farmed in the first place.

So I look forward today to this hearing about the excellent research that is being done in the field of distillers dried grain, an ethanol co-product that is being used by our different livestock industries. Ethanol plants in my home State of Minnesota and neighboring South Dakota are producing about a quarter of the three

and a half of the DDGs that are being produced annually in North America. And we are doing some good research on looking at fractionating corn and splitting it into protein and oil and fiber before we put it in the ethanol process and I think this has a lot of potential to alleviate some of this feed problem. And we need to do research, additional research. We have people in our State that are doing this and I am looking forward to the testimony of Dr. Shurson from the Department of Animal Science at the University of Minnesota, to hear about some of the work that they are doing. And we will, as I say, try to increase research funding so that we can do more work in this area. So I just want to assure everybody that this committee is going to be very vigilant. We do not want to harm the animal agriculture industry. This is the premier value-added industry that we have in this country and it is important and we need to make sure that we not only maintain it, but that we allow it to grow. So again, I appreciate, Mr. Chairman, your leadership, and the ranking member, and look forward to the testimony from the witnesses. Thank you.

Mr. BOSWELL. Thank you, Mr. Chairman. I would like to recognize Mr. Goodlatte for what remarks he might want to make.

STATEMENT OF HON. BOB GOODLATTE, A REPRESENTATIVE IN CONGRESS FROM THE STATE OF VIRGINIA

Mr. GOODLATTE. Well, thank you, Mr. Chairman, and I want to thank you and the ranking member for showing concern about this issue and I very much appreciate having Secretary Conner and Dr. Glauber and our other witnesses here today, because this is a matter of grave concern to me. So I would like to thank you for calling today's hearing. And let me state from the outset that I support all of our efforts to develop new market opportunities for the Nation's agricultural producers, no matter what the commodity or product.

As I visit with the livestock producers of the 6th District of Virginia, poultry and eggs, cattle and calves, hogs and pigs, milk and dairy, the one recurring concern I hear about is the high cost of feed. High feed prices are naturally a concern to all livestock producers and it is important that this subcommittee examine the long- and short-term implications of policies that affect production costs. For livestock producers, corn is an absolute necessity for which there is no substitute. However, there are a number of other factors that are adding to the increased cost of production for livestock producers that cannot be ignored.

While today we are specifically discussing the effect of feed prices on livestock production, we must recognize that there are a variety of other factors in play as well. We should perhaps view today's hearing as a cautionary tale illustrating the impact of unintended consequences. Today we are discussing how increased ethanol production leads to higher grain costs, which can in turn mean higher feed costs for livestock producers and lower profitability. However, I think what we will hear today is that when you add costs, any costs, to the livestock production system, you injure livestock producers. It makes no difference if these costs are higher grain prices, investments forced by mandatory animal identification, production costs associated with country of origin labeling, market disruptions caused by packer/ownership bans, or regulatory burdens associated

with environmental policies, the outcome is the same. When we take actions that add costs to the animal agriculture sector, we hurt livestock producers.

Recent policies enacted by Congress have created much excitement in the development of renewable energy. The creation of a Renewable Fuels Standard in the Energy Policy Act of 2005, along with several production tax credits and the phase out of methyl tert-butyl ether (MTBE), have helped fuel investment in new ethanol and biodiesel plants and created more markets for agricultural products. In the State of the Union address, the President outlined his 20 and 10 proposal to reduce domestic fuel consumption by 20 percent by 2017. This initiative is extremely ambitious and can only be achieved with contributions from all components of the agriculture sector, including grains and soybeans, plant and wood waste, vegetable oil and animal fat and waste.

However, last year, 20 percent of the U.S. corn crop was used for ethanol production and that amount is expected to rise significantly over the next few years. Currently, corn is the leading commodity used to produce renewable fuels. Corn is also the staple feed stock for livestock producers and increased demand for corn has resulted in the highest corn prices we have seen in more than a decade. The high price of corn, coupled with increases in other input costs, has put producers in a tough spot financially. Livestock producers have always been the most reliable consumers of corn and soybeans. We must be cautious that our policies do not cause unintended economic distortions to either grain or livestock producers as the renewable fuel market continues to grow. As input costs continue to rise and we work to reduce our dependency on foreign sources of energy, we must do all we can to promote the development of alternative fuels as well as working to create new market opportunities for our agricultural producers.

At the same time, however, we must also ensure that we continue have a reliable and affordable feed supply for our livestock industry. Reduced reliance on foreign energy sources, stable energy prices, and the creation of new markets for agricultural products are all positive benefits of the growth of the renewable fuels industry. However, there must be balance. The needs of the renewable fuels market and the livestock industry can be met simultaneously without significant price or supply distortions.

Mr. Chairman, again, I thank you for holding this hearing on this very important issue and I look forward to hearing the testimony from today's witnesses.

Mr. BOSWELL. Thank you for being with us this morning. You will always be welcome, of course. So we would like to welcome our first panel to the table, the Honorable Chuck Conner, Deputy Secretary of the USDA, accompanied by Dr. Glauber. Am I saying it correct?

Mr. GLAUBER. It is Glauber.

Mr. BOSWELL. Glauber. Okay, I got that. The Deputy Chief Economist. We are glad to have you here. Secretary Conner, we are anxious to hear what you have got to share. Please begin.

STATEMENT OF HON. CHUCK CONNER, DEPUTY SECRETARY, UNITED STATES DEPARTMENT OF AGRICULTURE, ACCOMPANIED BY DR. JOE GLAUBER, DEPUTY CHIEF ECONOMIST, UNITED STATES DEPARTMENT OF AGRICULTURE

Mr. CONNER. Chairman Boswell and Ranking Member Hayes, I do really appreciate the opportunity for the Department of Agriculture to be a part of this hearing today. Mr. Chairman, I especially appreciate the outreach and the statements you made about your relationship with Mr. Hayes, as well, and the bipartisanship of this subcommittee, and I will just tell you that the U.S. Department of Agriculture wants to be part of that bipartisanship as well. I think we have challenges ahead of us in this field of energy and feed costs. There is no question about that. But I think we need to keep in mind that those challenges are the result of some unprecedented opportunities that we have in American agriculture that many of us and many of you have strived for, you know, for much of your career. And so I think we need to keep that in mind as we review these challenges that we have in front of us today. I am joined today by Dr. Joe Glauber, our USDA Deputy Chief Economist, and we will provide a brief status report on the rapid growth in biofuels and its implications on the livestock and poultry industry. I have a much longer and more detailed statement, Mr. Chairman, that I would ask be made a part of the record as well, and I will summarize that statement.

High oil prices and government programs, technology advances and private investment have indeed generated a rapid growth in biofuels production. Biofuels production is creating rural income and employment growth that we have not seen in a long time, while providing environmental and energy diversification benefits. It is also changing farm management, production and related industries across the agricultural sector. The rapid pace of biofuels production has been simply amazing. For the 2006 crop year, we forecast that about six billion gallons of ethanol will be produced, utilizing about 20 percent of the corn harvest. For the coming 2007 crop year, we now project nearly nine billion gallons will be produced, using approximately 26 percent of our corn crop. Similarly, biodiesel production has increased at a dramatic rate as well.

The strong demand for ethanol, lower corn production and increased corn exports have pushed corn farm prices to very near record levels. USDA forecast farm prices for the 2006 crop will average $3.20 per bushel and rise to a record $3.60 per bushel for the 2007 crop. Prices for other feed grains and soybean meal, of course, have also risen as well. Higher feed prices have raised the cost of producing livestock, poultry and livestock products and led to concerns among livestock producers about the future profitability of their business. Although producers are facing higher feed costs, firm consumer demand for meat and poultry, growing exports, and reasonably attractive prices are expected to help support our producers during this period of adjustment.

Total U.S. production of meat and poultry and exports are forecast to be record highs in 2007. These increases are expected to boost livestock receipts to a record $125 billion this year. With a modest increase in beef production expected this year, fed cattle prices should remain stable. Feeder cattle prices are expected to

decline from their recently very strong levels, as feedlots reduce their bids for feeder cattle to offset the increase in feed costs. Higher pork production is expected to lead to lower hog prices, while tighter domestic supplies for broiler meat could support higher broiler prices going forward. Retail meat prices are expected to increase by less than one percent in 2007. Milk prices, as you know, are rebounding from their decline experienced in the early part of last year and are expected to be up nearly 15 percent in 2007.

Poultry producers can adjust more rapidly to changing feed costs than other livestock producers. As a result of lower prices in 2006 and higher feed costs, they have slowed production and that is now being reflected in higher broiler prices. Adjustments for cattle, hog and dairy producers do take longer and further changes in feed prices will play an important role in their production decisions in 2007 and beyond that. With sustained higher feed costs, longer-term adjustments for beef, pork and poultry are generally similar. Each production sector experiences a decline in returns as feed prices are not immediately offset by higher livestock product prices. Falling returns, of course, eventually lead to less production and a return to higher prices.

Several important factors, Mr. Chairman, will affect the adjustment in livestock markets. First, forage supplies will be critically important for cattle. Compared with a year ago, the portion of the Nation's cow inventory in drought areas has declined sharply and forecasters expect improving pasture conditions in the Plains States this spring. Second, as ethanol production increases, there will be more dried distillers grain available for feeding. While hogs and poultry are more limited in their ability to use DDGs than cattle, this co-product feed will certainly augment our total livestock feed supply. Third, continued U.S. income growth and record livestock exports should maintain strong meat prices and meat demand, supporting livestock returns during this period. And fourth, the high corn prices will likely result in a substantial increase in corn production in 2007 and will lower our corn exports. Our analysts do believe that the corn-planted area will increase by nearly nine million acres, resulting in the largest corn-planted area in nearly 60 years. This increase should help corn supplies meet the needs for fuel, food and of course, feed.

To further evaluate the short- and long-term potential impacts of increased corn demand for ethanol, Secretary Johanns and I have established a livestock and poultry feed working group. Under Secretary Mark Keenum will be tapped to lead this effort. This group will work to ensure that the Secretary and I have a full understanding of the feed grains complex as the market adjusts in the short term to incorporate this new and powerful dynamic. And of course we will, Mr. Chairman, share all of the results of this working group with this subcommittee as we move forward.

At USDA, we believe that biofuels will be an essential part of the strategy to reduce the Nation's dependence on the imported oil. Even so, there are many uncertainties in how biofuels and agricultural markets will unfold in the coming years, including global economic growth, the price of crude oil, gasoline and ethanol, the rates at which cellulosic ethanol and other alternative energy sources are commercialized, and the emergence of technologies that improve

the use of ethanol co-product feeds, and finally, the increases in yields of corn, soybeans and other crops, to name several factors. We believe our corn supplies are limited in their ability to support continued expansion of biofuels. They are limited. Cellulosic feed stocks, such as residues, waste, forest materials and grasses, can fuel the Nation's vehicles and relieve some of the pressures now placed solely on the corn market. The President's proposal to reduce gasoline use by 20 percent in 10 years is based upon the expectation that cellulosic ethanol will play a key role in achieving this goal. The Administration's 2007 Farm Bill proposal includes funding, about $1.6 billion over the next 10 years, to support research and commercialization of cellulosic ethanol.

One thing seems clear, Mr. Chairman, the growth of biofuels in the United States has the potential to greatly reduce our reliance on imported oil and in doing so, transform U.S. agriculture and we believe this is a good thing. In the near term, livestock producers are facing higher feed costs and a notable period of adjustment. More corn acreage, higher corn yields, better use of DDGs, and strong global demand for livestock products, we believe will help cushion this adjustment going forward. In addition, as we progress down the road to commercial-scale cellulosic ethanol, feed stocks other than corn we believe will increasingly be used in our biofuels production complex.

That completes my oral statement, Mr. Chairman. Again, we have provided a lot more analysis in my written statement that is part of the record and we will certainly be happy to answer questions or comments from the subcommittee at this point.

[The prepared statement of Mr. Conner appears at the conclusion of the hearing.]

Mr. BOSWELL. Thank you very much, Mr. Secretary, we appreciate that and we will have questions. And I just might remind the members that weren't here when I made the opening statement, that we will recognize them by seniority, who were here when the gavel fell and then after that as they arrive, and I appreciate you understanding that. And of course, we are not asking for opening remarks from Members. We ask that you submit what you might want for the record and we want adequate time for the questions and the give-and-take process. So with that, I would like to recognize Mr. Donnelly from Indiana for five minutes.

Mr. DONNELLY. Thank you, Mr. Chairman. Obviously, in my district in Indiana, we are feeling the same pinch. I have had meetings with farmers throughout my district. We have 12 counties and in one of the first or second meetings, it was after the meeting that about three fellows came up to me and quietly said, we are the livestock guys. We have got to sit down and talk. And their concern is palpable and understandable. And so my question is, how do you see fixing this quandary or where we go in the future? And some of the farmers have said, well, you know, our concern is that our feed costs are going up, but we are not going to be able to pass this along to the marketplace. And sitting next to them is a grain producer who says, I have been struggling through $2 corn for most of my life. And so they are saying this is our chance to try to catch up. And the livestock producer, as I said, is saying to us, well, we are not sure we can pass it on to the marketplace. And the grain

producers are saying, well, you know, the consumer will have to be the one to judge whether they can pay some more for pork chops or for chicken or whatever. So I am just wondering where you see this quandary. We are looking for that balance and how do we get there. And I know that is the magic question.

Mr. CONNER. Yes, it is. Well, Mr. Donnelly, I am very familiar with your district in Indiana and I know you have got mixed points of view, because you have got some tremendous corn producing areas in there, as well as the important livestock sector.

Mr. DONNELLY. Right.

Mr. CONNER. And this is a balance. Let me just say that, generally speaking, you know, this is a good problem for us to be trying to address at this point. In working many, many years on these types of issues before this committee and before the Senate, I will tell you that our goal of value-added agriculture was an illusive goal for a very, very long period of time and we are seeing that goal, you know, come together. And obviously, I think it would be unanimous around this subcommittee and the full committee that the notion of us growing more of our energy needs is a very, very positive thing for this country and reducing our reliance as well.

Mr. DONNELLY. One of the other comments we have had is this is the first time a lot of the folks have had a spring in their step for a long, long time.

Mr. CONNER. Absolutely. So it is a balance. As I noted in my statement, Mr. Donnelly, we do anticipate that farmers are going to react to the market signals that are being sent to them right now. You know, historically, we talked about a corn/soybean price ratio of about 2.5 to one. That changed a little bit and we started talking about a 2.2 to one. Well, the current corn/soybean ratio, you know, in the Midwest is quite bit less than two to one right now. Our estimates do show that, producers will respond to market signals. We are estimating, again, as much as nine million additional acres of corn to be made available out there. We are anticipating that farmers are going to be able to justify going for those higher yields now and, we think the market will respond to this. Our first crop report is on March 30, where we will actually go out and survey producers, in terms of their planting intentions. That is a very important report for our future and certainly for the future of this subcommittee, as we carefully analyze and monitor this situation. But again, our expectation is that that report is going to show that the market is working here and that the price signal that the corn market is sending is going to be something the producers are going to take full advantage of.

Mr. DONNELLY. Thank you, Mr. Chairman.

Mr. BOSWELL. Thank you. Mr. Goodlatte, did you have questions you would like to ask? I recognize that you may have other things you want to do.

Mr. GOODLATTE. Well, thank you, Mr. Chairman. I very much appreciate it. Secretary Conner, we very much appreciate your testimony and I certainly agree with you, that times are good for American agriculture. However, there are many, many parts of the country that are not like the gentleman from Indiana's district, where there is a choice between crop production and value-added livestock production and that is true of virtually the entire east

coast of the United States, more and more so. Certainly true in my district in the Shenandoah Valley of Virginia, which I have had the honor of having you come and visit to see what we do there. For many, many years, back over 100 years ago, the Shenandoah Valley was known as the breadbasket of the Confederacy. It was the production of wheat and things like that. But we have expansion westward and other lands being farmed that are more suitable for that. The rolling hills of the Shenandoah Valley are not very suitable for large-scale row crop production and almost all of the corn and so on produced in the area comes from and is used for feeding livestock. So beef cattle and dairy and poultry, which is by far the largest industry, allow people to maintain that farmland. Poultry farmers have a very good living on a small amount of land, but when they are squeezed as they are today by the price of corn, we risk losing that type of land, not just in my district, but all across the entire east coast of the United States, if we do this. Their option is between livestock production and selling out to developers. So there is a lot of support from surprising groups of people who want to make sure that we maintain those farms that are a buffer against the sprawl that has hit many parts of our region of the country. What do you say to those folks who can't use dried distiller grains, who have a major industry is up against it because they simply don't have the ability to make the alternative? They don't see the other side of that coin that somebody in Indiana might see because of the great opportunity that ethanol does present to row crop farmers.

Mr. CONNER. Well, Mr. Goodlatte, let me just address that generally and then if Joe has any specific comments to add to this. I think how you address them is certainly you can't say in any way that, going from virtually none of your corn for ethanol production a few short years ago to 30 percent of, some very, very large corn crops going for ethanol, that change cannot occur without, resulting in some fundamental changes in other sectors of American agriculture.

Mr. GOODLATTE. Do you think we should have price support systems for livestock production like we do for grain production?

Mr. CONNER. Well, I suspect if I suggested that, Mr. Goodlatte, I would probably get egged by some of my Indiana friends that the subcommittee is going to hear from next. I don't think anyone in the livestock sector is soliciting that type of thing at this point. But you know, let me just say that, again, there is going to be change in the livestock sector and I think we would be foolhardy if we were to sit here and suggest that all of this occurring in the corn and the feed sector is not going to have some fundamental change. We have done a pretty detailed analysis of the impact of ethanol on the livestock sector, so we want to start with some good information as we analyze what we believe is still a relatively short-term problem here, albeit a very, very important problem. We released the results of that study at our outlook conference, which focused on energy, last week. Dr. Glauber, if you want, can go through the details. We will certainly make that document, USDA agricultural projections through 2016, available for the subcommittee and the full committee to review, but it, in very specific detail, analyzes that impact.

Mr. GOODLATTE. Well, let me ask you a few other questions.

Mr. CONNER. Yes.

Mr. GOODLATTE. Because my time, I am sure, is limited. But one of the things I mentioned in my comments were the other things that we can add to the cost that livestock producers face, like mandatory animal identification, like mandatory country of origin labeling, like increased environmental regulations. What is the Administration's position on what they can do in those areas to help buffer the increased costs that they are going to face in feed prices?

Mr. CONNER. Well, I think you raise a good point, Mr. Goodlatte, and obviously, I think this subcommittee and the full committee need to be very, very mindful of any legislative initiatives at this point that would add cost to the livestock sector, albeit perhaps even some well-intentioned efforts. But you know, this is not a time to be adding any cost to the system during period that we are in right now. As you know, Mr. Goodlatte, we do favor a voluntary animal ID system for this country. I believe are we making great progress in terms of getting premises registered on that and are headed down that right path on that. On mandatory country of origin labeling, the law requires us to have that implemented in the not too distant future. As you know, the Administration's policy position is against mandatory country of origin labeling. Our economic analysis, from a couple of years ago did suggest that there would be sizable costs. This adds into the livestock sector system, which we felt was inappropriate at the time and certainly during these kind of times, because it makes it very, very difficult. So you know, we hope to work with the committee in our farm bill effort to make sure that we are not adding on even additional costs to the system with this type of regulation. Obviously, on the environmental front, very quickly, as you know, we don't want to add environmental costs to the system. That is one of the reasons we did choose in our farm bill proposal to increase the equip dollars by over $4 billion. Most of that money goes to the livestock sector to help them meet environmental requirements without costing them an arm and a leg in doing so.

Mr. GOODLATTE. Mr. Chairman, I wonder if I might have leave to ask one more question of the witness. The National Chicken Council, the National Pork Producers Council, the National Turkey Federation, and the National Cattlemen's Beef Association all favor allowing the exiting blenders tax credit and ethanol import tariff to sunset. And I am wondering your opinion about whether ethanol can be produced economically in the United States without the current subsidy and what impact would the expiration of the ethanol subsidy have on feed availability.

Mr. CONNER. Well, Mr. Goodlatte, that particular analysis is actually included in some of the data on the document that I just made reference to, put together by Keith Collins and Dr. Glauber and our folks in the Chief Economist's Office, so I refer you, specifically to that, because it does go through it and in some detail analyze the impact on that. As you know, Mr. Goodlatte, the Administration's position is that we favor the continuation of the tax credit through its 2010 date and the Administration has said, at some point, we will work with Congress. This is obviously something we can't change. It has to be legislated. We will work with Congress

at a later time to analyze the full impact of this situation to determine what is the appropriate steps going forward at this point.

Mr. GOODLATTE. Let me just say that this Administration won't be this Administration in 2010 and in the meantime, I think we need to be taking into account the long-term impact that this is having in the near term, and if we don't review these policies sooner than 2010, by 2010 we may have dramatically affected sectors of our economy in ways that I am not sure are necessary. I do hope you will continue to look at the problem that particularly poultry and hog producers have, and there are not a lot of answers for them right now.

Mr. CONNER. Yes.

Mr. GOODLATTE. Thank you, Mr. Chairman.

Mr. BOSWELL. Thank you, Mr. Goodlatte. I am going to step out of order a little bit because, when Mr. Peterson comes back, we will recognize him, because of their schedules, and recognize at this moment, with everybody's concurrence, thank you, Mr. Hayes will be next.

Mr. HAYES. Thank you, Mr. Chairman. And gentlemen, thanks for being here. A couple quick questions and short answers will be fine. Chairman Peterson asked about CRP. What is the short answer to which way you are looking? And we do want to protect the wildlife habitat. CRP, up, down, sideways?

Mr. CONNER. Mr. Chairman, as you know, we are in the middle of a reenrollment process on our CRP acreage, where we are offering producers the opportunity to reenroll certain acreage in the CRP. That reenrollment has ranged from two years up to 15 years, depending upon on the environmental benefits provided by that land. Now, in very short order, when I say short order, I would anticipate, within the next probably 24 to 48 hours, we are going release the results of that reenrollment process and based upon those results, I can tell you that we believe there is a significant quantity of acreage, several million acres to be exact, that we will show where producers are, at least at this time, expressing an interest in getting out of the CRP. Now, we don't know what their intended purposes are in getting out, but I think you can safely assume that some of that will be intended for production, obviously. And again, we will be releasing those results very soon.

Mr. HAYES. What percentage of your acreage on corn and soybeans is used for livestock feed, roughly?

Mr. GLAUBER. Roughly, for current feed use, about 58 percent of corn goes into feed, but that is declining and projected to decline. As we have larger and larger corn crops, more of that is going to ethanol. So although the feed use itself that we are projecting is fairly constant at around six billion bushels, the percent of total use is declining. And in our 10 year projections, we see that declining to around 42 percent or 43 percent. In terms of soybean, there the situation is, you know, we crush domestically about 1.7 billion bushels. That is projected to increase. And of that, most of that is feed. Most of the soybean meal goes into feed here. A little bit is exported. As we see going forward, we are probably going to be crushing a larger percentage of the U.S. crop. Some of that is due to the fact that the soybean crop is going down because of the soybean areas going into corn area. But the other thing is we are prob-

ably going to be exporting and we are projected to export fewer soybeans. More of it will remain home and crushed. So we are seeing actual domestic crush increasing over time, and as a percent of the total U.S. crop, also increasing.

Mr. HAYES. Okay. What about percentage for corn and soy on ethanol and biodiesel production, respectively?

Mr. CONNER. Go ahead, Joe.

Mr. GLAUBER. The corn data, again, that has been the real, the dramatic increase we have seen there has gone from, as Deputy Conner mentioned, six percent in 2000. It is currently around 20 percent of the corn crop and we expect, in really short order, probably by 2009, 2010, to be up around 30 percent and plateauing off after that. That is for corn. The biodiesel, currently we have a little less than 300 million gallons of biodiesel production. That has been a dramatic growth from where it was. It was almost nothing in 2000. And we are projecting that to increase to about 700 million gallons, which is about five billion pounds soybean oil. So a lot of that crush is going to be going. We are projecting that a significant portion of that will be going into biodiesel.

Mr. HAYES. Okay, the next question. A number of significant grants have been made to our State and related institutions to study the economic effects of increased ethanol and biofuel production on the Midwestern economy. Some grants have been made to major livestock producing States outside of the Midwest, such as, I will pick one by random, North Carolina, to study these economic effects. And the last question, we are running out of time, speak in the answer to, are we anticipating transportation needs as ethanol and corn and soybeans, as that increases over the years. Thank you.

Mr. CONNER. If I could, Congressman Hayes, my folks advise me that, on October 11 of 2006, Secretary Johanns and Bodman did announce nearly $17.5 million for 17 biomass research and development projects. One of those grants, I believe, close to a half a million dollars, was awarded to North Carolina, a State university, for the purpose of strategic positioning of biofuels in the context of future agriculture and oil needs.

Mr. HAYES. That is nice, $500,000 and $17 million.

Mr. CONNER. Well, let me just, on the transportation situation, I will tell you that there are equal challenges there as well. As the chairman knows, transportation challenges in agriculture in general, through rails, is always there. This is something we have worked on for a number of years and every time there is a very large crop out there, the question of availability of railcars and the transportation situation is always a huge factor on this. I will tell you that, the results of what we are hearing out there from folks around the countryside is that there has been a pretty remarkable reaction and positioning, in terms of the railroad industry, to meet the needs that are occurring out there and those needs are very, very substantial and they are changing dramatically every day. And I am not saying we are not going to always have those traditional problems that we have in agricultural, being a bulk, agricultural producer that we are, low value-type product, we are always going to, you know, face challenges for railroad competition. But I

think, at this point, our sense is and our analysis is that needs are being met out there at this stage.

Mr. BOSWELL. Thank you, Mr. Hayes. The Chair recognizes Mr. Lampson for five minutes.

Mr. LAMPSON. Thank you, Mr. Chairman. I was only teasing when I asked for 10. It is an honor to have you both here. Thank you very, very much to come and to educate us and to discuss with us some of the current problems that we face. I have been a longtime proponent of bioenergy and I am very pleased and excited that we have long overdue political and public support for this necessary and absolutely exciting transition, and I am deeply concerned about, however, the strain placed on ranchers and producers throughout the agriculture community due to the rapid growth of both, well, all sorts of biofuels, ethanol and biodiesel. And although consumers are not currently feeling the same squeeze that our producers are, it is only a matter of time before they do.

And as you said, we know that the USDA is forecasting a 25 percent or so increase in the corn crop consumed by ethanol producers. It is our responsibility here in Congress to conduct a thorough evaluation and hopefully come up with suggestions of how to solve some of the problems of the harmful effects of skyrocketing demand that it is has already had and will continue to have for the foreseeable future on our producers and in turn our nation's food supply. I have spoken often about the diversification of biomass for energy production and I think that we can all understand that we are not quite there yet. Until we are, then obviously livestock is going to be competing with ethanol for corn. Hopefully we will have and be able to ease the burden this growing demand is placing on our producers. I am chairman of the Subcommittee on Energy and Environment and one of the things that I believe we can do is provide a huge amount from our land for the biofuel needs. But we can't do it as long as we are going to be competing with crops that provide our food. What is being done to promote the research necessary to develop new crops that typically are not used for food, the things like jatropha that is indigenous to India? Are other kinds of crops that we may know about here, even down to the point of using algae, which has a significant concentration of oil that can be turned into biodiesel.

Mr. CONNER. Well, I appreciate the question, Congressman. It is a very, very important topic you raised. Let me just, if I could, refer you to some of the proposals that we have suggested in our 2007 Farm Bill recommendations, because I think they do go to the heart of your question. For example, one of the items that we are suggesting is the creation of a subset within the Conversation Reserve Program, a subset meaning acreage set aside that would be used to grow crops like you suggest and those crops would be targeted specifically for biomass production. The producer would obviously get a conservation payment, a long-term conversation payment associated with that, but as well, he would be required to meet conservation requirements, as part of that land, consistent with, you know, the Conversation Reserve. So that is one suggestion that we have got in terms of helping producers transition to grow those types of crops that will be needed for biomass production.

I would also point you to a new program that we have created that is a bit of an offshoot of an old program called the Cellulosic Bioenergy Program. We have set aside $100 million for that. The purpose of that program, again, is to reduce the cost a little bit of those inputs, those cellulosic inputs, because we know that there is a difficult transition here in terms of those producers getting a foothold to grow those products economically going forward and competing against the traditional crops that they might be considering. So that program as well. Obviously, you are interested in research. We have got a very, very strong research and development section in this title, all focused towards biomass cellulosic production and finally, then, of course the loan guarantees to help us build the plants to continue down that path. So it is a very extensive effort in our farm bill.

Mr. LAMPSON. But it seems like the huge preponderance of it is we are picking something, we are picking cellulosic ethanol as a good opportunity. There are many other opportunities and are we putting comparable emphasis on the development of those other or the seeking out of those other crops that could provide potentially as big if not a greater potential.

Mr. CONNER. Yes, let me just say that we are, I will tell you, to answer very, very quickly and I would be happy to, if you want me to provide a very detailed briefing for you and your staff on some of the changes that we are making within our Agricultural Research Service. We sort of see our ARS modifying its programs into really sort of four pillars. The first of those pillars is exactly as you mentioned, cellulosic feed stock design, that very notion of what is the right crops to be produced out there. You know, is it switch grass? Is it something else that, you know, people haven't even thought about? I think there needs to be, you know, R and D in that. Very, very quickly, because I know your time is running out as well. The other three parts of that is cellulosic feed stock production, the production of that product itself, the research once you determine what it is, then finally cellulosic feed stock logistics. It has got to be grown in a way that it can get to the plant in an economical way and that is a challenge for us as well. And then finally, just the conversion itself. What is the right enzyme, for example, to break down that algae that you may have mentioned or something like it? It may not be the traditional enzymes we have used in ethanol production. We need research and development to focus on that.

Mr. LAMPSON. My point is that you have emphasized. You made my point for me. You emphasized ethanol. You talked only about ethanol in your answer. There are other biofuels. Biodiesel comes from, right now, soy. And we need other kinds of crops from which we can take oil, or we need to be doing, and I know my time is up. We need to be doing the research to identify many of those other crops because they are available and then helping farmers make that transition to the new crops, and I would indeed like to pursue this to a greater extent.

Mr. CONNER. Absolutely.

Mr. LAMPSON. Thank you, Mr. Chairman.

Mr. BOSWELL. Thank you. Mr. Smith, please. Five minutes.

Mr. SMITH. Thank you, Mr. Chairman, and thank you for appearing here today. It has been an interesting journey, if you will, hearing from various folks on the frontlines of the ethanol industry and the livestock industry. I hear a concern that there is not enough corn, period, at any price and certainly available corn at a high price can hit the bottom line, but no available corn is certainly another issue. That being said, the drought impact, if Dr. Glauber could perhaps respond to that, what we might be able to experience with change in weather, you know, that is bound to happen, but the overall drought impact, if you could comment on that.

Mr. GLAUBER. Sure. Well, thanks. You are absolutely right about the—you know, we are looking at stocks this year, being for corn, that is, close to five percent of estimated use. Very low levels, the lowest level since we had in the mid-1990s. And you are seeing that reflected in the futures market. They are highly volatile. Deputy Conner mentioned the March plantings report that is coming out at the end of the month. I think the market will be closely watching that. And then I think from then on out we are going to be watching the weather and I think you are absolutely right. With a tight stock situation, you know, there will be a lot of volatility in markets until we know what the weather, you know, how that is going to transform into the yields at the end of the year. So you are right, weather is always an issue, but it is particularly an issue when you have low stocks.

Mr. SMITH. Okay. Thank you very much. Thank you, Mr. Chairman.

Mr. BOSWELL. Thank you. The chair recognizes at the time, let us see, it looks like everybody has come and gone here. Would you check and see for Mr. Peterson? He said he might have a question or two before we get to the closure. Well, I will just say this while we have this opportunity, Mr. Secretary. We will see if Mr. Peterson can come back. Looking at your testimony today, it seems like a number of times a recurring theme is let the biodiesel tax credit and the ethanol import tariff expire and I wonder if you have any data or projections on how this will affect livestock and ethanol industries should that happen, and what research has been done on the impact on the feed costs should this be allowed to run out, what it might be.

Mr. CONNER. Yes. Mr. Chairman, if I could, I made reference earlier to a publication that we released in our outlook conference, entitled USDA Agricultural Projections through 2016. I am going to ask Dr. Glauber to specifically refer to some of those, that data that you referred to, but we will make sure that the committee has copies of this document, because it does go into some detail of our projections for the future, both with and without extension of the tax credit.

Mr. GLAUBER. As we have just mentioned, there is a lot of detail in here and I will just go through a quick summary. In our baseline we are showing ethanol production to increase to about 12 billion gallons. A lot of that is driven obviously by the high oil prices that we foresee over the next 10 years and the continued high oil prices. Our analysis shows that if the credits were removed, that you would see a drop in ethanol production, but not by a whole lot. It would drop from around 12 to around 10 billion gallons, which of

course would mean slightly lower corn area and slightly lower corn prices over the period, and the adjustments throughout the rest of the sector. I would say, though, that these, again, are predicated on the assumption of fairly high oil prices. If oil prices were to drop, for example, down to the, you know, $40 range or where we saw them only five years ago, or something like that, then obviously the blender tax credit becomes all the more important in terms of the overall profitability of the ethanol industry.

Mr. BOSWELL. Thank you very much. The chair recognizes Mr. Kagen for five minutes.

Mr. KAGEN. Thank you, Mr. Chairman, and welcome, Deputy Secretary Conner. It is not Conners, not Chuck Conners, it is Conner.

Mr. CONNER. No rifleman. That is correct, sir.

Mr. KAGEN. In your opening remarks and your written statement, you indicated that there was a divergent effect of ethanol expansion on the different species of livestock and in different regions of the country, which could result in structural changes in some parts. Would you expand on what you mean by structural changes?

Mr. CONNER. As I noted, Congressman, in my opening statement, you know, the ability of different species of livestock to utilize the dried distillers grain, the byproduct of the ethanol process, does very considerably and I think it is fair to say that, within the cattle feeding sector, there is a very good ability to use these dried distillers grains to substitute for what may have been regular feed corn prior to that. Obviously, it has been noted as well, particularly within the pork industry, that ability is more limited, far more limited, as a matter of fact. In terms of the structural changes, real quickly, let me just say that I think, you know, part of the situation is some of the structural change you could see, for example, because of the beef industry's ability to use these dried distiller grains.

And I would note, the ability to use the dried distiller grains, even in their wet form, coming right out of the plant, what we are seeing in terms of structure is, you know, feeding operations occurring close by to where these ethanol facilities are. The ability then to feed that wet product, you know, close by, you don't have to go through the expense of drying it, which is necessary if you transport it large distances, this type of thing. You know, those are the types of structural changes that we are seeing producers contemplate and in fact, actually implement in some cases where some cases the feeding of the livestock is moving, you know, to where the ethanol is being produced in order to get access to what is, you know, for some species, not all, but for some species, a fairly low-cost feed stock.

Mr. KAGEN. But to have access to those distiller products, you have to be rather close, don't you, within 150 miles?

Mr. CONNER. Well, as has been advised to me, there are two forms of those dried distillers grains. There is the wet form, which is how they come out of the plant. Those products then can be dried, which obviously does add to the expense of the product, and then transport it much as you would regular feed at that point.

Mr. KAGEN. And before I ask my other question, I want to make a comment or two that this morning I haven't heard, I have read

all of the written remarks about the costs of doing business in agriculture, but no one mentioned healthcare and being a physician, I have got to tell you, everywhere I have been in my district, healthcare was number one. It is their number one expense. Energy and feed. So I would appreciate, in your other testimony, if you would include healthcare first because, unless we solve that national crisis, all our businesses, not just agriculture, are going to suffer. You also noted that there were high prices and a strong export market for many of our products, mostly livestock commodities. So what can the USDA do to help keep our export markets viable and competitive without any threat for collapse?

Mr. CONNER. If I could, I will address your healthcare point first. I would refer you, Congressman, to some of the provisions dealing with rural healthcare in our farm bill. Over 1200 rural critical access hospitals that we are proposing to fully revitalize within the dollars that we have made available within our farm bill and we are very, very excited about that provision. We believe it really represents kind of a fundamental quality of life issue in rural America. You know, you obviously have to have access to critical healthcare facilities. Those hospitals have been designated. They just simply haven't been upgraded at this point. We provide the resources to upgrade them and I believe we do have a number of those in your State as well, and again, a very important provision to us. In terms of your second question, and I apologize that I am forgetting what that question was.

Mr. KAGEN. It had to do with what the USDA could do to help keep the export market stable and viable and competitive.

Mr. CONNER. Absolutely. Well, let me just say, obviously, we continue to believe strongly in the export market. As I noted in my oral testimony, Congressman, the good news for the livestock sector really has been on the export front during this period, you know, while they are struggling with higher feed prices. Certainly our exports of a number of a different commodities has been very, very strong. I believe we will set another record, which I believe 17 years running we have increased our level of pork exports. We will continue that trend this year with another remarkable growth in those exports. Broilers, again, have come back strong in terms of export activity. The beef situation, you know, we could talk about that a long time but we continue to plug away on that as well. So I think continue to do that, obviously the beef situation is critical to us in terms of moving those products and I think we need to just stay focused on that, whether it is the Koreans or the Japanese or whatever the case may be.

Mr. KAGEN. Thank you very much. I yield back.

Mr. BOSWELL. Well, that brings us to closure. I say this, Mr. Secretary, as you go away. Well, I appreciate you being here and obviously, we are going to have continuing dialogue.

Mr. CONNER. Yes.

Mr. BOSWELL. So we look forward to that and your quick response would be much appreciated. Chairman Peterson has said that he wants to have something on the table by August break, so let us move right along. We are going to have to work together and we look forward to your help and thank you for coming up today

and we will be in touch. So this will close the first panel. Again, thank you.

Mr. CONNER. Thank you, Mr. Chairman. You will have our full cooperation and whatever you need from us now.

Mr. BOSWELL. And I think just to get started right away, I noticed that you were here when we had the first panel, so that is good. That will save a little time and we will just start off with you Mr. Morales, for five minutes and we will go right down line and then we will go to questions in direct to all of you. So with that, welcome. We are very, very glad to have you here.

STATEMENT OF ERNIE MORALES, MEMBER, NATIONAL CATTLEMEN'S ASSOCIATION, TEXAS CATTLE FEEDERS ASSOCIATION

Mr. MORALES. Good morning. Mr. Chairman and members of the committee, my name is Ernie Morales. I am a rancher and a cattle feeder from Devine, Texas. I appreciate the opportunity to be here today and talk about high feed prices and the impact we are feeling in the cattle industry.

Our industry is currently facing multiple feed pressures. Due to widespread drought, last year's wildfires and the recent severe winter weather, we have seen our hay and forage supplies dwindle. From emergency grazing of CRP acres to hay hotlines, our industry has been working hard trying to find enough supply to meet our demand, because we have been forced to utilize lesser-quality forage as a result. We will continue to see high hay demand and prices as drought persists in other areas of the country, as we see some hay acres converted to corn.

As with most of my counterparts who feed cattle, corn is our primary feed stock, accounting for about 80 of every 100 pounds of cattle feed. We will feed about two billion bushels of corn this year, out of nearly six billion bushels of feed to livestock. The livestock industry remains the largest consumer of corn by utilizing almost 58 percent of the total corn used over the past decade. From the cattle feeder's perspective, every $1 per bushel increase of corn means we must pay approximately $22 a hundred weight less for a 550 pound calf, just to have a chance to make the same income. For the cow-calf producer, that roughly is $121 per head reduction in price. So in reality, cattle feeders absorb a portion of the higher corn prices in the form of increased operating costs, and the cow-calf producer absorbs a portion in the form of reduced prices for the calves.

From January 1 to February 16 of this year, the average Omaha cash corn price was $3.68 a bushel. The average price from the same time period last year was only $1.91 a bushel. This is over a 92 percent increase in just one year. This increase in corn has moved our cost of gains from an average of 55 cents a pound in 2006 to 75 cents a pound in 2007. Analysts at Cattle-Fax predict that this number may even move into the 80s as corn demand increases. This is not a cost that the producer, nor I as a feeder, can pass along to consumers, because consumer demand for our beef is fairly inelastic. There is only so much the consumer is willing to pay before they begin to choose other protein options. This means

that, in the short run, the majority of these higher feed costs are borne by cattle feeders and cow-calf producers.

So how is the cattle industry supposed to respond? One way is to look at alternative feed sources. Ethanol production results distillers grains as a co-product. These co-products can be used in our feed rations. In all of the livestock species, cattle are the ones that can best utilize these co-products. On the average, about 30 percent of cattle ration can be switched to these ethanol co-products. However, at these levels there is concern about cattle performance. The variability of the co-products has made it hard to get consistent product to blend into our feed. With increased input costs and the inherent risk of cattle feeding, the last thing we want to see is a cattle not eating and not gaining weight.

I should also point out that, while wet distillers grains actually makes a better feed than dried distillers grains, a feedlot must be within 150 miles of the production source in order to manage or handle a wet co-product. Wet distillers are extremely hard to mechanically handle and are susceptible to spoilage. Dried distillers grains, or DDGs, are better to handle, but it is still hard to mechanically convey since it doesn't flow through hoppers and equipment, like corn.

NCBA supports our Nation's commitment to reduce dependence on foreign energy by developing forms of renewable energy such as ethanol. We recognize that Federal support of this ethanol industry has been necessary to encourage development of basic production technology. However, we as cattlemen believe in a market-based economy and there is a concern amongst our industry about the influence of renewable energy policy on the price of feed stuff such as corn. This is why we support transition to a market-based approach for production and usage of ethanol produced from corn. NCBA supports allowing the existing blenders tax credit and ethanol import tariff to sunset as scheduled in 2010 and 2009, respectively. The Center for Agriculture and Rural Development at Iowa State University produced a comparison of corn prices with and without the blenders credit. At a price of $50 a barrel of oil, the price of corn in the credit was $2.67 a bushel. Without the credit, the price fell to $1.83 per bushel. We believe the U.S. beef industry can and will remain competitive as long as we have the ability to compete on a level playing field with the ethanol industry for that bushel of corn.

Mr. Chairman, thank you for the opportunity to testify here today. Our industry looks forward to working with you and the committee in finding ways to develop renewable fuels that will not put an undue burden on any agriculture sector. Thank you.

[The prepared statement of Mr. Morales appears at the conclusion of the hearing.]

Mr. BOSWELL. Thank you for your comments. We will go to Mr. Wonderlich from Dairy Farmers of America, but before you start, though, Rob, I give my best to Corinna and Jacob and Rachael.

Mr. WONDERLICH. Okay. Thank you.

Mr. BOSWELL. And I am glad to have you here.

STATEMENT OF ROB WONDERLICH, DAIRY FARMERS OF AMERICA

Mr. WONDERLICH. Thank you, Mr. Chairman and the rest of the committee. I am Rob Wonderlich, a dairy farmer from Ollie, Iowa. My wife, Corinna, and I operate a 270 cow dairy that produces more than 6.5 million pounds of milk annually, or 760,000 gallons. In addition, we farm 520 acres of cropland. We have been in the dairy business for 27 years. I serve on the board of directors of Dairy Farmers of America, a national milk marketing cooperative based on Kansas City, Missouri, with dairy farmer member-owners in 49 states. I also serve as a director on DFA's Central Area Council. I appreciate the opportunity to testify today.

Today, I am here before all of you to express my concerns about the effect of increased costs associated with dairy operations. Specifically, I will speak to you about increased feed and fuel costs and how these two items negatively impact, not only my operation, but the other 62,000 dairy farmers across the United States, even in North Carolina.

As many of you are well aware, commodity grain prices, particularly corn, have dramatically increased over the past seven months to price levels not seen since the mid-1990s. Many economists are attributing this to a growing demand from the ethanol industry, which uses corn as its primary feed stock. While this is great for the U.S. grain farmers that have experienced several consecutive years of depressed prices, it is tragically affecting the financial viability of dairy farms. Feed costs are the greatest costs for most dairies and greatly impact farm finance. On my personal farm, I have calculated that the recent increase in grain prices has increased my cost of production by $1.90 per hundred weight. That is a 45 percent increase, which is extremely close to the U.S. average feed cost increase of $1.89 per hundred weight. I would like to note before proceeding, that on my operation I purchase only 50 percent of my feed. Many other dairies, however, are extremely dependent and purchase feed from outside entities and are even more susceptible to increased feed costs.

Increased operating costs are not the only factor of my profit equation that is being affected by higher feed costs. My farm revenues are being stressed as the value of bull calves born from my dairy cows has been drastically reduced by almost half. As bull calves require higher grain diets and typically require large quantities of corn in preparation for slaughter, the calves' value has dropped due to calf feeders' unwillingness to buy corn-hungry calves. Therefore my personal revenue from bull calves sales has declined by $100 per calf or a 50 percent decrease.

Not only have feed costs been burdensome to dairy farm profit margins, but increased energy costs have been as well. Based on my farm's financial reports, my energy costs have doubled since 2004, which, on a hundred weight basis, is an operating cost increase of 40 to 50 cents per hundred weight. USDA reported a similar finding as the average energy increase. For a U.S. dairy, it has increased by 30 cents per hundred weight since 2004.

Partially due to increased operating costs from feed and energy, the value of milk has started to increase after being substantially lower for the past 12 months. However, the gains in milk prices

have not fully offset the increased operating costs. According to USDA, the all milk priced received in Iowa during January 2007 was $14.40 per hundred weight. That is $1.90 per hundred weight higher than June 2006. Of note, I would like to add that milk prices in June 2006 were not good prices for dairy farmers. The milk-feed ratio, which is a statistic that is the price of a hundred weight of milk divided by the price of a hundred weight of feed, for February 2007 shows a ratio of 2.32, the lowest since June of 2003. In June 2003, this ratio was higher due to an MLIC payment, which was not available in February 2007 because the milk price was too high. The increase in milk prices are returning me to average revenue. From 2003 through 2006, the average all milk price received in Iowa was $14.62 per hundred weight. The current milk price is just under the State's average price receipt. As you can see, higher operating costs are strangling opportunities for my farm to produce a reasonable profit. And that does not only affect my farm, it is also affecting the 62,000 other dairy farms in the United States.

In closing, ladies and gentlemen, I want to thank Chairman Boswell and the House Subcommittee on Livestock, Dairy and Poultry of the Committee on Agriculture for hearing my testimony. Despite any perception formulated from my comments today, I am a firm believer in renewable fuels derived from agricultural commodities. And further, I applaud the United States in trying to decrease its dependence on foreign oil. However, this biofuel revolution occurred very quickly and did not allow for farmers such as myself, and in the other various livestock industries, to properly adapt, which has sent a shockwave across the industries in the form of increased operating costs. Again, I thank each and every one of you for your time, and thank you again.

[The prepared statement of Mr. Wonderlich appears at the conclusion of the hearing.]

Mr. BOSWELL. Thank you for your testimony. We will now recognize Ms. Philippi from the Pork Producers.

STATEMENT OF JOY PHILIPPI, IMMEDIATE PAST PRESIDENT, NATIONAL PORK PRODUCERS COUNCIL

Ms. PHILIPPI. Chairman Boswell, Ranking Member Hayes and members of the committee, I am Joy Philippi. I am a pork producer from Bruning, Nebraska. I also have a row crop and as of last Saturday, I am the Immediate Past President of the National Pork Producers Council. We represent 44 affiliated States with 67,000 producers. We also work very hard to make sure that we bring their issues to you in a manner that you will understand from the viewpoint of the producer. I would like to thank you for the opportunity to be here today and I applaud you for holding this hearing and I believe it is one of the top issues for us to be considering as we look at the farm bill.

Economist Dan Otto and John Lawrence at Iowa State University estimate that our industry creates nearly 35,000 full-time jobs and is responsible for more than 500,000 other jobs, and all of these are in the rural areas. In 2005 the pork producers of this country marketed more 103 million hogs. That amounts to $34.5 billion dollars that was contributed back into our U.S. economy.

Mr. Chairman, I want to be very clear. U.S. pork producers support the development and the use of alternative and renewable fuels as a way to reduce America's dependence on foreign oil, but we continue to have the jitters over the rapid rise of corn ethanol production in our country. We have concerns about the availability to find corn to feed our pigs.

In 2006 the United States produced approximately 10.75 billion bushels of corn. The entire livestock industry consumes more than six billion bushels of that. The pork industry uses just over one billion bushels of corn. Then nearly 1.5 billion bushels are processed for food and industrial uses. And about two billion bushels are exported. The ethanol industry in 2006 used close to two billion bushels, so you can understand why we have concerns about having corn available. And right now, this morning in Bruning, Nebraska, you cannot buy a bushel of corn at any price. It is not available. The ethanol industry is expected to use 2.75 billion bushels this year, and considering plants under construction and on the drawing board, former USDA Ag Economist Bill Tierney estimates that by 2010, it will use 10 billion bushels of corn.

In addition to the corn availability issues, the current demand for corn already has resulted in higher corn prices. Right now, if you are going to buy corn, it is going to cost you $4 a bushel. A year ago now, it cost between $1.85 and $2 a bushel. That is almost double what we had to pay last year and it has doubled our cost of production, especially feed inputs from $35 a pig to $65 right now. The ethanol industry is growing because of the high price of crude oil, and with the blenders tax credit, it adds even more to the cost of that. The credit is equivalent to a $1.40 per bushel of corn and that also receives a 10 percent per gallon income tax credit, but when you add on other State and Federal incentives, it all adds up to about $2 a bushel.

Now, certainly the pork industry will adjust to these changes in costs. We did it in the past and we will do it again. But according to Iowa State University Center for Ag and Rural Development, pork production will need to decline by 10 to 15 percent to allow the industry to recoup these higher prices. CARD also estimates that these higher production costs are going to result in a smaller livestock industry in the United States, higher retail prices and food price inflation. We must recognize that jobs in rural America may also be adversely affected. John Lawrence of Iowa State has calculated that a 100-million gallon ethanol plant creates about 80 jobs. But if the bushels of corn required to produce that much ethanol are diverted from use in pork production, there will be 800 jobs lost.

It has been also suggested that corn availability problems are just irrelevant because of the distillers grains. As we told the Senate Ag Committee on January 10, distillers dried grains, or DDGs, are just not easily fed to pigs. And I am going to defer to Dr. Shurson to expound on that today. Most importantly, though, DDGs are so much more useful in beef and dairy rations than they are on our hog rations, that those industries will probably always be able to bid them away from us.

Now as I said at the beginning of my testimony, U.S. pork producers do support alternative and renewable fuels, but we believe

our industry faces significant challenges because of the expansion of the corn ethanol industry. Given all of those challenges, last week at our annual meeting our producers set policy that we will use as we work to set policy with you on the energy issues. Our delegates supported allowing the sunsetting of the 51 cent ethanol blenders tax credit and of course the tariff. We also believe that if the tax credit has to be extended, that we should look at developing a countercyclical program, something that would make it work on a sliding scale with the oil price. They showed their support for renewable fuels by asking that we increase our use of biodiesel. And again, we are looking to the future and asking for incentives to figure out how we can use methane and digesting these things into fuel. One of the other things that they, and I believe it is a strong signal of our support for using renewable fuels, is that we use the CARD study that was mentioned earlier in our foundation. That gives some good data as to how this will affect us.

As I sum up, I appreciate the fact that members of the committee have noticed that there is other issues in front of us, not just the renewable fuels issue. We look forward to working with you as we work to protect our domestic and global competitiveness. Mr. Chairman and members of the committee, we stand ready to work with you to craft a free market-based fuels policy that will protect the fuel, food and feed security of our country. I thank you again for the opportunity to be here today and I will answer any questions at the appropriate time.

[The prepared statement of Ms. Philippi appears at the conclusion of the hearing.]

Mr. BOSWELL. We thank you. And we do have a vote on, but I think that we can go to Mr. Seger and I don't think I will have to interrupt you, but we would like to go ahead and take your testimony and then we will probably take a short recess. Mr. Seger.

STATEMENT OF TED SEGER, FARBEST FOODS, INC.

Mr. SEGER. Good morning, Chairman Boswell and Ranking Member Hayes. Thank you for the opportunity to testify today. My name is Ted Seger and I am president and part owner of Farbest Foods, Incorporated in Huntingburg, Indiana. Farbest soon will be the Nation's fourth largest integrated turkey company, contracting with 150 producers and employment more than 700 people. We are involved in grain procurement, feed manufacturing, growing, processing and marketing of turkey meat around the world. I also serve as chairman of the National Turkey Federation, which represents all segments of the $8 billion U.S. turkey industry.

Our industry has significant concerns about the growing impact of Federal renewable fuels policy on the demand for corn and soybeans. These two commodities account for nearly three fourths of a turkey's daily feed ration. The price of corn has increased more than $2 per bushel in the last 12 months. Corn supplies are tightening and most new corn acres are expected to come at the expense of existing soybean acres. There have been many forecasts about the effects of ethanol production. In almost all cases, findings indicate the availability of feed grains will be limited tremendously over the next two to three years. USDA's own forecast indicates that the corn stocks use ratio will fall below six percent in the

2007–2008 crop year. This is the lowest ratio since 1995–1996, when corn prices reached a record $5 per bushel. Turkey production fell by more than 10 percent and our industry consolidated significantly in that time.

Our low ending stock is especially alarming, given three straight years of record corn production. More than one third of the cost of a tom turkey is generated by corn and soybean meal alone. Increasing corn and soybean meal and other feed ingredient prices from just one year ago has raised the feed cost per tom turkey by about eight cents per pound, a 35-percent increase. That equals $576 million more in feed costs on annual basis to the industry. Turkey companies will have to cover this increased cost through higher values for exports as well as domestic products. In the long run, this will mean higher food costs for consumers. Existing sales contract commitments have held prices down, shrinking turkey company profits to near zero and it is likely the industry will absorb losses in the short run. Eventually, though, high feed prices will result in a decrease in poultry and meat production. It also will result in food service and retail contracts that shift the cost burden to consumers. There are indications that this already is happening. The Consumer Price Index for food released in January showed an alarming 0.9 percent increase in one month alone, from December 2006 to January 2007, for all food.

The commodity grain market futures are trading today on the assumption that we will have the largest corn crop in history. Our industry's concern is what happens if we produce 11 billion bushels instead of the 12.2 billion bushels projected? Keep in mind that 11 billion bushels would still be the second largest crop ever, yet it would leave the balance sheet with negative carryover of more than 200 million bushels. The current dilemma is that demand is far outstripping supply, and demand is continuing to grow rapidly. The Renewable Fuel Association reports today's capacity at 5.6 billion gallons per year and almost certain to reach 11.8 billion gallons by 2008. These plants will consume at least 3.9 to 4.2 billion bushels of corn for 2009. This is one billion bushels more than the 2008 USDA projection of 3.2 billion bushels used for ethanol. Again, even with a best case scenario, two record crops in a row, we will still likely be in a deficit carryover situation. The reality for many turkey companies is that there is no economically feasible substitute for a grain-based diet. Feeding more wheat, barley, sorghum or soybean meal has no advantage because these products trade at energy equivalent values to corn. DDGs can only be used on a limited basis. Ten percent is about the maximum for turkeys. DDGs cannot replace corn on anything approaching a one-to-one basis.

NTF's first recommendation is to support the highest level of funding possible for all farms of cellulose-based research and full funding of already approved cellulose-based demonstration projects. As you write the farm bill and if the committee has input on the new energy bill, NTF has several other recommendations we believe will help speed energy independence and minimize the impact of a renewable fuels policy on poultry and meat producers. Our recommendations include providing maximum funding for research into ways corn yields can be increased; allowing farmers whose CRP contracts are close to expiring to opt out early with no pen-

alty. This would be similar to the program implemented in 1996 and 1997; eliminating the 51 cent per gallon blenders credit for ethanol, or at least indexing it to the price of oil; eliminating the 54 cent per gallon duty on ethanol imported from the Caribbean, Central America and South America; promoting the production of a more consistent, higher quality DDG by ethanol plants.

Thank you again for the opportunity to testify and I hope that I have been able to convey the impact on feed prices and food prices for you, and I will look forward to answering any questions.

[The prepared statement of Mr. Seger appears at the conclusion of the hearing.]

Mr. BOSWELL. Thank you very much. I am sorry that we have to interrupt now, but we do have two votes, so I will be back as quick as I can and ask for your indulgence and your patience and we will continue just as soon as we get back. So we will take a momentary recess.

[Recess.]

Mr. BOSWELL. Okay. Thank you very much for the interruption and we will continue on. Let us see. Mr. Seger, you had just finished, so we would like to go now to Mr. Herman. Thank you for being here. Five minutes, please.

STATEMENT OF MATTHEW HERMAN, COMPLEX MANAGER, TYSON FOODS, BEHALF OF NATIONAL CHICKEN COUNCIL AND NORTH CAROLINA POULTRY FEDERATION

Mr. HERMAN. Good afternoon, Chairman Boswell, Congressman Hayes and members of the subcommittee. On behalf of the National Chicken Council and the North Carolina Poultry Federation, I appreciate your invitation to provide the chicken industry's comments on the impact of the new cost environment for feed grains and oilseeds. My name is Matthew Herman, Complex Manager for Tyson Foods in Monroe, North Carolina, which includes a slaughter plant, a hatchery and two other facilities. We contract with 190 family farmers to grow our broilers, and 42 family farmers to produce our hatching eggs. Each week, my complex produces more than 1.3 million chickens or approximately eight million live pounds.

In 2006, the industry nationwide produced almost 48.5 billion pounds live weight of chickens, using more than 53.5 million tons of feed. The industry purchased 1.3 billion bushels of corn to make this feed. Before the price of corn began to escalate rapidly in mid October, the average cost of feed was $139.20 per ton. Last month the same ton of feed cost 34 percent more, almost entirely because of the rising cost of corn. Last year the chicken industry's total feed bill was $7.5 billion. This year the total feed cost to the chicken industry will very likely be over $10.5 billion, a 40-percent increase.

Certain analysts have suggested that we have been here before. That is, animal agriculture has weathered high prices for feed grains and oilseeds in years past. In the past, however, this has been a short-term supply-driven problem. Today's situation is demand-driven, with no end in sight. U.S. animal agriculture has not been here before.

In response to an inquiry from the National Chicken Council this week, Dr. Bruce Babcock, Director of the Center for Agriculture

and Rural Development at Iowa State University, analyzed the impact of corn costs on the grower industry. He concluded that rising costs will result in a period of low or even no growth in poultry production, with rising prices at both the wholesale and retail levels. Dr. Babcock's conclusion assumes a near-adequate supply of corn, but will there be a near-adequate supply of corn in the years ahead?

Assuming average yields for the corn harvest in 2007 and 2008, 21 million additional acres must be shifted to corn production over the next two years to meet the expected needs for food, fuel and export. Such a major shift is virtually impossible. We, as a Nation, need to decide the proper balance between grain for feed and food and grain for bioenergy. This is a discussion that is long overdue. Foremost in a national discussion on the issue is the need for a credible plan of action in the event of a significant shortfall in the corn crop. What happens if there are not enough acres shifted to corn and yields are measurably below the trend line?

In addition, we need more focus on non-grain-based solutions and the contributions animal agriculture can make to energy independence. For example, animal fats are an excellent feed stock for emerging renewable diesel technologies. While animal agriculture is prepared to participate in the growth of renewable fuels in the United States, it is vital that these types of developing technologies be supported so that agriculture capabilities are more fully utilized.

In addition to initiating a national discussion about the proper balance and pathway for the United States to move toward more energy independence, Congress can do several things to meet the needs for both food and fuel. Let me mention just two of them: permit non-environmentally sensitive cropland in USDA's Conservation Reserve Program to be released without penalty and loss of program benefits; permit non-environmentally sensitive cropland in the Conservation Reserve Program to produce grain and oilseed crops if the harvest is designated for use to produce bioenergy.

Achieving greater energy independence is a very worthy national goal that we all can support. Achieving that goal must be pursued in a reasonable, rational way. Moving forward at a measured pace that allows agriculture producers to adequately react to market signals and at a pace that minimizes disruptions to food production and consumption should be a priority.

I would like to again thank the subcommittee for the opportunity to testify today. I would be happy to receive any questions.

[The prepared statement of Mr. Herman appears at the conclusion of the hearing.]

Mr. BOSWELL. Thank you very much. We appreciate your testimony and we will have questions. Mr. Truex, thank you for being here. We are looking forward to your testimony.

STATEMENT OF RON TRUEX, PRESIDENT AND GENERAL MANAGER, CREIGHTON BROTHERS, LLC, ON BEHALF OF THE UNITED EGG PRODUCERS

Mr. TRUEX. Good morning, Mr. Chairman and Mr. Hayes and members of the subcommittee. My name is Ron Truex and I am the President and General Manager of Creighton Brothers in Warsaw, Indiana. We are a midsized egg producing operation and employ

approximately 300 people in northern Indiana. I appreciate the opportunity to testify on behalf of the United Egg Producers. About 90 percent of all the eggs in the United States are produced by UEP members. Thank you for holding this hearing. There is no doubt that ethanol is booming, but unfortunately, every boom has its downside. For people in the livestock and poultry sector, feed costs have risen dramatically and there are some very real consequences that Congress needs to consider.

Ethanol and other biofuels will benefit the United States in many ways. By expanding our use of the renewable energy sources, we can reduce our dependence on imported oil and cut our overall use of fossil fuels. However, half of the U.S. farm economy is livestock, dairy and poultry, and anyone who must buy animal feed has been hurt by the dramatic increases in the cost of production. About 55 percent of the cost of producing a dozen eggs is feed. Sixty-three percent of a typical layer ration is corn. When corn prices are $4 a bushel, egg producers' costs skyrocket. A typical Midwest egg operation saw feed increases per ton increase about 58 percent from September of 2006 through the end of February 2007. Feed went from $106 per ton for a layer ration in September to $168 per ton in February of this year. For my operation, the cost of feed in each dozen eggs increased from a range of approximately 16 cents per dozen during most of 2006 to nearly 29 cents per dozen today, over a 10 cent per dozen increase.

Of course, costs in other areas of the country are higher than in the Midwest. It is good to be from Indiana. Their grain transportation and other similar factors costs them more, so other regions of the United States have been hit even harder than producers in my area. USDA published long-term projections just two weeks ago that back up these numbers. The Department projects that not only was egg production unprofitable during 2006, which many of us can attest to, but according to the Department, egg producers will lose money in each of the next several years through 2009, largely because of higher feed costs. What will happen is producers sustain losses and are unable to continue their operations. In some cases, production will pass into stronger hands, meaning more consolidation. Midsized operations like mine will find it harder and harder to compete. In other cases, some production will may move outside the United States. In that case, the domestic demand base for U.S. feed grains and oilseeds will shrink.

Mr. Chairman, I would like to conclude with several specific policy recommendations for your consideration. First, if Congress expands the Renewable Fuels Standard, the expansion should be limited to fuels that are made from non-corn feed stocks. Any increase in the RFS should focus on cellulosic feed stocks. And if this is not yet realistic, the RFS expansion should be delayed until it is. Second, Congress needs to ask whether the current 51 cent per gallon excise tax credit is really a necessary incentive when oil prices are high. Does ethanol really need the same level of support when oil is $60 per barrel as it did when oil was $30 per barrel? We suggest that Congress explore a countercyclical tax credit that is greater when oil prices are low, but less when oil prices are high. Third, Congress should encourage the Secretary of Agriculture to use his authorities to permit early release of some land in the Conserva-

tion Reserve Program. Internal USDA estimates suggest that several million acres could potentially be added to corn plantings in this way. Of course, the land needs to be selected in an environmentally responsible manner. Fourth, we encourage Congress to expand research in several areas: commercialization of technologies to make ethanol from cellulosic biomass; modification of DDGs to expand their potential use in non-ruminant rations; and the development of other renewable energy sources, such as power generation using manure and mortality. Fifth, we believe there should be greater parity of production incentives. Any tax credits or similar benefits available to ethanol or biodiesel should also be available for other sources of renewable fuels, including products of the livestock and poultry industries, like fats, tallow, waste and mortality.

Mr. Chairman, I know the strong support of many members of this subcommittee are for renewable energy. I am also in favor of renewable energy, but I do not believe my industry should be sacrificed so we can mandate the next billion gallons of corn-based ethanol. Everyone says that the future of ethanol is in cellulose rather than starch. Our policies, including the Energy Title of the 2007 Farm Bill, should reflect this commitment. We would like to work with you to make sure they do. Thank you very much.

[The prepared statement of Mr. Truex appears at the conclusion of the hearing.]

Mr. BOSWELL. Thank you very much. Dr. Shurson, we would like to hear from you at this time. Thank you for being here.

STATEMENT OF GERALD SHURSON, PROFESSOR, DEPARTMENT OF ANIMAL SCIENCE, UNIVERSITY OF MINNESOTA

Mr. SHURSON. Thank you very much. It is my pleasure. Chairman Boswell, ranking member, Mr. Hayes and other members of the subcommittee, I think the first point I would like to make, and I will be very brief and hopefully we will have some time for questions, is that we need to recognize that distillers byproducts are really an imperfect substitute for corn, no matter what livestock or poultry species we talk about. And so distillers byproducts can partially replace some of the corn, soybean meal, some of the inorganic phosphorus in our animal feeds, and as a researcher and educator, I guess our position has been, at the University of Minnesota, to really accept the fact that the ethanol industry is here to stay and we are going to have increasing amounts of these byproducts. And I guess, from our point of view, what we are trying to do is understand the benefits as well as the limitations so we know how to manage using these byproducts most effectively, where they have the greatest value in various animal species.

I am really from a nutritional point of view, and a very simple way of thinking about things is that distillers byproducts are really nothing more than a package of nutrients, just like any other ingredient. But the economic value, the amount that we can feed the various animal species, as well as some of the benefits and limitations that are inherent with these byproducts, those vary depending on the type of animal that we are trying to feed. For example, and I think the reference has been made a couple of times here this morning, that these distillers byproducts, because of their proportions of nutrients and the form that these nutrients are in, are al-

ways going to be worth more in dairy cattle diets, followed by beef feedlot diets, then probably poultry diets, with swine diets probably having the most difficulty in being able to utilize the package of nutrients that DDGs or some of these byproducts provide. And so there are different abilities of different livestock commodity groups to pay more or less for some of these byproducts.

And again, kind of focusing on what our research and educational program has been really about here over the last 10 years or so is really trying to understand some of the limitations and if we understand those, we can then begin to try to manage feeding programs around them. And again, I think, just to reiterate some points that other people have made this morning, variation in nutrient content and digestibility continues to be a big issue. Our ability to pellet diets, particularly for some of the swine integrators and some of the poultry integrators in the Southeast, is another limitation and one of the problems we run into is reductions in meal throughput, even fairly low inclusion rates in some of these monogastric diets. And clearly, some ethanol plants have issues with flowability, which has implications in terms of unloading it out trucks and railcars, and those are some issues that really need to be addressed to enhance utilization of these byproducts, especially the dried byproducts, more effectively here in the livestock industry.

A couple of other specifics. One of the limitations is when we feed DDGs, or wet distillers grains, to lactating dairy cows, one of the problems that we could run into at inclusion rates greater than 20 percent is a depression in milk fat. And maybe some of the newer fractionated byproducts coming on the market that are lower in fat will allow us to go to higher inclusion rates, which would be a good thing, but we need to learn more about some of these feeding applications as this growing number of new variations of distillers byproducts continue to evolve.

We are also feeding quite a bit of it in dairy cow rations as well as beef feedlot rations, but one of the things we have to recognize from a broader perspective is that this ingredient is going in as primarily an energy source and by treating it strictly kind of as an energy source. We end up overfeeding protein or nitrogen as well as phosphorus, and certainly that has implications in terms of manure management plans and dealing with nitrogen and phosphorus excretion in manure, particularly as we move as an industry toward phosphorus-based manure standards. Amino acid balance. That is an issue for swine and poultry. Corn is not a very high-quality protein source, relative to the amino acids that make up protein, and that is a limitation as well.

On the pork side, which is an area that I am probably most familiar with, because that is what I specialize in, we are currently doing some research right now trying to understand how we can manage some of the potential negative impacts that feeding a high corn oil-based byproduct, like DDGs, might have on pork fat quality. And probably one of the hottest topics right now that I know FDA is addressing to some extent, and other feed industry groups, is this issue about the potential for antimicrobial residues, knowing that myosin, penicillin in particular, are a couple of those that are used fairly regularly in the ethanol industry to control bacterial in-

fections during fermentation. And at this point, there really aren't any significant amounts that are causing issues that we know of, but certainly some more surveillance and research is needed to verify that some of these production issues are not a major concern for food animal production.

And so again, kind of just to summarize here a little bit, we do need to continue working on understanding some of the different nutritional attributes of this ingredient. There are some very positive benefits that our research has identified, not only in swine feeding applications, but certainly other research groups around the country that have been working closely with this byproduct have also been able to identify, and by overcoming some of those limitations, clearly, we will be able to move more of this set of byproducts into greater usage rates in livestock feeds.

I think one of the real key questions, though, that we are dealing with is, will the rate of increased distillers grains use in various sectors of the livestock and poultry industry keep up with the rate of increased production? And I think a lot of that really depends on how good a job some of us at land grant universities do in terms of conducting research on relevant topics, relevant issues and how well we do in terms of educating end users, as far as how to use these byproducts most effectively. One of the approaches that we have done at the University of Minnesota is to create a website exclusively devoted toward sharing relevant, practical scientific-based information on feeding applications of distillers byproducts to the feed industry, the livestock and poultry industry and I am proud to say that, in the last four years, that website has had over a million hits, which tells me that there is a lot of interest out there and hopefully the information we are providing is benefiting people. And clearly, more efforts are needed along those lines as well, because, quite frankly, for a lot of States, a lot of producers around the country in maybe non-traditional corn producing areas, this becomes a little bit of an issue.

I am going to stop there and just thank you for the opportunity to be here today and I look forward to any questions you may have.

[The prepared statement of Mr. Shurson appears at the conclusion of the hearing.]

Mr. BOSWELL. Well, thank you very much. A few questions and I think we will have plenty of time, but I don't want to drag this out too long because of the time of day. But back to you, Mr. Morales. I think you said in your statement that, in fact, wet distillers grain is actually a better feed than dry?

Mr. MORALES. Yes, sir.

Mr. BOSWELL. But your feedlot has to be within a close proximity of the availability of that?

Mr. MORALES. That is correct.

Mr. BOSWELL. And it is more of a statement and I am not here to quarrel with you about it, but in my district, I drive through Eddyville frequently and see what is going on there and I kind of stop and check on them once in a while, the big plant there and all of the stuff coming out of there, and I think they are up to like four railcars that will take the wet distillers grain all the way to Amarillo. And so I believe that they have got four cars in action

already. I don't know if they are going to do more. Are you aware of that?

Mr. MORALES. Are those specifically wet distillers grains from ethanol plants, or could that be—and maybe, doctor, you could help me with that. That could be a byproduct that we use, called corn gluten. It is?

Mr. BOSWELL. Okay.

Mr. MORALES. And corn gluten is used very limited in our Nation. We can only use up to 10 percent of corn gluten. But that is not the same thing as what we are talking about as wet distillers grain.

Mr. BOSWELL. That is different.

Mr. MORALES. Yes, sir, that is correct.

Mr. BOSWELL. That is a good clarification on that. Okay. I appreciate that. Mr. Wonderlich, milk prices increased recently. What caused that?

Mr. WONDERLICH. We have had several things that have helped to increase the price of milk that the farmers are receiving. Some of the things, we have an organization called National Milk Producers Federation and we have had a self-help program that we initiated, called Cooperatives Working Together, or CWT. For this program, it is self-funded by the dairy farmers and we have used monies collected from the dairy farmers at five cents a hundred weight, and now up to 10 cents a hundred weight, and used that money to help to export cheese. We have also had herd retirement programs, which we are having another herd retirement program coming up, where we will pay farmers, based on their previous year's milk production, so much. They have to bid into the program at a hundred weight basis what they would take to exit the business. They could also, again, resume being a milk producer after those cows have been shipped to slaughter.

Another thing that has helped significantly is the price of whey on the international market, and other dairy proteins. There has been a strong demand from the international community for U.S. diary products, especially the whey and protein ingredients. These have significantly impacted the price of milk over the last several months and helped to bring it up. Also, on the future market, speculators are looking at the corn prices and contemplating what that is going to do to the dairy sector over time, and in the futures market, they are responding on down the line with higher prices yet for dairy commodities, but we have to get to that point. We, in the dairy industry, have had the year of 2006 as a relatively low-priced year and now with the advent of the high feed costs, it is negatively impacting our operation. The Deputy Secretary for Agriculture stated that the USDA looks for the milk price to increase by 15 percent over this coming year of 2007, while at the same time our feed costs are increasing in the 40 to 50 percent range.

Mr. BOSWELL. Thank you very much. I may have another question for you, but I am going to stay by own rules here. But I want to ask Ms. Philippi, sometime we are a victim of what we read and you can't always believe everything you read. We all know that. But nevertheless, I am going to pose this question. The article on feed stuff recently, a writer by the name of Scott Tapper, with the Iowa pork producers, said that "good producers will still make

money, even with higher corn prices. We will have to cut back on the market weights of our hogs and start using more dried distillers grains." Would you please respond to that statement? And would you say it is accurate, or whatever comments you might make. And I realize that you have got to have the corn. You already told me that a little while ago.

Ms. PHILIPPI. Right, right.

Mr. BOSWELL. But you got to be able to find it and I understand, out in your territory, there is none available. I understand that. But set that aside and respond, please.

Ms. PHILIPPI. Okay. I think the issue that we see, and you bring up a good one, you know, if we can't make any money at it, we are not going to stay in the business. The other thing is, if it isn't fair, they are not going to stay in the business. And I spoke with one of the Iowa folks at their annual meeting, where we talked a lot of about, you know, how do we keep this thing in a balance out there, because they like ethanol and all of these things. Yet, they laid it out pretty clearly that if we can't find corn, we can't raise pigs. And if we can't raise pigs, that is not good for ethanol, either.

Mr. BOSWELL. Well, I understand that and I appreciate you taking that position, but getting back to this statement. Some of you didn't have the drought conditions and corn was available at the price. Is he making an accurate statement or not, in your opinion?

Ms. PHILIPPI. Yes.

Mr. BOSWELL. You think it is accurate? You can still make a profit?

Ms. PHILIPPI. Would you repeat?

Mr. BOSWELL. Yes, sure. I am just referring to the article on feed stuffs by Scott Tapper, I believe it is. His statement was " good producers will still make money, even with higher corn prices. We will have to cut back on the market weights of our hogs and start using more dried distillers grains." And that was his statement. What is your response to that?

Ms. PHILIPPI. Well, we can always adapt to different corn prices. The retailers got to be involved in helping us get more for that. But the next two years are going to be tough because we weren't prepared for it. And you know, like, it took $15,000 more per 2,000 head, just to produce the last pigs that we put out. So you know, you got to have those things. You got to work it into it. A year from now it will be easier than it was now.

Mr. BOSWELL. Okay. Mr. Hayes.

Mr. HAYES. Thank you, sir. And again, thanks to all of you for being here. And believe me, it makes a difference to have you all here getting this information out, particularly your personal experiences. Mr. Herman, North Carolina is a corn deficit State. You talked in today's testimony about the 40 percent increase. What, if anything, is the poultry industry considering as an alternative, and are there viable alternatives at this point in time?

Mr. HERMAN. Yes, there are. I guess, as a company, at Tyson, we have established a renewable energy program or division, currently exploring the use of animal fats for alternative fuels. Also, I guess DDGs are not used in chicken rations currently, due to their high fiber content. But if we had research to help single-stomach animals such as chickens, that would be very helpful for us.

Mr. HAYES. But no real alternatives for feed at the moment that would take the place of corn?

Mr. HERMAN. No, sir.

Mr. HAYES. People are concerned about corn prices adding to the cost of our exports. It makes us less competitive with Brazil. Has this trend begun or is it something that is coming? What is the status on pricing poultry?

Mr. HERMAN. Congressman, I am not sure exactly. I will have to look——

Mr. HAYES. Okay. Mr. Seger.

Mr. SEGER. If you will, I can take a shot at that one.

Mr. HAYES. Sure.

Mr. SEGER. Because we are into marketing all across the world. And I will speak for turkey right now and I think that chicken leg quarters are in a similar position today, exports right now for turkey and chicken. In 2006, export markets, we exported just a little bit less than we did in 2005, but the value of those exports were up just a little bit, so it offset some of the increased cost, but a small portion. Today, the situation is, in Turkey, for example, we export and our primary export is Mexico and our prices of turkey drumsticks and turkey thigh meat are relatively high. And I can tell you, though, that as we sit here and speak, there is a very large resistance from Mexico to continue to purchase turkey drumstick meat from us right now. I know leg quarters are 45 cents a pound, I believe, and that is obviously their largest export market, but I can't tell you how that reaction is today. But I think, over time, as I said in my remarks, that we will lose export markets as an industry, if we continue to try to raise those, as I put it, our dark meat values too much. We can push it to a certain limit, but after that, then they will start switching to other alternatives, assuming that they have other alternatives.

Mr. HAYES. Thank you, sir. Dr. Shurson, you talked about DDGs and if you were a poultry or hog producer right now, pork or poultry, would you use DDGs to feed your stock?

Mr. SHURSON. The quick answer is yes and it is being used.

Mr. HAYES. Good. How are we doing with the whole idea of using excess animal nutrients and methane for energy? What is happening there? Anything good to report today? Either or both of you.

Mr. SHURSON. Well, I can just comment that there is a growing interest in using methane as an energy source, or collecting methane. Economics, some of the technologies still need further development. We are in the process at the University of Minnesota-St. Paul campus of looking at that issue, methane generation, very closely. In terms of excess nutrients generated by feeding distillers byproducts, one of the things you can argue is a benefit in swine and poultry diets is that, when we run corn through an ethanol plant, we take a fairly low-digestible level of phosphorus in corn and make it very highly digestible. That is good news, because now we can start taking some of the inorganic phosphate out of our diet, which is a fairly expensive nutrient that we have to supplement anyway, and we can actually minimize excretion of phosphorus by using distillers grains, particularly if we throw in the enzyme, phytase. So on the monogastric side, distillers grains has a benefit in terms of phosphorus excretion. We still have problems

with excess nitrogen coming out. Hopefully that kind of answers your question.

Mr. HAYES. Very good. Thank you.

Mr. BOSWELL. Mr. Smith, please.

Mr. SMITH. Thank you, Mr. Chairman, and thank you for all of your testimony today. I think it highlights the fact that we have a very stable industry and I hope we can keep it that way. And I also appreciate, I think, a high level of feedback from you that is not a bunch of finger pointing and obviously you recognize the fact that there are some pretty excited corn growers around the country and they have paid a price over the years as well. If anyone would choose to briefly highlight perhaps the dialogue, the interactivity with the corn growers, perhaps, whether it is planning ahead, what can we expect from this point forward, maybe a brief history on the relationship, but certainly I appreciate the testimony to date. And perhaps if anyone would choose to elaborate? Ms. Philippi.

Ms. PHILIPPI. I guess I will start out with that one. We have had ongoing dialogue with the corn growers, because the majority of our members are diversified and they have asked us to do that. We try to make sure they understand what we are doing and we want to know what they could do and how they can help us as well. We just recently, Monday, I spoke with their chairman and we talked about the policies we passed, the policies they passed, and then how we can work together on many other issues.

Mr. SMITH. Okay. Thank you. And then, obviously, from your testimony, I think you pointed out that, livestock is still a much larger consumer of corn and we don't want to jeopardize that. The next question that I have is, and I hear about the promise, perhaps, if that is the correct description, of biodiesel and the future that biodiesel has, might we find ourselves in a similar situation with a similar growth, perhaps, in the future of biodiesel?

Mr. WONDERLICH. Maybe I will take a stab at that. I think you are correct in that assumption, but also the fact that the increase in the corn acres that we are going to see this year, that is already going to negatively impact, for livestock producers, the price of soybeans and soybean meal mixture. Another area of concern for cattle producers and dairy producers is there will be probably large numbers of acres of alfalfa and hay ground that will come out of that type of production and go into corn production. But I think it is going to have a revolving effect that we are going to see from this whole thing, this whole biofuel revolution.

Mr. SMITH. Okay. Thank you. And I yield back the balance of my time. Thank you.

Mr. BOSWELL. Thank you very much. I am wondering, Mr. Truex, do you know Mr. Van Zenten from out——

Mr. TRUEX. Yes, I do.

Mr. BOSWELL. Well, give him my regards and since I have known him for a number of years and tell him I expect to hear from him.

Mr. TRUEX. I will do that.

Mr. BOSWELL. On this matter.

Mr. TRUEX. Okay, I will tell him.

Mr. BOSWELL. And I appreciate that very much. And I just have to talk about all of you, whether you are coming in forthrightness.

I think you presented us more problems than you have solutions, but this is the beginning and I appreciate that and it is going to be interesting to see, as the news reports, your suggestions to stop the subsidies and open up the foreign market. It will be interesting how that is responded to as we go out across the country. So we will let that play its way out. But I just feel like we have done a good thing here today, because I have learned and I think you have. I think you agree with me, the man from Nebraska. And Mr. Hayes said to be sure and tell you this, as he went to another committee. They are doing a markup, I believe, on armed forces, which of course we all heard about. But I want to thank you for your time and I know we have heard a lot of information. I believe that the committee gained some knowledge here today and that is what we are all about, and hopefully some possible avenues where we can go forward. We will continue to look for more and I want you to consider this is an open invitation to keep this communication channel open and let us keep going there.

I think we have heard today discussions from our researcher, a professor and some of you, that there is a lot being done on trying to assist us in how to use the distillers grains better. I want to help myself and the rest of our producers to be able to meet these demands and I think we can and I have a lot of hope that we will. I would guess that those of you are direct producers sitting out there, and I know some of you are, if not all of you, that you must be an eternal optimist or you wouldn't be doing what you are doing. So I feel the same way. So I am going to pledge to you today that we are going to keep the communication channel open and we want to hear from you and we will continue to work with you and hopefully, again, we will have solutions to these challenges before us. But it is truly a new era in agriculture and I am very excited about being part of it and I hope you are too. We have got challenges? Yes, we talked about that in the beginning. But together we can work our way through it and we are going to be okay.

So I am going to call this meeting to a close, unless there is anybody on the panel who wants to make one last comment. I will give you this opportunity. I see that Bob has got something that he wants to say and I welcome him to say it.

Mr. WONDERLICH. Well, I would just like to mention about much has been said about DDG, and in the dairy business, it is my experience that if I feed more than seven or eight percent of that in my diet to my dairy cows, that we have a decrease fat production.

Mr. BOSWELL. Say again the percentage.

Mr. WONDERLICH. If I feed more than seven to eight percent of DDG in my dairy rations, that it negatively impacts the fat production of my dairy cows. And also the fact that the price of DDG has gone up dramatically too. It is not a bargain to be feeding that. I purchased last year, FOB from the ethanol plant, DDG for $75 per ton. That price has since risen into the $140 to $150 range. So it has gone up, percentage-wise, basically like the corn price has.

Mr. BOSWELL. Well, I appreciate that and thank you for sharing that information. I think everybody you are telling that is at your kitchen table, but I appreciate that very much and I think the rest of us need to understand that, that just to feed more doesn't nec-

essarily solve it, particularly in the area where it is an influence on the fat and so on.

All right, under the rules of the committee, the record of today's hearing will remain open for 10 days to receive additional material and supplementary written responses from witnesses to any question posed by a member of the panel. The hearing of the Subcommittee on Livestock, Dairy and Poultry is adjourned and I thank you very much.

[Whereupon, at 12:44 p.m., the subcommittee was adjourned.]

Opening Statement
Chairman Leonard Boswell
Subcommittee on Livestock, Dairy, and Poultry
Review the impact of feed costs on the livestock industry
March 8, 2007

I would like to thank everyone for coming today. I appreciate the opportunity to hear what the impact of increased feed costs is having on the livestock industry. As a cattlemen myself, I understand better than some what rising input costs can have on producers.

I would personally like to thank Mr.Wonderlich for testifying before our Subcommittee. Mr. Wonderlich is a dairy farmer from my district in Iowa and I am anxious to hear what he has to say.

Feed costs have risen dramatically over the past year with corn being sold at well over $3 a bushel. The issues varies across the livestock sector but I believe the entire livestock industry has felt this burden and ultimately will be felt by the consumer. Many of these increased costs are the result of rising ethanol production around the country, and the higher demand for corn.

With that said, I believe we would all agree that renewable energy is not only a way to break our addiction and dependence on foreign oil and ensure national security, but also open new markets to the agricultural community. Many, if no most, of the ethanol production plants are cooperatively owned by local farmers. I am confident that many producers in your particular organizations who also grow corn are invested in ethanol production. We farmers often have commented that we are being left out of the value added chain. With alternative fuels we are part of it. The question I pose to our panelists: Will we stay in it?

I have been involved in renewable energy since the 1970's, and with Iowa leading the way in ethanol production I am very proud of what we have accomplished. However, we must also acknowledge the unintended consequences of increased ethanol production.

Last year, 110 ethanol plants around the country used almost 2 billion bushels of corn—nearly 20 percent of total corn production in the country. With 114 ethanol biorefineries up and running and another 78 under construction this issue is not going to go away.

But there is some light at the end of the tunnel. With premier universities across the country conducting invaluable research on DDG's, I am hopeful that the livestock industry will be able to use these DDG's to offset any increases in feed cost. Also, with the technology available to produce higher yields each year, I believe that our agricultural community will eventually be able to produce enough grain for both the livestock and ethanol industry.

There are many issues that will be addressed today. We must not only look at the impacts that high feed costs have on the livestock industry, we must also look at ways to increase corn production.

I look forward to the comments and information provided, not only on the impacts of high feed costs, but ways to combat those costs while keeping the livestock industry thriving. At this time, I would like to recognize the Ranking Member, Mr. Hayes.

Closing statement

Chairman Leonard Boswell
Subcommittee on Livestock, Dairy, and Poultry
Review the impact of feed costs on the livestock industry
March 8, 2007

I would once again like to thank everyone for their time today. We gathered a wealth of information. Not only do I believe that the Committee gained knowledge of the issues the livestock industry is facing but hopefully some possible avenues to assist some of those issues.

As we have heard here today there is much being done to try to assist producers to feed higher levels of DDGs. I hope and want to help that American producer to be able to meet the growing demands of both industries. We pledge to keep communication channels open. I ask that you keep talking to us and keep sharing your needs and ideas.

Opening Statement
Representative Steve Kagen, M.D.
Subcommittee on Livestock, Dairy & Poultry
Committee on Agriculture

Review of the Impact of Feed Costs on the Livestock Industry
March 8, 2007

Mr. Chairman,

Thank you for holding this hearing today. As most know, dairy is the number one agricultural commodity in Wisconsin. Yet many don't know that we are 3rd in the nation in the production of corn.

I am encouraged by the exponential increase in the production and availability of renewable fuels in our country. Ethanol and biodiesel facilities are being built in Wisconsin, and corn and soybean producers have another market in which to sell their crop. Having ample, domestically-produced fuel sources will help stabilize energy prices, decrease our dependence on fuel from volatile parts of the world, and create jobs in a new industry.

That is the good news. The bad news is that livestock and dairy producers are now dealing with nearly record-high feed and energy costs.

Let me put this in perspective: 2000 was the worst period of milk prices in recent history. At that time, the Class III price (for milk used to make cheese) fell as low as $8.57 per hundredweight, and averaged the lowest price since the late 1970s.

But even in comparison to those really bad milk price times, the net price that our dairy farmers are facing now, once you factor in the unusually high feed costs and energy costs, are even worse.

For example, the milk-feed price ratio (a measure of the number of pounds of feed that can be purchased with a pound of milk) was an average of 3.06 in the year 2000. The average milk-feed price ratio for 2006 was 2.56, showing that the net income picture of dairy farmers is even worse now than it was in the notoriously bad price period of 2000.

Because the livestock safety net is tied to commodity prices and not input costs, there are no federal programs to assist them through this time of instability. It is my hope that we can talk about solutions to this very serious issue facing our livestock producers today.

I look forward to hearing from the witnesses today.

Thank you, Mr. Chairman.

Congressman Joe Baca
Subcommittee on Livestock, Dairy and Poultry
"Hearing to Review the Impact of Feed Costs on the Livestock Industry"
March 8, 2007

Opening Statement

Chairman Boswell & Ranking Member Hayes:

I am pleased to be here today to discuss the impact that renewable fuels is having on our livestock ranchers and dairy farmers.

I thank the Chairman and Ranking Member for convening a hearing on such a timely and important issue and hope we will be able to learn more about how we as a government can encourage and foster a successful renewable energy program while still providing our livestock industry with affordable feed.

I want to thank each of our many witnesses for coming here today and hope that both of you will be able to help us in Congress understand how far we've come and what more must be done to provide affordable, accessible, and consistently available fuel AND feed for our country.

As a representative from the great state of California, which is home to some of the largest dairy, cattle, pork, poultry and egg operations in the nation, the issues that matter to each of our witnesses is of great concerns to the family farms right in my own district.

I represent San Bernardino County, which just 20 years ago was the largest milk producing county in the country. Despite our proximity to Los Angeles and other metropolitan areas, the Inland Empire still boasts a robust $500 million dollar dairy industry.

Some of the farmers in my district are 4th and 5th generation. Federal agriculture policy needs to be formulated in a way that we can keep these family farms successful – both here and abroad.

But they cannot sustain 90% increases in the cost of corn for their animals.

Much is being said these days about reformulated distiller's grain, but ask any dairy farmer in California and they will tell you the same thing – the animals lose weight, it doesn't provide the right balance of nutrition, and in the case of poultry and egg producers, they can't feed it to them at all. They simply have no choice but to buy feed at record high prices.

This not only has devastating effects on our farmers, but ultimately our consumers. Americans and the worldwide market depend on high quality, wholesome meats, cheeses, eggs, and dairy products at affordable prices.

As Chairman of the Department Operations, Oversight, Nutrition and Forestry Subcommittee in this Committee, I know that low-income families in this country have a difficult enough time providing a nutritious diet to their families. The increased prices on corn and other feedstocks will only raise prices for the consumer and make it that much more difficult to feed our children.

At a time where 36 million Americans are experiencing poverty and food insecurity, higher prices on staples like meat, cheese, eggs, and milk are not acceptable.

Mr. Chairman, I think everyone in this room realizes that the time is ripe for change in this country. American consumers are tired of paying high gas prices and we need to invest in a solid, long-term plan for energy security that is environmentally-friendly and domestically based.

But we need to figure out a way to do it without hurting the American consumer, without reducing the quality of our products, and without endangering the livelihood of thousands of Americans who make their living on livestock and dairy operations.

We must invest more in research and bring cellulosic ethanol and other technologies like woody biomass conversion and methane digestion into reality. The Inland Empire is home to the first methane digester and we're taking manure and turning it into clean, renewable fuel. These are the types of technologies we need to be encouraging as a country and as a nation – because ultimately, we a comprehensive energy policy in this country that will benefit everyone – and not just at the expense of our farmers.

Thank you.

Congressman Nick Lampson - Opening Statement
Committee on Agriculture
Subcommittee on Livestock, Dairy and Poultry
Thursday, March 8, 2007

Deputy Secretary Connor and Doctor Glauber, I thank you for being here. It is an honor to have all of you here today - from across our nation and the agriculture community – to educate and discuss with us the current problems we face along with potential solutions.

Let me begin by saying that as a longtime proponent of bio-energy, I am very pleased and excited about the long-overdue political and public support for this necessary and exciting transition. However, I am deeply concerned about the strain placed on our ranchers and producers throughout the agriculture community due to the rapid growth of ethanol and bio-diesel. And although consumers are not currently feeling the same squeeze that our producers are, it is only a matter of time before they do.

The USDA last week forecasted that a quarter of this year's U.S. corn crop will be consumed by ethanol producers. It is our responsibility here in Congress to conduct a thorough evaluation of the harmful effects the skyrocketing demand has already had, and will continue to have for the foreseeable future, on our producers, and in turn our nation's food supply. I have often spoken of a diversification of bio-mass for energy production, and I think that we all understand that we're not quite there yet. Until we are, livestock must

compete with ethanol for corn. Hopefully we will be able to ease the burden this growing demand is placing on our producers.

As you all know, both agriculture and energy are important industries in Texas, and in my district. It has long been a passion and goal of mine to bring these two sectors together – in order to reduce our nation's dependence on foreign oil, and to empower our farmers. Finding a healthy balance between livestock producers and bio-fuel producers is the key to ensuring a successful transition to a renewable energy based system. I am confident that by working together, Congress and you - the real experts in the field - can make sure that happens.

Statement of Chairman Collin C. Peterson
House Committee on Agriculture
Subcommittee on Livestock, Dairy, and Poultry
Hearing to review the impact of feed costs on the livestock industry
March 8, 2007

Thank you, Chairman Boswell and Ranking Member Hayes, for holding this hearing today. I appreciate Deputy Secretary Conner being here today, as well as Dr. Glauber, and all of the livestock representatives who are here to share their views with the subcommittee this morning.

One of the biggest developments that agriculture and rural America has seen in a many years has been the growing demand and expanding market for agriculturally-based energy sources, including ethanol and biodiesel. This demand for ethanol continues to grow and is supported not just in farm country, but by those in the suburbs and the cities who are overwhelmingly in favor of utilizing homegrown renewable fuels as a way to reduce our nation's dependence on foreign energy once and for all.

This demand has highlighted the issue of feed costs and their impact on the livestock industry as corn prices have climbed near historic high levels. It is important to look at corn prices and their effect on livestock with some historical perspective. When corn was under $2.00 a bushel that low price had an effect on the beef, poultry and pork industries just as high prices do today. Those industries were able to benefit not only with a major

input cost being priced low, but also with the federal farm safety net for grains like corn and soybeans being in place.

The 2007 Farm Bill our committee will consider this year will maintain the safety net, but it will also include an energy title that will help meet the growing demand for the next generation of ethanol beyond corn – cellulosic ethanol. Federal loan guarantee programs will speed up the commercialization of the cellulosic ethanol industry, which can take the pressure off of corn, and I believe it is the real key to achieving energy independence.

One issue that will come up as the Farm Bill debate progresses is the idea of removing acres out of the popular Conservation Reserve Program and placing them into production. This is not an action I support. CRP has been a boon to wildlife and is vital to the protection of marginal and highly erodible land. CRP is already facing pressures from increased land values and cash rents, making it hard enough for farmers to enroll in the program.

I look forward to hearing today about the excellent research being done in the field of distiller's dried grains, or DDGS, an ethanol co-product that can be useful as a dairy, beef, swine or poultry feed. Ethanol plants in my home state of Minnesota and neighboring South Dakota are producing about a quarter of the three and a half tons of DDGS being produced

annually in North America. DDGS are being produced by small, farmer-owned plants, utilizing new technology and improved quality control procedures to make this product as useful to poultry and pork as it has historically been to cattle.

Researchers in my home state of Minnesota and other land grant universities have done great work with improving the nutritional value of these by-products, and I am looking forward to the testimony of Dr. Gerald Shurson, a professor in the Department of Animal Science at the University of Minnesota, to hear about their advancements in DDGS. I will seek to increase funding in the year's Farm Bill to continue the valuable research that will make DDGS and other by-products more usable to the livestock industries.

Again, I thank the witnesses for being here, I look forward to their testimony, their outlook on the future of feed costs, and I yield back my time.

THE HONORABLE ROBIN HAYES
HOUSE COMMITTEE ON AGRICULTURE

REVIEW OF THE IMPACT OF FEED COSTS ON THE LIVESTOCK INDUSTRY

March 8, 2007

I want to thank all of our witnesses for making the great effort to be with us today. I would particularly like to thank Matthew Herman from Monroe, North Carolina for being able to come and testify today. Matthew is an 8th District constituent and serves as Complex Manager for Tyson's Foods. I'm looking forward to hearing from you and others to get a better understanding of the impact feed costs are having on livestock production in North Carolina and across the country.

I can assure you that I have heard from many of my constituents and other producers in North Carolina about the effects of feed costs on livestock producers' bottom line. My district is one of the top poultry producing districts in the nation, and I have heard a great deal from North Carolina's pork producers as well. With turkeys, chickens, and hogs not able to utilize the ethanol by-products as efficiently as cattle and dairy cows, there are serious concerns in the livestock sector that need to be heard and taken into consideration.

Furthermore, I want to commend the North Carolina pork industry and the North Carolina poultry industry for taking proactive steps to consider various technologies that may convert waste into energy. With pork and poultry being our largest livestock sectors in North Carolina, it is important for my constituents to have access to and utilize such technologies. I know more needs to be done in this area, but again, I appreciate the industry looking ahead to the future and how they can play a role as America strives for energy independence.

While I look forward to hearing from you all to get a better national perspective on this issue, I can also sympathize with you all on other important issues your industry may face that could dramatically increase your cost of production. This farm bill will be important for all of America's producers, and my goal is to ensure we do not place costly burdens and mandates on our livestock producers. When you look at the costs associated with such issues as mandatory country of origin labeling, a ban on packer ownership, and onerous environmental regulations, your industry has many volatile issues at the forefront that could have a major impact on production costs and the livelihood of the industry. I certainly do sympathize with your concerns and production costs you face today and the hurdles you face in the future.

Mr. Chairman, thank you for holding this hearing and allowing the livestock industry to be heard on this issue. I look forward to working with you

on this issue and others since the farm bill is on the horizon. I also look forward to today's testimony and the insight that each witness will provide on this issue. I appreciate all of you being here so we can learn more about the affects on each sector of the industry.

Statement of Ranking Member Bob Goodlatte
House Committee on Agriculture
Subcommittee on Livestock, Dairy, and Poultry
Hearing to review of the impact of feed costs on the livestock industry
March 8, 2007

Mr. Chairman, I'd like to thank you for calling today's hearing. Let me state from the outset that I support all our efforts to develop new market opportunities for our nation's agricultural producers – no matter what the commodity or product.

As I visit with the livestock producers of the 6th District of Virginia – poultry and eggs, cattle and calves, hogs and pigs, and milk and dairy – the one recurring concern I hear about is the high cost of feed. High feed prices are naturally a concern to all livestock producers and it's important that this Subcommittee examine the long- and short-term implications of policies that effect production costs. For livestock producers, corn is an absolute necessity for which there is no substitute; however, there are a number of other factors that are adding to the increased cost of production for livestock producers that cannot be ignored. While today we are specifically discussing the effect of feed prices on livestock production, we must recognize that there are a variety of other

factors in play as well. We should perhaps view today's hearing as a cautionary tale illustrating the impact of unintended consequences.

Today, we are discussing how increased ethanol production leads to higher grain costs, which can, in turn, mean higher feed costs for livestock producers and lower profitability. However, I think what we'll hear today is that when you add costs, any costs, to the livestock production system, you injure livestock producers. It makes no difference if these costs are higher grain prices, investments forced by mandatory animal ID, production costs associated with country-of-origin labeling, market disruptions caused by packer ownership bans, or regulatory burdens associated with environmental policies. The outcome is the same: when we take actions that add costs to the animal agriculture sector, we hurt livestock producers.

Recent policies enacted by Congress have created much excitement in the development of renewable energy. The creation of a Renewable Fuels Standard in the Energy Policy Act of 2005, along with several Production Tax Credits, and the phase-out of MTBE have helped fuel investment in new ethanol and biodiesel plants and created more markets for

agriculture products. In his State of the Union Address, the President outlined his "Twenty in Ten" proposal to reduce America's gasoline consumption by 20 percent by 2017. This initiative is extremely ambitious and can only be achieved with contributions from all components of the agriculture sector including grains and soybeans, plant and wood waste, vegetable oil, and animal fat and waste.

However, last year 20 percent of the U.S. corn crop was used for ethanol production and that amount is expected to rise significantly over the next few years. Currently, corn is the leading commodity used to produce renewable fuels. Corn is also the staple feedstock for livestock producers and increased demand for corn has resulted in the highest corn prices we've seen in more than a decade. The high price of corn, coupled with increases in other input costs, has put producers in a tough spot financially. Livestock producers have always been the most reliable consumers of corn and soybeans. We must be cautious that our policies do not cause unintended economic distortions to either grain or livestock producers as the renewable fuel market continues to grow.

As input costs continue to rise, and we work to reduce our dependency on foreign sources of energy, we must do all we can to promote the development of alternative fuels as well as working to create new market opportunities for our agriculture producers.

At the same time, however, we must also ensure that we continue to have a reliable and affordable feed supply for our livestock industry. Reduced reliance on foreign energy sources, stable energy prices, and the creation of new markets for agricultural products are all positive benefits of the growth of the renewable fuels industry. However, there must be balance so the needs of the renewable fuels market and the livestock industry can be met simultaneously without significant price or supply distortions.

Mr. Chairman, I thank you again for holding this hearing on this very important issue. I look forward to hearing the testimony from today's witnesses.

WC: 693

AMERICAN FEED INDUSTRY ASSOCIATION

Evaluation of Analytical Methods for Analysis of Dried Distillers Grains with Solubles

AFIA Sub-Working Group Final Report and Recommendations February 2007

Co-sponsored and Equally Funded by:

AMERICAN FEED INDUSTRY ASSOCIATION

RFA Renewable Fuels Association

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Background

Within the Fuel Ethanol Industry there are no guidelines or recommendations on which analytical test methods should be used for the measurement of DDGS, which can lead to a significant level of confusion related to analysis and subsequent interpretation of data for moisture, protein, fat, and fiber, all of which are critical feed quality parameters for DDGS. Most wet chemistry methods used for the analysis of DDGS in the analytical community currently are what would be classified as ***empirical methods***, meaning the results are an indirect measurement of the analyte of interest and the results are in part or in whole dependent on the conditions of the assay (i.e. reagent type or concentration and assay parameters like temperature, time, pH, etc.). Since the analytical community has not yet come to a consensus on what empirical method is best suited for the analysis of any given analyte in DDGS, many different empirical methods are used among laboratories and even within a single laboratory. The use of various empirical methods for a single analyte leads to results that vary significantly from lab to lab and thereby can create confusion for producers, marketers, nutritionists, regulatory bodies, and most importantly the customers/end-users. ***Segal's Law***, which states, ***"A man with a watch knows what time it is. A man with two watches is never sure"***, sums up the current state of affairs best as it relates to analysis of DDGS.

This problem was identified by the ethanol industry and strategically addressed in the Fall of 2005; two working group bodies were formed to collectively address the problem and cooperatively design a study which would lead to recommendations on the most applicable test methods for DDGS. The two bodies formed to accomplish this task were:

RFA Testing Subcommittee (Operating under the *RFA Co-Products Committee)*

Members:	Shon Van Hulzen	Broin Management
	Dr. Lance Forster	ADM
	Charlie Staff	Distillers Grain Technology Council
	Bob Dinneen	Renewable Fuel Association

AFIA DDGS Analytical Methods Sub-Working Group (Operating under the *AFIA DDGS Technical Issues Working Group)*

Members:	Shon Van Hulzen	Broin Management
	Dr. Lance Forster	ADM
	Charlie Staff	Distillers Grain Technology Council
	Dr. Thomas Robb	Abengoa Bioenergy
	Dr. Phil Smith	Tyson Foods, Inc.
	Thomas Sliffe	Perten Instruments
	Trace Yates	Tyson Foods
	Mark Host	FOSS North America
	Lars Reimann	Eurofins Scientific

Shon Van Hulzen, Quality Control Director, Broin Management, was chosen as the chair for both committees. Nancy Thiex, Laboratory Manager, Olson Biochemistry Laboratories, South Dakota State University and chair of the Association of American Feed Control Officials (AAFCO) was selected as

the primary consultant by the AFIA group, and was the organizer, coordinator, and statistical evaluator of the study.

The RFA group was to provide input and insights from the perspective of the ethanol industry as well as provide several members to serve on the AFIA group, which also included several representatives from the feed industry as well as other stake holders. The AFIA DDGS Analytical Methods Sub-Working Group was also the body responsible for setting the direction of the study, see to its completion, and reporting the final outcome and eventual recommendations based on the data.

The Study

The study was designed to evaluate the efficacy, applicability, the ***intra-*** laboratory variation, and the ***inter-*** laboratory variation of the most commonly used test methods in the analytical community for the analysis of Moisture/Loss on Drying, Crude Protein, Crude Fat, and Crude Fiber. Table 1 below lists the analytical methods that were evaluated in this study.

Table 1 Test Methods for DDGS with Test Method Reference by Organization

Moisture/Loss on Drying (LOD)	
AOAC 934.01	Loss on Drying (Moisture) for Feeds (Vacuum Oven 95-100 °C)
AOAC 935.29	Moisture in Malt (Gravimetric Method at 103-104 °C / 5 hr)
NFTA 2.2.2.5	Lab Dry Matter (105 °C / 3 hr)
AOAC 930.15	Loss on Drying (Moisture) for Feeds (135 °C / 2 hr)
AOAC 2001.12	Determination of Water/Dry Matter (Moisture) in Animal Feed, Grain, and Forage (Karl-Fischer)
Crude Protein	
AOAC 990.03	Protein (Crude) in Animal Feed - Combustion
AOAC 2001.11	Protein (Crude) in Animal Feed and Pet Food (Copper Catalyst)
Crude Fat	
AOAC 2003.05	Crude Fat in Feeds, Cereal Grains, and Forages (Ether Ext.)
AOAC 2003.06	Crude Fat in Feeds, Cereal Grains, and Forages (Hexane Ext.)
AOAC 954.02	Crude Fat by Acid Hydrolysis
AOAC 945.16	Oil in Cereal Adjuncts (Petroleum Ether)
Crude Fiber	
AOAC 978.10	Fiber (Crude) in Animal Feed and Pet Food (F.G. Crucible)
AOCS Ba 6a-05	Ankom Method

Phase I, which was designed to evaluate the efficacy, applicability, and the ***intra-*** laboratory variation of the respective test methods, involved the analysis of 30 samples, which were collected from six carefully selected locations (five samples from each location) with the intent of gathering a sample set that resembles a cross section of the market. The six locations are found in Table 2 below.

Table 2 Phase I Sample Matrix Locations

2 locations from Broin Companies Corn Dry Mill Plants - (2 different processes)
2 locations from ADM Corn Dry Mill Plants - (2 different processes)
1 location from an Alternative Feedstock Dry Mill (Western Plains Energy in Oakley, KS)
1 location from a Beverage (potable) Plant (Jim Beam)

Each of the 30 samples (5 samples from each location X 6 sample locations) was analyzed in triplicate by all of the methods listed in Table 1 above at the Olsen Biochemistry Laboratories, under the direction of Nancy Thiex. The results achieved are summarized in Table 3 below and in Figures 1-2 below.

Phase II, which was designed to evaluate the ***inter-*** laboratory variation, involved the analysis of 5 samples, which were a subset of the samples collected for Phase I. The five samples were one sample from each of the six locations – one of the locations was unable to submit the larger sample size required for the inter laboratory portion of the study and was thereby left out of Phase II, hence the five samples in Phase II instead of the intended six samples. The five samples were sent to 23 participating laboratories and analyzed in duplicate for each method the respective laboratory had signed up for in advance. The results achieved for the five samples at the 23 participating laboratories are summarized in Table 3 below and in Figures 3-4 below.

Conclusions

All statements in the following sections are based on the statistical analysis and related conclusions found in the final report from Nancy Thiex, which can be supplied upon request by contacting either Nancy Thiex (nancy_thiex@sdstate.edu) or Shon Van Hulzen (shon.vanhulzen@broin.com). A summary of the committee's recommendations can be found in Table 4 below.

Moisture/Loss on Drying

Although it is commonly known and widely accepted that Karl Fischer Titration provides the most accurate measurement of water in feed, the labor (both time and training), reagent, and instrument costs make Karl Fischer analysis an economic burden that most laboratories would not be willing to bear. The committee recognizes these concerns and has used Karl Fischer as the means of determining the gravimetric (loss on drying) method that has the least amount of bias when compared to actual Karl Fischer method. Using this criteria, **NFTA 2.2.2.5, *Lab Dry Matter (105 °C / 3 hr)*, was selected as the recommended method for the analysis of moisture in DDGS**; this method also had acceptable CV's (coefficient of variation—a method of determining repeatability) in both the intra- and inter-laboratory portions of the study.

The committee also wishes to emphatically note that all gravimetric methods be considered, and used accordingly, as "**loss on drying**" methods and only serve as an estimation of the "true" moisture level. One of the gravimetric methods, AOAC 930.15, *Loss on Drying (Moisture) for Feeds (135 °C / 2 hr)*, was shown to dramatically overestimate the moisture content in DDGS and therefore, it is highly discouraged to use this method to analyze samples of DDGS; use of this method is widespread as demonstrated by the fact that 17 of the 23 labs reported values using AOAC930.15.

Crude Protein
The protein methods investigated in this study were determined to be statistically equivalent, and both had acceptable coefficients of variation for both the intra- and inter- laboratory portions of the study. **AOAC 990.03, *Protein (Crude) in Animal Feed – Combustion*, and AOAC 2001.11, *Protein (Crude) in Animal Feed and Pet Food (Copper Catalyst)*, can therefore be used interchangeably to provide accurate and precise protein results on DDGS.**

Crude Fat
The three non-hydrolysis fat methods (AOAC 2003.05, AOAC 945.16, and AOAC 2003.06) were determined to be statistically equivalent methods for the analysis of DDGS, however, in the inter laboratory portion of the study, **AOAC 945.16, *Oil in Cereal Adjuncts (Petroleum Ether)*, had a significantly lower coefficient of variation than the other non-hydrolysis methods and has thereby proven to be a more robust method in the analytical community, and is therefore chosen as the recommended test method for the analysis of fat in DDGS.**

The acid hydrolysis method (AOAC 954.02) was determined to be significantly different, with a bias of ~+4% (absolute difference). It should be noted that only relative accuracy was compared and since all four methods in the investigation are empirical in nature, further work would need to be completed to determine the most accurate method. However, since the three non-hydrolysis methods were found to be statistically equivalent methods, it was decided that the most robust (most repeatable) non-hydrolysis method in the inter- laboratory portion of the study would be selected as the method of choice.

Crude Fiber
Both crude fiber methods evaluated, AOAC 978.10 and AOCS Ba 6a-05, were considered to be not significantly different. However, the "F58 Filter Bag", which is needed to comply with AOCS Ba 6a-05 is no longer commercially available. The recommended replacement, the "F57 Filter Bag", which is commercially available has been shown to cause a 10% (relative) low bias. It is doubtful that AOAC 978.10 and AOCS Ba 6a-05, modified for the F57 bag, would be statistically equivalent. Based on lack of availability of the F58 filter bag which is needed to perform AOCS Ba 6a-05, **the committee is recommending AOAC 978.10, *Fiber (Crude) in Animal Feed and Pet Food (F.G. Crucible)*, as the recommended method for crude fiber analysis on DDGS.**

Table 3 Summary of Results

Results Summary Table			Intralaboratory (SDSU Lab) Results Summary				Interlaboratory (23 labs) Results Summary				
Method	Description	Units	StdDev	CV	Avg Value	Range	StdDev	CV	Avg Value	Range	n
AOAC 934.01	Loss on Drying (Vacuum)	%	0.25	2.34%	10.67		0.75	7.93%	9.50		8[a]
AOAC 935.29	Loss on Drying (103C/5Hrs)	%	0.15	1.47%	10.17		0.50	5.23%	9.60		7[a]
NFTA 2.2.2.5	Loss on Drying (105C/3Hrs)	%	0.18	1.82%	9.87		0.44	4.62%	9.50		11[b]
AOAC 930.15	Loss on Drying (135C/2Hrs)	%	0.19	1.50%	12.69		0.94	8.09%	11.67		17[b]
AOAC 2001.12	Moisture (Karl Fischer)	%	0.08	0.89%	9.03	3.66	NA	NA	8.08	3.59	1[a]
AOAC 990.03	Crude Protein (Combustion)	%	0.18	0.67%	26.85		0.43	1.58%	27.05		17
AOAC 2001.11	Crude Protein (Kjedahl)	%	0.16	0.60%	26.75	0.10	0.33	1.23%	26.57	0.48	8
AOAC 2003.05	Crude Fat (Ethyl Ether)	%	0.28	3.04%	9.22		0.84	8.34%	10.02		7
AOAC 954.02	Fat (Acid Hydrolysis)	%	0.57	4.37%	13.03		0.96	8.07%	11.84		9[b]
AOAC 945.16	Crude Fat (Pet Ether)	%	0.24	2.71%	8.85		0.27	2.95%	9.13		8[a]
AOAC 2003.06	Crude Fat (Hexane)	%	0.19	2.11%	9.00	4.18	0.48	5.45%	8.85	2.99	5
AOAC 978.10	Crude Fiber	%	0.31	4.09%	7.58		1.26	17.84%	7.06		6[c]
AOCS Ba 6a-05	Crude Fiber (Ankom)	%	0.54	7.07%	7.64	0.06	0.51	8.10%	6.36	0.70	6[d]

Intralaboratory results are based on averages of 30 test samples analyzed in triplicate for each method at SDSU Olsen Biochemistry Laboratories

Interlaboratory results are based on averages of 5 test samples analyzed in duplicate for each method at various participating laboratories

n = number of labs included in statistical analysis in Phase II

a = two statistical outliers (labs) removed

b = three statistical outliers (labs) removed

c = four statistical outliers (labs) removed

d = one statistical outlier (lab) removed

Figure 1

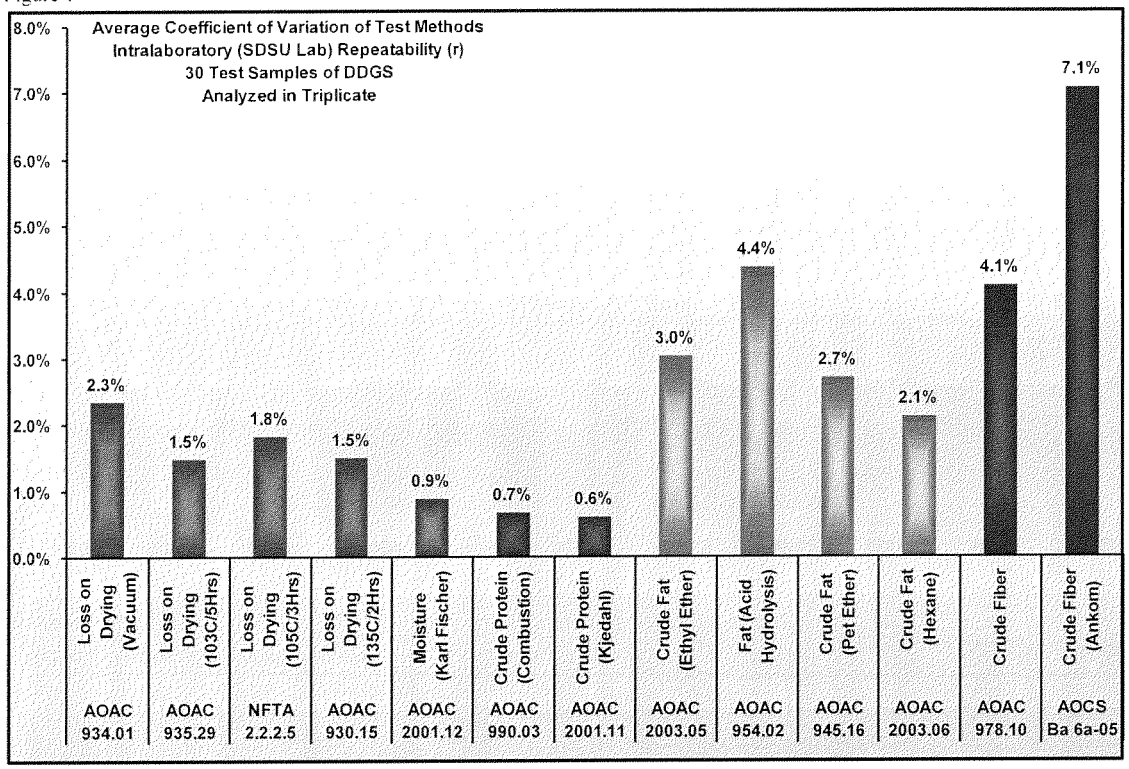
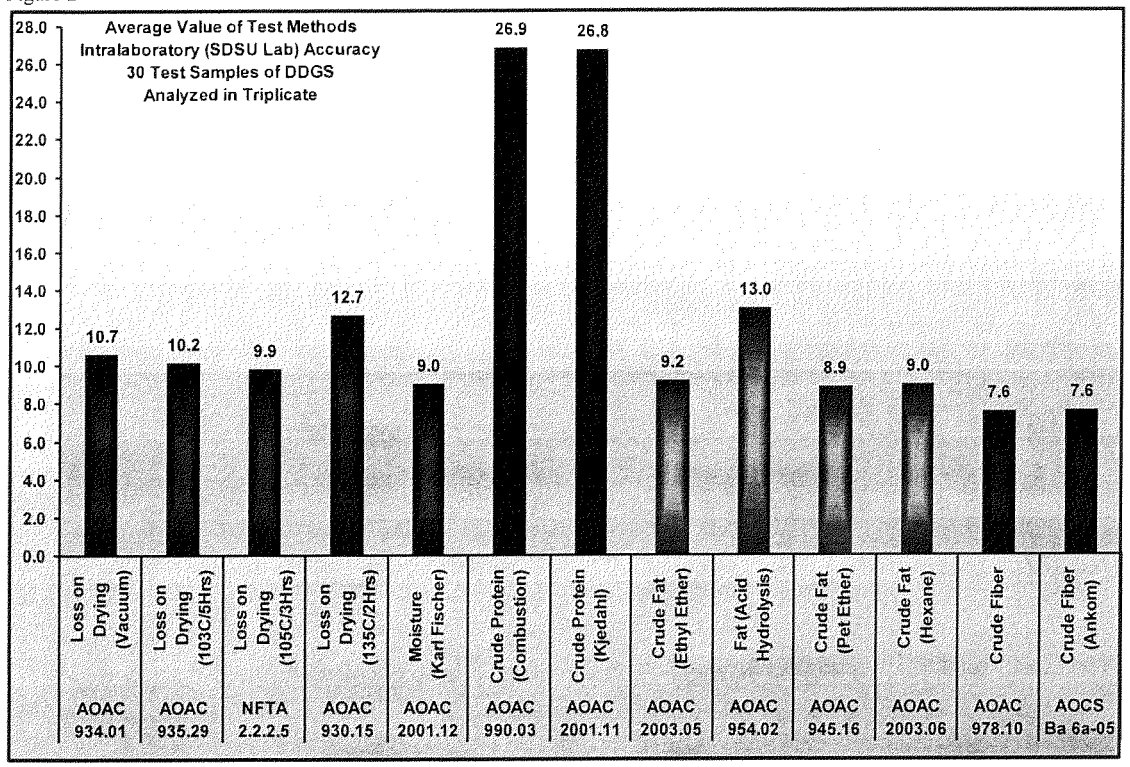

Average Coefficient of Variation of Test Methods
Intralaboratory (SDSU Lab) Repeatability (r)
30 Test Samples of DDGS
Analyzed in Triplicate
8.0%
7.0%
6.0%
5.0%
4.0%
3.0%
2.0%
1.0%
0.0%
2.3%
1.5%
1.8%
1.5%
0.9%
0.7%
0.6%
3.0%
4.4%
2.7%
2.1%
4.1%
7.1%
Loss on Drying (Vacuum)
Loss on Drying (103C/5Hrs)
Loss on Drying (105C/3Hrs)
Loss on Drying (135C/2Hrs)
Moisture (Karl Fischer)
Crude Protein (Combustion)
Crude Protein (Kjedahl)
Crude Fat (Ethyl Ether)
Fat (Acid Hydrolysis)
Crude Fat (Pet Ether)
Crude Fat (Hexane)
Crude Fiber
Crude Fiber (Ankom)
AOAC 934.01
AOAC 935.29
NFTA 2.2.2.5
AOAC 930.15
AOAC 2001.12
AOAC 990.03
AOAC 2001.11
AOAC 2003.05
AOAC 954.02
AOAC 945.16
AOAC 2003.06
AOAC 978.10
AOCS Ba 6a-05

Figure 2


Average Value of Test Methods
Intralaboratory (SDSU Lab) Accuracy
30 Test Samples of DDGS
Analyzed in Triplicate
28.0
26.0
24.0
22.0
20.0
18.0
16.0
14.0
12.0
10.0
8.0
6.0
4.0
2.0
0.0
10.7
10.2
9.9
12.7
9.0
26.9
26.8
9.2
13.0
8.9
9.0
7.6
7.6
Loss on Drying (Vacuum)
Loss on Drying (103C/5Hrs)
Loss on Drying (105C/3Hrs)
Loss on Drying (135C/2Hrs)
Moisture (Karl Fischer)
Crude Protein (Combustion)
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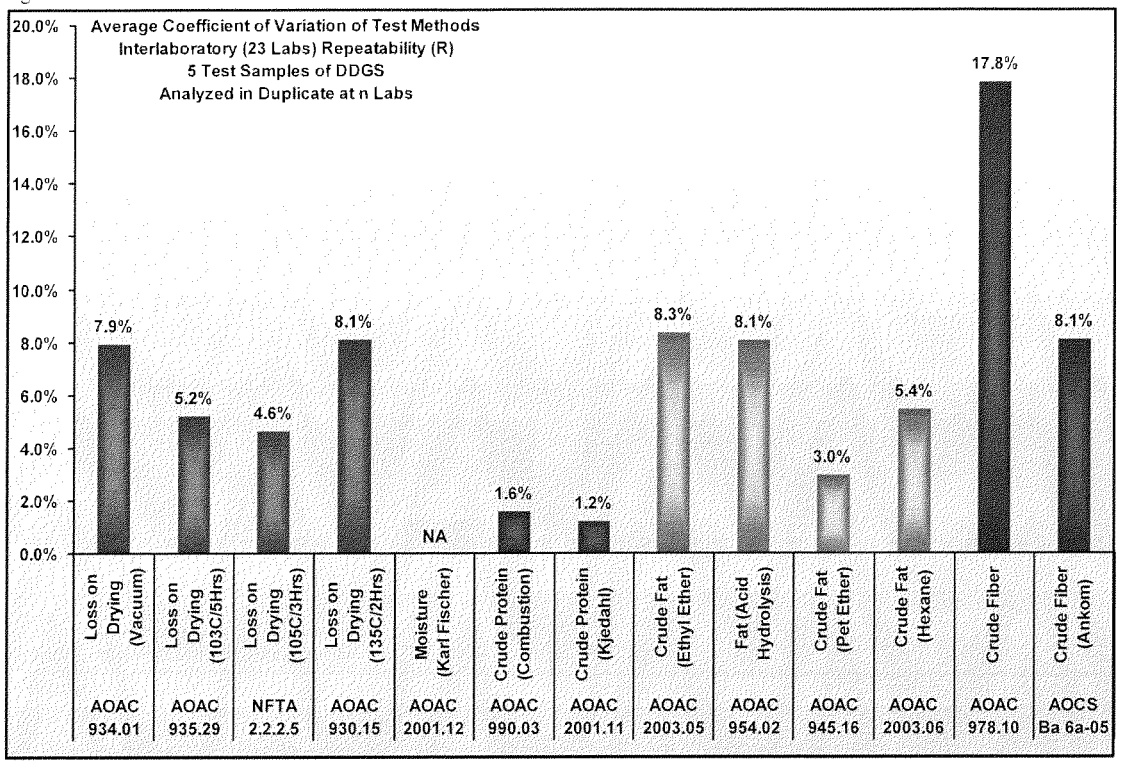
AOAC 990.03
AOAC 2001.11
AOAC 2003.05
AOAC 954.02
AOAC 945.16
AOAC 2003.06
AOAC 978.10
AOCS Ba 6a-05

Figure 3


Average Coefficient of Variation of Test Methods
Interlaboratory (23 Labs) Repeatability (R)
5 Test Samples of DDGS
Analyzed in Duplicate at n Labs
20.0%
18.0%
16.0%
14.0%
12.0%
10.0%
8.0%
6.0%
4.0%
2.0%
0.0%
7.9%
5.2%
4.6%
8.1%
NA
1.6%
1.2%
8.3%
8.1%
3.0%
5.4%
17.8%
8.1%
Loss on Drying (Vacuum)
Loss on Drying (103C/5Hrs)
Loss on Drying (105C/3Hrs)
Loss on Drying (135C/2Hrs)
Moisture (Karl Fischer)
Crude Protein (Combustion)
Crude Protein (Kjedahl)
Crude Fat (Ethyl Ether)
Fat (Acid Hydrolysis)
Crude Fat (Pet Ether)
Crude Fat (Hexane)
Crude Fiber
Crude Fiber (Ankom)
AOAC 934.01
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NFTA 2.2.2.5
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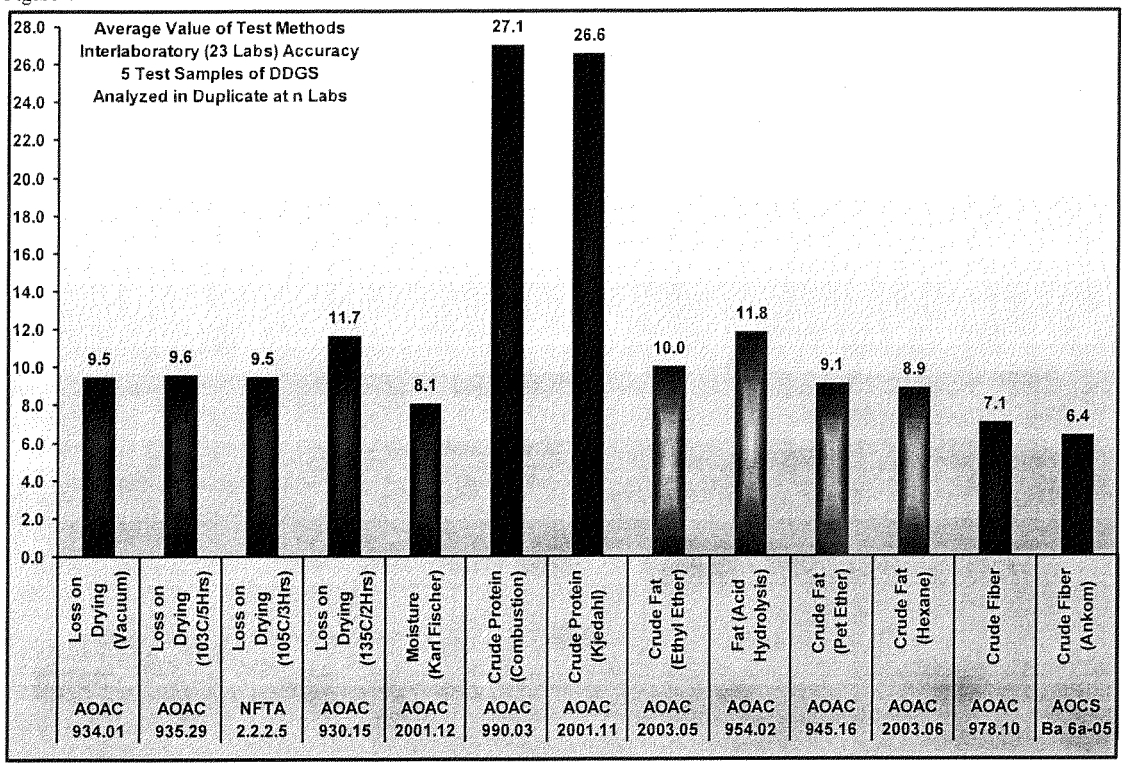
AOAC 990.03
AOAC 2001.11
AOAC 2003.05
AOAC 954.02
AOAC 945.16
AOAC 2003.06
AOAC 978.10
AOCS Ba 6a-05

Figure 4


Average Value of Test Methods
Interlaboratory (23 Labs) Accuracy
5 Test Samples of DDGS
Analyzed in Duplicate at n Labs
28.0
26.0
24.0
22.0
20.0
18.0
16.0
14.0
12.0
10.0
8.0
6.0
4.0
2.0
0.0
9.5
9.6
9.5
11.7
8.1
27.1
26.6
10.0
11.8
9.1
8.9
7.1
6.4
Loss on Drying (Vacuum)
Loss on Drying (103C/5Hrs)
Loss on Drying (105C/3Hrs)
Loss on Drying (135C/2Hrs)
Moisture (Karl Fischer)
Crude Protein (Combustion)
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AOAC 2001.11
AOAC 2003.05
AOAC 954.02
AOAC 945.16
AOAC 2003.06
AOAC 978.10
AOCS Ba 6a-05

Table 4 AFIA DDGS Analytical Method Recommendations

Moisture/Loss on Drying	
NFTA 2.2.2.5	Lab Dry Matter (105 °C / 3 hr)
Crude Protein	
[a]AOAC 990.03	Protein (Crude) in Animal Feed - Combustion
[a]AOAC 2001.11	Protein (Crude) in Animal Feed and Pet Food (Copper Catalyst)
Crude Fat	
AOAC 945.16	Oil in Cereal Adjuncts (Petroleum Ether)
Crude Fiber	
AOAC 978.10	Fiber (Crude) in Animal Feed and Pet Food (F.G. Crucible)
[a]Methods are statistically similar and either is acceptable for use on DDGS	

AMERICAN FEED INDUSTRY ASSOCIATION

AFIA DDG/S Technical Issues Working Group

DDG/S Definitions Sub-Working Group

Summary Report and Recommendations

February 2007

Abstract

The group addressed two questions: (1) whether the AAFCO legal definition should be amended; and (2) how the AFIA guidelines should be updated.

The answer to (1) was "no." It was generally felt that changes in the AAFCO definitions would tend to limit trade without providing any further clarity between supplier and customer.

The answer to (2) was that the AFIA Ingredient Guidelines should be updated to address modern processing technologies. Draft changes are attached as appendices.

Appendices

1. Draft – Proposed AFIA Guideline Updates: DDG/S
2. Draft – Proposed AFIA Guideline Updates: CCDS

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Background

There is an explosive growth in the amount and type of Distillers Products becoming available on a wide-spread basis. As with any growth industry, there is some confusion surrounding the technical issues of DDG/S – specifically, issues impacting trade. Over the past several months – in various venues – several different solutions have been proposed to help reduce this confusion.

The AFIA has taken a leadership role in addressing the most important of these issues. A meeting of the AFIA DDG/S Technical Issues Working Group was convened in Kansas City in 2005. Two specific items were selected for further work: "Analytical Methodologies" and "Definitions." Two sub-working groups were formed.

The "Analytical Methodologies" issue is, by far, the most pressing matter to be addressed. That group has made tremendous strides in addressing this issue. Those efforts are reported elsewhere.

The "Definitions" issue is much less pressing. However, at the prompting of the Working Group, a Sub-Working group was convened to revisit this issue from a new perspective. Specifically, four individuals representing DDG/S producers and four individuals representing buyers were appointed to the group. The group was charged with two issues: (1) whether the AAFCO legal definition should be amended; and (2) how the AFIA ingredient guidelines should be updated.

Findings of the sub-working group follow.

Findings of the Sub-Working Group

Should AAFCO Definitions Be Amended?

Bottom Line: No.

The group felt that the AAFCO Definition(s) adequately define(s) the Distillers Product(s) of today. Further changes might impact new technologies. A broad definition was preferred which are the current definitions.

No further action required.

How Should AFIA Ingredient Guidelines Be Updated?

General Feedback: It was generally agreed that some updates should be considered. Actually, after reviewing the current AFIA Ingredient Guidelines, it seemed that the participants had a greater understanding of DDG/S (and CCDS), in general.

Several items were presented for discussion. All were considered as viable suggestions.

An action item was taken: submit all ideas for review and summary.

Three participants (4, including the chair) responded with written items for inclusion in a proposed update. Charlie Staff, Distillers Grains Technology Council, submitted the two AFIA Guidelines with proposed modifications included. These served as basis for including suggestions from all participants. These draft proposed AFIA ingredient guideline updates are attached to this report (See Appendices).

Specific Topics: The main points of the discussion and subsequent submissions focused on: (1) ethanol process (Fuel vs. Potable vs. Other Grades), (2) typical nutrient analysis (and some discussion about exceptions), (3) physical characteristics, and (4) a general notice that specifications should be a contractual issue.

Further Action Items

Suggestion: After an appropriate period of time, this Sub-Working Group should reconvene to consider any and all suggestions to the draft ingredient guideline updates; a final version of each product Guideline can be proposed to AFIA for adoption.

The chair notes he edited the two guidelines developed more than 20 years ago. These edits are in addition to the ones submitted by sub-working group members.

Some personal observations from the Chair:

1. AFIA Guidelines: The AFIA Guidelines should be updated. The role of the AFIA in providing these guidelines – and overall leadership in this area – cannot be over-emphasized.

   The proposed Guidelines may require some further work before they become final.

   Other Distillers Products Guidelines may need to be re-evaluated.

   This may be an exercise that should be routinely done for many ingredients.

2. Actually, the process of reviewing the current AFIA Guidelines and suggesting updates seemed to be pretty educational *per se*. There may be a "take-home" message that education about the current products is probably more important than new documentation.

3. AAFCO Definitions: The decision to not change the AAFCO Definitions seems more appropriate today that ever before.

For the Sub-Working Group:

Matthew L. Gibson, Ph.D.
Chair, Definitions Sub-Working Group
VP, Tech Svcs & Mktng
Dakota Gold Marketing

Appendix 1. Draft – Updated AFIA Guidelines – DDG/S

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DISTILLERS DRIED GRAINS WITH SOLUBLES (27.6)

PRODUCT DESCRIPTION

Distillers dried grains with Solubles (DDG/S) is a product obtained by condensing and drying the whole stillage remaining after the removal of ethanol by distillation from the yeast fermentation of grain or grain mixture by condensing and drying at least three-fourths of the solids of the resultant whole stillage by methods employed in the grain distilling industry. The whole stillage contains coarse material that is separated from the thin, watery portion by centrifuging or screening. The thin stillage fraction is concentrated by evaporation to a syrup (Condensed Distillers Solubles – CDS) and then added back to the coarse fraction and dried in rotary, flash, or steam-tube heated air dryers. The predominating grain must be declared as a first word in the name; i.e. Corn Distillers Dried Grains with Solubles (CDDG/S).

This product is made from a dry milling operation which makes potable, fuel, and / or other grades of ethanol.

TYPICAL ANALYSIS:

Moisture, %	8 - 12	Protein, %	25 - 28
Ether Extract, %	6 - 10	Crude Fiber, %	8 - 10
Ash, %	4 - 5		

Specifications should be determined by buyer and/or seller at the time of sale.

FACTORS INFLUENCING QUALITY:

The nutritional composition of corn distillers dried grains with solubles will typically be uniform if acquired from the same production facility – regardless of whether the grain is processed for fuel or beverage (potable) use. However, there may be considerable variation in product acquired from different ethanol production facilities.

For the majority of the distilleries, the composition of distillers grains with solubles is approximately three times that of the cereal grains used (plus vitamins and yeast cells and metabolites produced during fermentation). Higher drying temperatures, mash bill differences, and residual sugars can influence the degree of color and / or darkness.

STORAGE AND HANDLING

Corn distillers dried grains with solubles with uniform moisture (8-12%), properly cooled and stored in an enclosed cool location, will withstand long periods of storage. Occasionally if the corn distillers dried grains is not cooled sufficiently at the distillery after drying, or allowed to store 24 hours before shipping, there may be increased problems during transportation due to reduced flowability.

PHYSICAL PROPERTIES:

Color:	Yellow to Brown
Odor:	Sweet and Cool; Not Burnt or Musty
Bulk Density:	Approximately 30 – 35 lb per cubic foot
Texture:	Can range from fine/powdery to coarse/gritty Depending upon the original fineness of grind of the grain

AVAILABILITY

Corn distillers dried grains with solubles is now readily available in all areas of the United States; principally in Midwest by truck and rail and by rail at the West and East coasts of the United States. Export markets are served by railcars into northern Mexico and barge and export container quantities moving to export overseas markets.

MAJOR FEED APPLICATIONS

Corn distillers dried grains with solubles have been readily incorporated into many rations for ruminants and non-ruminants, alike. It is an excellent source of energy, protein, fat, phosphorus, and bypass protein. It has been widely accepted as an excellent ingredient for dairy, beef cattle and is gaining acceptance in swine and poultry rations.

DEFINITIONS AND NAMES

AAFCO Ingredient Definition – #27.6. Please note: the predominating grain shall be declared as a first word in the name. IFN#5-12-185 Barley distillers grains with solubles; IFN#5-07-987 Cereals distillers grains with solubles; IFN#5-02-843 Maize (corn) distillers grains with solubles; IFN#5-04-024 Rye distillers grains with solubles; IFN#5-04-375 Sorghum distillers grains with solubles; IFN#5-05-194 Wheat distillers grains with solubles.

RELATED "NEW PROCESS" PRODUCTS

Some distilleries are removing the corn germ and/or the corn bran prior to fermentation which substantially reduces fat and/or crude fiber content of the final product. Some distilleries are removing the fat before or after condensing of the syrup which also reduces substantially the fat content of the finished CDDGS product. In both of these processes, the fat content is decreased and protein content increased. Some of these higher protein products are called high protein corn distillers dried grains (DDG; protein content 33 – 45 %).

Appendix 2. Draft – Updated AFIA Guidelines – CCDS

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CONDENSED DISTILLERS SOLUBLES (27.7)

PRODUCT DESCRIPTION

Condensed distillers solubles (CDS) is obtained after removal of ethanol by distillation from the yeast fermentation of a grain or grain mixture by condensing the thin stillage fraction to a thick viscous liquid. The predominating grain must be declared as a first word in the name; i.e. corn condensed distillers solubles (CCDS).

This product is made from a dry milling operation which makes potable, fuel, and/or other grades of ethanol.

TYPICAL ANALYSIS:

Dry Matter, %	28 - 45	Protein, %	7 - 15
Ether Extract, %	4 - 20	Crude Fiber, %	1 - 5

Specifications should be determined by buyer and/or seller at the time of sale.

FACTORS INFLUENCING QUALITY:

The nutritional composition of condensed distillers solubles will typically be uniform if acquired from the same production facility – regardless of whether the grain is processed for fuel or beverage (potable) use. However, there may be considerable variation in product acquired from different ethanol production facilities.

Different processing may significantly alter composition. Processes which will result in lower fat content (and correspondingly higher protein content) may include: (1) removing the germ fraction prior to fermentation, (2) removing corn oil before or during evaporation, and (3) using screens for separating whole stillage rather than centrifuges.

Condensed distillers solubles viscosity is dependant upon solids content and temperature and is usually similar to other concentrated liquid feed ingredients, i.e. molasses, condensed steep water, etc. Ordinary mild steel tanks, pipes, pumps and fixtures are satisfactory for a normal length of storage, agitation is highly recommended. The product is normally delivered by railcars or tank trucks. Heat or extended storage may result in darkening color and thicker viscosity products.

PHYSICAL PROPERTIES:

Color:	Yellow to tan colored liquid with syrup consistency
Bulk Density:	Weight per gallon: 9.4 – 10.0 lb.
pH:	4 – 4.5
Viscosity:	Increases with decreasing temperatures

MAJOR FEED APPLICATIONS

Condensed distillers solubles have been used extensively by liquid animal feed manufacturers for many years because of its nutritional value and palatability. In past years, dried CCDS was found to be an excellent feed ingredient for non-ruminant rations.

DEFINITIONS AND NAMES

AAFCO Feed Ingredient Definition # 27.7. Please note: the predominating grain shall be declared as a first word in the name. IFN#5-12-211 Maize (corn); Barley IFN#5-12-210; Cereals IFN#5-02-146; Rye IFN#5-12-212; Sorghum IFN#5-12-231; Wheat IFN#5-12-213.

ADDITIONAL INFORMATION

The production of fuel and beverage ethanol is accomplished by cooking a milled-grain mash and adding an enzyme to convert the starch to fermentable sugars. Yeast is then added to cause fermentation and conversion of the sugars to alcohol and carbon dioxide. The fermented mash is called distillers beer and is passed through a distillation column to extract the alcohol. Residual liquid from the distillation column is called whole stillage and contains all the vitamins, minerals, fats and proteins of the whole grain which are concentrated by removal of the starch. After distillation, the whole stillage is separated into soluble (thin stillage) and insoluble fractions by screening or centrifuging. With screening, the majority of the fat remains with the insoluble portion and with centrifuging the majority of the fat is carried into the soluble fraction prior to evaporation. If the germ of the grain has been removed prior to fermentation, the fat content of the CDS will be substantially reduced (30-70%). Evaporators concentrate the thin stillage to a 25-45% solids content, and it is the condensed distillers solubles product that result. It is an excellent feedstuffs due to its soluble amino acids, proteins and valuable nutrients.

STATEMENT OF CHUCK CONNER
DEPUTY SECRETARY,
U.S. DEPARTMENT OF AGRICULTURE
BEFORE THE HOUSE AGRICULTURE SUBCOMMITTEE ON
LIVESTOCK, DAIRY, and POULTRY
March 8, 2007

Mr. Chairman, thank you for the invitation to discuss the impacts of biofuels on livestock markets. Dr. Joe Glauber, USDA Deputy Chief Economist is with me today, and we will provide a brief status report on the rapid growth in biofuels, discuss the impacts of this growth on crop and livestock markets and conclude with a summary of the Administration's 2007 farm bill proposals that support research and investment in biofuels.

Current Market for Biofuels

The rapid growth of biofuels production has stimulated tremendous enthusiasm about the prospects for ethanol and biodiesel making substantial inroads in reducing the demand for imported oil. Substantial new investment in biofuel production capacity is creating growth in rural incomes and employment. The rapid growth, providing the promise of continued substantial environmental, economic, and energy diversification benefits, is also generating changes in farm management, production, and related industries across the agricultural sector.

Ethanol. In 2000, about 1.6 billion gallons of ethanol were produced in the United States, with ethanol utilizing about 6 percent of the 2000 corn harvest. By 2006, an estimated 5 billion gallons of ethanol were produced, utilizing about 20 percent of the 2006 corn harvest. As of February 12, data gathered by the Renewable Fuels Association indicate there are now 113 ethanol plants with total production capacity of 5.6 billion gallons and another 78 ethanol plants under construction and another 7 facilities under expansion. When construction and expansion of these facilities are completed, ethanol capacity in the United States will be 11.8 billion gallons per year, which is likely to occur during 2008-09.

The furious pace of construction in the ethanol industry over the past year has led USDA to substantially revise upward its projections of ethanol production. A year ago, USDA released long-term agricultural projections to 2015. At that time, annual ethanol production was projected to reach about 7.5 billion gallons by 2010/11 and account for about 22 percent of total U.S corn production. In our latest long-term agricultural projects, released February 14, 2007, USDA now projects that by 2010/11 about 4 billion bushels of corn will be used to produce 11.5 billion gallons of ethanol, accounting for 30 percent of U.S. corn production.

Biodiesel. While ethanol production has received much of the recent press attention, biodiesel production has grown even faster. Biodiesel production increased from 500,000 gallons in 1999 to 28 million gallons in 2004 and to 91 million gallons in 2005. USDA estimates biodiesel production increased to 245 million gallons in 2006, a 170-percent increase year over year and a 490-fold increase since 1999. Our latest long-term projections indicate that by 2010/11 we will be using about 5 billion pounds of soybean oil to produce about 700 million gallons of biodiesel per year, accounting for about 23 percent of U.S. soybean oil production (Figure 1).

As of January 2007, the National Biodiesel Board indicated there were 105 commercial U.S. biodiesel plants. The annual production capacity of these plants ranges from 500,000 gallons to 50 million gallons, with total capacity of 864 million gallons per year. The National Biodiesel Board reports that there were 77 new plants under construction and 8 plants that were expanding capacity as of January 2007. The total annual capacity of these new plants and expansions, if realized, would increase the capacity of the existing biodiesel industry by 1.7 billion gallons per year.

Near-Term Market Impacts of Biofuels

Crop Markets. The main story in the 2006/07 crop markets has been the increase in corn used in ethanol and the rise in corn and other crop prices. With wheat production and thus wheat feed supplies down this year, the strong demand for ethanol has combined with a slightly reduced corn harvest last fall and a large increase in demand for corn from overseas to push corn prices to near record levels. The overseas demand has partly been driven by the drought in Australia and unexpectedly low grain yields in parts of Europe. As supply from those markets is restored, this should have a moderating influence on corn prices. For the 2006/07 marketing year, with carryover stocks expected to drop sharply, the U.S. season-average corn price is forecast at $3.20 per bushel, only slightly below the record–high $3.24 per bushel set in 1995/96. The high corn prices have also raised the prices of other grains and oilseeds.

For 2007/08, the recently released USDA long-term projections estimate that 3.2 billion bushels of corn, or 26 percent of total U.S. corn production, will be used for ethanol. This spring, the number of acres planted to corn is projected to increase by 11 percent and 2007 corn production is projected to increase by 16 percent and corn exports are expected to fall by 14 percent. USDA updated these projections at its annual Agricultural Outlook Forum on March 1 and 2; the first survey of farmers planting intentions for 2007 will be released on March 30.

Despite the corn production increase, we anticipate that the corn market will remain relatively tight during the upcoming 2007/08 marketing year. The corn ending stocks-to-use ratio could decline to 5 percent by the end of the 2007/08 season. Consequently, the farm price for corn is forecast to average $3.60 per bushel for the 2007/08 marketing year, and futures prices for delivery between now and 2010 are consistently above $3.50 per bushel.

The majority of the increase in corn acres is expected to come from reduced soybean plantings. We are projecting a 7-percent decline in soybean planted acres for 2007/08 and, coupled with slightly lower soybean yields due to an expected return to trend yields, a 10-percent

decline in soybean production. Lower production is forecast to lead to an increase in farm level prices for soybeans from $6.20 per bushel in 2006/07 to $7.10 per bushel in 2007/08. Higher soybean prices are also expected to lead to a 7-percent increase in soybean oil prices and a 9-percent increase in soybean meal prices.

Tight market conditions for corn and soybeans will continue to support prices for other feed grains. With respect to food grains, a 20-percent increase in wheat production in 2007/08 is expected to limit the increase in the farm price of wheat to about 1-2 percent.

Livestock Markets. Turning to near-term prospects for livestock and poultry, the expansion of U.S. biofuels is affecting livestock markets through higher feed costs, as just described. However, coproduct feeds from ethanol plants are also augmenting the feed supply.

Role of DDGs. Distillers dried grains (DDGs), a coproduct of ethanol production, may substitute for corn in some livestock rations, particularly for beef and dairy cattle. Each bushel of corn used to produce ethanol yields about 17.5 pounds of DDGs which substitute for corn and other feed ingredients. USDA's long-term projections assume that 75 percent of DDGs are used in domestic livestock sector feeding. Exports of DDGS are assumed to account for 10 percent of production. The remaining 15 percent of DDGS production is assumed to go to other nonfeed, domestic uses. Of the portion of distillers grains used for domestic livestock feeding, 80 percent is assumed to be used for beef cattle, 10 percent for dairy, and 5 percent each for poultry and hogs. These assumptions reflect the relatively easier use of DDGs by ruminants compared to monogastric animals. The high use by beef cattle also reflects the ability of those animals to use the wet form of distillers grains.

Based on the animal nutrition studies listed below, distillers grains on a dry matter basis are assumed to replace corn in beef cattle rations pound for pound; dairy rations, 1 pound of distillers grains for 0.45 pounds of corn; hog rations, 1 pound distillers grains for 0.85 pounds of

corn; and poultry rations, 1 pound distillers grains for 0.55 pounds of corn. For each animal type, other ration components are adjusted to rebalance the ration. Protein adjustments affect soybean meal feeding for hogs, poultry, and dairy cattle. Most distillers grains used for cattle feeding displace urea as the protein source rather than soybean meal. Using these assumptions, each pound of DDGs produced from the conversion of corn into ethanol reduces corn used in domestic livestock feed rations by 0.7 pounds. Since beef cattle are assumed to be the largest users of distillers grains, only a small offset is expected in soybean meal use. The divergent effects of ethanol expansion on the different species of livestock and in different regions of the country could result in structural changes in some parts of the U.S. livestock sector.

Overview of current livestock markets. Although livestock producers will face higher feed costs as increasing amounts of corn are converted into ethanol, growth in domestic consumption and exports are expected to boost livestock receipts to a record $125.2 billion in 2007. U.S. red meat and poultry exports are forecast to reach a record high in 2007. Pork exports are forecast to lead the way, increasing for the 17th consecutive year and approach 3.2 billion pounds carcass weight or 14.5 percent of production. After depressed sales in early 2006, poultry sales increased as foreign concerns about Avian Influenza abated and U.S. broiler meat prices declined. Broiler exports are projected increase to 5.4 billion pounds in 2007, but fall short of the record 5.6 billion pounds exported in 2001. Beef exports are expected to increase with the gradual expansion of exports to Japan and Korea. However, Korea's import restrictions and Japan's age limits on imported beef from the United States continue to limit growth. Although total beef exports are expected to increase 25 percent to 1.4 billion pounds in 2007, the level of exports will remain below the 2003 pre-BSE level of 2.5 billion pounds.

Total U.S. production of meat and poultry is forecast to be record-high in calendar year 2007, which is expected to lead to slightly lower prices for hogs. In contrast, tighter domestic

supplies of broiler meat could support higher broiler prices and lead to stable prices for fed cattle. Feeder cattle prices will be lower, reflecting the increase in feed costs. With potentially weaker hog prices, lower feeder cattle prices, stable fed cattle prices, and somewhat modest gains in broiler prices, changes in feed prices will play an important role in producer production decisions in 2007 and 2008.

Beef. Beef production is currently forecast to increase 2 percent in 2007 as both slaughter numbers and carcass weights increase. Weight gains per animal will likely be smaller than in previous years due to higher feed prices. Steer prices will likely remain near last year's $85.41 per cwt. Poor forage conditions resulted in higher cow slaughter during 2006 as many producers lacked sufficient forage resources to support their herds. Herd expansion is expected to be slow as the January 2007 *Cattle* report indicated a small calf crop, and producers indicated they intend to retain 0.5 percent fewer heifers for addition to the beef breeding herd.

Pork. Pork production in 2007 is forecast to expand 3 percent, marking the 7th year of expansion, as producers continue to respond to favorable returns over the last several years. Given farrowing intentions reported in the most recent *Hogs and Pigs* report, inventories will continue to expand, albeit at slower rates. The increase in 2007 production primarily will reflect increased slaughter while weight gains will be limited as producers respond to higher feed prices. Hog prices are expected to reflect the increased production, declining from 2006's $47.26 per hundredweight to $45 per hundredweight.

Broilers. Broiler producers have endured several periods of poor returns due to relatively low broiler prices in 2005 and 2006 and higher feed costs. Consequently, producers reduced chicks placed in 2006, resulting in the lowest rate of production growth since the early 1980s. Production growth in 2007 is expected to be even slower. With tighter broiler meat supplies,

market prices are expected to average 71 cents per pound in 2007, up from 64.4 cents per pound in 2006.

Dairy. Milk producers are expected to respond to higher feed prices and lower 2006 milk prices by modestly reducing cow inventories and as a result, the rate of growth of milk production in 2007 will be slower than in 2006. Production in 2006 increased 2.7 percent and the all-milk price declined to $12.90 per hundredweight from $15.14 per hundredweight in 2005. Output per cow in 2006 was affected by abnormally high temperatures in much of the country during the summer, but growth is expected to follow a more normal pattern in 2007. Producers are expected to reduce cow inventories during the year as feed costs likely will increase more rapidly than milk prices through much of 2007. Demand prospects for dairy products, both domestically and for export, are stable for 2007. Commercial exports of nonfat dry milk and whey are likely to remain strong, reflecting limited supplies from competing exporters. Domestic demand for cheese and butter is also likely to remain firm, thus, prices of cheese, butter, nonfat dry milk, and whey are all forecast higher in 2007 and will support the all-milk price at $14.70 per hundredweight. With product prices above support, no CCC net removals are forecast.

Longer-Term Market Impacts of Biofuels

Biofuels are not the only factor affecting agricultural markets, although they have certainly become a major force in shaping the markets for corn and soybeans. We are now projecting corn prices at over $3 per bushel for several years into the future compared with about $2 per bushel in 2004/05 and 2005/06 (Table 1). These are historically high corn prices (Figure 2). We are also projecting that almost 83 million acres of corn will be harvested for grain in 2010/11—6 million acres more than we projected for 2010/11 in last year's long-term baseline

projections. For comparison, the last time corn harvested acres reached 83 million was in 1945 (Figure 3).

With respect to biodiesel, we also expect to see significant growth. For 2006/07, biodiesel is expected to account for 2.6 billion pounds of soybean oil or 13 percent of total soybean oil use. In our most recent long-term agricultural projections, we expect biodiesel production to increase to about 700 million gallons per year and use about 24 percent of soybean oil production in 2010/11 (assuming continuation of the biodiesel tax credit). This is less than the capacity currently estimated by the National Biodiesel Board. In our view, higher soybean oil prices will slow biodiesel expansion and reduce capacity utilization. Due mostly to switching acres from soybeans to corn, we now project soybean prices to exceed last year's baseline projection by $1.05 per bushel in 2010/11 and soybean oil prices to be about $0.07 per pound higher in 2010/11.

The rapid growth in biofuels has generated many questions about its sustainability and the current and potential impacts of this evolving industry on livestock markets and consumers. In the short-term, livestock and poultry profitability declines under higher corn feeding costs. For example for hogs, which are heavily dependent on corn and limited in the level of DDGs that can be put into feeding rations, and a $1 per bushel increase in the price of corn would raise the cost of producing hogs by about $4 per cwt of weight gain. However, as markets adjust and supplies are reduced, some of those cost increases are passed to consumers.

The prospective longer term adjustment in the livestock sector is graphically portrayed in Figures 4 through 6, which show projected production and returns for beef, pork, and poultry. The adjustment for beef, pork, and poultry is similar. Each production sector experiences a decline in returns as cost increases due to higher feed prices are not immediately offset by higher livestock product prices. Falling returns eventually lead to less production and higher prices.

To get a sense of how longer term livestock market prospects have changed compared with conditions a year ago, we can compare our current projections released in February 2007 with those released in February 2006. It is important to emphasize that not all of the difference in projections is due to biofuels. Higher biofuel production is a major factor, however, the change in projections also reflects global trade developments, a substantially higher projected price of crude oil compared with a year ago, and changes in consumer preferences. With that caution in mind, we now project broiler, beef, and pork production to be 9, 5, and 1 percent lower in 2015, compared to our long-term projections for 2015 made in February 2006. With less production, we also see farm-gate livestock prices anywhere from 7 to 14 percent higher in 2015 when compared to our February 2006 projections, and the Consumer Price Index for pork, poultry, and beef and veal averaging 1 to 1.5 percentage points higher over the next 8 years. The CPI for food would average 0.3 percentage points higher. These higher prices lead to more normal livestock sector returns and eventually to a rebound in production.

Biofuels is Global

The United States is not alone in its attempt to replace petroleum with biofuels. In 2005, global ethanol production approached 10 billion gallons, with the United States and Brazil, by far, the dominant ethanol producers. The United States and Brazil each produced over 4 billion gallons of ethanol in 2005, accounting for almost 90 percent of global production. While most ethanol production is consumed domestically, the United States also imports ethanol. In 2006, the United States imported 653 million gallons of ethanol, with Brazil accounting for two-thirds of our imports.

With respect to biodiesel, the European Union (EU) is by far the biggest producer of biodiesel in the world because the majority of the cars in the EU are diesel cars. In 2005, the EU produced about 800 million gallons of biodiesel and the European Commission set a goal that by the end of 2005, biofuels should account for 2 percent of the energy used in transportation with the target growing to 5.75 percent by 2010. At the end of 2005, the actual share energy used in transportation from biofuels was 1.4 percent. The European Council has now suggested a new goal of 8 percent by 2015.

Currently less than 2 percent of the European farmland is cultivated with crops for biofuel production. To reach the 5.75 percent target it would take approximately 15-17 percent of the total arable land in the EU. The European Commission considers such huge amount of land for producing biofuel crops undesirable and proposes to produce half the biofuel from domestically grown crops and import the other half.

Other countries are requiring the use of biofuels or considering increasing their capacity. For example:

- Indonesia. On January 9, 2007, 67 agreements for biofuel development were signed with an estimated investment value of $12.4 billion. If current targets are met, almost 2.5

million tons of biofuels (approximately 800 million gallons), mostly biodiesel, would be produced in Indonesia during 2008. This would represent a large increase over current production, which is around 300,000 tons (approximately 100 million gallons).

- Philippines. On January 11, 2007, the President of the Philippines signed into law a biofuels mandate that requires the use of gasoline with a blend of 5 percent bio-ethanol within two years. The mix would be increased to 10 percent within four years.
- Canada. In early 2006, the government mandated that by 2010, biofuels would account for 5 percent of all fuels consumed in the transportation sector. If this mandate is to be met, annual ethanol and biodiesel must increase to about 800 million gallons by 2010; a doubling of current biofuels capacity.

The Administration's 2007 Farm Bill Proposal

The 2007 farm bill provides an opportunity to address the implications of expanding renewable energy to support the President's goal of reducing gasoline consumption by 20 percent in 10 years. The 2007 farm bill proposal is a comprehensive program that augments efforts by the Department of Energy in that it promotes research and development (R&D), feedstock availability, and cellulosic ethanol production.

With respect to R&D, the 2007 farm bill proposal would create an Agricultural Bioenergy and Biobased Products Research Initiative. This initiative would be funded at $500 million over 10 years and would focus research and development (R&D) on improving biomass production and sustainability and improving biomass conversion in biorefineries. A second proposal would build on the Biomass Research and Development Act and provide $150 million over 10 years to increase the annual competitive grant funding for biomass research, focusing on cellulosic ethanol.

To insure ethanol producers have access to a reliable feedstock, the 2007 farm bill proposal would provide the authority for a Cellulosic Bioenergy Program. The Cellulosic Bioenergy Program would be funded at $100 million and would share the cost of biomass feedstocks used by cellulosic ethanol producers. In addition, the 2007 farm bill proposes a Biomass Reserve Program (BRP) operated under the Conservation Reserve Program (CRP). The BRP would establish clear requirements that biomass could only be harvested with sufficient environmental protections, and rental payments would be limited to income forgone or costs incurred by the participant to meet conservation requirements in those years biomass was harvested for energy production.

The 2007 farm bill proposal would also create a Forest Wood-to-Energy Program. This program would be funded at $150 million over 10 years and its goal is to accelerate development and use of new technologies to more productively utilize low-value woody biomass resources, offsetting the demand for fossil fuels and improving the forest health.

Lastly, the 2007 farm bill proposal recommends expanding the 9006 loan guarantee limits for cellulosic ethanol projects to $100 million with additional authority to exempt these cellulosic projects from the cap on guarantee loan fees and investing $210 million to support $2.17 billion in guaranteed loans for the construction of cellulosic ethanol facilities over 10 years.

Conclusions

There are many uncertainties in how biofuels and agricultural markets will unfold in the coming years, including global economic growth; the prices of crude oil, gasoline, and ethanol; the rates at which cellulosic ethanol and other alternative energy are commercialized; the emergence of technologies that alter the use of ethanol co-product feeds; and the increases in yields of corn, soybeans and other crops, to name several.

Our view of how markets may unfold makes a range of assumptions about these uncertain factors, which, of course could change. One thing seems clear: the growth of biofuels in the United States has the potential to greatly reduce reliance on imported oil, and in doing so, transform U.S. agriculture. This powerful new source of demand for crops will shrink the long-term excess production capacity. The result is sharp increases in market returns for energy crop producers, more crop production, more investment in rural America in biofuel refineries, greater rural economic activity in crop and diversity in biofuel production regions, and sharply reduced taxpayer spending on farm programs. In the near term, consumers are facing higher food prices and livestock producers are facing higher feed costs and reduced returns and there will be a period of adjustment. However, increased supplies of co-product feeds and strong consumer demand for livestock products will help cushion the adjustment. In addition, as we progress down the road to commercial-scale cellulosic ethanol, feed prices should moderate as corn yields rise faster than the annual increases in demand for corn for ethanol, as ethanol production stablilzes.

Mr. Chairman, that completes my statement, and again, thank you for the opportunity to discuss this highly important issue facing U.S. agriculture.

Figure 1. Projected Soybean Oil Used for Biodiesel Production and Share of Total Domestic Soybean Oil Production.

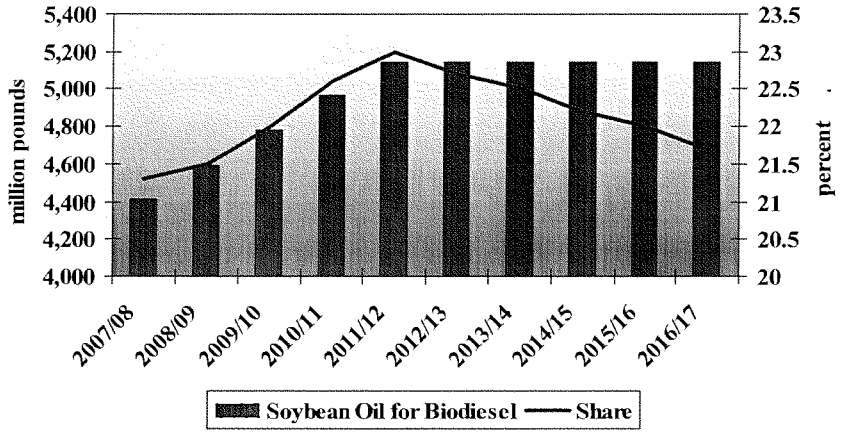


Figure 2. Nominal Corn Prices, 1930-2016

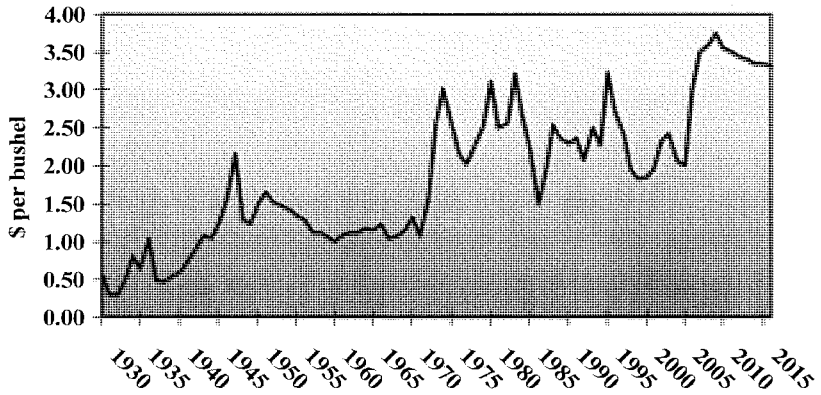


Figure 3. Harvested Corn Acres, 1930-2016

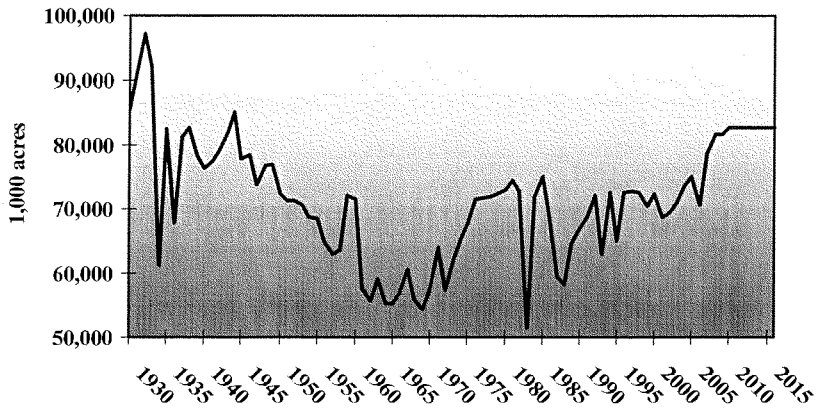


Figure 4. Beef Production and Returns over Cash Costs for Cow-Calf Enterprises, 2007-16.

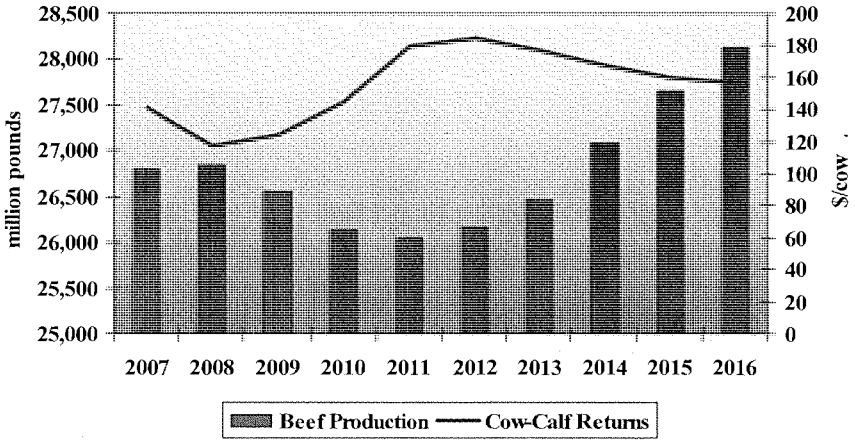


Figure 5. Pork Production and Returns Above Cash Costs for Farrow to Finish, 2007-16.

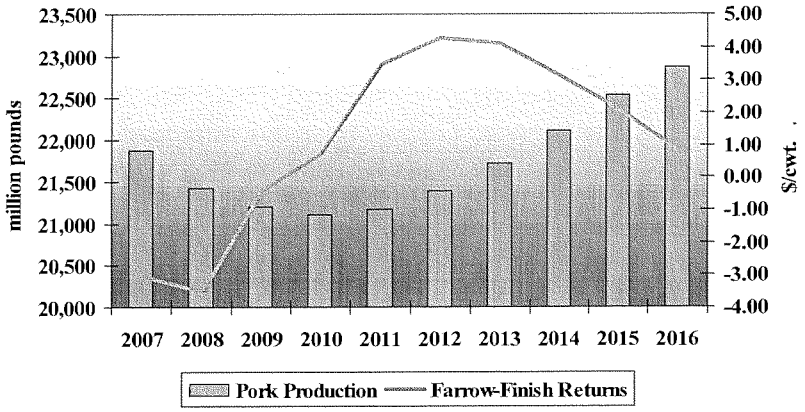


Figure 6. Chicken Production and Net Returns, 2007-16.

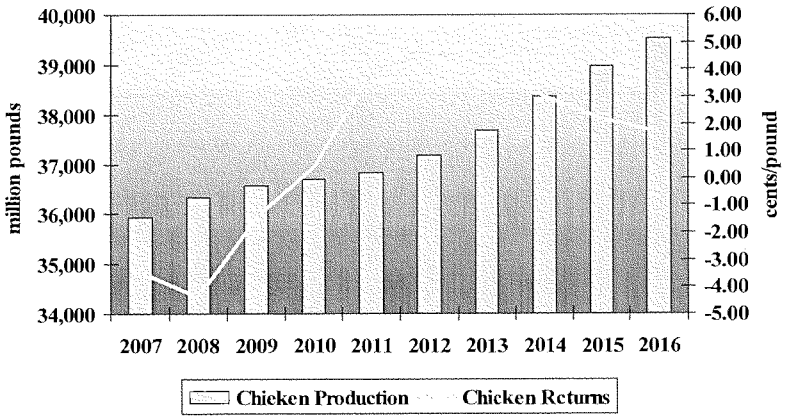


Table 1. Comparison of the USDA Long-Term Projections for 2015 Made on February 2006 and February 2007.

	Feb-06	Feb-07	Percentage Difference
Harvested Corn Acres (millions)	77.2	82.8	7.3
Corn Production (million bushels)	12,655	13,935	10.1
Fuel Alcohol Use (million bushels)	2,915	4,300	47.5
Fuel Share of Corn Production (percent)	23.0	30.9	34.0
Corn Prices ($/bushel)	$2.60	$3.35	28.8
Stock to Use Ratio	8.9	5.5	-38.2
Net Returns ($/acre)	$194.51	$332.00	70.7
Harvested Soybean Acres (millions)	69.4	67.7	-2.4
Soybean Production (million bushels)	3,075	3,055	-0.7
Soybean Oil Production (million pounds)	22,095	23,390	5.9
Soybean Prices ($/bushel)	$6.10	$6.75	10.7
Soybean Price Oil ($/pound)	$0.26	$0.31	16.0
Stock to Use Ratio	8.1	7.5	-7.4
Net Returns ($/acre)	$170.17	$195.00	14.6
Total Beef Production (million pounds)	29,201	27,649	-5.3
Choice Steer Prices, Nebraska ($/cwt.)	$80.51	$91.59	13.8
Cow-Calf Returns above Cash Costs ($/cow)	$112.49	$159.52	41.8
Total Pork Production (million pounds)	22,839	22,535	-1.3
Hog Farm Price ($/cwt.)	$48.41	$53.82	11.2
Farrow-Finish Returns above Cash Costs ($/cwt.)	$0.75	$2.14	185.3
Total Chicken Production (million pounds)	42,878	38,960	-9.1
Broiler Farm Price (cents/pound)	44.00	47.10	7.0
Net Returns (cents/pound)	0.40	2.19	447.5
Annual Avg. Change in CPI (1982-84=100) during 2007-2015 for:			
Beef and Veal	0.9	2.2	
Pork	1.4	2.3	
Poultry	1.5	3.0	
Food away From Home	2.2	2.8	
Food at Home	2.1	2.2	
All Food	2.1	2.4	
Crude Oil (Refiner Acq. Cost)	59.5	70.3	18.2

Testimony

on behalf of the

National Cattlemen's Beef Association

with regard to

The Impact of Higher Feed Costs on the Cattle Industry

submitted to the

United States House of Representatives - Committee on Agriculture
Subcommittee on Livestock, Dairy, and Poultry

The Honorable Leonard Boswell, Chairman

submitted by

Mr. Ernie Morales

Member
National Cattlemen's Beef Association
Texas Cattle Feeders Association

March 8, 2007
Washington, DC

Mr. Chairman, members of the Committee, my name is Ernie Morales, and I am a rancher and cattle feeder from Devine, Texas. I appreciate the opportunity to be here today to talk about high feed prices and the impact we are feeling in the cattle business. As an independent cattleman, I have first-hand experience in what these prices are doing to my bottom line.

Our industry is currently facing multiple feed pressures. Due to widespread drought, last year's wildfires, and the recent severe winter weather, we have seen our hay and forage supplies dwindle. The U.S. Department of Agriculture reported that U.S. hay stocks had dropped to an 18-year low of 96.4 million tons as of December 1, 2006. We have experienced dry conditions for several years now, so this year's conditions caused an even further depletion of tight forage stocks. From emergency grazing of CRP acres to hay hotlines, our industry has been working hard to try to find enough supply to meet the demand. We have been forced to utilize lesser quality forage as a result. Although devastating, these winter conditions will hopefully help ease the drought and allow us to replenish our hay supplies. Regardless, we will continue to see high hay demands and prices as drought persists in other areas of the country and we see some hay acres converted to corn.

As with most of my counterparts who feed cattle, corn is our primary feed stock accounting for about 85 of every 100 pounds of cattle feed. We'll feed about two billion bushels of corn to cattle this year out of the nearly six billion bushels fed to livestock. The livestock industry remains the largest consumer of corn by utilizing almost 58 percent of the total corn used over the past decade.

From a cattle feeder's perspective, every $1 per bushel increase in the price of corn means we must pay approximately $22 per hundredweight less for a 550-pound calf just to have a chance to make the same income. For the cow-calf producer, that's roughly a $121 per head reduction in price. So in reality, cattle feeders absorb a portion of higher corn prices in the form of increased operating costs and cow/calf producers absorb a portion in the form of reduced prices for their calves.

From January 1st to February 16th of this year, the average Omaha cash corn price was $3.68. The average price from that same time period last year was only $1.91. That is over a 92 percent increase in just one year. The most pronounced effect of this increase was seen last fall when the price for 600 pound feeder steers between September and the end of 2006 fell 20 percent from $122/cwt to $102/cwt.

This increase in corn prices has moved our cost of gain from an average of $0.55 per pound in 2006 to $0.75 per pound in 2007. Analysts at Cattle-Fax predict that this number may even move into the low $0.80's as corn demand increases. With increased inputs and decreased prices for cattle, every rancher and cattle feeder in the country is seeing a hit to their bottom lines.

This is not a cost that neither the producer, nor I as a feeder, can pass along to consumers because consumer demand for our beef is fairly inelastic. Although we have built

demand and maintained that through increased retail beef prices over the past several years, there is only so much that a consumer is willing to pay before they begin to choose other protein options. This means that in the short run, the majority of these higher feed costs are borne by cattle feeders and cow/calf producers. Retailers and packers won't pay any more for fed cattle.

As we are all aware, the primary driver of these corn prices is ethanol. As of February 25th, the Renewable Fuels Association's website puts current U.S. ethanol production at 5.6 billion gallons with another 6.2 billion gallons currently under construction. There are currently 114 biorefineries in production, with another 78 under construction, which when fully operational, will need roughly 4.25 billion bushels of corn.

In time, we believe U.S. corn producers can and will meet this rapidly expanding additional demand for corn. However, until the appropriate acreage and yield adjustments can be made during this transition, USDA's current projection of a 50 percent year-to-year increase in ethanol-based corn demand from 2.15 to 3.2 billion bushels will be felt squarely in the wallets of every feeder and cow-calf producer in this country.

So how is the cattle industry supposed to respond? One way is to look at alternative feed sources. Ethanol production results in distillers grains as a co-product. Distillers grains are used as wet (35 percent dry matter), modified wet (50 percent), or dried (90 percent). Each bushel of corn used for ethanol production returns about 18 pounds of dried distiller grains. These co-products can be used in our feed rations, and of all the livestock species, cattle are the ones that can best utilize these co-products.

On average, about 30 percent of a cattle ration can be switched to these ethanol co-products when a feedlot can obtain them, and some feedlots are trying as much as 40 percent. However, at these levels, there is concern about cattle performance, mostly in regards to the higher sulphur content of distillers grains, which tends to suppress appetites and tie up micronutrients that are essential to cattle health. With increased input costs and the inherent risk of cattle feeding, the last thing we want to see is cattle not eating and not putting on weight.

We are also concerned about the variability of the co-products from ethanol production. It has proven difficult to get a consistent product which, in turn, makes it hard to formulate a balanced ration. Nearly every truck load of distillers presents something different for our nutritionist to deal with.

We're also keeping a close eye on any impact that distillers grains might have on the quality of our end product. The beef industry has worked hard for many years to build beef demand. This demand, however, is based on the quality of our product, and any changes to that quality could jeopardize a consumer's willingness to purchase our beef.

Another critical component of our costs is transportation. Basis levels for corn have skyrocketed to historic levels in recent months in Texas and other parts of the country,

and there are very limited risk management tools out there to mitigate these costs. Previously, I mentioned that we're in the midst of a historic transition in the U.S. cattle feeding business. If my operation is to be successful during these historic structural changes to this industry, I believe the key will be our ability to rapidly expand and maintain a viable transportation system. During NCBA's annual convention five weeks ago in Nashville, the grain consulting firm ProExporter indicated that in less than 10 years, this historic transition to biofuels will require a 68 percent increase in rail/ton/miles for bulk agricultural commodities. This is a shocking projection that may very well dictate the success or failure of our business in the coming years.

I should also point out that while wet distillers grains actually makes a better cattle feed than dried distillers grain, a feedlot must be within about 150 miles of the production source in order to manage or handle a wet co-product. Wet distillers are extremely hard to mechanically handle and it is also susceptible to spoilage. Dried distillers grains, or DDGs, are better to handle, but it is still hard to mechanically convey since it just doesn't flow through hoppers and equipment like corn.

At about 90 percent of the value of corn, the use of wet or dry distiller's grains will help mitigate costs, but corn must still make up the majority of the feed ration. The price of distillers grains will also be something to watch. Despite the hype, supplies of ethanol co-products remain tight as most ethanol plants have used 6-12 month forward contracts to lock-in co-product prices. We're hearing that it may be late 2007 before co-product supplies begin to reach a point of being readily available in a spot market.

In the meantime, we fully expect to see an extremely volatile corn market in 2007. As corn becomes more tied to ethanol and energy, we can expect it to become more and more influenced by the same factors that influence energy prices. Increased volatility puts further pressure on the users of corn. This increased volatility will also bring in yet even more speculative interest in agricultural futures markets such as hedge funds.

NCBA supports our nation's commitment to reduce dependence on foreign energy by developing forms of renewable energy such as ethanol. We recognize that federal support of the ethanol industry has been necessary to encourage development of basic production technology, however, we as cattlemen believe in a market-based economy and there is concern amongst our industry about the influence of renewable energy policy on the price of feedstuffs such as corn. This is why we support a transition to a market-based approach for the production and usage of ethanol produced from corn. NCBA calls for allowing the existing blenders tax credit and the ethanol import tariff to sunset as scheduled in 2010 and 2009 respectively. The Center for Agriculture and Rural Development at Iowa State University produced a comparison of corn prices with and without the blenders credit. At a price of $50 for a barrel of oil, the price of corn with the credit was $2.67 a bushel. Without the credit, the price fell to $1.83 per bushel.

NCBA members believe that these credits have served a valuable purpose, but at a projected annual production level of somewhere between 12 and 15 billion gallons, it is clear that this is no longer a fledgling industry. As such, when these incentives expire,

this industry must be subjected to equivalent market forces as the U.S. beef industry. Said another way, we believe the U.S. beef industry can and will remain competitive as long as we have the ability to compete on a level playing field with the ethanol industry for that bushel of corn.

The cattle industry has always depended on the markets to drive our business, and we are firm believers in free enterprise fostering innovation. That is why we believe that other renewable fuel sources, such as cellulosic feedstocks for ethanol, hold great promise. It, and other more efficient means of producing biofuels, could also potentially help to utilize manure and ease the environmental concerns our industry faces. For example, we continue to support the use of animal fats and oils in the production of biodiesel as we also see this as a way to decrease our energy dependence by utilizing what has traditionally been a waste product.

Mr. Chairman, thank you for the opportunity to testify here today. Our industry looks forward to working with you and the Committee in finding ways to develop renewable fuels that will not put an undue burden on any sector of agriculture.

Testimony of Rob Wonderlich
House Agriculture Committee Hearing
Washington, D.C.
March 8, 2007

I am Rob Wonderlich, a dairy farmer from Ollie, Iowa. My wife, Corinna, and I operate a 270-cow dairy that produces more than 6.5 million pounds annually (or 760,000 gallons). In addition, we farm 520 acres of cropland. We have been in the dairy business for 27 years. I serve on the board of directors of Dairy Farmers of America, Inc. (DFA), a national milk-marketing cooperative based in Kansas City, Missouri, with dairy farmer-member owners in 49 states. I also serve as a director on DFA's Central Area Council.

In addition to my roles with DFA, I represent my fellow local dairymen by serving on the Iowa Dairy Nutrition Advisory Committee, which is a branch of the Midwest Dairy Association. Also, my wife and I served as the secretary couple on National Milk Producer Federation's Young Cooperator (YC) Committee in 1991. Finally, in 1989 we received the Outstanding YC Farm award for the Upper Midwest region of Mid-American Dairymen.

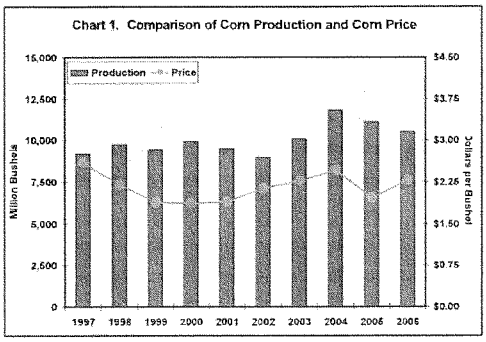
I appreciate the opportunity to testify at this hearing today.

Today, I am here before all of you to express my concerns about the effect of increased costs associated with dairy operations. Specifically, I will speak to you about increased feed and fuel costs and how these two items have negatively impacted not only my operation, but also the other 62,000 dairy farms[1] across the United States.

1) As many of you are well aware, commodity grain prices, particularly corn, have dramatically increased over the past seven months to price levels not seen since the mid 1990s. Many economists are attributing this phenomenon to a growing demand from the ethanol industry, which uses corn as its primary feedstock. While this is great for U.S. grain farmers that have experienced several consecutive years of depressed prices, it is tragically affecting the financial viability of dairy farmers. Feed costs are the greatest cost for most dairies and an increase to feed costs directly impacts farm finances. On my personal farm, I have calculated that the recent increase in grain prices has increased my cost of production by $1.90 per hundredweight (+45 percent), which is extremely close to the U.S. average feed cost increase of $1.89 per hundredweight[2]. I would like to note before proceeding, that on my operation I purchase only 50 percent of my feed. Many other dairies, however, are extremely dependent on purchasing feed from outside entities and are even more susceptible to increased feed costs.

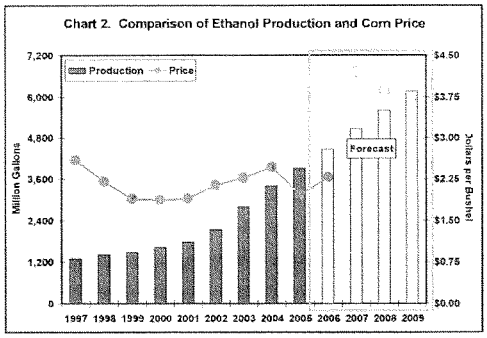
[1] Actual U.S. dairy farm number for 2006, according to USDA's February 2007 *Milk Production* report, is 61,990 farms.
[2] Source: USDA Economic Research Service. *Farm Income and Costs* report. http://www.ers.usda.gov/Briefing/FarmIncome/. 27 February 2007.

Looking at Chart 1, you will see a comparison of U.S. corn production and the annual average U.S. corn price. This chart represents a typical supply and demand relationship within the corn market.



Source: USDA National Agricultural Statistics Service. *Crop Production* and *Agricultural Prices* reports.

Over the previous 10 years, the annual average corn price has not been above $2.60 per bushel; however, as seen in Chart 2, the Chicago Board of Trade[3] futures market is valuing corn no less than $3.75 over the next three years, which will greatly damage the profitability of dairy operations.



Sources: USDA National Agricultural Statistics Service. *Agricultural Prices* Report.
Renewable Fuels Association. Industry Statistics.
Chicago Board of Trade. Corn Futures Prices (December contracts closing prices as of February 28, 2007)

[3] Source: Chicago Board of Trade. December 2007, 2008 and 2009 closing prices as of February 28, 2007.

As previously stated and as depicted in Chart 2, the futures market is primarily being driven by increased ethanol demand[4]. Although the ethanol production forecast is built on the most recent five-year trend, the forecast seems to be aligned with price expectations according to corn futures prices on the Chicago Board of Trade, therefore showing the significance of the ethanol industry on corn and feed prices.

2) Increased operating costs are not the only factor of my profit equation that is being affected by higher feed costs. My farm revenues are being stressed as the value of bull calves born from my dairy cows has been drastically reduced by almost half. As bull calves require higher grain diets that typically require large quantities of corn in preparation for slaughter, the calves' value has dropped due to calf feeders' unwillingness to buy corn-hungry calves. Therefore, my personal revenue from bull calf sales has declined $100 per bull calf (-50 percent).

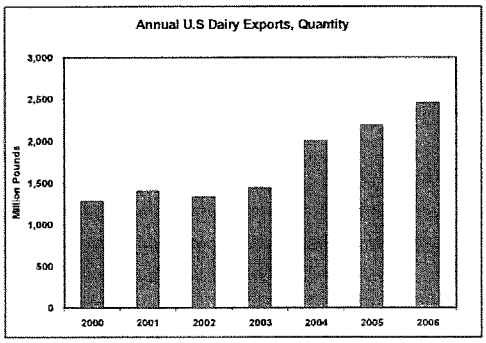
3) Not only have feed costs been burdensome to dairy farm profit margins, but increased energy costs have been as well. Based on my farm's financial reports, my energy costs have doubled since 2004, which on a hundredweight basis is an operating cost increase of $0.40 to $0.50 per hundredweight. USDA reported a similar finding, as the average energy increase for a U.S. dairy farm has increased $0.30 per hundredweight since 2004[5].

4) Partially due to increased operating costs from feed and energy, the value of milk has started to increase after being substantially lower for the past 12 months. However, the gains in milk prices have not fully offset the increased operating costs. According to USDA, the all milk price received in Iowa during January 2007 was $14.40 per hundredweight, $1.90 higher than June 2006[6]. Of note, I would like to add that milk prices in June 2006 were not good prices for dairy farmers[7]. The milk-feed ratio (a statistic that is the price of a hundredweight of milk divided by the price of a hundredweight of feed) for February 2007 shows a ratio of 2.32, the lowest since June 2003. In June 2003, this ratio was higher due to a MILC payment, which was not available in February 2007 because the milk price was too high. The increase in milk price is returning me to average revenue. From 2003-2006 the average all milk price received in Iowa was $14.62 per hundredweight[8]; the current milk price is just under the state's average price receipt. As you can see, higher operating costs are strangling opportunities for my

[4] Renewable Fuels Association. Industry Statistics. http://www.ethanolrfa.org/. 28 February 2007.
[5] Source: USDA Economic Research Service. *Farm Income and Costs* report. http://www.ers.usda.gov/Briefing/FarmIncome/. 27 February 2007.
[6] Source: USDA National Agricultural Statistics Service. *Agricultural Prices* report. http://www.ers.usda.gov/Briefing/FarmIncome/. 27 February 2007.
[7] The Iowa all milk prices from May 2006 through July 2006 were the lowest prices received by dairy farmers over the past 38 months. Source: USDA National Agricultural Statistics Service. Agricultural Prices report.
[8] Source: USDA National Agricultural Statistics Service. *Agricultural Prices* report. http://www.ers.usda.gov/Briefing/FarmIncome/. 27 February 2007.

farm to produce a reasonable profit. And it does not only have an effect on my farm, it also is affecting 62,000 other dairy farms in the U.S.

A main factor that has increased milk prices over the past months has been strong global demand for domestically produced dried milk powders and dairy proteins. Chart 3 shows the annual export volume for dairy products since 2000.



Source: USDA Foreign Agricultural Service. U.S. Trade Exports.

Growth in U.S. dairy exports is a huge accomplishment that has taken a considerable amount of effort between dairy-oriented organizations and the national government to complete. However, if milk prices continue to increase, so that dairy operations can cover operating costs, the work that has been put into growing global demand for U.S.-produced dairy products may have been for nothing as higher valued U.S. dairy products will not be competitive with other global products. Therefore, foreign countries will be unwilling to purchase our dairy foods and hurt our export market.

As we look at the balance between domestic energy and food policies, we need to be sure to consider all potential benefits or consequences. If our domestic energy policies cause an increase in the cost of food, we may create a scenario where we are subsidizing one group (those who can spend higher amounts of their disposable income on transportation) at the expense of other groups (those who have to spend higher amounts of their disposable income on food). If feed costs for livestock and dairy producers continue to increase, the higher costs will eventually lead to higher food costs. During the last three years when milk prices where at higher levels (2001, 2004 and 2005), the farm price of 100 pounds of milk was approximately $10.50 higher than the cost of 100

pounds of feed[9]. Based on where futures markets[10] anticipate feed costs being in the next two to three years, farm milk prices would likely rise to record highs in order to attract enough production to meet demand. While I am not opposed to high milk prices, consumers may be. We have to be careful of how high farm level milk prices impact consumers. If farm milk prices reach record highs, the retail prices of fluid milk, butter and cheese will follow. We do not want an unintended consequence of a domestic energy policy to be higher retail food prices that drive consumers away from healthy, nutritious products, such as dairy.

In closing, ladies and gentlemen, I want to thank Chairman Boswell and the House Subcommittee on Livestock, Dairy, and Poultry of the Committee on Agriculture for hearing my testimony. Despite any perception formulated from my comments today, I am a firm believer in renewable fuels derived from agriculture commodities, and further, I applaud the U.S. in trying to decrease its dependence on foreign oil. However, this biofuel revolution occurred very quickly and did not allow for farmers, such as myself, in the various livestock industries to properly adapt, which has sent a shock across the industries in the form of increased operating costs. Again, I appreciate your time. Thank you.

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[9] Source: USDA National Agricultural Statistics Service. *Agricultural Prices* report. http://www.ers.usda.gov/Briefing/FarmIncome/. 27 February 2007.
[10] Source: Chicago Board of Trade. 27 February 2007.

Written Testimony of

Joy Philippi

Pork Producer, Bruning, Nebraska

Immediate Past President

National Pork Producers Council

Before the

House Committee on Agriculture

March 8, 2007

Washington, D.C.

INTRODUCTION

I am Joy Philippi, a pork producer from Bruning, Nebraska, and the immediate past president of the National Pork Producers Council. I want to thank the Chairman and the Members of the Committee for inviting me to speak today regarding the impact of corn-based ethanol on my industry.

The pork industry is of immense importance to the United States. Drs. Dan Otto and John Lawrence at Iowa State University just completed a major study of the value added by the U.S. pork sector. They estimate that the U.S. pork industry is directly responsible for the creation of 34,720 full-time equivalent jobs. They calculated that my industry generates 127,492 jobs in the rest of agriculture. We are responsible for 110,665 jobs in the manufacturing sector, mostly in the packing industry, and 65,224 jobs in professional services such as veterinarians, real estate agents and bankers. All told, we are responsible for 550,221 mostly rural jobs in the U.S. Nationwide, more than 67,000 pork producers marketed more than 103 million hogs in 2005, and those animals provided total gross receipts of $15 billion. Overall, an estimated $20.7 billion of personal income and $34.5 billion of gross national product are supported by the U.S. hog industry.

Pork producers operate on very tight margins, and they have an enormous respect for market forces. Producers have not asked for any form of government subsidies in previous farm bills, and the industry is among the most vocal advocates of free trade and free trade agreements. New technologies have been adopted and productivity has been increased to maintain the U.S. pork industry's international competitiveness. As a result, pork exports have hit new records for the past 15 years. In 2006, exports represented 15 percent of production.

PORK PRODUCERS HAVE CONCERNS ABOUT ETHANOL

Until recently, the pork industry was optimistic about its future. Continued worldwide demand for pork and pending free trade agreements with Peru, Colombia and South Korea, as well as the possibility of a successful WTO Doha Round agreement that would increase access to the European and Japanese markets, painted a rosy economic outlook for pork producers.

Last summer, however, the optimism began to fade in large part because the principal source of the industry's competitiveness – reasonably priced and abundant feed grains – started being diverted in very large quantities to bio-fuel production, particularly corn-based ethanol.

Pork producers support efforts to reduce the country's dependence on foreign oil. Most even supported the government subsidy that was being given to the ethanol industry because they supported energy security and saw the economic activity that ethanol plants were generating. Additionally, many pork producers also are corn producers, and they viewed ethanol as a way to get corn market prices up to the loan rate, a price where corn production was profitable without direct government support.

Since world crude oil prices hit $60 a barrel, the ethanol industry has not needed financial support. However, the government continues to support the industry, and this has proved to be a boon for those who own ethanol plants. These plants were buying corn at $2 per bushel and turning it into $6 or $8 worth of ethanol. They also were benefiting from a host of state and federal tax credits and outright construction subsidies from the USDA and individual states.

Ethanol prices also have been high because ethanol is being used as an oxygenate for gasoline and because the United States uses import tariffs to restrict ethanol imports from Brazil. The result has been an explosion in ethanol production that has not yet reached its peak.

FEED AVAILABILITY CRITICAL TO PORK PRODUCERS

Pork production has always tended to locate in counties and countries that have a surplus of feed. This is true because feed surplus areas have always had lower feed prices than feed deficit areas and because feed is such an important component of the total cost of livestock production. Having access to abundant feed supplies is what has allowed the U.S. pork industry to grow and to export. Any policy that reduces our access to feed will obviously have a negative impact on our competitiveness both domestically and internationally.

Let me put the growth of the corn-based ethanol industry in perspective. Last year the U.S. produced approximately 10.75 billion bushels of corn. The entire livestock industry consumes

more than 6 billion bushels of corn annually, with the U.S. pork industry using about 1.1 billion bushels. More than 1.3 billion bushels are processed for food and industrial uses and about 2 billion bushels are exported. In calendar year 2007, the ethanol industry will use 2.72 billion bushels of corn, and when the plants that are currently under construction are completed, the ethanol industry will need 4.9 billion bushels per year. With average yields of 157 bushels per acre, the growth in the ethanol industry in just one crop year will either require an additional 12.5 million acres of corn or cutbacks in livestock production or exports.

Industry expert and former USDA agriculture economist Dr. Bill Tierney keeps track of ethanol plants that are being planned but that have not yet started construction. He estimates that the eventual size of the ethanol industry could double again by 2010 so that total annual corn usage for ethanol would reach 10 billion bushels. The industry would need to expand to 12.7 billion bushels if President Bush's proposed 35 billion gallon ethanol mandate were all supplied from corn-based ethanol.

CORN AVAILABILITY CONCERNS IN SUMMER 2007, 2008

Pork producers are worried about the availability of corn in the summers of 2007 and 2008. Dr. Bob Wisner at Iowa State keeps a very close watch on corn supply and use. (His current balance sheet is attached.) He projects an end-of-year corn carryover of only 685 million bushels in 2007. This is less than three weeks' worth of utilization. The last time there was this small a level of carryover was in the fall of 1996 when supplies got down to 2.6 weeks' worth. Corn was so scarce in Iowa that it had to be shipped in from Texas.

Dr. Wisner also points out that his forecast assumes that corn exports this year will increase by the 2.5 percent projected by the USDA. However, corn export sales to date are running 15 percent above the same period last year. If this pace of export sales continues, parts of the country could simply run out of corn. It may be that the recent surge in export sales is an aberration, but it also may be true that corn importers have begun to stockpile because they realize that the United States may not have enough corn and because other exporters such as China and Argentina have begun to restrict their corn exports.

Projections are that about 26 million acres of corn will be needed to supply the ethanol industry by 2008, about half of which will be for new plants that come on line in 2007. Prices of corn futures contracts for delivery in 2008 are providing strong incentives for farmers to plant more acres to corn, but there simply may not be enough corn to meet the country's food, fuel *and* feed needs – and any shortfall would be exacerbated by a short crop.

Indeed, right now is some parts of the country, including in my home state of Nebraska, you cannot buy corn at any price – there is no corn to purchase.

HIGHER CORN DEMAND MEANS HIGHER PRODUCTION COSTS

Markets have already responded to the current and expected surge in corn demand, with corn prices rising from about $2 per bushel last summer to about $4 per bushel now. As these higher corn prices have begun to attract acres from soybean production to corn production, the price of soybeans has also increased to reflect the imminent scarcity of soybeans. The price of soybean meal has increased from about $175 per ton to about $220 per ton.

Recently updated estimates by Iowa State University indicate that finished pigs require 12.3 bushels of corn, 120 pounds of soybean meal and, where it is readily available, 32.5 pounds of DDGS, an ethanol production process by-product. For most of 2005, pork producers could purchase corn for about $2 per bushel and soybean meal for $175 per ton. The total cost of corn and soybean meal per animal was $35.38, and total production costs averaged $100 per animal. Pigs born in March 2007 will consume 12.8 bushels of corn valued near $4 per bushel ($51.20) and 123.3 pounds of soybean meal valued at about $220 per ton. So, instead of the $35.38 per head cost for pigs sold before the recent run-up in prices, pigs sold in September 2007 will have corn and soybean feed costs closer to $65 per head. Total costs will have increased from $100 to $130, a 30 percent increase in our total costs. In an industry that has seen average margins of $2 to $3 per hog since 1992, a $30 per head cost increase is a disaster. Spread over the entire industry for a full year, the impact of this cost is $3.12 billion. This ethanol boom is costing us $60 million per week.

ETHANOL IS DRIVEN BY SUBSIDY AND NOT BY MARKETS

Why is the ethanol industry in the middle of such an enormous expansion? First, it is selling an energy product that ultimately competes with crude oil. U.S. ethanol production is not going to drive down world crude oil prices, and as long as OPEC is successful at maintaining crude at the current $60 per barrel target, ethanol will have a price floor. The ethanol industry receives a blender's tax credit of $0.51 per gallon, which is equivalent to $1.40 per bushel of corn that it uses. This blender's credit was put in place when crude oil prices were much lower, and it has remained unchanged as crude oil prices have doubled.

The combination of high oil prices and generous subsidies gives the ethanol industry incentive to grow. It will be difficult for producers to compete against ethanol for corn as long as the ethanol industry receives the subsidies it does. In addition to the blender's credit, the ethanol industry benefits from a 10-cent per gallon income tax credit and a host of additional state and federal programs. We estimate that the total value of these subsidies is approximately $2 per bushel of corn that is used. Had ethanol not caused the price of corn to surge, the effect of these subsidies would have been to provide the ethanol industry with free corn. There is not a single industry in the world that can compete against a competitor who is this heavily subsidized.

HIGHER PRODUCTION COSTS MEAN HIGHER FOOD COSTS

The pork industry will adjust to changing costs as it always has. High production costs will reduce profitability and, initially, many producers will try to ride it out, hoping that other producers will reduce output first. Eventually bankers will be forced to foreclose on some operations, and some producers will simply decide to retire early. Production will eventually fall by enough to bring the hog market to a new equilibrium. According to Iowa State University's Center for Agricultural and Rural Development (CARD), pork production would need to decline by 10 to 15 percent from levels they otherwise would be to allow the industry to recoup the higher production costs. This adjustment could take years. CARD has estimated that a 30 percent production cost increase at the farm level will translate into a 7.5 percent price increase at the retail level. This surge will occur simultaneously in beef, dairy and broiler prices. We will end up with a smaller livestock industry in the U.S. and with higher retail prices and food price inflation.

And the question remains as to who ultimately will benefit from subsidized ethanol production. Ethanol plant owners have benefited greatly to date. Corn growers will certainly benefit from higher corn prices this year and possibly in 2008, and soybean growers will benefit as well during that period. Eventually, though, higher corn and soybean profits will be bid into higher cash rents for crop acres thus driving up production costs for corn and soybeans and reducing profits. Higher rents will drive up land prices, and the eventual beneficiaries will be landowners.

It seems certain that rural America will NOT benefit from the surge in ethanol. John Lawrence at Iowa State has calculated that a 100 million gallon ethanol plant creates about 80 jobs. But if the bushels of corn required to produce that much ethanol are diverted from use in pork production, rural America will lose 800 direct on-farm jobs[1]. Given the multiplier calculated for the pork industry, that would mean an estimated 12,000 lost jobs economy wide.

DISTILLERS GRAINS AND SWINE DIETS

The ethanol industry has suggested that all of the feed problems created by using a substantial portion of the nation's corn supply for ethanol production are irrelevant because of distillers grains, a major co-product of the ethanol production process. As we told the Senate Agriculture Committee in testimony Jan. 10 of this year, distillers dried grains with solubles, or DDGS, do little to allay the concerns of pork producers regarding the future cost and availability of feedstuffs and consequently, the well-being of our animals and the cost of pork to U.S. consumers. Pork producers have several issues with regard to feeding DDGS to pigs.

First, DDGS are quite inconsistent from ethanol plant to ethanol plant and even within a plant. There is variability in their nutrient content – protein, fat, phosphorus. If the fermentation or drying process for DDGS is changed or varies from batch to batch, it can have an impact on the digestibility of nutrients.

Additionally, corn can contain mycotoxins that are, in some instances, detrimental to pig performance. (Ethanol plants are required to check only for the presence of aflatoxin.) The presence of mycotoxins varies by growing season, location and environmental factors. Since the

[1] http://www.extension.iastate.edu/ag/LawrencePowerPoint.pdf

ethanol production process removes the starch (two-thirds of the volume) from corn, DDGS produced from mycotoxin-contaminated corn will have three times the level of mycotoxin that was present in the corn itself. Based on the percentage of DDGS fed and which toxins are present, pigs can experience multiple problems, including immune challenges, abortion and feed refusal. The mycotoxin issue is a limit on the widespread use of DDGS in gestation and lactation diets.

As pigs are fed increasing levels of DDGS, the corn oil present (also at three times the concentration as in corn grain) can increase the iodine value (soft fat) of the carcass. This can result in belly slicing problems and possible rancidity or shelf-life issues. A higher percentage of DDGS in the diet also can have a negative effect on carcass weights, most likely due to the increased fiber content of the DDGS.

Other concerns with DDGS include:

- Flowabililty – As plants try to extract more ethanol from every bushel of corn, some plants grind the corn into a finer material, creating flowability problems of the DDGS at the feedmill as well as in the complete feed in the feed bin.
- Pelleting – DDGS have been shown to decrease the pelleting efficiency at feedmills. As increased efficiency is needed from the pig due to higher feed costs, more feed will be pelleted. This will increase processing costs.
- Phosphorus levels – In late finishing, the pigs' phosphorus requirements can be fairly low. Higher percentages of DDGS fed to pigs could increase phosphorus levels and increase excretions, which must be factored into nutrient management plans and may restrict DDGS use at higher levels in late finishing rations.

Finally, DDGS are so much more useful in ruminant – beef and dairy – rations than in hog rations that the ruminant market will always bid it away from hogs. It will typically sell at a small discount to corn so that hog producers chose corn and ruminants chose DDGS.

CONCLUSION

Mr. Chairman and Members of the Committee, the U.S. pork industry supports the development and use of alternative and renewable fuels, but it believes – as this testimony lays out – that the industry faces significant challenges because of the rapid rise in ethanol demand. Given those challenges, pork producer delegates participating in NPPC's just-concluded National Pork Industry Forum approved the following resolutions:

- NPPC supports allowing the 51-cent per gallon ethanol blender's tax credit and the 54-cent tariff on imported ethanol to expire. The blender's credit is set to expire Dec. 31, 2010; the import tariff Dec. 31, 2008.
- NPPC supports – should the blender's credit be extended – development of a countercyclical blender's credit system based on the price of oil.
- NPPC supports the increased use of bio-diesel as a renewable fuel source.
- NPPC will seek and support incentives for capturing and digesting methane from swine farms as an alternative energy source.
- NPPC urges the federal government to appropriate funds for research on the use of bio-fuels co-products for swine feed rations and for research on swine utilization of distillers dried grains with solubles (DDGS) and their impact on meat quality and animal health.
- NPPC supports the findings of a Center for Agricultural and Rural Development study on the impact of corn-based ethanol production on the livestock industry and asks that they be considered during formulation of the 2007 Farm Bill.
- NPPC supports the incremental early release – without penalty – by USDA of Conservation Reserve Program acres back into crop production.

Mr. Chairman and Members of the Committee, NPPC stands ready to work with Congress to craft a market-based bio-fuels policy that will ensure the fuel, food *and* feed security of our country and that will help maintain a $15 billion industry that provides hundreds of thousands of jobs and that helps feed the world.

11/28/06 Corn Balance Sheet (Mil. Bu.)

	2004-05	2005-06	Nov. '06 for.	Projected 2007-08			Projected 2008-09		
Supplies:			2006-07	A	B	C	A	B	C
Plant. A(mil.)	80.9	81.8	78.6	84.5	84.5	84.5	86.5	86.5	86.5
Harv.A.(mil)	73.6	75.1	71.0	77.0	77.1	77.3	79.0	79.2	79.4
Bu./A.	160.4	147.9	151.2	146.0	156.5	161	146.0	158	163
Production	11,807	11,112	10,745	11,235	12,064	12,444	11,534	12,514	12,946
Carryover	958	2,114	1,871	685	685	685	623	623	623
Total Supply	12,776	13,236	12,625	11,932	12,763	13,143	12,169	13,151	13,584
Feed & resid.	6,162	6,080	6,125	5,400	5,950	6,000	4,850	5,775	5,900
Food, ind. & seed	2,686	2,985	3,540	4,165	4,190	4,265	4,850	4,875	4,900
Corn for fuel ethanol	1,323	1,600	2,150	2,775	2,800	2,875	3,450	3,475	3,500
Exports	1,814	2,125	2,275	1,800	2,000	2,025	1,750	1,875	1,950
Total Utilization	10,662	11,190	11,940	11,365	12,140	12,290	11,450	12,525	12,750
Carryover	2,114	2,046	685	567	623	853	719	626	834
U.S. FARM PRICE	$2.06	$2.00	$3.20	$3.50	3.15	2.85	$4.10	3.25	2.90
IOWA AVE. PRICE, $/Bu.	1.96	1.95	$3.15	3.45	3.10	2.80	4.05	3.20	2.85
Counter-Cyclical Pmt.	0.30	0.35	$0.00	0	0	0	0	0	0
HARV. PRICE, C.IA	1.60	1.40	$2.80	3.40	2.90	2.60	3.80	2.90	2.75
DEC. FUT. @ HARV.	$1.98	$2.00	$3.15	$3.80	$3.30	$3.00	$4.20	$3.30	$3.20
Historical Probability				18%	65%	17%	18%	65%	17%
Weeks carryover supply	10.3	9.5	3.0	2.6	2.7	3.6	3.3	2.6	3.4
Feed use % chg. Drought years vs. current				-11.8%			-20.8%		
Corn replaced by increased DDGS			97		115			119	
Decline in corn feeding vs. prev. year			45		-175			-175	
Percent Decline in corn feeding vs. prev. year:				-11.2%			-18.5%		

IMPACT OF FEED COSTS ON THE LIVESTOCK INDUSTRY

HEARING OF THE LIVESTOCK, DAIRY, AND POULTRY SUBCOMMITTEE HOUSE COMMITTEE ON AGRICULTURE

THE HONORABLE LEONARD L. BOSWELL
SUBCOMMITTEE CHAIRMAN

TED SEGER
FARBEST FOODS, INC.
HUNTINGBURG, INDIANA

ON BEHALF OF
THE
NATIONAL TURKEY FEDERATION

MARCH 8, 2007
WASHINGTON, DC

Good morning, Chairman Boswell, Ranking Member Hayes; thank you for the opportunity to testify today. My name is Ted Seger, and I am President and part owner of Farbest Foods, Inc., in Huntingburg, Indiana. For 25 years I have served in various capacities at Farbest, from Sales Manager to President. Farbest is an integrated turkey company involved in grain procurement, feed manufacturing, growing, processing and marketing of turkey meat around the world. Farbest soon will become the country's fourth-largest producer with nine million turkeys grown by more than 150 contract producers and approximately 320 million pounds of turkey meat processed by more than 700 employees.

I was recently elected Chairman of the National Turkey Federation (NTF), which represents all segments of the U.S. turkey industry, including producers, processors, breeders, hatchery owners and allied companies. Our industry raises approximately 270 million turkeys annually, which equals approximately 7.2 billion pounds live weight per year. The wholesale value of turkey production will be over $6 billion in 2007.

From the turkey industry's perspective, this hearing could not have come at a better time for we have significant concerns about the growing impact of the federal renewable fuels policies are having on the demand for corn and soybeans. These two commodities account for nearly three quarters of a turkey's daily feed rations. To this point, the most visible impact of expanded ethanol production has been on the price of corn, which has increased more than $2 per bushel in the last 12 months. But, we all know the reason prices are going up. Corn supplies are tightening. Those high prices will induce farmers to plant more corn acres in 2007 but most experts believe that will be primarily at the expense of existing soybean acres. We are not in a feed availability crisis – yet – but there are several very realistic scenarios in which we could have a serious crisis within the next two years. It is my hope that these comments can paint a more complete picture of the direct impact renewable fuels programs can have on turkey production and the livelihoods of thousands of farm families, processing employees, and the rural communities that are supported by the turkey industry.

I want to make one thing clear at the outset. NTF and its members understand the need to reduce our dependence on foreign energy, especially oil imported from unstable regions of the world. We know renewable, alternative fuels are one part of the solution, and we do not want to see a "food vs. fuel" fight. NTF does not expect Congress or the Administration to base its policy on outlandish, doomsday crop scenarios. No reasonable person would blame the federal government if there were a severe drought or flood for which there is no historical precedent. However, we don't think renewable fuels policy should be a "faith-based initiative," relying on unrealistically rosy forecasts of ever increasing crop yields.

In the Farm Bill this Agriculture Committee will write, and in any Energy Bill Congress may also consider, renewable fuels policy should be based on historic norms for corn yields and overall production, and there should be programs that promote increased production as well as contingencies for deviations for which there is historical precedent.

Likely Impact of Ethanol Production on the Turkey Industry

There have been many forecasts by economists, analysts and industry people on what the affects may be. I can tell you that in almost all cases the findings are clear that, in the short term, over the next two to three years, the availability of feed grains will be limited tremendously. In fact, USDA's own forecasts indicate the corn stocks-to-use ratio will fall below 6 percent for the 2007/2008-crop year, as reported by USDA Chief Economist Keith Collins on March 1. This is the lowest stocks-to-use ratio since 1995/1996, when corn prices hit record highs of over $5 per bushel. This is an alarming fact, given that the United States has just recorded three years of record corn production. We have been fortunate that we have not witnessed a bad crop since the higher fuel standards have been put in place.

During the ensuing three years after 1996, turkey production fell by more than 10 percent as growers and processors were forced to go out of business or consolidate. In 1993, the top four turkey producers accounted for approximately 33 percent of the market share; today, they account for nearly 60 percent. If margins continue to slide or go negative, this consolidation will increase even further.

Here are some of the basic economics of feeding turkeys:

Industry Turkey Live Weight Slaughter for 2006 is approximately 7.2 billion pounds. At average feed conversion of 2.5 pounds of feed per pound live weight; industry consumption of feed is approximately nine million tons annually.

Corn is approximately 52% of the ration, or 4.68 million tons, or 167 million bushels of corn, or $668 million at $4.00 per bushel. Soybean meal is approximately 20% of the ration, or 1.8 million tons, or $414 million at $230 per ton.

For one tom turkey at 40 lbs, feed equals 104 pounds, at 2.6 feed conversion (toms are slightly less efficient at feed conversion than hens). Total feed cost of the tom is approximately $17.20 at 43 cents per pound. Corn, at 52 percent of the feed ration, equals 54 pounds at seven cents per pound. That's $3.85 per tom, or 23 percent of the total cost of the bird. Soybean meal at 20 percent equals 21 pounds at 11.5 cents per pound equals $2.42 per tom, or 14% of the cost of the bird.

Therefore, 37% of the cost of the tom turkey is generated by corn and soybean meal alone. The other feed ingredients combine to bring the total cost of the feed to nearly 70% of the total cost to grow the tom turkey. As you may already be aware, the other ingredient prices have risen along with corn and soybean meal as the total protein and energy sector is in demand.

The increase in corn, soybean meal and other feed ingredient prices from just one year ago has lead to an increase in feed cost per tom turkey of approximately eight cents

per pound which is an increase of 35% and equates to approximately $576 million increased cost for the industry on an annual basis. The vertically integrated operations would have to cover this increased cost through higher values for export commodities, domestic retail and foodservice channels. Export volumes have decreased slightly for 2006 in volume while value stayed approximately the same for a net of a small amount of offset.

ALTERNATIVE

The economics of feeding turkeys is pretty basic. Feed accounts for about 70 percent of the cost of producing turkeys. Corn represents about 52 percent of the feed ration and soybean meal another 20 percent. Overall, it takes about 2.5 pounds of feed to produce a pound of turkey and, as noted earlier, the industry will produce about 7.2 billion pounds of turkey (live weight) in 2007. That means we will use about 18 billion pounds of feed in 2007.

Based on those numbers, every one-cent increase in the price of feed costs the turkey industry about $180 million. Not only have we seen a significant increase in corn prices, as well as more modest increases in other feed ingredients, has increased the overall cost of turkey production by about $575 million on an annualized basis. Of that, about $540 million is attributable to the increase in corn prices.

Impact on the Consumer

In the long run, of course, this all will mean higher costs to the food consumer. It is my understanding the industry to this point has not been able to raise domestic foodservice and retail values to cover the entire cost increase. Existing sales contract commitments have held prices down, shrinking turkey company profits to near zero, and it is likely the industry will absorb losses in the short run. Eventually, high feed prices will result in a decrease in poultry and meat production and the cost burden will be shifted to the foodservice and retail contracts sector. Over time, this means higher prices for the consumer.

There are indications the process is beginning to take shape even now. We have seen inflationary prices in the consumer price index for food. In January the index showed a 2.3% increase in 2006 versus 2005 and more alarming, a 0.9% increase in one month alone from December 2006 to January 2007 for all food.

Can We Produce Enough Corn?

The commodity grain market futures are trading today on the assumption that we will have the largest corn crop in history. Our industry's concern is with the scenario of what happens if we do not produce the largest crop in history, and produce only 90% of the largest crop in history or about 11 billion bushels instead of 12.2 billion bushels that

would be needed if the 2012 mandate of 7.5 billion gallon were implemented this crop year. It should also be noted that last year's crop (which was a good year) was 10.7 billion bushels. Producing 11 billion bushels would still be the second-largest crop ever and would leave the balance sheet with a negative carryover of more than 200 million bushels. Grain prices would settle at levels never seen before and would take billions from the livestock, dairy and poultry sectors.

The current situation for corn is unlike any other in the history of this commodity. Usually high prices are a result of poor weather that limits production for just one year and the next year usually brings relief. However, the current dilemma is that the demand side of the equation is far outstripping the supply side and the demand side is continuing to grow at a rapid pace, when reality says that continued growth in supply is limited and constrained by Mother Nature. The gains made with genetically modified corn are real; however, the yield curve is predicted to be about 2-3 bushels per acre more per year. Even with this sustained growth, the next two years will see stocks depleted due to the rush of new ethanol plants coming on line.

The Renewable Fuels Association reports today's capacity at 5.6 billion gallons per year at 114 plants with another 78 new plants and 7 expansions soon to boost capacity to 11.8 billion gallons per year in 2008. These plants are verified under construction and will consume at least 3.9 to 4.2 billion bushels of corn for the 2009 year. This is one billion bushels more than the 2008 USDA projection of 3.2 billion bushels used for ethanol. Again, even with the best-case scenario of a record crop two years in a row, the United States will still likely be in a deficit carryover situation.

Alternative Feeds are Not Practical

The reality for my company and many other turkey companies is that there is no economically feasible substitute for a grain-based diet. Feeding more wheat, barley, sorghum, milo or soybean meal is no advantage because wheat and soybeans trade at energy equivalent values similar to corn. All commodities eventually find their economic value based on the strongest commodity, which is corn. In fact, because of high feed costs, feed conversions become increasingly important and with animal byproducts such as animal fat increasing in price, we have begun to introduce enzymes into the formula to gain more energy out of the soybean meal therefore using less animal fats. By implementing this practice, we actually will be buying more corn for the diet, which is the replacement for animal fat.

We also have heard a lot about Dried Distiller's Grains (DDGs), which are a byproduct of ethanol production. Yes, DDGs can be used in turkey feed rations, but only on a limited basis. At this time, 10 percent substitution is about the maximum in the industry, and the average is probably closer to 5 percent because there are such variances in the quality of DDGs being produced. I do not pretend to have the expertise that some of the other witnesses here today have on this subject, but I want to stress that DDGs cannot replace corn on anything approaching a one-to-one basis.

Recommendations

As noted earlier, Farbest and the NTF strongly support reducing dependence on foreign oil. However, we believe the goal of achieving less reliance on foreign sources through increased corn yields may prove short sighted. I have always been a proponent of using the most efficient system available to solve a problem. I do believe, and studies have shown, that corn-based ethanol is not the most efficient process for production of ethanol.

That is why NTF's first recommendation is to support the highest level of funding possible for all forms of cellulose-based research and full funding of already approved cellulose-based demonstration projects. Much like the government did with the Manhattan Project and sending a man to the moon in just under a decade, this country is capable of great technology advances in a short period of time if we set our mind and resources to it. We can speed up the technology curve on cellulosic ethanol.

Of course, ethanol, as you all well know, alone will not itself cure our dependence on foreign oil. Even with all the new bio-fuel mandates in place the Energy Information Administration (EIA) still projects that oil and gas will continue to supply two-thirds of the consumption in the year 2030. So, a multi-pronged attack is encouraged that includes multiple types of renewable fuels, both domestic and imported, reducing gasoline consumption through increasing vehicle efficiency and stepping up domestic oil production wherever practical. Obviously, some of these things are beyond the scope of this committee.

However, you will write the Farm Bill, and many of you are in a position to have a significant impact on any Energy Bill that Congress may write as well. With that in mind, NTF has several other recommendations that we believe would help speed energy independence and minimize the impact a renewable fuels policy has on poultry and meat producers. In addition to speeding development of cellulosic ethanol, our recommendations include:

- Providing maximum funding for research into ways corn yields can be increased;
- Allowing farmers whose Conservation Reserve Program (CRP) contracts are close to expiring to opt out early with no penalty if desired. This would be similar to the program implemented in 1996/97.
- Eliminating the 51-cent per gallon blenders credit for ethanol, or at least indexing it to the price of oil.
- Eliminating the 54-cent per gallon duty on ethanol imported from the Caribbean, Central America and South America.

- Promoting the production of a more consistent, higher-quality DDG by ethanol plants. Whether through incentives, or as a condition for receiving federal support, a consistent supply of high quality DDGs would provide more benefit to producers. Thus, allowing producers the ability to utilize them at higher levels, which is not the case now.

Finally, NTF and the National Chicken Council during the 2005 Energy Bill urged Congress to keep in mind the impact a crop disaster could have on the poultry and livestock industry when determining when waivers to the Renewable Fuels Standard could be granted. Should that standard be altered in any future legislation, the waiver process should be examined again.

While no one item is a silver bullet, this approach would help to alleviate the reliance upon corn-based ethanol. Furthermore it would figure in some cushion and provide a contingency plan should we have a bad crop year for one reason or another. If, however, we continue with the existing policies the inevitable will happen and that is more food inflation, loss of export markets, huge losses for growers and processors and eventually contraction of entire industries. Ultimately, consumers will be forced to pay higher prices.

In closing I would like to thank the committee for allowing me to testify today on this most important issue to the NTF, and I hope my statement today has enumerated the impact on feed prices and food prices for you. I look forward to answering any questions.

IMPACT OF FEED COSTS ON THE LIVESTOCK INDUSTRY

HEARING OF THE LIVESTOCK, DAIRY, AND POULTRY SUBCOMMITTEE HOUSE COMMITTEE ON AGRICULTURE

THE HONORABLE LEONARD L. BOSWELL
SUBCOMMITTEE CHAIRMAN

MATTHEW HERMAN
TYSON FOODS
MONROE, NORTH CAROLINA

ON BEHALF OF
NATIONAL CHICKEN COUNCIL
AND
NORTH CAROLINA POULTRY FEDERATION

MARCH 8, 2007
WASHINGTON, DC

Good morning, Chairman Boswell, Congressman Hayes, and members of the Subcommittee. Thank you, Chairman Boswell, for the opportunity to participate in this very important and very timely hearing regarding the issue of using corn for food and for fuel. On behalf of the National Chicken Council and the North Carolina Poultry Federation, I appreciate your invitation to provide the chicken industry's comments on the impact of the new cost environment for feedgrains and oilseeds. U.S. animal agriculture will need the Subcommittee's help so that producers can better meet the increasing demands and difficult challenges.

My name is Matthew Herman, Complex Manager for Tyson Foods in Monroe, North Carolina. As manager for the Tyson Foods' complex in Monroe, North Carolina, I am responsible for a slaughter plant, a hatchery, and two other facilities. More than 1,500 employees help operate the Monroe complex. My complex contracts with 190 family farmers to grow our broilers and 42 family farmers to produce hatching eggs. Each week, Tyson Foods at my complex processes more than 1.3 million pounds of poultry on a liveweight basis. Tyson Foods, like the other companies in the chicken industry, provides good, steady income for family farmers across the United States. Further, the chicken industry's growth over the years has offered increased opportunities for growers to expand their operations. That track record of growth may be over as corn going for fuel is squeezing-out corn available for feed.

Tyson Foods is a member of the National Chicken Council and the North Carolina Poultry Federation. I am pleased to present this statement on behalf of these two organizations. The National Chicken Council (NCC) represents companies that produce, process, and market about 95 percent of the young meat chickens (broilers) in the United States.

The North Carolina Poultry Federation has been the voice of the North Carolina poultry industry since 1968. Serving producers and processors of chicken, turkey and egg products, the Federation provides a united voice for the industry with government, media, and the general public to help create a favorable climate for business success for everyone involved in the poultry industry in North Carolina.

Increasing Feed Costs

In 2006 almost 48.5 billion pounds, liveweight, of chickens were produced using more than 53.5 million tons of feed for the young meat chickens (broilers) and the breeder flocks that provide the fertile eggs for hatching. Of the 53.5 million tons of feed, about 1.3 billion bushels of corn were purchased. The average cost of chicken feed before the corn price began to rapidly escalate in mid-October, 2006 was $139.20 per ton. Last month the same ton of feed cost $186.38 ton, a 34 percent increase. The vast majority of the run-up in feed costs was the result of corn more than doubling in price.

Last year the chicken industry's feed bill was $7.5 billion and this year total feed costs to the chicken industry will very likely be over $10.5 billion, a 40 percent increase.

Many years ago then Secretary of Agriculture Earl Butz fondly referred to chickens as "condensed corn." When Secretary Butz was in office in the early '70s it took more than 2.25 pounds of feed to produce a pound of liveweight chicken. Today the feed conversion is better than 2.0 to 1.0, with many companies having conversion ratios of better than 1.9 to 1.0. Except for farm-raised catfish, no farm-raised animal is a better converter of feed to food. Nonetheless, even very efficient feed conversion cannot mitigate the high corn prices and the significant impact on the cost of producing chicken. Since October 21, 2006 the cumulative cost increases through the end of February 2007 for the chicken industry have totaled more than $610 million. Based on commodity futures prices, it appears there will be further escalation in the corn price and, therefore, even higher feed costs are most likely for this year and beyond. Further, not only will corn prices most likely be higher, the volatility in corn prices will be much greater.

Current and Future Situation

Certain analysts have suggested that "we have been here before." That is, animal agriculture has weathered high prices for feedgrains/oilseeds in years past and, for the most part, have survived. It is true that there have been high feed costs before now and, at certain times, the quick run-up in prices have come upon the market unexpectedly. In the past, the problem has been a one year or so supply problem. But now, however, the situation is not supply-driven but rather demand driven. U.S. animal agriculture has not been here before. For example, certain university

econometric models that analyze the animal agriculture sector and forecast how the sector interrelates with the feed complex have been reworked and significantly adjusted because the models cannot handle the new dynamics of current and future scenarios.

Corn used for ethanol for the 2005/06-crop year was 1.6 billion bushels or 14 percent of total usage. For 2006/07 USDA is estimating 2.15 billion bushels or over 18 percent of total corn usage. Corn for ethanol during 2007/08 will total 3.5 billion bushels according to the American Farm Bureau Federation. This quantity compares with USDA's estimate of 3.2 billion bushels. The National Chicken Council and the North Carolina Poultry Federation agree with the Farm Bureau that USDA is underestimating the likely quantity of corn for ethanol and the impact it is having and will have on the traditional uses of corn both domestically and in the international market.

In response to an inquiry from the National Chicken Council this week, Dr. Bruce Babcock, Director of the Center for Agricultural and Rural Development at Iowa State University, concluded the following about the future of the U.S. broiler industry over the next few years. Dr. Babcock explained "the large run up in feed costs due to growth in ethanol is having and will continue to have a major impact on the poultry industry. Higher feed costs have already reduced the number of flocks placed. Instead of 2 or 3 percent annual production growth rates, we anticipate a year or two of flat to low poultry growth. This adjustment in production will allow wholesale prices to rise to cover the increase in feed costs. The increase in wholesale prices will eventually show up as higher retail prices. During this adjustment period, most growers will refrain from investing in new houses and related facilities. After the adjustment period we anticipate a return to slow growth, albeit with higher production costs and market prices".

Dr. Babcock's conclusion assumes a near-adequate supply of corn. But, will there be a near-adequate supply of corn in the years ahead?

Assuming average trend-line yields for the corn harvests in 2007 and in 2008, 14 million more acres must be shifted to corn this year and an additional 7 million acres next year if all users of corn are to have their needs adequately met. The largest shift predicted so far by a private

analytical group is 12.4 million more acres of corn. If the corn crop is adequate this year because enough acres were shifted from soybeans to corn and the average yield was significantly above the trend-line, the questions is where will the additional 7 million acres be found in 2008? A shortfall this harvest means even more than 7 million more corn acres will be needed next year. Soybean acres will probably be reduced as much as possible this year with little additional ability to reduce more in 2008.

USDA is predicting ending corn stocks for 2007/08 at 637 million bushels, which is less than minimum pipeline requirements. There is no room for a misstep in corn production for 2007 through at least 2010. To assume favorable weather for crops over the next four years is an assumption the U.S. chicken industry is not prepared to make.

National Debate/Plan-of-Action Needed

We, as a nation, need to decide the proper balance between grain for feed/food and grain for bio-energy. That discussion has not taken place and it is over-due. Greater energy independence is a very worthy goal for the United States, but the negative and unintended consequences of moving too far too fast have not been adequately addressed. The debate does not need to be a black and white food-versus-fuel argument if enough lead-time and resources are permitted. For the chicken industry like other animal agriculture producers, there will be in the foreseeable years ahead fewer pounds of animal protein produced, not just in this country but on a global basis. Consumers who have sufficient income to devote to cover the higher costs of food will reach deeper into their pocketbooks and pay the higher food prices. For consumers in this country and around the world who cannot continue to afford animal protein in their diets, they will have to shift to other foods. However, with land being a limiting factor in the production of food, it is most likely all foods will be higher in price, whether of animal-origin or not.

Foremost in a national discussion on the issue is the need for a credible plan-of-action in the event of a significant shortfall in the corn crop. Animal agriculture is most vulnerable over the next two years. What happens if there are not enough acres shifted to corn and /or yields are measurably below trend line? We have not seen a contingency plan that will help prevent a crisis for animal agriculture or food shortages for consumers.

The National Chicken Council and the North Carolina Poultry Federation encourage the Subcommittee to help launch an active, productive national debate on the issue. We stand ready to engage in that worthwhile discussion.

Renewable Energy

Before concluding my comments, it is important to note the role of renewable energy. Although corn-for-ethanol is placing a heavy burden on the back of animal agriculture, there is one aspect of the bioenergy situation that may prove to provide a benefit to animal agriculture.

Animal agriculture in the United States produces approximately 1.5 billion gallons of pure animal fats on an annual basis. While the technologies exist to produce biodiesel from both vegetable oils and animal fats, biodiesel produced from vegetable oils is preferred due to its cold weather properties. As a result, to date most biodiesel produced in the United States is derived from vegetable oils. Moreover, nearly all biodiesel production facilities lack the added equipment necessary to process animal fats.

In contrast, animal fats are an excellent feedstock for the growing range of renewable diesel processes. Outside the United States, significant research and development has been directed toward next generation renewable diesel technologies. Multiple technologies using a thermal depolymerization process produce renewable diesel from animal fats. Not only do these manufacturing processes perform better with animal fats, they actually produce superior products. These processes are commercially viable right now. Currently, renewable diesel is in various stages of commercialization in Europe, South America, Asia and Australia by leading companies.

While animal agriculture is prepared to participate in the growth of renewable fuels in the United States, a level playing field is needed with oilseed-based diesel alternatives. Similar to biodiesel, in the current volatile oil price environment, the economics are not viable for renewable diesel to spur the investment needed. It is vital that developing technologies be supported so that agricultural capabilities are more fully utilized. It is good not just for poultry but all animal agriculture that have byproducts that can be converted to renewable biodiesels.

Recommended Actions

In addition to initiating a national discussion about the proper balance and pathway for the United States to move toward more energy independence, the National Chicken Council and the North Carolina Poultry Federation have certain other recommendations. There are a number of actions and measures that can be taken to help alleviate to some degree the impact of over-using subsidized corn for ethanol. We recommend the following:

- permit non-environmentally sensitive cropland in USDA's Conservation Reserve Program to be released without penalty and loss of program benefits;
- permit non-environmentally sensitive cropland in the Conservation Reserve Program to produce grain and oilseed crops if the harvest is designated for use to produce bio-energy;
- provide that any new mandates for renewable fuel standard should be sourced from bio-based materials (such as cellulosic, methane) that do not adversely impact the availability of animal feed;
- USDA should prepare and have-ready an effective plan-of-action in the event of a shortfall in a corn crop for the next few years;
- Provide for counter cyclical subsidies for ethanol so that as the price of crude oil goes up, the subsidy for ethanol goes down;
- provide an effective waiver to reduce or eliminate the renewable fuel standard when economic conditions, especially for animal agriculture so warrant;
- allow the U.S. import duty on ethanol to expire as scheduled on December 31, 2008; and
- increase funding and support for projects that will result in methods that permit greater use of dried distiller grains with soluble (DDGs) for feeding single-stomach animals, such as poultry.

Conclusion

Achieving greater energy independence is a very worthy national goal that we all can support. Achieving that goal must be pursued in a reasonable, rational way. Moving forward at a measured pace that allows agricultural producers to adequately react to market signals and at a pace that minimizes disruptions to food production and consumption should be a priority. The current approach and pace is full of risks to traditional users of feedgrains. Without adequate

safeguards for the unintended consequences, the future of U.S. animal agriculture is put in great jeopardy.

U.S. chicken producers look forward to working more closely with the Subcommittee and others in Congress so that poultry companies have a better opportunity to meet the new challenges and consumers of poultry products can continue to enjoy an ongoing, adequate supply of animal protein at reasonable prices.

Thank you, Chairman Boswell, Congress Hayes, and Members of the Subcommittee, for the opportunity to share our thoughts, comments, and recommendations.

Testimony of

Ron Truex

On Behalf of

United Egg Producers

Before the

Subcommittee on Livestock, Dairy, and Poultry House Committee on Agriculture

March 8, 2007

Good morning, Mr. Chairman, Mr. Hayes and members of the subcommittee. My name is Ron Truex and I am the president and general manager of Creighton Brothers, LLC, in Warsaw, Indiana. I appreciate the opportunity to testify on behalf of United Egg Producers. About 90% of all the eggs in the United States are produced by UEP members. UEP is a farm cooperative, and in addition to performing all the functions of a trade association, we also administer a program of animal care standards called the UEP Certified Program. In addition, we negotiate and conclude export sales through our subsidiary, U.S. Egg Marketers, as well as providing egg trading, access to insurance and other services.

The Downside of the Ethanol Boom

I would like to thank this subcommittee for holding a hearing on livestock and poultry feed costs. The fact that you would invite all of us here today is evidence that you understand one fact of life: There is a downside to every boom.

And there is no doubt that ethanol is booming. Production has increased from 1.6 billion gallons in 2004 to 4.9 billion gallons in 2006, according to the Renewable Fuels Association[1], and the U.S. Department of Agriculture projects more than 12 billion gallons by 2010.[2] Many believe USDA is too conservative.

In many ways, ethanol and other biofuels will benefit the United States. Increased use of biofuels has already created profitable investment opportunities in many rural communities. By expanding our use of renewable energy sources, we can reduce our

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[1] Robert Dinneen, "The U.S. Potential for Biofuels." Presentation at Agricultural Outlook Forum 2007. http://www.usda.gov/oce/forum/2007%20Speeches/PDF%20PPT/BDinneen.pdf

[2] U.S. Department of Agriculture, *USDA Agricultural Projections to 2016.* Report OCE-2007-1, February 2007.

dependence on imported oil and cut our overall use of fossil fuels. Needless to say, the tremendous rally in corn and soybean prices benefits farmers who grow those crops.

However, half of the U.S. farm economy is livestock, dairy and poultry. And for anyone who must buy animal feed, the swift runup in corn and other ingredient costs has meant dramatic increases in the cost of production.

What Feed Costs Mean to Egg Producers

About 55% of the cost of producing a dozen eggs is feed.[3] About 63% of a typical layer ration is corn.[4] You can well imagine, then, that when corn prices are around $4 a bushel, egg producers' costs will skyrocket.

A typical Midwest egg operation saw feed costs per ton increase 58% just from September 2006 through the end of February 2007, from $106.23 per ton in September to $168.19 in February for a layer ration. That increase reflected a large jump in the price of corn during this five-month period, from $2.13 per bushel to $4.17 per bushel. For this operation, the cost of feed to produce a dozen eggs increased from a range of 16-19 cents per dozen during most of 2006 to nearly 29 cents per dozen today. This means that the cost of delivering a dozen eggs to the grocery store is 10 cents more today than it was just a few months ago.[5]

Of course, costs in other areas of the country are higher than in the Midwest because of grain transportation and similar factors. So other regions of the United States have been hit even harder than producers in my area.

The producer's costs do not end when eggs are laid, of course. Washing, grading, cartoning and transporting eggs to a retail store add substantially to our industry's expense. All in all, the estimated total costs to provide a dozen eggs to retail markets in 2006 was about 78-79 cents.[6] Again, at current corn and soybean meal prices, production costs are likely about 10 cents per dozen higher in early 2007.

USDA Projections Show Rising Production Costs

USDA published long-term projections just two weeks ago that back up these numbers. The Department projects that not only was egg production unprofitable during 2006 (many of us, unfortunately, can attest to that) – but according to the Department, egg producers will lose money in each of the next several years through 2009, largely because of higher feed costs. Measuring total production costs to deliver a dozen eggs to the

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[3] Don Bell, University of California Poultry Specialist, emeritus. Personal communication, February 28, 2007.
[4] William J. Stadelman and Owen J. Cotterill, Editors, *Egg Science and Technology, 4th Edition.* Binghamton, NY: The Haworth Press, 1995.
[5] Data provided by egg-laying operation in Eastern Corn Belt. Personal communication, February 27, 2007.
[6] Data provided by Don Bell, University of California Poultry Specialist, emeritus, and by United Egg Producers from Express Markets, Inc. Personal communications, February 27-28, 2007.

grocery store, USDA calculates 2006 costs at 71.84 cents a dozen and projects they will increase to 85.41 cents a dozen in 2007 and keep rising to reach 99.97 cents a dozen in 2010[7].

We hear much discussion of dried distillers grains with solubles (DDGS) as a substitute for corn in feed rations. However, the high fiber content of this product limits its use in non-ruminants. In poultry rations, DDGS cannot exceed about 5% of the ration, so this ethanol by-product will not offset much of the increase in corn costs.

The Stakes for Animal Agriculture

I am not suggesting that the nation abandon ethanol. However, it is imperative for Congress to take the livestock and poultry sector's needs into account.

We are like everyone else in production agriculture: Our ability to pass along our costs to our customers is extremely limited in the short term. Eventually, consumer prices will rise, and at that point many more people will pay attention. Unfortunately, by that time a significant number of livestock, dairy, poultry and egg producers may be out of business.

As producers sustain continued losses and are unable to continue their operations, one or both of two things will happen, and neither is desirable. In some cases, production will pass into stronger hands: The consolidation and vertical integration which we have seen for some years in the animal agriculture sector will accelerate. Mid-sized operations like mine will find it harder and harder to compete.

The other possible consequence is that some production will move outside the United States. In that case, the domestic demand base for U.S. feed grains and oilseeds will shrink. That will not be good for corn and soybean farmers.

What Should Congress Do?

I would like to make several specific policy recommendations for your consideration.

First, if Congress expands the Renewable Fuels Standard, **the expansion should be limited to fuels that are made from non-corn feedstocks.** Most experts agree that the future lies in cellulosic ethanol once technologies can be commercialized. Any increase in the RFS should focus on cellulosic feedstocks – and if this is not yet realistic, then the RFS expansion should be delayed until it is. In fact, the ethanol industry itself is *not* actively seeking an increase in the RFS at this time.

Second, **Congress needs to ask whether the current 51-cent-per-gallon excise tax credit for renewable fuels is really a necessary incentive when oil prices are relatively high and corn prices are extremely high**. Analytical work at Iowa State University has shown that ethanol plants can afford to bid the price of corn up to levels

[7] UEP's production cost estimates are about 11% higher than USDA's. UEP believes its data sources are reliable.

substantially above even today's high price, as long as the tax credit is available.[8] Does ethanol really need the same level of support when oil is $60 per barrel that it did when oil was $30 per barrel? We suggest that Congress explore a countercyclical tax credit that is greater when oil prices are low, but less when oil prices are high, and zero when they are very high.

Third, **Congress should encourage the Secretary of Agriculture to use his authorities to permit early release of some land in the Conservation Reserve Program**, in order to expand corn production. Internal USDA estimates suggest that several million acres could potentially be added to corn plantings in this way. Of course, this land needs to be selected in an environmentally responsible way, and it needs to be land that can be sustainably farmed in corn production. But I would remind you that the other main source of new corn acres is existing corn acres – that is, land that is now in a two-year corn-soybean rotation that might be converted to a three-year corn-corn-soybean rotation. There is a yield penalty to be paid from this sort of conversion, and the net result may be increased use of nitrogen fertilizer since the nitrogen-fixing soybean crop will be planted less often. That is also an environmental issue, and needs to be taken into account when evaluating the pros and cons of planting corn on former CRP acres.

Fourth, **we encourage Congress to expand research in several areas**: commercialization of technologies to make ethanol from cellulosic biomass, with an emphasis on operating cost reductions; modification of DDGS and other byproducts to expand their potential use in non-ruminant rations; and development of other renewable energy sources, such as power generation using manure and mortality.

Fifth, **we believe there should be greater parity of production incentives**. Any tax credits or similar benefits available to ethanol or biodiesel should also be available for other sources of renewable fuels, including products of the livestock and poultry industries: fats, tallow, animal waste and mortality.

Conclusion

Mr. Chairman, I know the strong support of many members of this subcommittee for renewable energy. I am also in favor of renewable energy, but I do not believe my industry should be sacrificed so we can mandate the next billion gallons of corn-based ethanol. Everyone says that the future of ethanol is in cellulose rather than starch. Our policies, including the energy title of the 2007 farm bill, should reflect this commitment. We would like to work with you to make sure they do.

Thank you, Mr. Chairman.

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[8] Amani Elobeid *et al.*, "The Long-Run Impact of Corn-Based Ethanol on the Grain, Oilseed and Livestock Sectors: A Preliminary Assessment." CARD Briefing Paper 06-BP 49, November 2006.

TESTIMONY OF

DR. GERALD SHURSON

for the

SUBCOMMITTEE ON LIVESTOCK, DAIRY, AND POULTRY

of the

U.S. HOUSE OF REPRESENTATIVES

COMMITTEE ON AGRICULTURE

March 8, 2007
Washington, D.C.

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Introduction of Testifier

Dr. Gerald Shurson is a Professor in the Department of Animal Science at the University of Minnesota. He received his B.S. degree in Animal Science and Agricultural Economics at the University of Minnesota and his M.S. and Ph.D. degrees in swine nutrition from Michigan State University. Dr. Shurson was Assistant Professor and Extension Swine Specialist for 4 years at The Ohio State University before returning to the University of Minnesota. As a Professor at the University of Minnesota he currently has responsibilities for on-campus undergraduate and graduate teaching and advising, as well as research and extension programs related to swine nutrition and management. He devotes his time extensively to working with pork producers and feed industry professionals on nutrition and management related issues. During the past ten years, Dr. Shurson's research program has primarily focused on evaluating the nutritional value of distiller's dried grains with solubles (DDGS) in swine diets. His expertise is nationally and internationally recognized and he has presented his research findings at numerous symposiums and conferences. He works very closely with the U.S. Grains Council to provide educational programs and assess export market opportunities for DDGS. Dr. Shurson has served in several professional leadership roles including: Director, Midwest Section, American Society of Animal Science Board; Director, University of Minnesota Swine Center; and President, Midwest Section, American Society of Animal Science.

WHAT WE KNOW AND DON'T KNOW ABOUT FEEDING DISTILLER'S BY-PRODUCTS TO LIVESTOCK AND POULTRY

Introduction

Fuel ethanol production is one of the fastest growing segments in American agriculture. In 2006, 110 ethanol plants located in 19 states around the U.S. used 1.8 billion bushels of corn (17% of total production) and 26% of the U.S. sorghum crop to produce 4.9 billion gallons of ethanol (Renewable Fuels Association, February, 2006). Corn is the primary grain used in wet mills and dry-grind ethanol plants because of its high fermentable starch content compared to other feed stocks. Approximately 18% of fuel ethanol is produced by wet-mills after the starch is separated from the corn kernel, and these plants produce wet or dried corn gluten feed, corn gluten meal,

and corn germ meal as the primary by-products. Dry-grind ethanol plants represent the fastest growing segment of the fuel ethanol industry in the U.S., and produce the majority (82%) of fuel ethanol. By-products from dry-grind ethanol plants include wet and dry distiller's grains, wet and dried distiller's grains with solubles, modified "wet cake" (a 50% moisture blend of distiller's grains and solubles), and condensed distiller's solubles. In 2006, the U.S. ethanol industry produced 12 million metric tonnes of distiller's grains, and some industry experts predict that 20 million metric tonnes of distillers grains will be produced by the year 2012 (Renewable Fuels Association, February, 2006). Approximately 30% of the distiller's grains with solubles are marketed as a wet by-product for use in dairy operations and beef cattle feedlots located near ethanol plants. The remaining 70% of distiller's grains with solubles is dried (DDGS) and marketed domestically and internationally for use in dairy, beef, swine and poultry feeds. In 2006, approximately 46% of distiller's grains were fed to dairy cattle, 42% to beef cattle, 3% to poultry, and 9% to swine (Renewable Fuels Association, February, 2006). Considerable opportunity exists to increase the use of distiller's by-products in all livestock and poultry sectors, but perhaps the greatest opportunities for increased DDGS usage are in the swine and poultry industries.

Nutrient Composition and Digestibility of Distiller's Grains

Corn dried distiller's grains with solubles (DDGS) is considered a high energy, mid-protein ingredient, that is low in the essential amino acid lysine. Nutritionally, DDGS is higher in crude fat (10-11%) and higher in total and available phosphorus than other grain by-products produced by the wet milling and brewing industries (i.e. corn gluten feed, corn gluten meal, and brewer's grains). The relatively high level of available phosphorus in DDGS significantly reduces the need for supplemental inorganic phosphorus in monogastric (swine and poultry) diets, when diets are formulated on an available phosphorus basis. Because of these nutritional characteristics, DDGS partially replaces some of the corn, soybean meal, and inorganic phosphorus commonly used in complete animal feeds.

Like many by-products, the nutrient content and digestibility of DDGS varies among sources. A number of factors contribute to the variability in nutrient content including, variation in nutrient content of corn, different production processing technology used in ethanol plants, and the

amount of solubles added to the grains fraction before drying. Variation in particle size, amount of solubles added to the grains fraction before drying, and drying time and temperature cause variation in nutrient digestibility, especially lysine, among dry-grind ethanol plants. To manage the diversity in nutrient content and quality among DDGS sources, DDGS buyers should specify source and buy directly from ethanol plants that produce DDGS with the desired nutrient content and quality.

Until more accurate *in vitro* procedures can be developed, color measurement with Minolta or Hunter lab spectrophotometers appears to be the most consistent predictor of lysine digestibility among DDGS sources. Dark colored corn DDGS has a lower amino acid (particularly lysine) digestibility and can lead to reduced growth performance when fed to swine and poultry compared to light colored, golden DDGS sources. Color of corn DDGS can vary from being very light, golden yellow in color to being very dark brown in color. However, color may not be a good indicator of lysine digestibility in sorghum DDGS sources. Color of corn DDGS samples appears to also be moderately correlated with total lysine content, where lighter colored samples tend to have more total lysine. Use of acid detergent insoluble nitrogen as a predictor of protein and amino acid digestibility in DDGS is not as accurate as for heat damaged forages. Although the use of enzyme assays such as IDEA™ and pepsin/pancreatin, and reactive lysine procedures are promising *in vitro* procedures for predicting digestible crude protein and amino acid content, more refinements are needed to improve their accuracy before they could be utilized effectively in the commercial feed industry. Calibrations for amino acids and energy in DDGS can be developed using Near Infrared Spectrophotometry (NIRS), but the quality of these calibrations is dependent on the calibration method used. If accurate NIRS calibrations can be developed, this procedure could be an excellent tool for quickly and inexpensively assessing nutrient content in DDGS.

Physical and Chemical Characteristics of DDGS

Physical and chemical characteristics of DDGS vary among sources and can influence its feeding value and handling characteristics. These characteristics include color, smell, particle size, bulk density, pH, flowability, shelf life stability, and hygroscopicity (ability to attract moisture). High quality, golden corn DDGS has a sweet, fermented smell. Dark colored DDGS sources that have

been overheated have a burned or smoky smell. Average particle size for DDGS is approximately 700 μm, but the range in particle size is extremely large (200 to 1217 μm) among sources. Low particle size may contribute to poor flowability through feed ingredient handling systems. Bulk density ranges from 23 to 35 pounds/cubic foot among DDGS sources and affects the volume of storage space needed in feed mills, as well as transportation cost/ton. The pH of DDGS sources averages 4.1 but can range from 3.6 to 5.0. Unfortunately, some sources of DDGS can have some very undesirable handling characteristics due to poor flowability under certain conditions. Very few research studies have attempted to characterize factors that affect flowability of DDGS. Results from one study showed relative humidity greater than 60% seemed to reduce flowability of a DDGS sample, and many other factors have been suggested as possible controllers of flowability such as particle size, content of solubles, dryer temperature, moisture content at dryer exit, and others. Only one recent research study has been conducted to determine whether preservatives and mold inhibitors are necessary to prevent spoilage and extend shelf life of DDGS. Unless the moisture content of DDGS exceeds 12 to 13%, the shelf life of DDGS appears to be stable for many months. It appears that under humid climatic conditions, DDGS will increase in moisture content during long-term storage. It is difficult to pellet DDGS, and adding DDGS to swine and poultry diets significantly reduces the throughput of pellet mills. This has been a major barrier for using DDGS among some of the large swine and poultry integrators in the southern U.S. Research studies to evaluate factors that improve flowability, improve pellet quality and pellet mill throughput, and the value of adding preservatives to extend shelf-life of distiller's grains are needed.

Feeding Wet and Dry Distiller's Grains to Dairy Cattle

Corn DDGS is a very good protein source for lactating dairy cows, and is a good source of ruminally undegradable protein (RUP), or by-pass protein, for cattle. It also is important to recognize that dark colored corn DDGS usually indicates heat damage of the protein, which may lead to reduced milk production. Corn DDGS is also a very good energy source for dairy cattle, with energy values equal to or slightly greater than corn. Corn DDGS contains high amounts of neutral detergent fiber (NDF) but low amounts of lignin. This makes DDGS a highly digestible fiber source for cattle, and reduces digestive upsets (acidosis) compared to when corn is fed. In general, distiller's grains are considered to be highly palatable, and research supports this

because dry matter intake is increased when distiller's grains are included up to 20% of the dry matter in dairy cow diets. Cows fed diets containing 4 to 30% distiller's grains produce the same amount of milk as cows fed diets containing no distiller's grains. However, when cows are fed diets containing more than 30% DDGS, milk yield tends to decrease. Milk fat percentage often varies among dietary inclusion levels of distiller's grains but yield of milk fat does not appear to be significantly affected by dietary inclusion level. Milk protein percentage is unaffected for cows fed diets containing 0 to 30% distiller's grains, and the form (wet or dry) of the distiller's grains does not appear to alter milk composition. However, milk protein percentage decreases by about 0.13 percentage units when distiller's grains are included at concentrations greater than 30% of the diet compared to cows fed control diets. Other dietary factors that may affect milk production and milk composition when distiller's grains are added to diets for lactating dairy cows include type of forage, ratio of forage to concentrate, high oil content of distiller's grains, and formulating diets on an amino acid basis. Type of forage fed can affect dry matter intake, and milk protein percent and yield, but has minimal affect on milk production or milk fat percent.

When formulating diets containing high levels of distiller's grains, it is important the diet contains adequate amounts of effective fiber from forage. While distillers grains contain similar amounts of NDF or fiber as high quality forages, the particle size of the fiber does not contribute to effective fiber and is quickly digested to volatile fatty acids in the rumen. The high oil content of distiller's grains is a potential concern in dairy cow diets because the corn oil in distiller's grains can potentially cause incomplete biohydrogentation in the rumen resulting in milk fat depression. However, a comprehensive review of previously published studies by Dr. Kalscheur at South Dakota State University did not show a consistent relationship between dietary distiller's grain inclusion and milk fat depression. The amino acid lysine will be deficient in diets where corn feedstuffs are the predominant ingredients in dairy cow diets. Feeding supplemental rumen protected lysine sources with distillers grains in dairy cattle diets has the potential to increase both the percentage and yield of milk protein. Corn DDGS can be effectively used in a total mixed ration by mid-lactating dairy cows under heat-stressed climatic conditions, and is a potential high quality by-product for the dairy industry in sub-tropical and tropical regions of the world. Although there has been limited research to evaluate feeding

DDGS to growing dairy heifers, DDGS has been added to growing beef cattle rations at levels up to 40% of dry matter intake to achieve excellent growth rate and feed conversion.

Feeding Wet and Dry Distiller's Grains to Beef Cattle

Corn distiller's grains is an excellent energy and protein source for beef cattle in all phases of production. It can effectively be used as an energy source and be fed up to 40% of ration dry matter intake for finishing cattle with excellent growth performance and carcass and meat quality. However, at high feeding rates, protein and phosphorus will be fed in excess of feedlot steer or heifer's requirements, and as a result, nitrogen and phosphorus levels in manure increase.

The best applications for using DDGS in beef cow diets are in situations where 1) supplemental protein is needed to improve the digestibility of low quality forages, 2) a low starch, high fiber energy source is needed to replace corn gluten feed or soy hulls, and 3) when a source of supplemental fat is needed.

For growing heifers, adding urea to meet the degradable protein intake requirement is not necessary when DDGS is used as an energy source in forage based diets. Distiller's grains can be an effective forage supplement to increase growth at times when availability and/or quality of forage may be limited.

Feeding DDGS to Swine

High quality corn DDGS has a digestible and metabolizable energy value, equal to, or greater than corn for swine. Like the low protein quality (low lysine and poor amino acid balance) of corn, corn DDGS is also low in lysine relative to its crude protein content. After lysine, the next likely essential amino acids to be limiting are threonine and tryptophan. These amino acids should be monitored during diet formulation when using more than 10% corn DDGS in swine diets. Amino acid digestibility can also vary among corn DDGS sources, with true lysine digestibility coefficients ranging from 38 to 63%. Lightness and yellowness of DDGS color appear to be reasonable predictors of digestible lysine content among golden corn DDGS sources for swine. In order to ensure excellent pig performance when adding DDGS to swine diets, only

light colored, golden sources should be used and diets should be formulated on a digestible amino acid basis if more than 10% DDGS is included in the diet.

Corn DDGS is an excellent source of available phosphorus for swine and has a relative phosphorus availability of 90% when using dicalcium phosphate as the inorganic phosphorus reference source. When swine diets containing DDGS are formulated on an available phosphorus basis, the amount of inorganic phosphorus supplementation can be significantly reduced, or eliminated in late finisher diets, while meeting the pig's phosphorus requirement. When swine DDGS diets are formulated on an available phosphorus basis, and the enzyme phytase is added to the diet, manure phosphorus excretion can be significantly reduced.

Research results have shown that adding up to 25% DDGS to swine starter diets, and up to 30% to swine grower and finisher diets, can result in excellent growth performance, lean composition of the pork carcass, and muscle quality if diets are formulated on a digestible amino acid basis. However, due to the high content of unsaturated fatty acids and linoleic acid in the corn oil of DDGS, pork fat will become increasingly softer and contain increasing levels of unsaturated fatty acids when the level of DDGS increases in grower-finisher diets. However, recent studies completed at the University of Minnesota show that feeding diets containing as much as 30% DDGS resulted in acceptable pork quality, shelf life of pork loins, and no difference in consumer taste preference of cooked pork loins compared to pigs fed conventional corn-soybean meal based diets. However, bacon, in retail packages at room temperature, processed from pigs fed high amounts of DDGS in their diet has an unacceptable, greasy appearance which would likely reduce consumer acceptability. New research results from studies conducted at the University of Minnesota will help the U.S. pork industry determine acceptable dietary inclusion rates of DDGS in growing pig diets to minimize the effects on pork fat quality. For sows, up to 50% DDGS can be successfully added to gestation diets, and 30% DDGS can be added to lactation diets if DDGS is free of mycotoxins to support good reproduction and litter performance. Some recent research results suggest that feeding high levels of DDGS in gestation and lactation may increase litter size and piglet weight gains. Feeding diets containing DDGS to swine results in a slight increase in manure production due to a slight reduction in dry matter digestibility caused by the relatively high fiber content of DDGS. The nitrogen content of swine manure will increase but the

phosphorus concentration will decrease when DDGS is added to the diet. No changes in odor, ammonia, or hydrogen sulfide emissions have been observed in manure from pigs fed DDGS diets. Finally, results from one University of Minnesota research study suggests that feeding diets containing 10% DDGS can reduce the prevalence, length and severity of lesions caused by *L. intracellularis*, the organism that causes ileitis, a common gut health problem in growing pigs.

Feeding DDGS to Poultry

Corn DDGS can supply a significant amount of energy, amino acids, and phosphorus to poultry diets. An energy value of 2755 kcal ME/kg has been determined for DDGS in poultry diets showing DDGS contributes substantially more energy to the diet than the previous value of 2480 kcal ME/kg reported in NRC (1994). Lysine digestibility of corn DDGS can be as high as 83% compared to 65% which is the value reported in the poultry NRC (1994). Lightness and yellowness of corn DDGS color is highly correlated with improved chick weight gain and feed conversion. Recent studies have confirmed that lightness and yellowness of DDGS color appears to be a reasonably good predictor of digestible lysine content among golden corn DDGS sources for poultry. When formulating diets containing corn DDGS, digestible amino acid values should be used especially for lysine, methionine, cystine, and threonine. Diets should also be formulated by setting minimum acceptable levels for tryptophan and arginine due to the second limiting nature of these amino acids in corn DDGS protein. Corn DDGS is also high in total phosphorus (0.73%) and available phosphorus (54 and 68%). The sodium content of corn DDGS averages 0.11% but can range from 0.01 to 0.48%. Therefore, dietary adjustments for sodium content may be necessary if the source of corn DDGS being used contains high levels of sodium, in order to avoid potential problems with wet litter and dirty eggs. Corn DDGS can contain as much as 40 ppm of xanthophyll. The xanthophyll content of corn DDGS has been shown in commercial field and university research trials to significantly increase egg yolk color when fed to laying hens, and increase skin color of broilers when included at levels of 10% of the diet. This is an attractive feature of DDGS among poultry nutritionists in the export market because of consumer preference for dark egg yolk color and yellow skin color. In layer diets, DDGS is a very acceptable feed ingredient and the maximum dietary inclusion level of DDGS should be 15% in high energy commercial diets. Research results have also demonstrated that DDGS from modern ethanol plants is an acceptable ingredient in broiler diets and the

recommended maximum dietary inclusion rates are 6% in the starter period, and 12 to 15% DDGS in grower and finisher phases. Results from a recent study conducted in Taiwan showed that adding DDGS at levels up to 18% of the diet for laying ducks had no significant effect on feed intake, feed conversion, or quality of the egg shells, and egg production rate increased in the cold season. Furthermore, egg weight tended to be higher by including 12% or 18% of DDGS in the diets, and egg yolk color was linearly improved with increasing amounts of DDGS in the laying duck diets. Therefore, DDGS can be efficiently used in the diets of duck layers to improve the yolk characteristics without influencing performance.

Summary of Benefits and Limitations of Feeding DDGS in Livestock Diets

USE OF DDGS IN LIVESTOCK DIETS	
Benefits and Limitations for **Lactating Dairy Cows**	
Benefits	***Limitations***
▪ More protein and energy than corn ▪ Feed at up to 20% of ration dry matter ▪ Highly digestible fiber source > fewer digestive upsets ▪ "Golden" DDGS gives best performance ▪ Highly palatable	▪ Low protein (lysine) quality > add other supplements high in lysine > lower milk protein percentage ▪ Manure P excretion increases at high feeding levels ▪ Variable effect on milk fat, but minimal if adequate forage in the ration
Benefits and Limitations for **Finishing Feedlot Cattle**	
Benefits	***Limitations***
▪ More protein and energy than corn ▪ Feed up to 40% of ration dry matter to replace corn > feed excess protein and P ▪ Highly digestible fiber source > fewer digestive upsets ▪ "Golden" DDGS gives best performance ▪ No effect on carcass yield, quality, or eating characteristics of beef	▪ Need to supplement calcium to achieve proper Ca:P ratio > avoid urinary calculi ▪ Manure N and P excretion increases at high feeding levels ▪ Monitor sulfur level of water and diet (< 0.4% ration DM) > avoid polioencephalmalacia
Benefits and Limitations for **Swine**	
Benefits	***Limitations***
▪ Energy value = corn ▪ High available P > reduce diet P supplementation > may reduce manure P excretion ▪ Partially replaces some corn, soybean meal, and dicalcium phosphate and reduces diet cost ▪ Commonly fed at 10% of diet > higher levels can be used if amino acids are supplemented ▪ Only "golden" DDGS should be used > high amino acid digestibility	▪ Low protein (lysine) quality > add other supplements high in lysine and tryptophan ▪ Variability in nutrient content and digestibility among sources ▪ Manure N excretion increases ▪ Belly firmness and pork fat quality may be reduced at high dietary inclusion rates ▪ Fine particle size can contribute to flowability problems in bins and feeders ▪ Difficult to pellet and maintain throughput of pellet

▪ Appears to reduce gut health problems due to ileitis ▪ May increase litter size weaned when fed at high levels to sows ▪ Increases pig weight gain when fed to sows during lactation	mills ▪ Mycotoxin free grain should be used to produce ethanol and DDGS ▪ Short-term feed intake may be reduced when feeding high DDGS diets to sows
Benefits and Limitations for **Poultry**	
Benefits	***Limitations***
▪ Good energy and amino acid source when limited to < 15% of the diet ▪ Source of highly available P > reduce manure P ▪ May improve egg yolk and skin color (xanthophyll) ▪ Source of "unidentified growth factors"? ▪ "Golden" DDGS gives best performance ▪ Highly palatable	▪ Energy value ~ 84% of corn ▪ Low protein quality > add other supplements high in lys, arg, trp ▪ Sources high in sodium may increase litter moisture if adjustments to dietary salt levels are not made

Feeding DDGS to Aquaculture

Corn DDGS can be an excellent protein and energy source in aquaculture feeds. Based upon recent research studies, maximum dietary inclusion of DDGS are much higher than previously recommended. Studies have shown that up to 30% DDGS can be included in catfish diets without negative effects on growth performance. For trout, up to 15% DDGS can be added to the diet without lysine and methionine supplementation, whereas up to 22% can be added to trout diets if diets are supplemented with lysine and methionine. Diets for salmon and shrimp can contain up to 10% DDGS in the diet to achieve good performance, but levels up to 40% DDGS in freshwater prawn diets can be used successfully while replacing some or all of the fish meal in the diet. Corn DDGS can be added up to 35% in high protein (40%) tilapia diets without supplemental lysine and tryptophan, and dietary inclusion rates of DDGS can be as high as 82% with lysine and tryptophan supplementation in low protein (28%) tilapia diets.

Feeding DDGS to Horses and Companion Animals

Very little research has been conducted related to feeding diets containing DDGS to horses and other companion animals. Based on the limited research information available, it appears that DDGS is a very suitable ingredient for use in horse, rabbit, and dog diets. Maximum dietary inclusion rates for DDGS are up to 20% for horses and rabbits, up to 10% for growing puppies, and up to 25% in diets for adult dogs. Amino acid digestibility is also likely to be of concern in companion animal diets as it is with swine and poultry diets.

Summary: Maximum Recommended Dietary Inclusion Rates for DDGS.

Specie	Production Phase	Maximum Inclusion Rate
Beef	Finishing beef cattle	40% (% of DM intake)
Dairy	Lactating dairy cow	20% (% of DM intake)
Swine	Weaned pigs (>7 kg)	25%
	Grow-finish	20%
	Gestation	50%
	Lactation	30%
Poultry	Broilers	15%
	Turkeys	15%
	Layers	15%
Aquaculture	Catfish	30%
	Trout	15-22%
	Salmon, shrimp	10%
	Prawn	40%
	Tilapia	35-82%
Equine		20%
Rabbits		20%
Canine	Growing puppies	10%
	Adult dogs	25%

Potential Quality Contaminants in DDGS

Mycotoxins can be present in distiller's grains by-products if the grain delivered to the ethanol plant is contaminated with them. Mycotoxins are not destroyed during the ethanol production process nor are they destroyed during the drying process to produce distiller's grains by-products. However, the risk of mycotoxin contamination in distiller's grains by-products is very low because many ethanol plants monitor grain quality and reject sources that may be contaminated with mycotoxins. When samples of distiller's by-products are tested, only high performance liquid chromatography (HPLC) should be used. HPLC is the mycotoxin detection reference method for DDGS. ELISA tests should not be used to determine if mycotoxins are present in DDGS because ELISA tests result in a high proportion of false positive readings.

Antibiotics such as penicillin G, penicillin B, and virginiamycin are used in very small quantities to control bacterial infections in fermenters during the ethanol production process. However, there appear to be no antibiotic residues in distiller's grains by-products because penicillin is destroyed as the pH in fermenters declines toward the end of fermentation, and virginiamycin appears to be destroyed at a temperature of > 200° F in the distillation towers of dry-grind ethanol plants. Results from two field trials have shown that DDGS can be stored in hot humid conditions for at least 10 weeks without adding antioxidants, with no evidence of oxidative rancidity in the corn oil in DDGS.

The Impact of the Ethanol Industry on the Livestock Industry

The ethanol industry is consuming an increasing proportion of the annual corn crop. Industry experts are predicting that about 20% of the 10.745 billion bushel 2006 U.S. corn crop will be used for ethanol production. As a point of reference, the U.S. livestock and poultry industries consume about 5 billion bushels of corn annually. Therefore, as the ethanol industry continues to grow, there will be increasing competition between the ethanol industry and the livestock and poultry industries for corn supply. This competition for corn has many people in the animal production industry worried about what it will mean to future corn prices and availability.

Researchers at the Food and Agricultural Policy Research Institute at the University of Missouri, have estimated ethanol production and corn use by marketing year from 2006/07 to 2010/11 (FAPRI, 2006, Table 1). By the year 2010/11, ethanol production is projected to increase by 86% of what is projected to be produced in 2006/07, and this will require a 61% increase in corn use for fuel ethanol production compared to current levels. Assuming that there will be no weather problems that affect corn production and yields, the annual U.S. corn crop is also projected to increase by an average of 23% per year through 2010/11, which requires an increase in corn acres planted and a gradual average annual improvement in yield of about 21%. Presumably much of the increase in corn acreage will be at the expense of acreage used to grow other crops (e.g. soybeans) and perhaps some of the acres currently enrolled in the CRP program.

Table 1. Projected ethanol and by-product production, and corn acreage, yield, and usage for ethanol by marketing year through 2010/2011 (FAPRI, 2006).

	2006/07	2007/08	2008/09	2009/10	2010/11
Ethanol produced, billion gal.	4.95	6.29	7.33	8.39	9.20
Corn required, billion bu.	2.15	2.51	2.91	3.22	3.46
Ethanol by-product feeds (dry basis), million tons	14.37	17.40	20.82	23.41	25.45
Corn crop, billion bu.	10.74	11.48	11.99	12.27	12.50
% corn crop	20.01	21.86	24.27	26.24	27.68
Acres planted, millions	79.4	82.9	85.6	86.5	87.0
Yield/acre, bu.	149.0	150.9	152.6	154.5	156.4

The net result of increased ethanol production is increased corn price, increased corn acreage, decreased corn exports, and increased feed use of ethanol by-products (i.e. DDGS).

One of the major concerns for livestock and poultry producers is whether they will have access to ample quantities of reasonably priced corn in the future. The rapid growth of the U.S. ethanol industry has turned some corn surplus regions in the Corn Belt into corn deficit areas due to the high quantities being used by ethanol plants in those locations. This is good news for corn farmers because the price basis has increased in these areas, and if they are shareholders of local ethanol plants, they have been earning an excellent return on their investment by adding value to each bushel of corn they supply to their ethanol plant. However, livestock and poultry producers who purchase corn must compete with the ethanol industry for supply and price. Based upon current ethanol prices and production costs, many modern ethanol plants can afford to pay more than $4 to $5 per bushel of corn to breakeven. With these high breakeven prices, it is understandable why livestock and poultry producers are nervous about their current and future feed costs.

If 25.45 million tons (23.08 metric tonnes) of distiller's by-products are produced in 2010 (Table 2), it could all be consumed by the U.S. livestock and poultry industries if there was 63% market penetration at the maximum dietary inclusion rates for each species shown in Table 3. Although each segment of animal production offers potential for consuming more DDGS, the swine and poultry sectors have the greatest potential for increased DDGS usage. In 2006, the U.S. pork

industry used about 1.08 million metric tonnes, which is only about 12% of the theoretical maximum use at 100% market penetration. The U.S. poultry industry consumed an even smaller amount (360,000 metric tonnes) of DDGS in 2006, which is only about 6% of the theoretical maximum use at 100% market penetration. If some of the barriers limiting DDGS use in swine and poultry diets can be overcome, it may be possible to achieve 50% or more in potential market penetration in these industries. Some of the barriers limiting the use of DDGS in swine and poultry diets include:

- Variability in nutrient content and digestibility among DDGS sources
- Low particle size and flowability problems of some DDGS sources
- Perceived risk of mycotoxins in DDGS and fast, accurate, inexpensive methods for monitoring the presence and level of mycotoxins
- Ability to pellet DDGS diets and maintain throughput of pellet mills
- Understanding and managing effects corn oil in DDGS on pork fat quality
- Controversy over palatability and negative effects on feed intake of growing pigs at high dietary inclusion rates
- Fast, accurate, and inexpensive *in vitro* methods to estimate amino acid digestibility among sources
- Net energy values of DDGS sources need to be determined

Table 2. Theoretical Potential of Distiller's By-Product Use in the U.S. Livestock and Poultry Industries (Cooper, 2006).

	Grain-Consuming Animal Units, millions	Maximum Dietary Inclusion Rate, %	1000 Metric Tonnes by % Mkt. Penetration		
			50%	75%	100%
Dairy	10.2	20	1,887	2,831	3,774
Beef	24.8	40	9,176	13,764	18,352
Pork	23.8	20	4,348	6,521	8,695
Poultry	31.1	10	2,877	4,315	5,754
Total			18,288	27,431	36,575

Our research group of agricultural economists (Drs. B. Buhr, V. Eidman, D. Tiffany) and animal scientists (Drs. G. Shurson, S. Noll, J. Linn, and A. DiCostanzo) at the University of Minnesota have conducted preliminary evaluations to estimate the impact of higher corn prices as a result of

increased corn demand from the ethanol industry, and DDGS use in livestock and poultry diets on various economic costs in the animal industry. An Equilibrium Displacement (Supply and Demand) model was used for this analysis (Lusk and Anderson, 2004). Price assumptions used in this economic model were based upon a December 2006 corn futures price of $3.46/bu and soybean meal price of $166.77/ton.

For the pork industry, results from this model using these price assumptions under a "most likely" scenario, suggest that there would be a 12.5% increase in total cost of pork production compared to a historical corn price of $2.15/bu and soybean meal of $192.48/ton. Adding DDGS to grower-finisher diets at a 10% inclusion rate would have a moderate benefit of reducing feed costs by about $0.50/ton (1.25%) compared to higher priced feed without DDGS. However, there would also be a 9.3% increase in pork price at the farm level. The increase in total cost of production could cause a 3.27% reduction in the quantity of pork (carcass basis) produced, and the net quantity of pork imported into the U.S. could increase by 1.1%, 7.9 million fewer pounds of pork would be exported, and consumer cost for pork at the retail level would increase by about 2.5%. These changes appear to be significant and will change the economic dynamics of the entire pork chain.

The U.S. beef industry is much less affected than the pork or broiler industries. Under the "most likely" scenario total cost of production would increase by 4.9%, due to a 40% reduction in feed cost using 40% dietary inclusion rate of wet distiller's grains. Beef price at the farm level is projected to increase by 2.4%, with a minimal reduction (0.6%) in the quantity of beef (carcass basis) produced. The net beef imports would be expected to increase by 1% and consumer price for beef at the retail level would only increase by about 1.16%.

Under the same assumptions used for the pork and beef models, the U.S. broiler industry will be impacted the most under the "most likely" scenario. First of all, feed prices would increase by 30% compared to baseline historical corn and soybean meal prices, and total production costs would increase by about 20%. Adding 10% DDGS to broiler diets would have a small benefit and slightly reduce feed cost by $0.02/ton (4%) compared to feeding higher priced feed without DDGS. Broiler price at the farm level is projected to increase by 19%, as the quantity of chicken

produced declines by 4.8%. The net impact is projected to be a 13.9% increase in the price of chicken at the retail level. The projected increase in the retail price of pork and chicken will likely shift consumer demand more in the direction of beef. Unfortunately, there are no estimates currently available on the impact of higher feed prices on the dairy, layer, and turkey sectors. It is also important to recognize that distiller's grains are always worth more, nutritionally, in dairy cow diets, followed by beef feedlot diets, then poultry, with swine diets being the most likely to not use DDGS if the price relationship with competing ingredients (corn, soybean meal, and inorganic phophorus supplements) relative to DDGS are not in favor of using it economically. This is because different animal species have different abilities to utilize and achieve value in the nutrients that distiller's by-products provide to the diet.

Research Needed to Increase Acceptance and Usage of Distiller's Grains in the Livestock and Poultry Industry

General

- Studies to understand the factors causing poor flowability of DDGS and practical methods to improve it
- Direct scientific studies that validate that there are no detectable or biologically active antimicrobial residues in distiller's by-products
- Ways of improving quality of DDGS pellets and ways of improving pellet mill throughput when manufacturing commercial feeds containing DDGS
- Fast, accurate, and low cost methods of monitoring mycotoxin presence and level in distiller's by-products
- Determine maximum dietary DDGS inclusion rates to support optimal performance while minimizing the quantity of manure, nitrogen, and phosphorus excreted relative manure management plans for all species
- Feeding value of new distiller's by-products resulting from fractionation and new processing technologies used in dry grind ethanol plants for all species
- Evaluation of the effectiveness of mold inhibitors and preservatives for wet and dry distiller's by-products

Swine

- Variability of product. Need rapid analysis techniques to determine, major nutrient (proximate) components, digestible amino acid and digestible phosphorus content of DDGS sources
- Determine optimal dietary inclusion rates and feeding strategies to minimize potential pork fat quality issues in pork carcasses
- Determine methods of improving the energy value of DDGS through improved fiber utilization (e.g. enzymes, processing, etc.)
- Further evaluation of DDGS and its role in improving gut health of pigs
- Evaluation of DDGS feeding levels on reproductive performance and longevity of sows
- Direct determination of the net energy value of DDGS sources for swine

Poultry

- Variability of product. Need rapid analysis techniques to determine, major nutrient (proximate) components, digestible amino acid and digestible phosphorus content of DDGS sources
- Increasing dietary utilization of energy from DDGS (enzymes, processing, etc.)
- How does the inclusion of DDGS affect gut microflora and bird health
- Role of DDGS in ammonia emissions from poultry manure
- Does DDGS have any effect on meat yield and quality
- Studies to determine updated amino acid requirements and responses to diet energy for market turkeys. This is critical if the feed industry moves toward lower energy type diets as energy sources (e.g. corn, fat from rendering) decline.

Dairy

- Impact of the amount and type of forage (corn silage or hay crop forage) in the diet on milk production with increasing dietary levels of DGS.
- Determine cause of and ways to minimize or eliminate milk fat content reductions with increasing DGS in diets.
- Determine if the inclusion of DGS increases the production of conjugated linoleic acid (CLA) in milk.

- Determine why there appears to be milk production differences between feeding dry versus wet DGS.
- Further studies are needed related to amino acid formulation of diets and possible total fatty acid content of diets as methods for enhancing milk production and milk composition with increasing inclusion amounts of DDGS in diets.

Beef

- Evaluate the impact of feeding DGS (particularily wet distiller's grains) on beef quality attributes (color, flavor, shelf life, fatty acid profile).
- Discover strategies that ameliorate the negative effects of high sulfur concentrations in distiller's grains
- Determine the effects of feeding DGS on health, performance and beef quality when fed from conception to consumption.

Summary

Corn dried distillers grains with solubles is an excellent energy, protein, and phosphorus feed ingredient that can be used successfully to support optimal animal performance, and often times, reduce overall diet cost. It has nutritional, handling, and feed manufacturing limitations that can be overcome by conducting research to learn how to manage these limitations. It is also a unique feed ingredient because it is produced from a microbial fermentation process, and may contain unidentified compounds that contribute to improved animal health and performance. As the U.S. ethanol industry continues to grow, a greater quantity of DDGS will be available for feeds in the domestic and export market, and a wider diversity of distiller's by-products with different nutritional characteristics will become available for specific animal feeding applications. Research is needed to understand the growing portfolio of new distiller's products, their value and most appropriate feeding applications. Please refer to the most comprehensive review of scientific information on feeding distiller's grains to livestock and poultry at www.ddgs.umn.edu.

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