§ 201.58a Indistinguishable seeds.

When the identification of the kind, variety, or type of seed or determination that seed is hybrid is not possible by seed characteristics, identification may be based upon the seedling, growing plant or mature plant characteristics according to such authentic information as is available.

(a) Ryegrass. In determining the pure seed percentage of perennial ryegrass and annual ryegrass, 400 seeds shall be grown on white filter paper and the number of fluorescent seedlings determined under ultraviolet light at the end of the germination period (see §201.58(b)(10)).

(1) Fluorescence results are to be determined as test fluorescence level (TFL) to two decimal places as follows:

\[
\% \text{TFL} = \frac{\text{Number of normal fluorescent seedlings}}{\text{Total number of normal seedlings}} \times 100
\]

(2) The percentage of perennial ryegrass is calculated as follows:

\[
\% \text{Perennial ryegrass} = \frac{\% \text{VFL (annual)} - \% \text{TFL}}{\% \text{VFL (annual)} - \% \text{VFL (perennial)}} \times \% \text{Pure ryegrass}
\]

where \(\text{VFL}=\text{Variety fluorescence level}\).

(3) Using results from the above formula, the percentage of annual ryegrass is calculated as follows:

\[
\% \text{Annual Ryegrass} = \% \text{Pure Ryegrass} - \% \text{Perennial Ryegrass}
\]

(4) If the test fluorescence level (TFL) of a perennial ryegrass is equal to or less than the variety fluorescence level (VFL) described for the variety, all pure ryegrass is considered to be perennial ryegrass and the formula is not applied.

(5) If the test fluorescence level (TFL) of an annual ryegrass is equal to or greater than the variety fluorescence level (VFL) described for the variety, all pure ryegrass is considered to be annual ryegrass and the formula is not applied.

(6) A list of variety fluorescence level (VFL) descriptions for perennial ryegrass varieties which are more than 0 percent fluorescent and annual ryegrass varieties which are less than 100 percent fluorescent is maintained and published by the National Grass Variety Review Board of the Association of Official Seed Certifying Agencies (AOSCA). If the variety being tested is not stated or the fluorescence level has not been described, the fluorescence level shall be considered to be 0 percent for perennial ryegrass and 100 percent for annual ryegrass. Both VFL (annual) and VFL (perennial) values must always be entered in the formula. If a perennial ryegrass variety is being tested, the VFL (annual) value is 100 percent. If an annual ryegrass variety is being tested, the VFL (perennial) value is 0 percent. For blends the fluorescence level shall be interpolated according to the portion of each variety claimed to be present.

(b) Sweetclover. To determine the presence of yellow sweetclover in samples of white sweetclover, at least 400 seeds shall be subjected to the chemical test as follows:

(1) Preparation of test solution: Add 3 grams of cupric sulfate (CuSO\(_4\)) to 30 ml of household ammonia (NH\(_4\)OH, approximately 4.8 percent) in a stoppered
bottle to form tetraamminecopper sulfate ([Cu(NH$_3$)$_4$]SO$_4$) solution used for this test. After mixing, a light blue precipitate of cupric hydroxide (Cu(OH)$_2$) should form. If no precipitate forms, add additional CuSO$_4$ until a precipitate appears. Since the strength of household ammonia can vary, formation of a precipitate indicates that a complete reaction has taken place between CuSO$_4$ and NH$_4$ OH; otherwise fumes from excess ammonium hydroxide may cause eye irritation.

(2) Preparation of seeds: To insure imbibition, scratch, prick, or otherwise scarify the seed coats of the sweetclover seeds being tested. Soak seeds in water for 2 to 5 hours in a glass container.

(3) Chemical reaction: When seeds have imbibed, remove excess water and add enough test solution to cover the seeds. Seed coats of yellow sweetclover will begin to stain dark brown to black; seed coats of white sweetclover will be olive or yellow-green. Make the separation within 20 minutes, since the seed coats of white sweetclover will eventually turn black also.

(4) Calculation of results: Count the number of seeds which stain dark brown or black and divide by the total number of seeds tested; multiply by the pure seed percentage for Melilotus spp.; the result is the percentage of yellow sweetclover in the sample. The percentage of white sweetclover is found by subtracting the percentage of yellow sweetclover from the percentage of Melilotus spp. pure seed.

(c) Wheat. In determining varietal purity, the phenol test may be used. Place at least 400 seeds on a black background under a F15T8–BLB or comparable ultraviolet tube(s) in an area where light from other sources is excluded. Seeds are considered fluorescent if the lemma or palea fluoresce or appear light in color. "Partially fluorescent" seeds shall be considered fluorescent. Seeds are considered non-fluorescent if the lemma and palea do not fluoresce and appear dark in color under the ultraviolet light.

§ 201.58b Origin.

The presence of incidental weed seeds, foreign matter, or any other existing circumstances shall be considered in determining the origin of seed.

[50 FR 64514, Dec. 14, 1994]

EDITORIAL NOTE: For Federal Register citations affecting §201.58a, see the List of CFR Sections Affected, which appears in the Finding Aids section of the printed volume and on GPO Access.