

approved PCR or other molecular test must be conducted, as provided in paragraph (b)(1) of this section.

(1) *PCR or other molecular tests*—(i) *Negative results.* If the results of PCR or other molecular tests are negative for all samples in a nursery, no further testing is required. The nursery may be considered free of evidence of *Phytophthora ramorum* and plants in the nursery are eligible for interstate movement under certificate in accordance with §301.92-5.

(ii) *Positive results.* If any samples tested using PCR or other molecular tests return positive results for *Phytophthora ramorum*, the nursery from which they originate is prohibited from moving plants interstate. The nursery will be eligible to ship certain plants interstate when an inspector determines that those plants are free of evidence of *Phytophthora ramorum*.

(2) *Culture Test*—(i) *Negative results.* If the results of culture tests are other than positive for any samples taken from a single nursery, plants in the nursery must continue to be withheld from shipment in accordance with §301.92-11 and each plant sample must be tested again using a PCR or other molecular test, as described in this section.

(ii) *Positive results.* If any culture tests return positive results for *Phytophthora ramorum*, the nursery from which they originate is prohibited from moving plants interstate as directed by an inspector. The nursery will be eligible to ship certain plants interstate when an inspector determines that those plants are free of evidence of *Phytophthora ramorum*.

(c) *Other test methods.* Other test methods may be acceptable if approved by APHIS.

PART 302—DISTRICT OF COLUMBIA; MOVEMENT OF PLANTS AND PLANT PRODUCTS

- Sec.
302.1 Definitions.
302.2 Movement of plants and plant products.

AUTHORITY: 7 U.S.C. 7701-7772 and 7781-7786; 7 CFR 2.22, 2.80, and 371.3.

SOURCE: 66 FR 1016, Jan. 5, 2001, unless otherwise noted.

§ 302.1 Definitions.

Inspector. Any employee of the Animal and Plant Health Inspection Service or other person authorized by the Administrator to inspect and certify the plant health status of plants and products under this part.

Interstate. From any State into or through any other State.

State. The District of Columbia, Puerto Rico, the Northern Mariana Islands, or any State, territory, or possession of the United States.

§ 302.2 Movement of plants and plant products.

Inspection or documentation of the plant health status of plants or plant products to be moved interstate from the District of Columbia may be obtained by contacting the State Plant Health Director, Plant Protection and Quarantine, APHIS, Wayne A. Cawley, Jr. Building, Room 350, 50 Harry S. Truman Parkway, Annapolis, MD 21401-7080; phone: (410) 224-3452; fax: (410) 224-1142.

[66 FR 54641, Oct. 30, 2001]

PART 305—PHYTOSANITARY TREATMENTS

- Sec.
305.1 Definitions.
305.2 Approved treatments.
305.3 Monitoring and certification of treatments.
305-4 [Reserved]

Subpart—Chemical Treatments

- 305.5 Treatment requirements.
305.6 Methyl bromide fumigation treatment schedules.
305.7 Phosphine treatment schedules.
305.8 Sulfuryl fluoride treatment schedules.
305.9 Aerosol spray for aircraft treatment schedule.
305.10 Treatment schedules for combination treatments.
305.11 Miscellaneous chemical treatments.
305.12-14 [Reserved]

Subpart—Cold Treatments

- 305.15 Treatment requirements.
305.16 Cold treatment schedules.

Subpart—Quick Freeze Treatments

- 305.17 Authorized treatments; exceptions.
305.18 Quick freeze treatment schedule.

§ 305.1

305.19 [Reserved]

Subpart—Heat Treatments

- 305.20 Treatment requirements.
- 305.21 Hot water dip treatment schedule for mangoes.
- 305.22 Hot water immersion treatment schedules.
- 305.23 Steam sterilization treatment schedules.
- 305.24 Vapor heat treatment schedules.
- 305.25 Dry heat treatment schedules.
- 305.26 Khapra beetle treatment schedule for feeds and milled products.
- 305.27 Forced hot air treatment schedules.
- 305.28 Kiln sterilization treatment schedule.
- 305.29 Vacuum heat treatment schedule.
- 305.30 [Reserved]

Subpart—Irradiation Treatments

- 305.31 Irradiation treatment of imported regulated articles for certain plant pests.
- 305.32 Irradiation treatment of regulated fruit to be moved interstate from areas quarantined for fruit flies.
- 305.33 [Reserved]
- 305.34 Irradiation treatment of certain regulated articles from Hawaii, Puerto Rico, and the U.S. Virgin Islands.
- 305.35–305.39 [Reserved]

Subpart—Treatments for Garbage

- 305.40 Garbage treatment schedules for insect pests and pathogens.
- 305.41 [Reserved]

Subpart—Miscellaneous Treatments

- 305.42 Miscellaneous treatment schedules.
- AUTHORITY: 7 U.S.C. 7701–7772 and 7781–7786; 21 U.S.C. 136 and 136a; 7 CFR 2.22, 2.80, and 371.3.

SOURCE: 70 FR 33269, June 7, 2005, unless otherwise noted.

§ 305.1 Definitions.

The following definitions apply for the purposes of this part:

Administrator. The Administrator, Animal and Plant Health Inspection Service, United States Department of Agriculture, or any person delegated to act for the Administrator in matters affecting this part.

APHIS. The Animal and Plant Health Inspection Service, United States Department of Agriculture.

Autoclaving. The introduction of steam at 212 °F into a pressurized enclosure containing a commodity to kill spores and other treatment-resistant pests.

Cold treatment. Exposure of a commodity to a specified cold temperature that is sustained for a specific time period to kill targeted pests, especially fruit flies.

Dose mapping. Measurement of absorbed dose within a process load using dosimeters placed at specified locations to produce a one-, two-, or three-dimensional distribution of absorbed dose, thus rendering a map of absorbed-dose values.

Dosimeter. A device that, when irradiated, exhibits a quantifiable change in some property of the device that can be related to absorbed dose in a given material using appropriate analytical instrumentation and techniques.

Dosimetry system. A system used for determining absorbed dose, consisting of dosimeters, measurement instruments and their associated reference standards, and procedures for the system's use.

Forced hot air. Hot air blown uniformly across commodities in a shipment until the pulp of each unit in the shipment of the commodity reaches a specified temperature.

Fumigant. A gaseous chemical that easily diffuses and disperses in air and is toxic to the target organism.

Fumigation. Releasing and dispersing a toxic chemical in the air so that it reaches the target organism in a gaseous state.

Hitchhiker pest. A pest that is carried by a commodity or a conveyance and, in the case of plants and plant products, does not infest those plants or plant products.

Hot water immersion dip. Complete immersion of a commodity in heated water to raise the temperature of the commodity to a specific temperature for a specified time. This treatment is usually used to kill fruit flies.

Inspector. Any individual authorized by the Administrator of APHIS or the Commissioner of Customs and Border Protection, Department of Homeland Security, to enforce the regulations in this part.

Irradiation. The use of irradiated energy to kill or devitalize organisms.

Methyl bromide. A colorless, odorless biocide used to fumigate a wide range of commodities.

Phosphine. Flammable gas generated from either aluminum phosphide or magnesium phosphide and used to treat stored product commodities.

Quick freeze. A commercially acceptable method of quick freezing at sub-zero temperatures with subsequent storage and transportation at not higher than 20 °F. Methods that accomplish this are known as quick freezing, sharp freezing, cold pack, or frozen pack, but may be any equivalent commercially acceptable freezing method.

Section 18 of Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA). An emergency exemption granted by the U.S. Environmental Protection Agency to Federal or State agencies authorizing an unregistered use of a pesticide for a limited time.

Sulfuryl fluoride. An odorless, colorless, and nonflammable compressed fumigant that is used primarily to kill pests of wood.

Steam heat. The introduction of steam at 212 °F or higher into an enclosure containing a commodity to kill targeted organisms.

Vacuum fumigation. Fumigation performed in a gas-tight enclosure. Most air in the enclosure is removed and replaced with a small amount of fumigant. The reduction in pressure reduces the required duration of the treatment.

Vacuum heat treatment. The treated commodity is held in a gas-tight enclosure and heated to a specified temperature for a specific time period to kill targeted pests.

Vapor heat. Heated air saturated with water vapor and used to raise the temperature of a commodity to a required point for a specific period.

[70 FR 33269, June 7, 2005, as amended at 70 FR 36332, June 23, 2005]

§ 305.2 Approved treatments.

(a) Certain commodities or articles require treatment, or are subject to

Used material	Pest	Treatment
Bags and bagging material or covers used to contain root crops.	<i>Globodera rostochiensis</i>	MB T306-a.
Bags and bagging used for commodities grown in soil.	Potato cyst nematode	MB T502-1.
Bags and bagging material or covers used for cotton only.	<i>Pectinophora</i> spp.	MB T306-b.
Bags and bagging used for small grains	Downy mildews and <i>Physoderma</i> diseases of maize.	T503-1-2: Soak in water slightly below boiling (212 °F) for 1 hour; or SS T503-1-3; or DH T503-1-4.
	Flag smut	DH T504-1-1 or SS T504-1-2.

treatment, prior to the interstate movement within the United States or importation or entry into the United States. Treatment is required as indicated in parts 301, 318, and 319 of this chapter, on a permit, or by an inspector.

(1) Treatment schedules provided in this part must be followed to neutralize pests.

(2) More information about treatment schedules is contained in the Plant Protection and Quarantine (PPQ) Treatment Manual, which is available on the Internet at http://www.aphis.usda.gov/ppq/manuals/online_manuals.html or by contacting the Animal and Plant Health Inspection Service, Plant Protection and Quarantine, Manuals Unit, 69 Thomas Johnson Drive, Suite 100, Frederick, MD 21702.

(3) Treatment requirements provided in this part must be followed to adequately administer treatment schedules.

(4) APHIS is not responsible for losses or damages incurred during treatment and recommends that a sample be treated first before deciding whether to treat the entire shipment.

(b) *Alpha grass and handicrafts (Stipa tenacissima, Ampelodesmos mauritanicus).* For treatment schedules, see §305.6 for methyl bromide (MB) fumigation.

Pest	Treatment
<i>Harmolita</i> spp.	MB T304-a or MB T304-b.

(c) *Bags, bagging materials, and covers (used).* The treatment schedules for which administration instructions are not provided are in §305.6 for methyl bromide (MB) fumigation, §305.23 for steam sterilization (SS), and §305.25 for dry heat (DH).

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Used material	Pest	Treatment
Bags and bagging material or covers	<i>Trogoderma granarium</i>	MB T306-c-1 or MB T306-c-2.
Bagging from unroasted coffee beans	Various	MB T306-d-1 or MB T306-d-2.
Covers used for commodities grown in soil.	Potato cyst nematode	MB T502-2.
Covers used for small grains	Downy mildews and <i>Physoderma</i> diseases of maize.	T503-2-2: Soak in water slightly below boiling (212 °F) for 1 hour; or SS T503-2-3; or DH T503-2-4.
Covers used for wheat	Flag smut	DH T504-2-1 or SS T504-2-2.

(d) *Broomcorn and broomcorn articles.* The treatment schedules for which administration instructions are not provided are in §305.6 for methyl bromide (MB) fumigation and §305.23 for steam sterilization (SS).

Pest	Treatment
Corn-related diseases (precautionary treatment).	T566-1 (broomcorn) and T566-2 (broomcorn articles): Completely submerge in hot water at 102 °F.

Pest	Treatment
<i>Ostrinia nubilalis</i> , ticks, and saw flies.	MB T309-a or MB T309-b-1or MB T309-b-2 or SS T309-c.

(e) *Cotton and cotton products.* The treatment schedules for which administration instructions are not provided are in §305.6 for methyl bromide (MB) fumigation and §305.7 for phosphine (PH).

Material	Pest	Treatment
Baled lint or linters	<i>Pectinophora</i> spp	MB T301-a-3.
Baled lint, linters, waste, piece goods, gin trash.	<i>Trogoderma granarium</i>	MB T301-b-1-1 or MB T301-b-1-2.
Cottonseed (samples and bulk)	<i>Pectinophora</i> spp	T301-a-7: (1) Delint the cottonseed by applying sufficient heat (145 °F) or acid or both; or (2) raise the temperature of the delinted seed during the subsequent drying process to 145 °F for no less than 45 seconds or at least 140 °F for no less than 8 minutes.
Cottonseed, cottonseed products, or samples.	<i>T. granarium</i>	MB T301-b-2.
Cottonseed meal	<i>T. granarium</i>	MB T301-b-3.
Cotton and cotton products	<i>Globodera rostochiensis</i>	MB T301-c.
Cotton and cotton products	<i>Anthonomus grandis</i>	MB T301-d-1-1 or PH T301-d-1-2.
Lint, linters, cottonseed, cottonseed hulls, gin trash, waste, cottonseed meal, or other baled or bulk commodities (except samples).	<i>Pectinophora</i> spp	MB T301-a-1-1 or MB T301-a-1-2.
Lint, linters, and cottonseed (bulk, sacked, or packaged cottonseed, lint or linters, cottonseed hulls, gin trash, and all other baled or bulk cotton commodities).	<i>Pectinophora</i> spp	PH T301-a-6.
Lint (except baled lint or linters), cottonseed (except packaged cottonseed), cottonseed hulls, gin trash, waste, cottonseed meal, or other baled or bulk commodities (excluding samples).	<i>Pectinophora</i> spp	MB T301-a-2.
Packaged cottonseed	<i>Pectinophora</i> spp	MB T301-a-4.
Samples of cotton and cotton products	<i>Pectinophora</i> spp	MB T301-a-5-1 or MB T301-a-5-2.

(f) *Cut flowers and greenery.* The treatment schedules for which administration instructions are not provided are in §305.6 for methyl bromide (MB) fumigation.

Pest	Treatment
External feeders, leafminers, hitchhikers (except for snails and slugs), surface pests ...	MB T305-a.

Pest	Treatment
Borers or soft scales	MB T305-b.
Mealybugs	MB T305-c.

(g) *Equipment.* The treatment schedules for which administration instructions are not provided are in §305.6 for methyl bromide (MB) fumigation,

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§ 305.9 for aerosol, and § 305.23 for steam sterilization (SS).

Article	Pest	Treatment
Aircraft	<i>Trogoderma granarium</i>	T409-a: Contact PPQ Regional Director for specific instructions. Aerosol T409-b.
	Hitchhiker pests (other than <i>T. granarium</i> , fruit flies, and soft-bodied insects).	
Automobiles	<i>Globodera rostochiensis</i> and <i>G. pallida</i> ..	T406-c, steam cleaning: Steam at high pressure until all soil is removed. Treated surfaces must be thoroughly wet and heated.
Construction equipment with cabs	<i>G. rostochiensis</i>	MB T406-b.
Construction equipment without cabs	<i>G. rostochiensis</i> and <i>G. pallida</i>	SS T-406d.
Containers	<i>G. rostochiensis</i>	MB T406-b.
Containers	Potato cyst nematode	MB T506-1.
Field and processing equipment (<i>Saccharum</i>).	<i>Xanthomonas albilineans</i> and <i>X. vasculorum</i> .	T514-4: Remove all debris and soil from equipment with water at high pressure (300 pounds per square inch minimum) or with steam.
Mechanical cotton pickers and other cotton equipment.	<i>Pectinophora gossypiella</i>	MB T407.
Used farm equipment with cabs	<i>G. rostochiensis</i> and <i>G. pallida</i>	T406-c, steam cleaning: Steam at high pressure until all soil is removed. Treated surfaces must be thoroughly wet and heated.
Used farm equipment without cabs	<i>G. rostochiensis</i> and <i>G. pallida</i>	SS T-406d.
Used containers	<i>G. rostochiensis</i> and <i>G. pallida</i>	SS T-406d.

(h) *Fruits and vegetables.* (1) Treatment of fruits and vegetables from foreign localities by irradiation in accordance with § 305.31 may be substituted for other approved treatments for any of the pests listed in § 305.31(a). Treatment of fruits and vegetables from Hawaii, Puerto Rico, and the U.S. Virgin Islands by irradiation at the minimum doses listed in § 305.31(a) and in accordance with § 305.34 may be substituted for other approved treatments for any of the pests listed in § 305.31(a).

(2) The treatment schedules for which administration instructions are not provided are in § 305.6 for methyl

bromide (MB) fumigation, § 305.10(a) for methyl bromide fumigation and cold treatment (MB&CT), § 305.10(b) for cold treatment and methyl bromide fumigation (CT&MB), § 305.11 for miscellaneous chemical treatments (CMisc.), § 305.16 for cold treatment (CT), § 305.18 for quick freeze, § 305.21 for hot water dip (HWD), § 305.22 for hot water immersion (HWI), § 305.24 for vapor heat (VH), § 305.27 for forced hot air (FHA), § 305.29 for vacuum heat (VCH), §§ 305.31 through 305.34 for irradiation (IR), and § 305.42 for miscellaneous (Misc.).

(i) *Treatment for shipments from foreign localities.*

Location	Commodity	Pest	Treatment schedule
All	All imported fruits and vegetables.	Most	Quick freeze T110.
	All imported fruits and vegetables approved for treatment with methyl bromide under the Federal Insecticide, Fungicide, and Rodenticide Act.	Hitchhiker pests or surface pests, except mealybugs.	MB T104-a-1.
		Mealybugs	MB T104-a-2.
	Acorns, chestnuts (see § 319.56-11 of this chapter).	Most	Quick freeze T110.
	Banana	<i>Cydia splendana</i> and <i>Curculio</i> spp..	MB T101-t-1 or MB T101-u-1.
		External feeders such as Noctuidae spp., <i>Thrips</i> spp., <i>Copitarsia</i> spp..	MB T101-d-1.
	Beet	Internal feeders	MB T101-g-1.
	Beet	External feeders	MB T101-g-1-1.

Location	Commodity	Pest	Treatment schedule
	Blackberry	External feeders such as <i>Noctuidae</i> spp., <i>Thrips</i> spp., <i>Copitarsia</i> spp., <i>Pentatomidae</i> spp., and <i>Tarsonemus</i> spp..	MB T101–h–1.
	Broccoli (includes Chinese and rapini).	External feeders and leafminers.	MB T101–n–2.
	Brussel sprouts	External feeders and leafminers.	MB T101–n–2.
	Cabbage (European and Chinese).	External feeders	MB T101–j–1.
	Cabbage (bok choy, napa, Chinese mustard).	External feeders and leafminers.	MB T101–n–2.
	Cantaloupe	External feeders	MB T101–k–1.
	Carrot	External feeders	MB T101–l–1.
	Carrot	Internal feeders	MB T101–m–1.
	Cauliflower	External feeders and leafminers.	MB T101–n–2.
	Celeriac (celery root)	External feeders	MB T101–n–1.
	Celery (above ground parts) ..	External feeders	MB T101–o–1.
	Chayote (fruit only)	External feeders	MB T101–p–1.
	Cherry	Insects other than fruit flies ..	MB T101–r–1.
	Cherry	<i>Rhagoletis indifferens</i> and <i>Cydia pomonella</i> .	MB T101–s–1.
	Chicory (above ground parts)	External feeders	MB T101–v–1.
	Chicory root	External feeders	MB T101–n–1.
	Copra	External feeders	MB T101–x–1.
	Corn-on-the-cob	<i>Ostrinia nubilalis</i>	MB T101–x–1–1.
	Cucumber	External feeders	MB T101–y–1.
	Dasheen	External feeders	MB T101–z–1.
	Dasheen	Internal feeders	MB T101–a–2.
	Durian and other large fruits such as breadfruit.	External feeders	Misc. T102–c.
	Endive	External feeders	MB T101–b–2.
	Fava bean (dried)	Bruchidae	MB T101–c–2. MB T101–d–2. MB T101–e–2.
	Garlic	<i>Brachycerus</i> spp. and <i>Dyspessa ulula</i> .	
	Ginger (rhizome)	Internal feeders	MB T101–f–2.
	Ginger (rhizome)	External feeders	MB T101–g–2.
	Grapefruit and other citrus	<i>Aleurocanthus woglumi</i>	MB T101–j–2.
	Herbs and spices (dried)	Various stored product pests, except khapra beetle.	MB T101–n–2–1–1.
	Herbs, fresh (includes all fresh plant parts except seeds).	External feeders and leafminers..	
	Kiwi	External feeders, <i>Nysius huttoni</i> .	MB T101–m–2.
	Leeks	Internal feeders	MB T101–q–2.
	Lentils (dried)	Bruchidae	MB T101–e–1.
	Litchi	Mealybugs (Pseudococcidae)	MB T101–b–1–1.
	Lime	Mealybugs and other surface pests.	HWI T102–e.
	Melon (including honeydew, muskmelon, and watermelon).	External feeders such as <i>Noctuidae</i> spp., <i>Thrips</i> spp., <i>Copitarsia</i> spp..	MB T101–o–2.
	Onion	Internal feeders and leafminers.	MB T101–q–2.
	Papaya	<i>Cercospora mamaonis</i> and <i>Phomopsis carica-papayae</i> .	T561: Dip in hot water at 120.2 °F for 20 minutes.
	Parsnip	Internal feeders	MB T101–g–1.
	Peas (dried)	Bruchidae	MB T101–e–1.
	Pecans and hickory nuts	<i>Curculio caryae</i>	CT T107–g.
	Peppers	Internal pests (except fruit flies) and external pests (except mealybugs).	MB T101–a–3.
	Pineapple	Internal feeders	MB T101–r–2.
	Plantain	External feeders such as <i>Noctuidae</i> spp., <i>Thrips</i> spp., <i>Copitarsia</i> spp..	MB T101–t–2.
	Potato (white or Irish)	<i>Graphognathus</i> spp.	MB T101–u–2.
	Potato (white or Irish)	<i>Ostrinia nubilalis</i> , <i>Phthorimaea operculella</i> .	MB T101–v–2.
	Pulses (dried)	Bruchidae	MB T101–e–1.

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Location	Commodity	Pest	Treatment schedule
	Pumpkin (includes calabaza varieties).	External feeders	MB T101-w-2.
	Radish	Internal feeders	MB T101-g-1.
	Raspberry	External feeders such as Noctuidae spp., <i>Thrips</i> spp., <i>Copitarsia</i> spp..	MB T101-x-2.
	Shallots	Internal feeders including leafminers.	MB T101-q-2.
	Squash (winter, summer, and chayote).	External feeders	MB T101-y-2.
	Sweet potato	External and internal feeders	MB T101-b-3-1.
	Strawberry	External feeders	MB T101-z-2.
	Tuna and other cactus fruit ...	External feeders and leafminers.	MB T101-e-3.
	Turnip	Internal feeders	MB T101-g-1.
	Yam	Internal and external feeders	MB T101-f-3.
	Zucchini	<i>Ceratitis capitata</i> , <i>Bactrocera cucurbitae</i> , <i>B. dorsalis</i> .	VH T106-b-8.
Albania	Zucchini	External feeders	MB T101-h-3.
	Horseradish	<i>Baris lepidii</i>	MB T101-i-2.
Algeria	Grape	<i>Lobesia botrana</i>	MB T101-h-2.
		<i>Ceratitis capitata</i>	CT T107-a or MB T101-h-2-1.
		<i>Ceratitis capitata</i> , <i>Lobesia botrana</i> .	MB T101-h-2-1.
		<i>Bactrocera cucurbitae</i> , <i>B. dorsalis</i> , <i>B. tryoni</i> , <i>Brevipalpus chilensis</i> , <i>Ceratitis capitata</i> , <i>Lobesia botrana</i> .	MB&CT T108-a-1 or T108-a-2 or T108-a-3.
	Grapefruit, tangerine	<i>Ceratitis capitata</i>	CT T107-a.
	Pear, plum, ethrog	<i>Ceratitis capitata</i>	CT T107-a.
		<i>Bactrocera cucurbitae</i> , <i>B. dorsalis</i> , <i>B. tryoni</i> , <i>Brevipalpus chilensis</i> , <i>Ceratitis capitata</i> , <i>Lobesia botrana</i> .	MB&CT T108-a-1 or T108-a-2 or T108-a-3.
Antigua and Barbuda	Bean (pod), pigeon pea (pod)	<i>Cydia fabivora</i> , <i>Epinotia aporema</i> , <i>Maruca testulalis</i> , and leafminers.	MB T101-k-2.
Argentina	Okra (pod)	<i>Pectinophora gossypiella</i>	MB T101-p-2.
	Apple, apricot, cherry, kiwi, peach, pear, plum, nectarine, quince, pomegranate.	Species of <i>Anastrepha</i> (other than <i>Anastrepha ludens</i>), <i>Ceratitis capitata</i> .	CT T107-a-1.
	Blueberry	<i>Anastrepha fraterculus</i> , <i>Ceratitis capitata</i> .	CT T107-a-1 or MB T101-i-1-1.
	Grape	Species of <i>Anastrepha</i> (other than <i>Anastrepha ludens</i>), <i>Ceratitis capitata</i> .	CT T107-a-1.
		Insects other than <i>Ceratitis capitata</i> and <i>Lobesia botrana</i> .	MB T101-i-2.
Armenia	Grape	<i>Lobesia botrana</i>	MB T101-h-2.
		<i>Ceratitis capitata</i>	CT T107-a MB T101-h-2-1.
		<i>Ceratitis capitata</i> , <i>Lobesia botrana</i> .	MB T101-h-2-1.
		<i>Bactrocera cucurbitae</i> , <i>B. dorsalis</i> , <i>B. tryoni</i> , <i>Brevipalpus chilensis</i> , <i>Ceratitis capitata</i> , <i>Lobesia botrana</i> .	MB&CT T108-a-1 or T108-a-2 or T108-a-3.
Australia	Horseradish	<i>Baris lepidii</i>	MB T101-l-2.
	Apple	<i>Austrotortrix</i> spp. and <i>Epiphyas</i> spp., <i>Bactrocera tryoni</i> , <i>Ceratitis capitata</i> , and other fruit flies.	CT&MB T109-d-1.
		<i>Bactrocera tryoni</i>	CT T107-d.
		Tortricidae	MB T101-a-1.
	Asparagus	External feeders, apple moth	MB T101-a-1.
		External feeders such as Noctuidae spp., <i>Thrips</i> spp. (except <i>Scirtothrips dorsalis</i> from Thailand), <i>Copitarsia</i> spp..	MB T101-b-1.
		<i>Halotydeus destructor</i>	T101-b-1-1.

Location	Commodity	Pest	Treatment schedule
Austria	Citrus—oranges, grapefruits, limes, lemons, mandarins, satsumas, tangors, tangerines, and other fruits grown from this species or its hybrids (<i>C. reticulata</i>).	<i>Bactrocera tryoni</i>	CT T107–d.
	Citrus—oranges, grapefruits, limes lemons, mandarins, satsumas, tangors, tangerines, and other fruits grown from this species or its hybrids (<i>C. reticulata</i>).	<i>Ceratitidis capitata</i>	CT T107–a.
	Grape	<i>Austrotortrix</i> spp. and <i>Epiphyas</i> spp., <i>Bactrocera tryoni</i> , <i>Ceratitidis capitata</i> , and other fruit flies.	MB&CT T108–b or CT&MB T109–d–1.
	Kiwi	<i>Bactrocera tryoni</i>	CT T107–d.
	Pear	<i>Austrotortrix</i> spp., <i>Epiphyas</i> spp., <i>Bactrocera tryoni</i> , <i>Ceratitidis capitata</i> , and other fruit flies.	CT&MB and T109–d–1.
	Grape	<i>Bactrocera tryoni</i>	CT T107–d.
		Tortricidae	MB T101–a–1.
		<i>Lobesia botrana</i>	MB T101–h–2.
		<i>Ceratitidis capitata</i>	CT T107–a or MB T101–h–2–1.
		<i>Ceratitidis capitata</i> , <i>Lobesia botrana</i> .	MB T101–h–2–1.
Aruba	Horseradish	<i>Bactrocera cucurbitae</i> , <i>B. dorsalis</i> , <i>B. tryoni</i> , <i>Brevipalpus chilensis</i> , <i>Ceratitidis capitata</i> , <i>Lobesia botrana</i> .	MB&CT T108–a–1 or T108–a–2 or T108–a–3.
	Bean, garden (pod or shelled)	<i>Baris lepidii</i>	MB T101–1–2.
Azerbaijan	Green bean	<i>Cydia fabivora</i> , <i>Epinotia aporema</i> , <i>Maruca testulalis</i> , and leafminers.	MB T101–k–2 or MB T101–k–2–1.
	Grape	<i>Cydia fabivora</i> , <i>Epinotia aporema</i> , <i>Maruca testulalis</i> , and leafminers.	MB T101–k–2.
<i>Lobesia botrana</i>		MB T101–h–2.	
<i>Ceratitidis capitata</i>		CT T107–a or MB T101–h–2–1.	
Bahamas	Horseradish (to Hawaii)	<i>Ceratitidis capitata</i> , <i>Lobesia botrana</i> .	MB T101–h–2–1.
		<i>Bactrocera cucurbitae</i> , <i>B. dorsalis</i> , <i>B. tryoni</i> , <i>Brevipalpus chilensis</i> , <i>Ceratitidis capitata</i> , <i>Lobesia botrana</i> .	MB&CT T108–a–1 or T108–a–2 or T108–a–3.
	Bean (pod)	<i>Baris lepidii</i>	MB T101–1–2.
	Okra (pod)	<i>Cydia fabivora</i> , <i>Epinotia aporema</i> , <i>Maruca testulalis</i> , and leafminers.	MB T101–k–2.
	Pigeon pea (pod)	<i>Pectinophora gossypiella</i>	MB T101–p–2.
Barbados	Bean (pod or shelled), pigeon pea (pod).	<i>Cydia fabivora</i> , <i>Epinotia aporema</i> , <i>Maruca testulalis</i> , and leafminers.	MB T101–k–2.
Belarus	Okra (pod)	<i>Cydia fabivora</i> , <i>Epinotia aporema</i> , <i>Maruca testulalis</i> , and leafminers.	MB T101–k–2.
	Grape	<i>Pectinophora gossypiella</i>	MB T101–p–2.
		<i>Lobesia botrana</i>	MB T101–h–2.
		<i>Ceratitidis capitata</i>	CT T107–a or MB T101–h–2–1.
Belgium	Horseradish	<i>Ceratitidis capitata</i> , <i>Lobesia botrana</i> .	MB T101–h–2–1.
		<i>Bactrocera cucurbitae</i> , <i>B. dorsalis</i> , <i>B. tryoni</i> , <i>Brevipalpus chilensis</i> , <i>Ceratitidis capitata</i> , <i>Lobesia botrana</i> .	MB&CT T108–a–1 or T108–a–2 or T108–a–3.
	Bean, garden (pod or shelled), pea (pod or shelled).	<i>Baris lepidii</i>	MB T101–1–2.
	Horseradish (to Hawaii)	<i>Cydia fabivora</i> , <i>Epinotia aporema</i> , <i>Maruca testulalis</i> , and leafminers.	MB T101–k–2.
		<i>Baris lepidii</i>	MB T101–1–2.

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Location	Commodity	Pest	Treatment schedule
Belize	Bean (pod or shelled), pigeon pea (pod or shelled).	<i>Cydia fabivora</i> , <i>Epinotia aporema</i> , <i>Maruca testulalis</i> , and leafminers.	MB T101-k-2.
	Carambola	Species of <i>Anastrepha</i> (other than <i>Anastrepha ludens</i>).	CT T107-c.
	Ethrog	<i>Ceratitis capitata</i> <i>Bactrocera cucurbitae</i> , <i>B. dorsalis</i> , <i>B. tryoni</i> , <i>Brevipalpus chilensis</i> , <i>Ceratitis capitata</i> , <i>Lobesia botrana</i> .	CT T107-a. MB&CT T108-a-1 or T108-a-2 or T108-a-3.
	Grapefruit, orange, tangerine Papaya	<i>Anastrepha ludens</i> <i>Ceratitis capitata</i> , <i>Bactrocera cucurbitae</i> , <i>B. dorsalis</i> .	CT T107-b. FHA T103-d-2.
Bolivia	Blueberry	<i>Ceratitis capitata</i>	MB T101-i-1-1.
Bosnia	Ethrog	<i>Ceratitis capitata</i> <i>Bactrocera cucurbitae</i> , <i>B. dorsalis</i> , <i>B. tryoni</i> , <i>Brevipalpus chilensis</i> , <i>Ceratitis capitata</i> , <i>Lobesia botrana</i> .	CT T107-a. MB&CT T108-a-1 or T108-a-2 or T108-a-3.
	Horseradish	<i>Baris lepidii</i>	MB T101-1-2.
Brazil	Apple, grape (prohibited into California).	Species of <i>Anastrepha</i> (other than <i>Anastrepha ludens</i>), <i>Ceratitis capitata</i> .	CT T107-a-1.
	Mango	<i>Ceratitis capitata</i> , <i>Anastrepha</i> spp., <i>Anastrepha ludens</i> .	HWD T102-a.
	Okra	<i>Pectinophora gossypiella</i>	MB T101-p-2.
Bulgaria	Grape	<i>Lobesia botrana</i> <i>Ceratitis capitata</i> <i>Ceratitis capitata</i> , <i>Lobesia botrana</i> .	MB T101-h-2. CT T107-a or MB T101-h-2-1. MB T101-h-2-1.
	Horseradish	<i>Baris lepidii</i>	MB&CT T108-a-1 or T108-a-2 or T108-a-3.
	Bean (pod or shelled), pigeon pea (pod).	<i>Cydia fabivora</i> , <i>Epinotia aporema</i> , <i>Maruca testulalis</i> , and leafminers.	MB T101-1-2. MB T101-k-2.
	Okra (pod)	<i>Pectinophora gossypiella</i>	MB T101-p-2.
Chile (all provinces except provinces of Region 1 or Chanaral Township of Region 3).	Apricot, nectarine, peach, plum, plumcot.	External feeders	MB T101-a-3.
	Cherimoya	<i>Brevipalpus chilensis</i>	Misc. T102-b
	Grape	External feeders	MB T101-i-2-1.
	Horseradish (to Hawaii)	<i>Baris lepidii</i>	MB T101-1-2.
	Lemon (smooth skin)	External feeders, <i>Brevipalpus chilensis</i> .	MB T101-n-2-1.
	Lime	<i>Brevipalpus chilensis</i> External feeders, <i>Brevipalpus chilensis</i> .	Misc. T102-b-1. MB T101-n-2-1.
	Passion fruit	<i>Brevipalpus chilensis</i>	Misc. T102-b-2.
	Tomato	External feeders	MB T101-a-3.
	Apple, cherry, pear, quince	<i>Ceratitis capitata</i> <i>Bactrocera cucurbitae</i> , <i>B. dorsalis</i> , <i>B. tryoni</i> , <i>Brevipalpus chilensis</i> , <i>Ceratitis capitata</i> , <i>Lobesia botrana</i> .	CT T107-a. MB&CT T108-a-1 or T108-a-2 or T108-a-3.
	Apricot	<i>Ceratitis capitata</i> and external feeders. <i>Bactrocera cucurbitae</i> , <i>B. dorsalis</i> , <i>B. tryoni</i> , <i>Brevipalpus chilensis</i> , <i>Ceratitis capitata</i> , <i>Lobesia botrana</i> .	CT T107-a and MB T101-a-3. MB&CT T108-a-1 or T108-a-2 or T108-a-3.
Avocado	<i>Bactrocera cucurbitae</i> , <i>B. dorsalis</i> , <i>B. tryoni</i> , <i>Brevipalpus chilensis</i> , <i>Ceratitis capitata</i> , <i>Lobesia botrana</i> .	MB&CT T108-a-1 or T108-a-2 or T108-a-3.	
Chile (all provinces of Region 1 or Chanaral Township of Region 3).	Babaco (fruit)	<i>Ceratitis capitata</i> , <i>Bactrocera cucurbitae</i> , <i>B. dorsalis</i> .	VH T106-b-3.
		External feeders	MB T103-d-1.

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Location	Commodity	Pest	Treatment schedule
	Blueberry	<i>Ceratitis capitata</i>	MB T101–i–1–1.
	Grape	<i>Ceratitis capitata</i>	CT T107–a.
		External feeders	MB T101–i–2–1.
		<i>Bactrocera cucurbitae</i> , <i>B. dorsalis</i> , <i>B. tryoni</i> , <i>Brevipalpus chilensis</i> , <i>Ceratitis capitata</i> , <i>Lobesia botrana</i> .	MB&CT T108–a–1 or T108–a–2 or T108–a–3.
	Horseradish (to Hawaii)	<i>Baris lepidii</i>	MB T101–1–2.
	Kiwi	<i>Ceratitis capitata</i>	CT T107–a.
		<i>Bactrocera cucurbitae</i> , <i>B. dorsalis</i> , <i>B. tryoni</i> , <i>Brevipalpus chilensis</i> , <i>Ceratitis capitata</i> , <i>Lobesia botrana</i> .	MB&CT T108–a–1 or T108–a–2 or T108–a–3.
	Lemon (smooth skinned)	External feeders, <i>Brevipalpus chilensis</i> .	MB T101–n–2–1.
	Lime	<i>Brevipalpus chilensis</i>	Misc. T102–b–2.
		External feeders, <i>Brevipalpus chilensis</i> .	MB T101–n–2–1.
	Loquat	<i>Ceratitis capitata</i>	CT T107–a.
	Mango	<i>Anastrepha</i> spp., <i>Anastrepha ludens</i> , <i>Ceratitis capitata</i> .	HWD T102–a.
	Mountain papaya	<i>Bactrocera cucurbitae</i> , <i>B. dorsalis</i> , <i>Ceratitis capitata</i> .	VH T106–b–3 or FHA T103–d–1.
	Nectarine	<i>Ceratitis capitata</i>	CT T107–a.
		External feeders	MB T101–a–3.
	Papaya	<i>Bactrocera cucurbitae</i> , <i>B. dorsalis</i> , <i>Ceratitis capitata</i> .	VH T106–b–4 or FHA T103–d–2.
	Peach	<i>Ceratitis capitata</i>	CT T107–a.
		External feeders	MB T101–a–3.
	Persimmon, sand pear	<i>Ceratitis capitata</i>	CT T107–a.
	Plum, plumcot	<i>Ceratitis capitata</i>	CT T107–a.
		<i>Bactrocera cucurbitae</i> , <i>B. dorsalis</i> , <i>B. tryoni</i> , <i>Brevipalpus chilensis</i> , <i>Ceratitis capitata</i> , <i>Lobesia botrana</i> .	MB&CT T108–a–1 or T108–a–2 or T108–a–3.
		External feeders	MB T101–a–3.
	<i>Opuntia</i> spp.	<i>Ceratitis capitata</i>	MB T101–d–3.
	Tomato	<i>Scrobipalpa absoluta</i> , <i>Rhagoletis tomatitis</i> .	MB T101–c–3–1.
China	Litchi	<i>Bactrocera cucurbitae</i> , <i>B. dorsalis</i> , <i>Conopomorpha sinensis</i> .	CT T107–h.
	Longan	<i>Bactrocera dorsalis</i> and <i>B. cucurbitae</i> .	CT T107–j.
	Pear (Ya variety), Shandong Province only.	<i>Bactrocera cucurbitae</i> , <i>B. dorsalis</i> , <i>Eutetranychus orientalis</i> .	CT T107–f.
	Sand pear	<i>Bactrocera cucurbitae</i> , <i>B. dorsalis</i> , <i>Eutetranychus orientalis</i> .	CT T107–f.
Colombia	Bean, garden	<i>Cydia fabivora</i> , <i>Epinotia aporema</i> , <i>Maruca testulalis</i> , and leafminers.	MB T101–k–2 or MB T101–k–2–1.
	Blueberry	<i>Ceratitis capitata</i>	MB T101–i–1–1.
	Cape gooseberry	<i>Ceratitis capitata</i>	CT T107–a.
	Grape	Species of <i>Anastrepha</i> (other than <i>Anastrepha ludens</i>).	CT T107–c.
	Grapefruit, orange, plum, tangerine, pomegranate.	<i>Anastrepha ludens</i>	CT T107–b.
	Okra	<i>Pectinophora gossypiella</i>	MB T101–p–2.
	Tuna	<i>Ceratitis capitata</i>	MB T101–d–3.
	Yellow pitaya	<i>Ceratitis capitata</i> and <i>Anastrepha fraterculus</i> .	VH T106–e.
Costa Rica	Bean, garden	<i>Cydia fabivora</i> , <i>Epinotia aporema</i> , <i>Maruca testulalis</i> , and leafminers.	MB T101–k–2 or MB T101–k–2–1.
	Bean, lima (pod or shelled), pigeon pea (pod or shelled).	<i>Cydia fabivora</i> , <i>Epinotia aporema</i> , <i>Maruca testulalis</i> , and leafminers.	MB T101–k–2.
	Ethrog	<i>Ceratitis capitata</i>	CT T107–a.

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Location	Commodity	Pest	Treatment schedule
		<i>Bactrocera</i> MB&CT <i>cucurbitae</i> , <i>B. dorsalis</i> , <i>B. tryoni</i> , <i>Brevipalpus chilensis</i> , <i>Ceratitidis capitata</i> , <i>Lobesia botrana</i> .	T108-a-1 or T108-a-2 or T108-a-3.
	Grapefruit, orange, tangerine	<i>Anastrepha ludens</i>	CT T107-b.
	Mango	<i>Ceratitidis capitata</i> , <i>Anastrepha</i> spp., <i>Anastrepha ludens</i> .	HWD T102-a.
Croatia	Ethrog	<i>Ceratitidis capitata</i>	CT T107-a.
		<i>Bactrocera cucurbitae</i> , <i>B. dorsalis</i> , <i>B. tryoni</i> , <i>Brevipalpus chilensis</i> , <i>Ceratitidis capitata</i> , <i>Lobesia botrana</i> .	MB&CT T108-a-1 or T108-a-2 or T108-a-3.
	Horseradish	<i>Baris lepidii</i>	MB T101-1-2.
Cyprus	Ethrog	<i>Ceratitidis capitata</i>	CT T107-a.
		<i>Bactrocera cucurbitae</i> , <i>B. dorsalis</i> , <i>B. tryoni</i> , <i>Brevipalpus chilensis</i> , <i>Ceratitidis capitata</i> , <i>Lobesia botrana</i> .	MB&CT T108-a-1 or T108-a-2 or T108-a-3.
	Grape	<i>Lobesia botrana</i>	MB T101-h-2.
		<i>Ceratitidis capitata</i>	CT T107-a or MB T101-h-2-1.
		<i>Ceratitidis capitata</i> , <i>Lobesia botrana</i> .	MB T101-h-2-1.
		<i>Bactrocera cucurbitae</i> , <i>B. dorsalis</i> , <i>B. tryoni</i> , <i>Brevipalpus chilensis</i> , <i>Ceratitidis capitata</i> , <i>Lobesia botrana</i> .	MB&CT T108-a-1 or T108-a-2 or T108-a-3.
Czech Republic	Grapefruit, orange, tangerine	<i>Ceratitidis capitata</i>	CT T107-a.
	Horseradish	<i>Baris lepidii</i>	MB T101-1-2.
Denmark	Horseradish (to Hawaii)	<i>Baris lepidii</i>	MB T101-1-2.
Dominica	Bean (pod), pigeon pea (pod)	<i>Cydia fabivora</i> , <i>Epinotia aporema</i> , <i>Maruca testulalis</i> , and leafminers.	MB T101-k-2.
	Okra (pod)	<i>Pectinophora gossypiella</i>	MB T101-p-2.
Dominican Republic	Bean (pod)	<i>Cydia fabivora</i> , <i>Epinotia aporema</i> , <i>Maruca testulalis</i> , and leafminers.	MB T101-k-2.
	Goa bean (pod or shelled)	<i>Cydia fabivora</i> , <i>Epinotia aporema</i> , <i>Maruca testulalis</i> , and leafminers.	MB T101-k-2.
	Grape	Species of <i>Anastrepha</i> (other than <i>Anastrepha ludens</i>).	CT T107-c.
	Hyacinth bean	<i>Cydia fabivora</i> , <i>Epinotia aporema</i> , <i>Maruca testulalis</i> , and leafminers.	MB T101-k-2-1.
	Pigeon pea (pod or shelled) ..	<i>Cydia fabivora</i> , <i>Epinotia aporema</i> , <i>Maruca testulalis</i> , <i>Melanagromyza obtusa</i> and leafminers.	MB T101-k-2 or MB T101-k-2-1.
	Okra (pod)	<i>Pectinophora gossypiella</i>	MB T101-p-2.
	Yard long bean (pod)	<i>Cydia fabivora</i> , <i>Epinotia aporema</i> , <i>Maruca testulalis</i> , and leafminers.	MB T101-k-2.
Ecuador	Apple	Species of <i>Anastrepha</i> (other than <i>Anastrepha ludens</i>), <i>Ceratitidis capitata</i> .	CT T107-a-1.
		<i>Bactrocera cucurbitae</i> , <i>B. dorsalis</i> , <i>B. tryoni</i> , <i>Brevipalpus chilensis</i> , <i>Ceratitidis capitata</i> , <i>Lobesia botrana</i> .	MB&CT T108-a-1 or T108-a-2 or T108-a-3.
	Bean (pod or shelled), pigeon pea (pod or shelled).	<i>Cydia fabivora</i> , <i>Epinotia aporema</i> , <i>Maruca testulalis</i> , and leafminers.	MB T101-k-2.
	Blueberry	<i>Ceratitidis capitata</i>	MB T101-i-1-1.
	Ethrog	<i>Ceratitidis capitata</i>	CT T107-a.
		<i>Bactrocera cucurbitae</i> , <i>B. dorsalis</i> , <i>B. tryoni</i> , <i>Brevipalpus chilensis</i> , <i>Ceratitidis capitata</i> , <i>Lobesia botrana</i> .	MB&CT T108-a-1 or T108-a-2 or T108-a-3.
	Grapefruit, orange, tangerine	Species of <i>Anastrepha</i> (other than <i>Anastrepha ludens</i>), <i>Ceratitidis capitata</i> .	CT T107-a-1.

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Location	Commodity	Pest	Treatment schedule
Egypt	Mango	<i>Ceratitis capitata</i> , <i>Anastrepha</i> spp., <i>Anastrepha ludens</i> .	HWD T102-a.
	Okra	<i>Pectinophora gossypiella</i>	MB T101-p-2.
	Pea (pod)	<i>Cydia fabivora</i> , <i>Epinotia aporema</i> , <i>Maruca testulalis</i> , and leafminers.	MB T101-k-2 or MB T101-k-2-1.
	Grape	<i>Lobesia botrana</i> <i>Ceratitis capitata</i>	MB T101-h-2. CT T107-a or MB T101-h-2-1. MB T101-h-2-1.
		<i>Ceratitis capitata</i> , <i>Lobesia botrana</i> .	
		<i>Bactrocera cucurbitae</i> , <i>B. dorsalis</i> , <i>B. tryoni</i> , <i>Brevipalpus chilensis</i> , <i>Ceratitis capitata</i> , <i>Lobesia botrana</i> .	MB&CT T108-a-1 or T108-a-2 or T108-a-3.
	Orange	<i>Ceratitis capitata</i>	CT T107-a.
	Pea (pod or shelled)	<i>Cydia fabivora</i> , <i>Epinotia aporema</i> , <i>Maruca testulalis</i> , and leafminers.	MB T101-k-2 or MB T101-k-2-1.
	Pear	<i>Ceratitis capitata</i> <i>Bactrocera cucurbitae</i> , <i>B. dorsalis</i> , <i>B. tryoni</i> , <i>Brevipalpus chilensis</i> , <i>Ceratitis capitata</i> , <i>Lobesia botrana</i> .	CT T107-a. MB&CT T108-a-1 or T108-a-2 or T108-a-3.
	El Salvador	Bean, garden and lima	<i>Cydia fabivora</i> , <i>Epinotia aporema</i> , <i>Maruca testulalis</i> , and leafminers.	MB T101-k-2 or MB T101-k-2-1.
Ethrog		<i>Ceratitis capitata</i> <i>Bactrocera cucurbitae</i> , <i>B. dorsalis</i> , <i>B. tryoni</i> , <i>Brevipalpus chilensis</i> , <i>Ceratitis capitata</i> , <i>Lobesia botrana</i> .	CT T107-a. MB&CT T108-a-1 or T108-a-2 or T108-a-3.
Grapefruit, orange, tangerine		<i>Anastrepha ludens</i>	CT T107-b.
Pigeon pea (pod or shelled)		<i>Cydia fabivora</i> , <i>Epinotia aporema</i> , <i>Maruca testulalis</i> , and leafminers.	MB T101-k-2.
Grape		<i>Lobesia botrana</i> <i>Ceratitis capitata</i>	MB T101-h-2. CT T107-a or MB T101-h-2-1. MB T101-h-2-1.
	<i>Ceratitis capitata</i> , <i>Lobesia botrana</i> .		
	<i>Bactrocera cucurbitae</i> , <i>B. dorsalis</i> , <i>B. tryoni</i> , <i>Brevipalpus chilensis</i> , <i>Ceratitis capitata</i> , <i>Lobesia botrana</i> .	MB&CT T108-a-1 or T108-a-2 or T108-a-3.	
Finland	Horseradish	<i>Baris lepidii</i>	MB T101-1-2.
	Horseradish (to Hawaii)	<i>Baris lepidii</i>	MB T101-1-2.
France	Apple, pear	<i>Ceratitis capitata</i>	CT T107-a.
	Ethrog, kiwi	<i>Ceratitis capitata</i> <i>Bactrocera cucurbitae</i> , <i>B. dorsalis</i> , <i>B. tryoni</i> , <i>Brevipalpus chilensis</i> , <i>Ceratitis capitata</i> , <i>Lobesia botrana</i> .	CT T107-a. MB&CT T108-a-1 or T108-a-2 or T108-a-3.
Georgia, Republic of	Grape	<i>Lobesia botrana</i> <i>Ceratitis capitata</i>	MB T101-h-2. CT T107-a or MB T101-h-2-1. MB T101-h-2-1.
		<i>Ceratitis capitata</i> , <i>Lobesia botrana</i> .	
		<i>Bactrocera cucurbitae</i> , <i>B. dorsalis</i> , <i>B. tryoni</i> , <i>Brevipalpus chilensis</i> , <i>Ceratitis capitata</i> , <i>Lobesia botrana</i> .	MB&CT T108-a-1 or T108-a-2 or T108-a-3.
	Horseradish (to Hawaii)	<i>Baris lepidii</i>	MB T101-1-2.
	Grape	<i>Lobesia botrana</i> <i>Ceratitis capitata</i>	MB T101-h-2. CT T107-a or MB T101-h-2-1. MB T101-h-2-1.
	<i>Ceratitis capitata</i> , <i>Lobesia botrana</i> .		
	<i>Bactrocera cucurbitae</i> , <i>B. dorsalis</i> , <i>B. tryoni</i> , <i>Brevipalpus chilensis</i> , <i>Ceratitis capitata</i> , <i>Lobesia botrana</i> .	MB&CT T108-a-1 or T108-a-2 or T108-a-3.	
Germany	Horseradish	<i>Baris lepidii</i>	MB T101-1-2.
	Grape	<i>Lobesia botrana</i>	MB T101-h-2.

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Location	Commodity	Pest	Treatment schedule		
Greece (includes Rhodes)	Horseradish	<i>Ceratitis capitata</i>	CT T107-a or MB T101-h-2-1.		
		<i>Ceratitis capitata, Lobesia botrana.</i>	MB T101-h-2-1.		
		<i>Bactrocera cucurbitae, E. B. dorsalis, B. tryoni, Brevipalpus chilensis, Ceratitis capitata, Lobesia botrana.</i>	MB&CT T108-a-1 or T108-a-2 or T108-a-3.		
		<i>Baris lepidii</i>	MB T101-1-2.		
		<i>Lobesia botrana</i>	MB T101-h-2.		
		<i>Ceratitis capitata</i>	CT T107-a or MB T101-h-2-1.		
		<i>Ceratitis capitata, Lobesia botrana.</i>	MB T101-h-2-1.		
		<i>Bactrocera cucurbitae, B. dorsalis, B. tryoni, Brevipalpus chilensis, Ceratitis capitata, Lobesia botrana.</i>	MB&CT T108-a-1 or T108-a-2 or T108-a-3.		
		<i>Baris lepidii</i>	MB T101-1-2.		
		<i>Ceratitis capitata</i>	CT T107-a.		
Grenada	Grape	<i>Bactrocera cucurbitae, B. dorsalis, B. tryoni, Brevipalpus chilensis, Ceratitis capitata, Lobesia botrana.</i>	MB&CT T108-a-1 or T108-a-2 or T108-a-3.		
		<i>Baris lepidii</i>	MB T101-1-2.		
		<i>Ceratitis capitata</i>	CT T107-a.		
		<i>Bactrocera cucurbitae, B. dorsalis, B. tryoni, Brevipalpus chilensis, Ceratitis capitata, Lobesia botrana.</i>	MB&CT T108-a-1 or T108-a-2 or T108-a-3.		
		Orange, pomegranate	<i>Ceratitis capitata</i>	CT T107-a.	
		Bean (pod)	<i>Cydia fabivora, Epinotia aporema, Maruca testulalis, and leafminers.</i>	MB T101-k-2.	
		Okra	<i>Pectinophora gossypiella</i>	MB T101-p-2.	
		Pigeon pea (pod or shelled) ..	<i>Cydia fabivora, Epinotia aporema, Maruca testulalis, and leafminers.</i>	MB T101-k-2.	
		Guadeloupe, Dept of (FR) and St. Barthelemy.	Okra (pod)	<i>Pectinophora gossypiella</i>	MB T101-p-2.
			Pigeon pea (pod or shelled), bean (pod).	<i>Cydia fabivora, Epinotia aporema, Maruca testulalis, and leafminers.</i>	MB T101-k-2.
Guatemala	Ethrog	<i>Ceratitis capitata</i>	CT T107-a.		
		<i>Bactrocera cucurbitae, B. dorsalis, B. tryoni, Brevipalpus chilensis, Ceratitis capitata, Lobesia botrana.</i>	MB&CT T108-a-1 or T108-a-2 or T108-a-3.		
		Grapefruit, orange, plum, tangerine.	<i>Anastrepha ludens</i>	CT T107-b.	
		Mango	<i>Ceratitis capitata, Anastrepha spp., Anastrepha ludens.</i>	HWD T102-a.	
		Okra (pod)	<i>Pectinophora gossypiella</i>	MB T101-p-2.	
		Pigeon pea (pod or shelled) ..	<i>Cydia fabivora, Epinotia aporema, Maruca testulalis, and leafminers.</i>	MB T101-k-2.	
		Tuna	<i>Ceratitis capitata</i>	MB T101-d-3.	
		Guyana	Apple, orange	Species of <i>Anastrepha</i> (other than <i>Anastrepha ludens</i>).	CT T107-c.
			Bean (pod or shelled)	<i>Cydia fabivora, Epinotia aporema, Maruca testulalis, and leafminers.</i>	MB T101-k-2.
		Haiti	Okra (pod)	<i>Pectinophora gossypiella</i>	MB T101-p-2.
Apricot, pomegranate	Species of <i>Anastrepha</i> (other than <i>Anastrepha ludens</i>).		CT T107-c.		
Mango	<i>Ceratitis capitata, Anastrepha spp., Anastrepha ludens.</i>		HWD T102-a.		
Bean (pod), pigeon pea (pod or shelled).	<i>Cydia fabivora, Epinotia aporema, Maruca testulalis, and leafminers.</i>		MB T101-k-2.		
Hungary	Okra (pod)	<i>Pectinophora gossypiella</i>	MB T101-p-2.		
	Grape	<i>Lobesia botrana</i>	MB T101-h-2.		
		<i>Ceratitis capitata</i>	CT T107-a or MB T101-h-2-1.		
		<i>Ceratitis capitata, Lobesia botrana.</i>	MB T101-h-2-1.		

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Location	Commodity	Pest	Treatment schedule
India	Horseradish	<i>Bactrocera cucurbitae</i> , <i>B. dorsalis</i> , <i>B. tryoni</i> , <i>Brevipalpus chilensis</i> , <i>Ceratitis capitata</i> , <i>Lobesia botrana</i> .	MB&CT T108–a–1 or T108–a–2 or T108–a–3.
	Litchi (fruit)	<i>Baris lepidii</i>	MB T101–1–2. CT T107–f.
	Mango	Plant pests of the class Insecta except pupae and adults of the order Lepidoptera.	IR
Israel (includes Gaza)	Apple, apricot, nectarine, peach, pear, plum.	<i>Ceratitis capitata</i>	CT T107–a.
	Avocado	<i>Bactrocera cucurbitae</i> , <i>B. dorsalis</i> , <i>B. tryoni</i> , <i>Brevipalpus chilensis</i> , <i>Ceratitis capitata</i> , <i>Lobesia botrana</i> .	MB&CT T108–a–1 or T108–a–2 or T108–a–3.
	Brassica oleracea	<i>Bactrocera cucurbitae</i> , <i>B. dorsalis</i> , <i>Ceratitis capitata</i> .	MB T101–c–1.
	Ethrog	External feeders and leafminers.	MB T101–n–2.
	Grape	<i>Ceratitis capitata</i>	CT T107–a.
		<i>Bactrocera cucurbitae</i> , <i>B. dorsalis</i> , <i>B. tryoni</i> , <i>Brevipalpus chilensis</i> , <i>Ceratitis capitata</i> , <i>Lobesia botrana</i> .	MB&CT T108–a–1 or T108–a–2 or T108–a–3.
	Grapefruit, litchi, loquat, orange, persimmon, pomegranate, pummelo, tangerine.	<i>Lobesia botrana</i>	MB T101–h–2.
		<i>Ceratitis capitata</i>	CT T107–a or MB T101–h–2–1.
		<i>Ceratitis capitata</i> , <i>Lobesia botrana</i> .	MB T101–h–2–1.
		<i>Bactrocera cucurbitae</i> , <i>B. dorsalis</i> , <i>B. tryoni</i> , <i>Brevipalpus chilensis</i> , <i>Ceratitis capitata</i> , <i>Lobesia botrana</i> .	MB&CT T108–a–1 or T108–a–2 or T108–a–3.
Horseradish root (to Hawaii)	<i>Ceratitis capitata</i>	CT T107–a.	
Lettuce (leaf), field grown	<i>Baris lepidii</i>	MB T101–1–2.	
Pea (pod or shelled)	External feeders and leafminers.	MB T101–n–2.	
Italy	Pea (pod or shelled)	<i>Cydia fabivora</i> , <i>Epinotia aporema</i> , <i>Maruca testulalis</i> , and leafminers.	MB T101–k–2.
	Tuna (fruit)	<i>Ceratitis capitata</i>	MB T101–d–3.
	Ethrog (North Atlantic ports only).	<i>Ceratitis capitata</i>	CT T107–a.
	Grape	<i>Lobesia botrana</i>	MB T101–h–2.
		<i>Ceratitis capitata</i>	CT T107–a or MB T101–h–2–1.
	Grapefruit, orange, persimmon, tangerine.	<i>Ceratitis capitata</i> , <i>Lobesia botrana</i> .	MB T101–h–2–1.
		<i>Bactrocera cucurbitae</i> , <i>B. dorsalis</i> , <i>B. tryoni</i> , <i>Brevipalpus chilensis</i> , <i>Ceratitis capitata</i> , <i>Lobesia botrana</i> .	MB&CT T108–a–1 or T108–a–2 or T108–a–3.
	Horseradish	<i>Ceratitis capitata</i>	CT T107–a.
	Kiwi (fruit)	<i>Ceratitis capitata</i>	CT T107–a.
	Pea (pod or shelled)	<i>Baris lepidii</i>	MB T101–1–2.
Jamaica	Tuna (fruit)	<i>Ceratitis capitata</i>	MB T101–d–3.
	Bean (pod), pigeon pea (pod)	<i>Bactrocera cucurbitae</i> , <i>B. dorsalis</i> , <i>B. tryoni</i> , <i>Brevipalpus chilensis</i> , <i>Ceratitis capitata</i> , <i>Lobesia botrana</i> .	MB&CT T108–a–1 or T108–a–2 or T108–a–3.
	Pea (pod or shelled)	<i>Cydia fabivora</i> , <i>Epinotia aporema</i> , <i>Maruca testulalis</i> , and leafminers.	MB T101–k–2.
	Tuna (fruit)	<i>Ceratitis capitata</i>	MB T101–d–3.

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Location	Commodity	Pest	Treatment schedule
Japan (includes Bonian Island, Ryukyu, Island Ryukyu Island, Tokara Island, Volcano Islands).	Ivy gourd (fruit)	<i>Cydia, fabivora, Epinotia aporema, Maruca testullis</i> , and leafminers.	MB T101-k-2.
	Okra (pod)	<i>Pectinophora gossypiella</i>	MB T101-p-2.
	Thyme	External feeders and leafminers.	MB T101-n-2.
Jordan	Apple (Fuji only)	<i>Carposina niponensis, Conogethes punctiferalis, Tetranychus viennensis, T. kanzawai</i> .	CT&MB T109-a-1 or T109-a-2.
	Cabbage (to Hawaii)	External feeders and leafminers.	MB T101-n-2.
Kazakhstan	Horseradish (to Hawaii)	<i>Baris lepidii</i>	MB T101-1-2.
	Apple, persimmon	<i>Ceratitis capitata</i>	CT T107-a.
	Grape	<i>Lobesia botrana, Ceratitis capitata, Ceratitis capitata, Lobesia botrana.</i>	MB T101-h-2. CT T107-a or MB T101-h-2-1. MB T101-h-2-1.
Korea, Republic of (South)	Grape	<i>Lobesia botrana, Ceratitis capitata, Ceratitis capitata, Lobesia botrana. Bactrocera cucurbitae, B. dorsalis, B. tryoni, Brevipalpus chilensis, Ceratitis capitata, Lobesia botrana.</i>	MB T101-h-2. CT T107-a or MB T101-h-2-1. MB T101-h-2-1. MB&CT T108a-1 or T108-a-2 or T108-a-3.
	Horseradish	<i>Baris lepidii</i>	MB T101-1-2.
	Apple (Fuji only)	<i>Carposina niponensis, Conogethes punctiferalis, Tetranychus viennensis, T. kanzawai.</i>	CT&MB T109-a-1 or T109-a-2.
Kyrgyzstan	Grape	<i>Lobesia botrana, Ceratitis capitata, Ceratitis capitata, Lobesia botrana. Bactrocera cucurbitae, B. dorsalis, B. tryoni, Brevipalpus chilensis, Ceratitis capitata, Lobesia botrana.</i>	MB T101-h-2. CT T107-a or MB T101-h-2-1. MB T101-h-2-1. MB&CT T108-a-1 or T108-a-2 or T108-a-3.
	Horseradish	<i>Baris lepidii</i>	MB T101-1-2.
	Apple	<i>Ceratitis capitata</i>	CT T107-a.
Latvia	Grape	<i>Lobesia botrana, Ceratitis capitata, Ceratitis capitata, Lobesia botrana. Bactrocera cucurbitae, B. dorsalis, B. tryoni, Brevipalpus chilensis, Ceratitis capitata, Lobesia botrana.</i>	MB T101-h-2. CT T107-a or MB T101-h-2-1. MB T101-h-2-1. MB&CT T108-a-1 or T108-a-2 or T108-a-3.
	Horseradish	<i>Baris lepidii</i>	MB T101-1-2.
	Apple	<i>Ceratitis capitata</i>	CT T107-a.
Lebanon	Grape	<i>Lobesia botrana, Ceratitis capitata, Ceratitis capitata, Lobesia botrana. Bactrocera cucurbitae, B. dorsalis, B. tryoni, Brevipalpus chilensis, Ceratitis capitata, Lobesia botrana.</i>	MB T101-h-2. CT T107-a or MB T101-h-2-1. MB T101-h-2-1. MB&CT T108-a-1 or T108-a-2 or T108-a-3.
	Horseradish	<i>Baris lepidii</i>	MB T101-1-2.
	Apple	<i>Ceratitis capitata</i>	CT T107-a.
Libya	Grape	<i>Lobesia botrana, Ceratitis capitata, Ceratitis capitata, Lobesia botrana. Bactrocera cucurbitae, B. dorsalis, B. tryoni, Brevipalpus chilensis, Ceratitis capitata, Lobesia botrana.</i>	MB T101-h-2. CT T107-a or MB T101-h-2-1. MB T101-h-2-1. MB&CT T108-a-1 or T108-a-2 or T108-a-3.
	Horseradish	<i>Baris lepidii</i>	MB T101-1-2.
	Apple	<i>Ceratitis capitata</i>	CT T107-a.
Lithuania	Grape	<i>Lobesia botrana, Ceratitis capitata, Ceratitis capitata, Lobesia botrana. Bactrocera cucurbitae, B. dorsalis, B. tryoni, Brevipalpus chilensis, Ceratitis capitata, Lobesia botrana.</i>	MB T101-h-2. CT T107-a or MB T101-h-2-1. MB T101-h-2-1. MB&CT T108-a-1 or T108-a-2 or T108-a-3.
	Horseradish	<i>Baris lepidii</i>	MB T101-1-2.
	Apple	<i>Ceratitis capitata</i>	CT T107-a.
Luxembourg	Grape	<i>Lobesia botrana</i>	MB T101-h-2.
	Horseradish	<i>Baris lepidii</i>	MB T101-1-2.

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		<i>Ceratitis capitata</i>	CT T107–a or MB T101–h–2–1.
		<i>Ceratitis capitata</i> , <i>Lobesia botrana</i> .	MB T101–h–2–1.
		<i>Bactrocera cucurbitae</i> , <i>B. dorsalis</i> , <i>B. tryoni</i> , <i>Brevipalpus chilensis</i> , <i>Ceratitis capitata</i> , <i>Lobesia botrana</i> .	MB&CT T108–a–1 or T108–a–2 or T108–a–3.
Macedonia	Ethrog	<i>Ceratitis capitata</i>	CT T107–a.
		<i>Bactrocera cucurbitae</i> , <i>B. dorsalis</i> , <i>B. tryoni</i> , <i>Brevipalpus chilensis</i> , <i>Ceratitis capitata</i> , <i>Lobesia botrana</i> .	MB&CT T108–a–1 or T108–a–2 or T108–a–3.
Martinique, Dept. of (FR)	Horseradish	<i>Baris lepidii</i>	MB T101–1–2.
	Ethrog	<i>Ceratitis capitata</i>	CT T107–a.
		<i>Bactrocera cucurbitae</i> , <i>B. dorsalis</i> , <i>B. tryoni</i> , <i>Brevipalpus chilensis</i> , <i>Ceratitis capitata</i> , <i>Lobesia botrana</i> .	MB&CT T108–a–1 or T108–a–2 or T108–a–3.
Mexico	Horseradish	<i>Baris lepidii</i>	MB T101–1–2.
	Apple, cherry, peach, plum, tangerine.	<i>Anastrepha ludens</i>	CT T107–b.
	<i>Brassica</i> spp., <i>Chenopodium</i> spp., cilantro.	External feeders such as <i>Noctuidae</i> spp., <i>Thrips</i> spp. (except <i>Scirtothrips dorsalis</i> from Thailand), <i>Copitarsia</i> spp..	MB T101–b–1.
	Carambola	Species of <i>Anastrepha</i> (other than <i>Anastrepha ludens</i>).	CT T107–c.
	Grapefruit	<i>Anastrepha ludens</i>	CT T107–b.
		<i>Anastrepha</i> spp.	MB T101–j–2–1 or FHA T103–a–1 or VH T106–a–2.
	Horseradish	<i>Baris lepidii</i>	MB T101–1–2.
	Mango	<i>Anastrepha ludens</i>	VH T106–a–3.
		<i>Ceratitis capitata</i> , <i>Anastrepha</i> spp., <i>Anastrepha ludens</i> , <i>Anastrepha ludens</i> , <i>Anastrepha obliqua</i> , <i>Anastrepha serpentina</i> .	HWD T102–a.
	Okra	<i>Pectinophora gossypiella</i>	FHA T103–c–1.
	Orange	<i>Anastrepha ludens</i>	MB T101–p–2.
		<i>Anastrepha</i> spp.	CT T107–b.
		<i>Anastrepha</i> spp. (includes <i>Anastrepha ludens</i>).	MB T101–j–2–1 or FHA T103–a–1.
	Pigeon pea (pod or shelled), bean (pod or shelled).	<i>Cydia fabivora</i> , <i>Epinotia aporema</i> , <i>Maruca testulalis</i> .	VH T106–a–4.
	Tangerine	<i>Anastrepha</i> spp.	MB T101–k–2.
Moldova	Grape	<i>Lobesia botrana</i>	MB T101–j–2–1 or FHA T103–a–1 or VH T106–a–1.
		<i>Ceratitis capitata</i>	MB T101–h–2.
		<i>Ceratitis capitata</i> , <i>Lobesia botrana</i> .	CT T107–a or MB T101–h–2–1.
		<i>Bactrocera cucurbitae</i> , <i>B. dorsalis</i> , <i>B. tryoni</i> , <i>Brevipalpus chilensis</i> , <i>Ceratitis capitata</i> , <i>Lobesia botrana</i> .	MB T101–h–2–1.
		<i>Bactrocera cucurbitae</i> , <i>B. dorsalis</i> , <i>B. tryoni</i> , <i>Brevipalpus chilensis</i> , <i>Ceratitis capitata</i> , <i>Lobesia botrana</i> .	MB&CT T108–a–1 or T108–a–2 or T108–a–3.
Montserrat	Horseradish	<i>Baris lepidii</i>	MB T101–1–2.
	Bean (pod), pigeon pea (pod)	<i>Cydia fabivora</i> , <i>Epinotia aporema</i> , <i>Maruca testulalis</i> , and leafminers.	MB T101–k–2.
Morocco	Okra	<i>Pectinophora gossypiella</i>	MB T101–p–2.
	Apricot, peach, pear, plum	<i>Ceratitis capitata</i>	CT T107–a.
		<i>Bactrocera cucurbitae</i> , <i>B. dorsalis</i> , <i>B. tryoni</i> , <i>Brevipalpus chilensis</i> , <i>Ceratitis capitata</i> , <i>Lobesia botrana</i> .	MB&CT T108–a–1 or T108–a–2 or T108–a–3.
	Cipollino (bulb/wild onion)	<i>Exosoma lusitanica</i>	MB T101–w–1.
	Ethrog	<i>Ceratitis capitata</i>	CT T107–a.

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Location	Commodity	Pest	Treatment schedule
		<i>Bactrocera cucurbitae</i> , <i>B. dorsalis</i> , <i>B. tryoni</i> , <i>Brevipalpus chilensis</i> , <i>Ceratitidis capitata</i> , <i>Lobesia botrana</i> .	MB&CT T108-a-1 or T108-a-2 or T108-a-3.
	Grape	<i>Lobesia botrana</i>	MB T101-h-2.
		<i>Ceratitidis capitata</i>	CT T107-a or MB T101-h-2-1.
		<i>Ceratitidis capitata</i> , <i>Lobesia botrana</i> .	MB T101-h-2-1.
		<i>Bactrocera cucurbitae</i> , <i>B. dorsalis</i> , <i>B. tryoni</i> , <i>Brevipalpus chilensis</i> , <i>Ceratitidis capitata</i> , <i>Lobesia botrana</i> .	MB&CT T108-a-1 or T108-a-2 or T108-a-3.
Namibia	Grapefruit, orange, tangerine	<i>Ceratitidis capitata</i>	CT T107-a.
	Grape	External feeders	MB T104-a-1.
		<i>Cryptophlebia leucotreta</i> , <i>Ceratitidis capitata</i> , <i>Ceratitidis rosa</i> , <i>Epichoristodes acerbella</i> .	CT T107-e.
Netherlands, Kingdom of	Bean, garden	<i>Cydia fabivora</i> , <i>Epinotia aporema</i> , <i>Maruca testulalis</i> , and leafminers.	MB T101-k-2.
Netherlands Antilles (includes Bonaire, Curacao, Saba, St. Eustatius)	Horseradish (to Hawaii)	<i>Baris lepidii</i>	MB T101-1-2.
	Bean (pod or shelled), pigeon pea (pod or shelled)	<i>Cydia fabivora</i> , <i>Epinotia aporema</i> , <i>Maruca testulalis</i> , and leafminers.	MB T101-k-2.
New Zealand	Apple	Tortricidae	MB T101-a-1.
	Asparagus	<i>Halotydeus destructor</i>	MB T101-b-1-1.
	Pear	Tortricidae	MB T101-a-1.
Nicaragua	Faba bean (pod), green bean (pod), mung bean (pod), pea (pod)	<i>Cydia fabivora</i> , <i>Epinotia aporema</i> , <i>Maruca testulalis</i> , and leafminers.	MB T101-k-2 or MB T101-k-2-1.
	Mango	<i>Ceratitidis capitata</i> , <i>Anastrepha</i> spp., <i>A. ludens</i> .	HWD T102-a.
	Yard-long-bean (pod)	<i>Cydia fabivora</i> , <i>Epinotia aporema</i> , and <i>Maruca testulalis</i> .	MB T101-k-2 or MB T101-k-2-1.
Norway	Horseradish (to Hawaii)	<i>Baris lepidii</i>	MB T101-1-2.
Panama and canal zone	Bean (garden) and lima (pod)	<i>Cydia fabivora</i> , <i>Epinotia aporema</i> , <i>Maruca testulalis</i> , and leafminers.	MB T101-k-2 or MB T101-k-2-1.
	Ethrog	<i>Ceratitidis capitata</i>	CT T107-a.
		<i>Bactrocera cucurbitae</i> , <i>B. dorsalis</i> , <i>B. tryoni</i> , <i>Brevipalpus chilensis</i> , <i>Ceratitidis capitata</i> , <i>Lobesia botrana</i> .	MB&CT T108-a-1 or T108-a-2 or T108-a-3.
	Grapefruit, orange, tangerine	<i>Anastrepha ludens</i>	CT T107-b.
	Pigeon pea (pod or shelled) ..	<i>Cydia fabivora</i> , <i>Epinotia aporema</i> , <i>Maruca testulalis</i> , and leafminers.	MB T101-k-2.
Peru	Asparagus	External feeders	MB T101-b-1.
	Bean (pod or shelled)	<i>Cydia fabivora</i> , <i>Epinotia aporema</i> , <i>Maruca testulalis</i> , and leafminers.	MB T101-k-2.
	Blueberry	<i>Ceratitidis capitata</i>	MB T101-i-1-1.
	Grape	Species of <i>Anastrepha</i> (other than <i>Anastrepha ludens</i>), <i>Ceratitidis capitata</i> .	CT T107-a-1.
	Grapefruit, mandarins or tangerines, sweet oranges, and tangelos.	<i>Anastrepha fraterculus</i> , <i>A. obliqua</i> , <i>A. serpentina</i> , and <i>Ceratitidis capitata</i> .	CT T107-a-1
	Mango	<i>Ceratitidis capitata</i> , <i>Anastrepha</i> spp., <i>Anastrepha ludens</i> .	HWD T102-a.
Philippines	Okra (pod)	<i>Pectinophora gossypiella</i>	MB T101-p-2.
	Avocado	<i>Bactrocera cucurbitae</i> , <i>B. dorsalis</i> , <i>Ceratitidis capitata</i> .	MB T101-c-1.
	Mango	<i>Bactrocera occipitalis</i> and <i>B. philippinensis</i> .	VH T106-d-1.
Poland	Horseradish	<i>Baris lepidii</i>	MB T101-1-2.
Portugal (includes Azores)	Bean, faba (pod or shelled) ...	<i>Cydia fabivora</i> , <i>Epinotia aporema</i> , <i>Maruca testulalis</i> , and leafminers.	MB T101-k-2.
	Ethrog	<i>Ceratitidis capitata</i>	CT T107-a.

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Location	Commodity	Pest	Treatment schedule
Romania	Grape	<i>Bactrocera cucurbitae</i> , <i>B. dorsalis</i> , <i>B. tryoni</i> , <i>Brevipalpus chilensis</i> , <i>Ceratitis capitata</i> , <i>Lobesia botrana</i> .	MB&CT T108–a–1 or T108–a–2 or T108–a–3.
		<i>Lobesia botrana</i>	MB T101–h–2.
		<i>Ceratitis capitata</i>	CT T107–a or MB T101–h–2–1.
		<i>Ceratitis capitata</i> , <i>Lobesia botrana</i> .	MB T101–h–2–1.
Romania	Horseradish (to Hawaii)	<i>Bactrocera cucurbitae</i> , <i>B. dorsalis</i> , <i>B. tryoni</i> , <i>Brevipalpus chilensis</i> , <i>Ceratitis capitata</i> , <i>Lobesia botrana</i> .	MB&CT T108–a–1 or T108–a–2 or T108–a–3.
		<i>Baris lepidii</i>	MB T101–1–2.
		<i>Lobesia botrana</i>	MB T101–h–2.
		<i>Ceratitis capitata</i>	CT T107–a or MB T101–h–2–1.
Romania	Grape	<i>Ceratitis capitata</i> , <i>Lobesia botrana</i> .	MB T101–h–2–1.
		<i>Ceratitis capitata</i> , <i>Eutetranychus orientalis</i> .	CT T107–a.
		<i>Bactrocera cucurbitae</i> , <i>B. dorsalis</i> , <i>B. tryoni</i> , <i>Brevipalpus chilensis</i> , <i>Ceratitis capitata</i> , <i>Lobesia botrana</i> .	MB&CT T108–a–1 or T108–a–2 or T108–a–3.
		<i>Baris lepidii</i>	MB T101–1–2.
Russian Federation	Grape	<i>Lobesia botrana</i>	MB T101–h–2.
		<i>Ceratitis capitata</i>	CT T107–a or MB T101–h–2–1.
		<i>Ceratitis capitata</i> , <i>Lobesia botrana</i> .	MB T101–h–2–1.
		<i>Bactrocera cucurbitae</i> , <i>B. dorsalis</i> , <i>B. tryoni</i> , <i>Brevipalpus chilensis</i> , <i>Ceratitis capitata</i> , <i>Lobesia botrana</i> .	MB&CT T108–a–1 or T108–a–2 or T108–a–3.
Russian Federation	Horseradish	<i>Baris lepidii</i>	MB T101–1–2.
		<i>Lobesia botrana</i>	MB T101–h–2.
		<i>Ceratitis capitata</i>	CT T107–a or MB T101–h–2–1.
		<i>Ceratitis capitata</i> , <i>Lobesia botrana</i> .	MB T101–h–2–1.
Russian Federation	Grape	<i>Bactrocera cucurbitae</i> , <i>B. dorsalis</i> , <i>B. tryoni</i> , <i>Brevipalpus chilensis</i> , <i>Ceratitis capitata</i> , <i>Lobesia botrana</i> .	MB&CT T108–a–1 or T108–a–2 or T108–a–3.
		<i>Baris lepidii</i>	MB T101–1–2.
		<i>Lobesia botrana</i>	MB T101–h–2.
		<i>Ceratitis capitata</i>	CT T107–a or MB T101–h–2–1.
Saint Kitts and Nevis	Bean (pod), pigeon pea (pod)	<i>Cydia fabivora</i> , <i>Epinotia aporema</i> , <i>Maruca testulalis</i> , and leafminers.	MB T101–k–2.
		<i>Baris lepidii</i>	MB T101–1–2.
Saint Lucia	Okra (pod)	<i>Pectinophora gossypiella</i>	MB T101–p–2.
		<i>Cydia fabivora</i> , <i>Epinotia aporema</i> , <i>Maruca testulalis</i> , and leafminers.	MB T101–k–2.
Saint Lucia	Bean (pod), pigeon pea (pod)	<i>Pectinophora gossypiella</i>	MB T101–p–2.
		<i>Cydia fabivora</i> , <i>Epinotia aporema</i> , <i>Maruca testulalis</i> , and leafminers.	MB T101–k–2.
St. Martin (France and Netherlands).	Okra (pod)	<i>Pectinophora gossypiella</i>	MB T101–p–2.
Saint Vincent and the Grenadines.	Bean (pod), pigeon pea (pod)	<i>Cydia fabivora</i> , <i>Epinotia aporema</i> , <i>Maruca testulalis</i> , and leafminers.	MB T101–k–2.
		<i>Pectinophora gossypiella</i>	MB T101–p–2.
Senegal	Okra (pod)	<i>Pectinophora gossypiella</i>	MB T101–p–2.
		<i>Cydia fabivora</i> , <i>Epinotia aporema</i> , <i>Maruca testulalis</i> , and leafminers.	MB T101–k–2 or MB T101–k–2–1.
Senegal	Bean, garden (pod or shelled)	<i>Cydia fabivora</i> , <i>Epinotia aporema</i> , <i>Maruca testulalis</i> , and leafminers.	MB T101–k–2.
		<i>Pectinophora gossypiella</i>	MB T101–p–2.
Slovakia	Horseradish	<i>Baris lepidii</i>	MB T101–1–2.
Slovenia	Ethrog	<i>Ceratitis capitata</i>	CT T107–a.
		<i>Bactrocera cucurbitae</i> , <i>B. dorsalis</i> , <i>B. tryoni</i> , <i>Brevipalpus chilensis</i> , <i>Ceratitis capitata</i> , <i>Lobesia botrana</i> .	MB&CT T108–a–1 or T108–a–2 or T108–a–3.
South Africa	Horseradish	<i>Baris lepidii</i>	MB T101–1–2.
		<i>Ceratitis capitata</i>	CT T107–a.
		<i>Cryptophlebia leucotreta</i> and <i>Pterandrus rosa</i> .	CT T107–e.
		<i>Ceratitis capitata</i>	CT T107–a.
South Africa	Apple, blueberry, grape, pear	<i>Cryptophlebia leucotreta</i> and <i>Pterandrus rosa</i> .	CT T107–e.
		<i>Ceratitis capitata</i>	CT T107–a.
		<i>Cryptophlebia leucotreta</i> and <i>Pterandrus rosa</i> .	CT T107–e.
		<i>Ceratitis capitata</i>	CT T107–a.
South Africa	Nectarine, peach, plum	<i>Cryptophlebia leucotreta</i> and <i>Pterandrus rosa</i> .	CT T107–e.
		<i>Ceratitis capitata</i>	CT T107–a.
		<i>Cryptophlebia leucotreta</i> and <i>Pterandrus rosa</i> .	CT T107–e.
		<i>Ceratitis capitata</i>	CT T107–a.
Spain	Citrus (fruit, Western Cape Province only).	<i>Ceratitis capitata</i>	CT T107–a.
		<i>Bactrocera cucurbitae</i> , <i>B. dorsalis</i> , <i>B. tryoni</i> , <i>Brevipalpus chilensis</i> , <i>Ceratitis capitata</i> , <i>Lobesia botrana</i> .	MB&CT T108–a–1 or T108–a–2 or T108–a–3.
		<i>Ceratitis capitata</i>	CT T107–a.
		<i>Bactrocera cucurbitae</i> , <i>B. dorsalis</i> , <i>B. tryoni</i> , <i>Brevipalpus chilensis</i> , <i>Ceratitis capitata</i> , <i>Lobesia botrana</i> .	MB&CT T108–a–1 or T108–a–2 or T108–a–3.
Spain	Apple	<i>Ceratitis capitata</i>	CT T107–a.
		<i>Bactrocera cucurbitae</i> , <i>B. dorsalis</i> , <i>B. tryoni</i> , <i>Brevipalpus chilensis</i> , <i>Ceratitis capitata</i> , <i>Lobesia botrana</i> .	MB&CT T108–a–1 or T108–a–2 or T108–a–3.
Spain	Ethrog	<i>Ceratitis capitata</i>	CT T107–a.
		<i>Bactrocera cucurbitae</i> , <i>B. dorsalis</i> , <i>B. tryoni</i> , <i>Brevipalpus chilensis</i> , <i>Ceratitis capitata</i> , <i>Lobesia botrana</i> .	MB&CT T108–a–1 or T108–a–2 or T108–a–3.

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Location	Commodity	Pest	Treatment schedule	
	Grape	<i>Lobesia botrana</i> <i>Ceratitidis capitata</i> <i>Ceratitidis capitata, Lobesia botrana.</i> <i>Bactrocera cucurbitae, B. dorsalis, B. tryoni, Brevipalpus chilensis, Ceratitidis capitata, Lobesia botrana.</i>	MB T101-h-2. CT T107-a or MB T101-h-2-1. MB T101-h-2-1. MB&CT T108-a-1 or T108-a-2 or T108-a-3.	
	Grapefruit, loquat, orange, tangerine.	<i>Ceratitidis capitata</i>	CT T107-a.	
	Horseradish	<i>Baris lepidii</i>	MB T101-l-2.	
	Kiwi	<i>Ceratitidis capitata</i>	CT T107-a.	
	Lettuce (above ground parts)	External feeders and leafminers.	MB T101-n-2.	
	Ortanique (fruit)	<i>Ceratitidis capitata</i>	CT T107-a.	
	Persimmon (fruit)	<i>Ceratitidis capitata</i>	CT T107-a.	
	Suriname	Bean (pod or shelled)	<i>Cydia fabivora, Epinotia aporema, Maruca testulalis, and leafminers.</i>	MB T101-k-2.
	Okra (pod)	<i>Pectinophora gossypiella</i>	MB T101-p-2.	
	Horseradish (to Hawaii)	<i>Baris lepidii</i>	MB T101-l-2.	
Sweden	Grape	<i>Lobesia botrana</i>	MB T101-h-2.	
		<i>Ceratitidis capitata</i>	CT T107-a or MB T101-h-2-1. MB T101-h-2-1.	
		<i>Ceratitidis capitata, Lobesia botrana.</i> <i>Bactrocera cucurbitae, B. dorsalis, B. tryoni, Brevipalpus chilensis, Ceratitidis capitata, Lobesia botrana.</i>	MB&CT T108-a-1 or T108-a-2 or T108-a-3.	
		Horseradish (to Hawaii)	<i>Baris lepidii</i>	MB T101-l-2.
	Switzerland	Grape	<i>Lobesia botrana</i>	MB T101-h-2.
			<i>Ceratitidis capitata</i>	CT T107-a or MB T101-h-2-1. MB T101-h-2-1.
		<i>Ceratitidis capitata, Lobesia botrana.</i> <i>Bactrocera cucurbitae, B. dorsalis, B. tryoni, Brevipalpus chilensis, Ceratitidis capitata, Lobesia botrana.</i>	MB&CT T108-a-1 or T108-a-2 or T108-a-3.	
		Horseradish (to Hawaii)	<i>Baris lepidii</i>	MB T101-l-2.
	Syrian Arab Republic	Ethrog	<i>Ceratitidis capitata</i>	CT T107-a.
			<i>Bactrocera cucurbitae, B. dorsalis, B. tryoni, Brevipalpus chilensis, Ceratitidis capitata, Lobesia botrana.</i>	MB&T T108-a-1 or T108-a-2 or T108-a-3.
	Grape	<i>Lobesia botrana</i>	MB T101-h-2.	
		<i>Ceratitidis capitata</i>	CT T107-a or MB T101-h-2-1. MB T101-h-2-1.	
		<i>Ceratitidis capitata, Lobesia botrana.</i> <i>Bactrocera cucurbitae, B. dorsalis, B. tryoni, Brevipalpus chilensis, Ceratitidis capitata, Lobesia botrana.</i>	MB&CT 108-a-1 or T108-a-2 or T108-a-3.	
		Taiwan	Carambola	<i>Bactrocera cucurbitae, B. dorsalis, Eutetranychus orientalis.</i>	CT T107-f.
		Horseradish (to Hawaii)	<i>Baris lepidii</i>	MB T101-l-2.
		Litchi (including clusters of fruit attached to a stem).	<i>Bactrocera dorsalis, B. cucurbitae, Conopomorpha sinensis.</i>	CT T107-h.
	Tajikistan	Mango	<i>Bactrocera dorsalis</i>	VH T106-d.
		Horseradish	<i>Baris lepidii</i>	MB T101-l-2.
		Grape	<i>Lobesia botrana</i>	MB T101-h-2.
	<i>Ceratitidis capitata</i>		CT T107-a or MB T101-h-2-1. MB T101-h-2-1.	
	<i>Ceratitidis capitata, Lobesia botrana.</i> <i>Bactrocera cucurbitae, B. dorsalis, B. tryoni, Brevipalpus chilensis, Ceratitidis capitata, Lobesia botrana.</i>	MB&CT 108-a-1 or T108-a-2 or T108-a-3.		
	Thailand	Asparagus (shoot)	<i>Scirtothrips dorsalis</i>	MB T101-b-1-1.
	Litchi	Plant pests of the class Insecta except pupae and adults of the order Lepidoptera.	IR.	
		Longan	Plant pests of the class Insecta except pupae and adults of the order Lepidoptera.	IR.

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Location	Commodity	Pest	Treatment schedule
	Mango	Plant pests of the class Insecta except pupae and adults of the order Lepidop- tera.	IR.
	Mangosteen	Plant pests of the class Insecta except pupae and adults of the order Lepidop- tera.	IR.
	Pineapple	Plant pests of the class Insecta except pupae and adults of the order Lepidop- tera.	IR.
	Rambutan	Plant pests of the class Insecta except pupae and adults of the order Lepidop- tera.	IR.
Trinidad and Tobago	Bean (shelled), pigeon pea (shelled).	<i>Cydia fabivora</i> , <i>Epinotia aporema</i> , <i>Maruca testulalis</i> , and leafminers.	MB T101–k–2.
	Grapefruit, orange, tangerine	Species of <i>Anastrepha</i> (other than <i>Anastrepha ludens</i>).	CT T107–c.
	Okra, roselle	<i>Pectinophora gossypiella</i>	MB T101–p–2.
Tunisia	Ethrog	<i>Ceratitis capitata</i>	CT T107–a
		<i>Bactrocera cucurbitae</i> , <i>B. dor- salis</i> , <i>B. tryoni</i> , <i>Brevipalpus chilensis</i> , <i>Ceratitis capitata</i> , <i>Lobesia botrana</i> .	MB&CT T108–a–1 or T108– a–2 or T108–a–3.
	Grape	<i>Lobesia botrana</i>	MB T101–h–2.
		<i>Ceratitis capitata</i>	CT T107–a or MB T101–h–2– 1.
		<i>Ceratitis capitata</i> , <i>Lobesia botrana</i> .	MB T101–h–2–1.
		<i>Bactrocera cucurbitae</i> , <i>B. dor- salis</i> , <i>B. tryoni</i> , <i>Brevipalpus chilensis</i> , <i>Ceratitis capitata</i> , <i>Lobesia botrana</i> .	MB&CT T108–a–1 or T108– a–2 or T108–a–3.
	Grapefruit, orange, tangerine	<i>Ceratitis capitata</i>	CT T107–a.
	Peach, pear, plum	<i>Ceratitis capitata</i>	CT T107–a.
		<i>Bactrocera cucurbitae</i> , <i>B. dor- salis</i> , <i>B. tryoni</i> , <i>Brevipalpus chilensis</i> , <i>Ceratitis capitata</i> , <i>Lobesia botrana</i> .	MB&CT T108–a–1 or T108– a–2 or T108–a–3.
Turkey	Ethrog	<i>Ceratitis capitata</i>	CT T107–a.
		<i>Bactrocera cucurbitae</i> , <i>B. dor- salis</i> , <i>B. tryoni</i> , <i>Brevipalpus chilensis</i> , <i>Ceratitis capitata</i> , <i>Lobesia botrana</i> .	MB&CT T108–a–1 or T108– a–2 or T108–a–3.
	Grape	<i>Lobesia botrana</i>	MB T101–h–2.
		<i>Ceratitis capitata</i>	CT T107–a or MB T101–h–2– 1.
		<i>Ceratitis capitata</i> , <i>Lobesia botrana</i> .	MB T101–h–2–1.
		<i>Bactrocera cucurbitae</i> , <i>B. dor- salis</i> , <i>B. tryoni</i> , <i>Brevipalpus chilensis</i> , <i>Ceratitis capitata</i> , <i>Lobesia botrana</i> .	MB&CT T108–a–1 or T108– a–2 or T108–a–3.
	Orange	<i>Ceratitis capitata</i>	CT T107–a.
Turkmenistan	Grape	<i>Lobesia botrana</i>	MB T101–h–2.
		<i>Ceratitis capitata</i>	CT T107–a or MB T101–h–2– 1.
		<i>Ceratitis capitata</i> , <i>Lobesia botrana</i> .	MB T101–h–2–1.
		<i>Bactrocera cucurbitae</i> , <i>B. dor- salis</i> , <i>B. tryoni</i> , <i>Brevipalpus chilensis</i> , <i>Ceratitis capitata</i> , <i>Lobesia botrana</i> .	MB&CT T108–a–1 or T108– a–2 or T108–a–3.
	Horseradish	<i>Baris lepidii</i>	MB T101–1–2.
Ukraine	Grape	<i>Lobesia botrana</i>	MB T101–h–2.
		<i>Ceratitis capitata</i>	CT T107–a or MB T101–h–2– 1.
		<i>Ceratitis capitata</i> , <i>Lobesia botrana</i> .	MB T101–h–2–1.

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Location	Commodity	Pest	Treatment schedule
United Kingdom (includes Channel Islands, Shetland Island).	Horseradish	<i>Bactrocera cucurbitae</i> , <i>B. dorsalis</i> , <i>B. tryoni</i> , <i>Brevipalpus chilensis</i> , <i>Ceratitis capitata</i> , <i>Lobesia botrana</i> .	MB&CT T108-a-1 or T108-a-2 or T108-a-3.
	Horseradish (to Hawaii)	<i>Baris lepidii</i>	MB T101-1-2. MB T101-1-2.
Uruguay	Apple, nectarine, peach pear, plum.	Species of <i>Anastrepha</i> (other than <i>Anastrepha ludens</i>), <i>Ceratitis capitata</i> .	CT T107-a-1.
	Blueberry	<i>Anastrepha fraterculus</i> , <i>Ceratitis capitata</i> ..	CT T107-a-1.
	Grape	<i>Lobesia botrana</i>	MB T101-h-2.
		<i>Ceratitis capitata</i>	CT T107-a or MB T101-h-2-1.
Uzbekistan	Grape	<i>Ceratitis capitata</i> , <i>Lobesia botrana</i> .	MB T101-h-2-1.
		<i>Lobesia botrana</i>	MB T101-h-2.
		<i>Ceratitis capitata</i>	CT T107-a or MB T101-h-2-1.
		<i>Ceratitis capitata</i> , <i>Lobesia botrana</i> .	MB T101-h-2-1.
		<i>Bactrocera cucurbitae</i> , <i>B. dorsalis</i> , <i>B. tryoni</i> , <i>Brevipalpus chilensis</i> , <i>Ceratitis capitata</i> , <i>Lobesia botrana</i> .	MB&CT T108-a-1 or T108-a-2 or T108-a-3.
Venezuela	Horseradish	<i>Baris lepidii</i>	MB T101-1-2.
	Bean (pod or shelled), pigeon pea (pod or shelled).	<i>Cydia fabivora</i> , <i>Epinotia aporema</i> , <i>Maruca testulalis</i> .	MB T101-k-2 or MB T101-k-2-1.
	Grape, grapefruit, orange, tangerine.	Species of <i>Anastrepha</i> (other than <i>Anastrepha ludens</i>), <i>Ceratitis capitata</i> .	CT T107-a-1.
	Mango	<i>Ceratitis capitata</i> , <i>Anastrepha</i> spp., <i>Anastrepha ludens</i> .	HWD T102-a.
Zimbabwe	Okra	<i>Pectinophora gossypiella</i>	MB T101-p-2.
	Apple, kiwi, pear	<i>Ceratitis capitata</i>	CT T107-a.
	Apricot, nectarine, peach, plum.	<i>Cryptophlebia leucotreta</i> and <i>Pterandrus rosa</i> .	CT T107-e.

(ii) Treatment for shipments from U.S. quarantine localities.

Location	Commodity	Pest	Treatment schedule
Areas in the United States under Federal quarantine for the listed pest..	.....	.....	.
	Any fruit or article listed in § 301.32-2(a) of this chapter.	All fruit fly species of the Family Tephritidae.	IR.
	Apple	<i>Anastrepha ludens</i>	CT T107-b.
		<i>Anastrepha</i> spp. (other than <i>A. ludens</i>).	CT T107-a-1 or CT T107-c.
		<i>Bactrocera cucurbitae</i> , <i>B. dorsalis</i> , <i>Ceratitis capitata</i> .	MB&CT T108-a-1 or T108-a-2 or T108-a-3.
		<i>Ceratitis capitata</i>	CT T107-a or MB&CT T108-b.
	Apricot	<i>Anastrepha ludens</i>	CT T107-b.
		<i>Bactrocera dorsalis</i> , <i>Ceratitis capitata</i> .	MB&CT T108-a-1 or T108-a-2 or T108-a-3.
		<i>Ceratitis capitata</i>	CT T107-a.
	Avocado	<i>Bactrocera cucurbitae</i> , <i>B. dorsalis</i> , <i>Ceratitis capitata</i> .	MB&CT T108-a-1 or T108-a-2 or T108-a-3.
	Bay leaves	<i>Phytophthora ramorum</i>	VCH T111-a-1
	Bell pepper	<i>Bactrocera cucurbitae</i> , <i>B. dorsalis</i> , <i>Ceratitis capitata</i> .	VH T106-b-1.
	Cherry	<i>Bactrocera dorsalis</i> , <i>Ceratitis capitata</i> .	MB&CT T108-a-1 or T108-a-2 or T108-a-3.
		<i>Ceratitis capitata</i>	CT T107-a.
	Citrons	<i>Anastrepha ludens</i>	CT T107-b.

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	Citrus	<i>Ceratitis capitata</i>	CT T107–a.
		<i>Anastrepha ludens</i>	FHA T103–a–1.
		<i>Anastrepha</i> spp. (other than <i>A. ludens</i>).	CT T107–a–1, CT T107–c.
		<i>Bactrocera dorsalis</i>	MB&CTOFF or CT&MBOFF.
		<i>Ceratitis capitata</i>	CT T107–a or MB T101–w–1–2.
	Citrus fruit regulated under § 301.78–2(a) of this chapter.	<i>Ceratitis capitata</i>	MB&CTMedfly or CTMedfly.
	Citrus fruit regulated under § 301.99–2(b) of this chapter.	<i>Anastrepha serpentina</i>	MBSFF.
	Eggplant	<i>Bactrocera cucurbitae</i> , <i>Ceratitis capitata</i> .	VH T106–b–2.
	Grape	<i>Bactrocera cucurbitae</i> , <i>B. dorsalis</i> , <i>Ceratitis capitata</i> .	CT T107–f or MB&CT T108–a–1 or T108–a–2 or T108–a–3.
		<i>Bactrocera dorsalis</i>	MB&CTOFF or CT&MBOFF.
		<i>Ceratitis capitata</i>	MB T101–h–2–1 or CT T107–a or MB&CT T108–b.
	Grapefruit	<i>Anastrepha ludens</i>	CT T107–b or MB T101–j–2–1 or FHA T103–a–1.
		<i>Ceratitis capitata</i>	CT T107–a.
		<i>Ceratitis capitata</i>	CT T107–a or MB T101–m–2–1 or MB&CT T108–a–1 or T108–a–2 or T108–a–3.
	Kiwi	<i>Ceratitis capitata</i>	CT T107–b.
	Litchi	<i>Anastrepha ludens</i>	CT T107–b.
	Longan	<i>Anastrepha ludens</i>	CT T107–h.
	Loquat	<i>Bactrocera dorsalis</i>	CT T107–a.
	Nectarine	<i>Ceratitis capitata</i>	MB&CT T108–a–1 or T108–a–2 or T108–a–3.
		<i>Bactrocera dorsalis</i>	CT T107–a or CT T107–c or MB&CT T108–a–1 or T108–a–2 or T108–a–3.
	Okra	<i>Pectinophora gossypiella</i>	MB T101–p–2.
	Orange	<i>Anastrepha ludens</i>	CT T107–b MB T101–j–2–1 or FHA T103–a–1.
		<i>Ceratitis capitata</i>	CT T107–a or CT T107–c.
	Optunia cactus (<i>Optunia</i> spp.)	<i>Ceratitis capitata</i>	MB T101–d–3.
	Papaya	<i>Bactrocera cucurbitae</i> , <i>B. dorsalis</i> , <i>Ceratitis capitata</i> .	VH T106–c VH T106–b–4 or.
	Peach	<i>Anastrepha ludens</i>	CT T107–b.
		<i>Anastrepha</i> spp. (other than <i>A. ludens</i>).	CT T107–a–1.
		<i>Bactrocera cucurbitae</i> , <i>B. dorsalis</i> , <i>Ceratitis capitata</i> .	MB&CT T108–a–1 or T108–a–2 or T108–a–3.
		<i>Ceratitis capitata</i>	CT T107–a or T107–c.
	Pear	<i>Anastrepha ludens</i>	CT T107–b.
		<i>Anastrepha</i> spp. (other than <i>A. ludens</i>).	CT T107–a–1.
		<i>Bactrocera cucurbitae</i> , <i>B. dorsalis</i> , <i>Ceratitis capitata</i> .	MB&CT T108–a–1 or T108–a–2 or T108–a–3.
		<i>Ceratitis capitata</i>	CT T107–a or CT T107–c or MB&CT T108–b.
	Pepper, bell	<i>Bactrocera cucurbitae</i> , <i>B. dorsalis</i> , <i>Ceratitis capitata</i> .	VH T106–b–1.
	Persimmons	<i>Anastrepha ludens</i>	CT T107–b.
	Pineapple (other than smooth Cayenne).	<i>Bactrocera cucurbitae</i> , <i>B. dorsalis</i> , <i>Ceratitis capitata</i> .	VH T106–b–5.
	Plum	<i>Anastrepha ludens</i>	CT T107–b.
		<i>Bactrocera dorsalis</i>	MB&CT T108–a–1 or T108–a–2 or T108–a–3.
		<i>Ceratitis capitata</i>	CT T107–a or CT T107–c or MB&CT T108–a–1 or T108–a–2 or T108–a–3.
	Pomegranate	<i>Anastrepha ludens</i>	CT T107–b.
		<i>Ceratitis capitata</i>	CT T107–a or CT T107–c.
	Pummelo	<i>Ceratitis capitata</i>	CT T107–a.
	Quince	<i>Anastrepha ludens</i>	CT T107–b.
		<i>Anastrepha</i> spp. (other than <i>A. ludens</i>).	CT T107–a–1.

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Location	Commodity	Pest	Treatment schedule
Hawaii	Squash	<i>Bactrocera dorsalis</i>	MB&CT T108-a-1 or T108-a-2 or T108-a-3.
		<i>Ceratitis capitata</i>	CT T107-a.
	Tomato	<i>Bactrocera cucurbitae</i> , <i>B. dorsalis</i> .	VH T106-b-6.
		<i>Bactrocera cucurbitae</i> , <i>B. dorsalis</i> , <i>Ceratitis capitata</i> .	VH T106-b-7.
	White sapote	<i>Bactrocera dorsalis</i>	MBOFF.
		<i>Ceratitis capitata</i>	MB T101-c-3.
	Abiu	<i>Anastrepha ludens</i>	CT T107-b.
		<i>Bactrocera cucurbitae</i> , <i>B. dorsalis</i> , <i>Ceratitis capitata</i> .	IR.
	Atemoya	<i>Bactrocera cucurbitae</i> , <i>B. dorsalis</i> , <i>Ceratitis capitata</i> .	IR.
	Avocado	<i>Bactrocera cucurbitae</i> , <i>B. dorsalis</i> , <i>Ceratitis capitata</i> .	MB T101-c-1.
		<i>Ceratitis capitata</i>	CT T107-a.
	Banana	<i>Bactrocera cucurbitae</i> , <i>B. dorsalis</i> , <i>B. tryoni</i> , <i>Ceratitis capitata</i> , <i>Brevipalpus chiliensis</i> , and <i>Lobesia botrana</i> .	CT T108-a-1 or T108-a-2 or T108-a-3.
		<i>Bactrocera curcurbitae</i> , <i>Bactrocera dorsalis</i> , <i>Ceratitis capitata</i> , <i>Coccus viridis</i> .	IR.
	Carambola	<i>Bactrocera cucurbitae</i> , <i>B. dorsalis</i> , <i>Ceratitis capitata</i> .	IR.
	<i>Capsicum</i> spp. (peppers)	Fruit flies of the family Tephritidae.	IR.
	Citrus	<i>Bactrocera cucurbitae</i> , <i>B. dorsalis</i> , <i>Ceratitis capitata</i> .	FHA T103-b-1.
	<i>Cucurbita</i> spp. (squash)	Fruit flies of the family Tephritidae.	IR.
	Eggplant	Fruit flies of the family Tephritidae.	IR.
	Litchi	<i>Bactrocera</i> or <i>dorsalis</i> , <i>Ceratitis capitata</i> .	HWI T102-d or VH T106-f.
		<i>Bactrocera cucurbitae</i> , <i>B. dorsalis</i> , <i>Ceratitis capitata</i> .	IR.
Longan	<i>Bactrocera dorsalis</i> , <i>Ceratitis capitata</i> .	HWI T102-d-1.	
	<i>Bactrocera cucurbitae</i> , <i>B. dorsalis</i> , <i>Ceratitis capitata</i> .	IR.	
Mango	<i>Bactrocera cucurbitae</i> , <i>B. dorsalis</i> , <i>Ceratitis capitata</i> .	IR.	
Papaya	<i>Bactrocera cucurbitae</i> , <i>B. dorsalis</i> , <i>Ceratitis capitata</i> .	VH T106-b-4 or VH T106-c or FHA T103-d-2 or IR.	
	<i>Bactrocera cucurbitae</i> , <i>B. dorsalis</i> , <i>Ceratitis capitata</i> .	IR or VH T106-b-5.	
Pineapple (other than smooth Cayenne).	<i>Bactrocera dorsalis</i> , <i>Ceratitis capitata</i> .	FHA T103-e or VH T106-g.	
Rambutan	<i>Bactrocera dorsalis</i> , <i>Ceratitis capitata</i> .	IR.	
	<i>Bactrocera cucurbitae</i> , <i>B. dorsalis</i> , <i>Ceratitis capitata</i> .	IR.	
Sapodilla	<i>Bactrocera cucurbitae</i> , <i>B. dorsalis</i> , <i>Ceratitis capitata</i> .	IR.	
Sweetpotato	<i>Euscepes postfasciatus</i> , <i>Omphisa anastomosalis</i> , <i>Elytrotreinus</i> or <i>subtruncatus</i> .	MB T101-b-3-1 or §305.24(k) or IR.	
	Fruit flies of the family Tephritidae <i>Ceratitis capitata</i> .	IR. MB T101-c-3.	
Puerto Rico	Beans (string, lima, faba) and pigeon peas (fresh shelled or in the pod).	<i>Cydia fabivora</i> , <i>Epinotia aporema</i> , <i>Maruca testulalis</i> , <i>Melanagromyza obtusa</i> , and leafminers.	MB T101-k-2 or MB T101-k-2-1.
		<i>Anastrepha obliqua</i>	CT T107-c.
Mango	Citrus fruits (orange, grapefruit, lemon, citron, and lime).	<i>Anastrepha</i> spp., <i>Ceratitis capitata</i> .	HWD T102-a.
		<i>Pectinophora gossypiella</i>	MB T101-p-2.
Okra (pod)	External and internal feeders	MB T101-b-3-1.	

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Virgin Islands	Pigeon pea (pod or shelled) ..	<i>Cydia fabivora</i> , <i>Epinotia aporema</i> , <i>Maruca testulalis</i> , and leafminers.	MB T101–k–2.
	Beans (string, lima, faba) and pigeon peas, in the pod.	<i>Cydia fabivora</i> , <i>Epinotia aporema</i> , <i>Maruca testulalis</i> , and leafminers.	MB T101–k–2 or MB T101–k–2–1.
	Citrus fruits (orange, grapefruit, lemon, citron, and lime).	<i>Anastrepha obliqua</i>	CT T107–c.
	Mango	<i>Anastrepha</i> spp., <i>Ceratitis capitata</i> .	HWD T102–a.
	Okra (pod)	<i>Pectinophora gossypiella</i>	MB T101–p–2.
	Sweet potato	External and internal feeders	MB T101–b–3–1.

(i) *Garbage*. For treatment of garbage, see § 305.33.

(j) *Grains and seeds not intended for propagation*. The treatment schedules for which administration instructions

are not provided are in § 305.6 for methyl bromide (MB) fumigation, § 305.23 for steam sterilization (SS), and § 305.25 for dry heat (DH).

Plant material	Pest	Treatment schedule
Acorns	<i>Cydia splendana</i> and <i>Curculio</i> spp	MB T302–g–1 or MB T302–g–2.
Corn seed (commercial lots)	Various corn-related diseases	SS T510–1.
Ear corn	Borers	MB T302–a–1–1 or DH T302–a–1–2.
Grains and seeds (guar "gum")	<i>Trogoderma granarium</i>	MB T302–c–1 or MB T302–c–3.
Grains and seeds	<i>Trogoderma granarium</i>	MB T302–c–2.
Grains and seeds contaminated with cotton seed.	<i>Pectinophora</i> spp	MB T301–a–1–1 or MB T301–a–1–2.
Grains and seeds	Insects other than <i>Trogoderma granarium</i> .	MB T302–e–1 or MB T302–e–2.
Grains and seeds excluding <i>Rosmarinus</i> seed.	Snails	T302–f: Remove snails through separation by screening or hand removal. If not feasible, an inspector will deny entry or treat with appropriate schedule (See miscellaneous cargo in paragraph (m) of this section.).
Shelled corn contaminated with cottonseed. (Do not use shelled corn treated with T301 for food or feed.)	<i>Pectinophora</i> spp	MB T302–b–1–2 (See MB T301–a–1–1 or MB T301–a–1–2.).

(k) *Hay, baled*. For treatment of baled hay for *Mayetiola destructor*, see the phosphine treatment schedule T311 in § 305.7.

(1) *Khapra beetle*. (1) For the heat treatment of feeds and milled products that are heated as a part of the processing procedure, or for other commodities that can be subjected to heat, and that are infested with khapra beetle, see treatment schedule T307–a in § 305.26.

(2) See treatment schedule T306–c–1 in § 305.6 for finely ground oily meals and flour.

(3) See also specific articles where the pest is *Trogoderma granarium* (khapra beetle).

(4) See treatment schedule T302–g–1 in § 305.6 for sorptive materials.

(m) *Miscellaneous (nonfood, nonfeed commodities or articles)*. The treatment schedules for which administration instructions are not provided are in § 305.6 for methyl bromide (MB) fumigation, § 305.8 for sulfur dioxide, § 305.16 for cold treatment (CT), and § 305.23 for steam sterilization (SS).

Material	Pest	Treatment schedule
Brassware from Bombay (Mumbai), India	<i>Trogoderma granarium</i>	MB T413–a or MB T413–b.
Inanimate, nonfood articles	Gypsy moth egg masses	MB T414.
Miscellaneous cargo (nonfood, nonfeed commodities).	Quarantine significant snails of the family Achatinidae, including <i>Achatina</i> , <i>Archachatina</i> , <i>Lignus</i> , <i>Limnicolaria</i> .	MB T402–a–1 or CT T403–a–6–3.

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	Quarantine significant snails of the family Hygromiidae, including the following genera: <i>Canidula</i> , <i>Cernuella</i> , <i>Cochlicella</i> , <i>Helicella</i> , <i>Helicopsis</i> , <i>Monacha</i> , <i>Platytheba</i> , <i>Pseudotrichia</i> , <i>Trochoidea</i> , <i>Xerolenta</i> , <i>Xeropicta</i> , <i>Xerosecta</i> , <i>Xerotricha</i> .	MB T403-a-2-1 or MB T403-a-2-2 or CT T403-a-2-3.
	Quarantine significant slugs of the families Agriolimacidae, Arionidae, Limacidae, Milacidae, Philomycidae, Veronicellidae, including the following genera: <i>Agriolimax</i> , <i>Arion</i> , <i>Colosius</i> , <i>Deroceras</i> , <i>Diplosolenodes</i> , <i>Leidyula</i> , <i>Limax</i> , <i>Meghimatum</i> , <i>Milax</i> , <i>Pallifera</i> , <i>Pseudoveronicella</i> , <i>Sarasinula</i> , <i>Semperula</i> , <i>Vaginulus</i> , <i>Veronicella</i> .	MB T403-a-3.
	Quarantine significant snails of the family Helicidae, including the following genera: <i>Caracollina</i> , <i>Cepaea</i> , <i>Cryptomphalus</i> , <i>Helix</i> , <i>Otala</i> , <i>Theba</i> .	MB T403-a-4-1 or MB T403-a-4-2 or CT T403-a-4-3.
	Quarantine significant snails of the families Bradybaenidae and Succineidae, including the following genera: <i>Bradybaena</i> , <i>Cathaica</i> , <i>Helicostyla</i> , <i>Omalonyx</i> , <i>Succinea</i> , <i>Trishoplita</i> .	MB T403-a-5-1 or MB T403-a-5-2, or CT T403-a-5-3.
	Quarantine significant snails sensitive to cold treatment. Members of the families Bradybaenidae, Helicidae, Helicellidae, Hygromiidae, and Succineidae, including the following genera: <i>Bradybaena</i> , <i>Candidula</i> , <i>Cepaea</i> , <i>Cathaica</i> , <i>Cernuella</i> , <i>Cochlicella</i> , <i>Helicella</i> , <i>Helicostyla</i> , <i>Theba</i> , <i>Trishoplita</i> , <i>Trochoidea</i> , <i>Xerolenta</i> , <i>Xeropicta</i> , <i>Xerosecta</i> , <i>Xerotricha</i> .	CT T403-a-6-1.
	Quarantine significant snails sensitive to cold treatment, certain members of the family Helicidae, including the genera <i>Helix</i> and <i>Otala</i> .	CT T403-a-6-2.
	Quarantine significant snails sensitive to cold treatment of the family Achatinidae, including the genera <i>Achatina</i> , <i>Archachatina</i> , <i>Lignus</i> , <i>Limicolaria</i> .	CT T403-a-6-3.
	<i>Globodera rostochiensis</i>	MB T403-c.
	<i>Trogoderma granarium</i>	MB T401-b or MB T402-b-2.
	Wood borers or termites	See treatments for wood products in paragraph (y) of this section.
	<i>Pieris</i> spp. (all life stages of cabbageworms) and all other Lepidoptera, hitchhiking insects, including other than Lepidoptera.	MB T403-f.
Miscellaneous cargo (nonfood, nonfeed commodities) that is sorptive or difficult to penetrate.	Quarantine significant insects not specifically provided for elsewhere in nonfood or nonfeed commodities.	MB T403-e-1-1 or MB T403-e-1-2.
Miscellaneous cargo (nonfood, nonfeed commodity) that is not sorptive or difficult to penetrate.	Quarantine significant pests other than insects (including snails of the families Helicarionidae, Streptacidae, Subulinidae, and Zonitidae, as well as other noninsect pests).	MB T403-e-2.
Nonfood materials	Ticks	MB T310-a or MB T310-b or sulfury fluoride T310-d.
Nonplant articles	Potato cyst nematode	MB T506-2-1 or SS T506-2-3.
Nonplant products	Ants	MB T411.

(n) *Plants, bulbs, corms, tubers, rhizomes, and roots.* The treatment schedules for which administration instructions are not provided are in § 305.6 for methyl bromide (MB) fumigation, § 305.10 for combination (COM), and § 305.42(c) for miscellaneous (Misc.).

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Plant material	Pest	Treatment schedule
<i>Anchusa</i> , <i>Astilbe</i> , <i>Clematis</i> , <i>Dicentra</i> , <i>Gardenia</i> , <i>Helleborus</i> , <i>Hibiscus</i> , <i>Kniphofia</i> , <i>Primula</i> .	Lesion nematodes (<i>Pratylenchus</i> spp.) ...	T553–2: Hot water dip at 118 °F for 30 minutes.
<i>Acalypha</i>	<i>Pratylenchus</i> spp	T570–1: Hot water dip at 110 °F for 50 minutes.
<i>Aconitum</i>	<i>Aphelenchoides fragariae</i> spp	T570–2: Hot water dip at 110 °F for 50 minutes.
<i>Allium</i> , <i>Amaryllis</i> , and bulbs	Bulb nematodes: <i>Ditylenchus dipsaci</i> , <i>D. destructor</i> .	T552–1: Presoak bulbs in water at 75 °F for 2 hours, then at 110–111 °F for 4 hours.
<i>Amaryllis</i>	<i>Ditylenchus destructor</i>	T565–1: Hot water dip at 110 °F for 4 hours immediately after digging.
Aquatic plants	Snails of the families: Ampullariidae, Bulnidae, Lymnaeidae, Planorbidae, Viviparidae.	T201–q: Hot water treatment at 112 °F for 10 minutes. (<i>Elodea</i> , <i>Danes</i> , and <i>Cabomba caroliniana</i> plants not tolerant to this treatment.)
<i>Armoracea</i> (horseradish roots), bulbs (not specifically provided for).	<i>Globodera rostochiensis</i> and <i>G. pallida</i> ..	T553–3: Hot water dip at 118 °F for 30 minutes.
<i>Astilbe</i> , <i>Bletilla hyacinthina</i> , <i>Cimicifuga</i> , <i>Epimedium pinnatum</i> , <i>Hosta</i> , <i>Paeonia</i> .	<i>Aphelenchoides besseyi</i>	T564–1: Presoak in water at 68 °F for 1 hour followed by hot water soak at 110 °F for 1 hour. Then dip in cold water and let dry.
<i>Astilbe</i> roots	<i>Brachyrhinus</i> larvae	MB T202–b.
<i>Azalea</i>	<i>Chrysomyxa</i> spp	T501–1: Remove infested parts and treat all plants of same species in shipment with 4–4–50 Bordeaux dip or spray.
<i>Azalea</i> hybrid	<i>Chrysomyxa</i> spp	T501–2: Remove infested parts and treat all plants of same species in shipment with 4–4–50 Bordeaux dip or spray; or T505–1–1: Treat with mancozeb or other approved fungicide of equal effectiveness according to the label.
Banana roots	External feeders	T202–c: Pretreatment at 110 °F for 30 minutes. Then, hot water dip at 120 °F for 60 minutes.
<i>Begonia</i>	<i>Aphelenchoides fragariae</i>	T559–1: Dip in hot water at 118 °F for 5 minutes.
<i>Bletilla hyacinthina</i>	<i>Aphelenchoides fragariae</i>	T553–4: Dip in hot water at 118 °F for 30 minutes.
Bromeliads	External feeders	MB T201–e–1.
	Internal feeders such as borers and miners.	MB T201–e–2.
	<i>Phyllosticta bromeliae</i> <i>Uredo</i> spp	T507–1: Remove infested leaves and treat all plants of same species in shipment with Captan following label directions.
Cacti and other succulents	External feeders (other than soft scales) infesting collected dormant and non-dormant plant material.	MB T201–f–1.
	Borers and soft scales	MB T201–f–2.
<i>Calla</i> (rhizomes)	<i>Meloidogyne</i> spp	T556–1: Dip in hot water at 122 °F for 30 minutes.
<i>Camellia</i> (light infestation)	<i>Cylindrosporium camelliae</i>	<i>Light infestation</i> : T509–1–1: Remove infested leaves and dip or spray plant with 4–4–50 Bordeaux. Dry quickly and thoroughly. <i>Heavy infestation</i> : An inspector will refuse entry.
Christmas tree	<i>Phoma chrysanthemi</i>	T501–5: Remove infested parts and treat all plants of same species in shipment with 4–4–50 Bordeaux dip or spray.
<i>Chrysanthemum</i>	<i>Phoma chrysanthemi</i>	T501–4: Remove infested parts and treat all plants of same species in shipment with 4–4–50 Bordeaux dip or spray.
<i>Chrysanthemum</i> rooted and unrooted cuttings.	Aphids	MB T201–g–1.
	External feeders	COM T201–g–2.
	Leafminers, aphids, mites, etc. (<i>Chrysanthemum</i> spp. from Dominican Republic and Colombia when infested with Agromyzid leafminers requires no treatment unless destined to Florida.)	T201–g–3: Dip in hot water at 110–111 °F for 20 minutes.
<i>Chrysanthemum</i> (not including Pyrethrum).	<i>Meloidogyne</i> spp. and <i>Pratylenchus</i> spp	T557–1: Dip in hot water at 118 °F for 25 minutes.

Plant material	Pest	Treatment schedule
Commodities infested with	Slugs of the families Agriolimacidae, Arionidae, Limacidae, Milacidae, Philomycidae, Veronicellidae, including the following genera: <i>Agriolimax</i> , <i>Arion</i> , <i>Colosius</i> , <i>Deroceras</i> , <i>Diplosolenodes</i> , <i>Leidyula</i> , <i>Limax</i> , <i>Meghimatium</i> , <i>Milax</i> , <i>Pallifera</i> , <i>Pseudoveronicella</i> , <i>Sarasinula</i> , <i>Semperula</i> , <i>Vaginulus</i> , <i>Veronicella</i> .	MB T201-l.
<i>Convallaria</i>	<i>Globodera rostochiensis</i> and <i>G. pallida</i> ..	T551-1: Keep the pips frozen until time for treatment. Then thaw enough to separate bundles just before treatment begins. Without preliminary warmup, immerse in hot water at 118 °F for 30 minutes.
<i>Crocus</i>	<i>Aphelenchoides subtenuis</i> , <i>Ditylenchus destructor</i> .	T565-2: Hot water at 110 °F for 4 hours immediately after digging.
Cycads (except <i>Dioon edule</i>)	External feeders	MB T201-h-1.
Deciduous woody plants (dormant)	External feeders	MB T201-a-1.
	Gypsy moth egg masses	MB T313-a or MB T313-b.
	Mealybugs	MB T305-c.
Deciduous woody plants (dormant), root cuttings, scion wood cuttings, and non-foliated citrus whitefly host: <i>Acer</i> , <i>Berberis</i> , <i>Fraxinus</i> , <i>Philadelphus</i> , <i>Rosa</i> , <i>Spiraea</i> , <i>Syringa</i> .	Borers, Citrus whitefly hosts	MB T201-a-2 or MB T201-k-1.
<i>Dioon edule</i>	External feeders	MB T201-h-2.
<i>Dieffenbachia</i> , <i>Dracaena</i> , <i>Philodendron</i> (plants and cuttings).	External feeders	MB T201-i-1.
Evergreens (<i>Azalea</i> , <i>Berberis</i> , <i>Camellia</i> , <i>Cedrus</i> , <i>Cupressus</i> , <i>Ilex</i> , <i>Juniperus</i> , <i>Photinia</i> , <i>Podocarpus</i> , <i>Thuja</i> , and <i>Taxus</i>).	Internal feeders	MB T201-i-2.
	External feeders	MB T201-b-1.
Exceptions:		
<i>Araucaria</i>	External feeders	MB T201-c-1.
<i>Azalea indica</i>	External feeders	MB T201-c-2.
Cycads	External feeders	MB T201-l.
Hosts	<i>Dialeurodes citri</i>	MB T201-k-1.
<i>Daphne</i>	External feeders	MB T201-c-1.
<i>Lavandula</i>	External feeders	Misc. T201-p-1.
<i>Osmanthus americanus</i>	External feeders	COM T201-p-2.
<i>Pinus</i> (Canada to certain States)	.....	MB T201-j.
Peanuts	Gypsy moth egg masses	MB T313-a.
Foliated host plants of <i>Dialeurodes citri</i> , excluding <i>Osmanthus americanus</i> .	<i>Dialeurodes citri</i>	MB T201-k-1.
<i>Fragaria</i> (strawberry)	<i>Aphelenchoides fragariae</i>	T569-1: Hot water at 121 °F for 7 minutes.
	<i>Pratylenchus</i> spp.	T558-1: Dip in hot water at 127 °F for 2 minutes.
Garlic (see § 319.37-6(c))	<i>Brachycerus</i> spp. and <i>Dyspessa ulula</i> ...	MB T202-j.
<i>Gentiana</i>	<i>Septoria gentianae</i>	T507-2: Remove infested leaves and treat all plants of same species in shipment with Captan following label directions.
<i>Gladiolus</i>	<i>Taeniothrips simplex</i>	MB T202-e-1 or MB 202-e-2.
	<i>Ditylenchus destructor</i>	T565-3: Hot water at 110 °F for 4 hours immediately after digging.
Greenhouse-grown plants, herbaceous plants and cuttings, greenwood cuttings of woody plants.	External feeders, leafminers, thrips	MB T201-c-1.
	Borers and soft scales	MB T201-c-2.
Exceptions:		
Bromeliads	External feeders	MB T201-e-3-1.
Cacti and other succulents	External feeders	MB T201-j.
<i>Chrysanthemum</i>	External feeders	MB T201-g-1.
Cycads	External feeders	MB T201-l.
<i>Cyclamen</i>	Mites	MB T201-a-2.
<i>Dieffenbachia</i> , <i>Dracaena</i> , and <i>Philodendron</i> .	External feeders	MB T201-i-1.
<i>Kalanchoe synsepala</i>	Quarantine pests, excluding scale insects.	Misc. T201-p-1.
<i>Lavandula</i>	Quarantine pests	COM T201-p-2.
Orchids	<i>Dialeurodes citri</i>	MB T201-k-2.

Plant material	Pest	Treatment schedule
<i>Osmanthus americanus</i>	Quarantine pests	Misc. T201–p–1.
<i>Pelargonium</i>	Quarantine pests	Misc. T201–p–1.
<i>Sedum adolphii</i>	Quarantine pests	Misc. T201–p–1.
Plants infested with	<i>Succinea horticola</i>	T201–o–1: Use a high-pressure water spray on the foliage to flush snails from the plants. The run-off drain must be screened to catch snails before drainage into the sewer system.
Plants infested with	<i>Veronicella</i> or other slugs	MB T201–1.
Horseradish roots from the countries of Armenia, Azerbaijan, Belarus, Bosnia, Herzegovina, Croatia, Czech Republic, Estonia, Georgia, Germany, Hungary, Italy, Kazakhstan, Kyrgyzstan, Latvia, Lithuania, Macedonia, Moldova, Poland, Russia, Serbia and Montenegro, Slovakia, Slovenia, Tajikistan, Turkmenistan, Ukraine, and Uzbekistan.	External feeders	MB T202–f.
Host plants of <i>Aleurocanthus woglumi</i>	<i>Aleurocanthus woglumi</i>	MB T201–n.
Host plants of <i>Omalonyx unguis</i> and <i>Succinea</i> .	<i>Omalonyx unguis</i> and <i>Succinea</i> spp. (snails).	T201–o–1: Use a high-pressure water spray on the foliage to flush snails from the plants. The run-off drain must be screened to catch snails before drainage into the sewer system; or T201–o–2: Dip plants with solution prepared by adding 3 level tablespoons of 25 percent Malathion wettable powder and 6 level teaspoons of 50 percent carbaryl wettable powder per gallon of water with a sticker-spreader formulation.
<i>Humulus</i>	<i>Heterodera humuli</i>	T553–5: Hot water at 118 °F for 30 minutes.
<i>Hyacinthus</i> (bulbs), <i>Iris</i> (bulbs and rhizomes), <i>Tigridia</i> .	<i>Ditylenchus dipsaci</i> and <i>D. destructor</i>	T554–1–1: Presoak in water at 70–80 °F for 2.5 hours followed by hot water immersion at 110–111 °F for 1 hour; or T554–1–2: Hot water immersion at 110–111 °F for 3 hours with no presoaking.
<i>Lilium</i> (bulbs)	<i>Aphelenchoides fragariae</i>	T566–3: Completely submerge in hot water at 102 °F.
Lily bulbs packed in subsoil	Internal feeders	MB T202–g.
<i>Lycoris</i>	<i>Taeniothrips eucharis</i>	MB T202–h.
<i>Muscari</i> , <i>Ornithogalum</i> , <i>Polianthes</i> (tuberose).	<i>Ditylenchus dipsaci</i>	T567–1: Dip in hot water at 113 °F for 4 hours.
<i>Narcissus</i>	<i>Steneotarsonemus laticeps</i>	MB T202–i–1; or MB T202–i–2; or T202–i–3: Hot water at 110–111 °F for 1 hour after bulbs reach 110 °F pulp temperature. Apply hot water within 1 month after normal harvest as injury to flower bud may occur.
	<i>Ditylenchus dipsaci</i>	T555–1: Presoak in water at 70–80 °F for 2 hours; then at 110–111 °F until all bulbs reach that temperature and hold for 4 hours.
Nonfoliated host plants of <i>Dialeurodes citri</i> , excluding <i>Osmanthus americanus</i> .	<i>Dialeurodes citri</i>	MB T201–k–2.
Orchids	<i>Ascochyta</i> spp	T513–1: Defoliate if leaf-borne only; inspector will refuse entry if pseudo-bulbs infested.
	<i>Cercospora</i> spp	T501–3: Remove infested parts and treat all plants of same species in shipment with 4–4–50 Bordeaux dip or spray.
	<i>Hemileia</i> spp., <i>Leptosphaeria</i> spp., <i>Mycosphaerella</i> spp., <i>Ophiodothella orchidearum</i> , <i>Phomopsis orchidophila</i> , <i>Phyllachora</i> spp., <i>Phyllosticta</i> spp., <i>Sphenospora</i> spp., <i>Sphaerodothis</i> spp., <i>Uredo</i> spp. (except <i>U. scabies</i>).	Light infestation: T509–2–1: Remove infested leaves and treat plant with 4–4–50 Bordeaux dip or spray. Dry quickly and thoroughly. Heavy infestation: An inspector will refuse entry.
Orchids, plants and cuttings (see MB T305–c for mealybugs).	External feeders (other than soft scales)	MB T201–d–1.
Orchids, plants and cuttings	External feeders (other than soft scales) infesting greenhouse grown plant material.	MB T201–d–2.

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Plant material	Pest	Treatment schedule
Orchids to Florida	Borers, cattleya fly, <i>Mordellistena</i> spp., soft scales, <i>Vinsonia</i> spp.	MB T201-d-3.
	<i>Cecidomyid galls</i>	T201-d-4: Excise all galls.
	Leaf miner, <i>Eurytoma</i> spp. infesting <i>Rhynchostylis</i> .	T201-d-5: Hot water dip at 118 °F for ½ hour followed by a cool water bath.
	Rusts	T508-1: An inspector will refuse entry of all infested plants and all other plants of the same species or variety in the shipment. Other orchid species in the shipment that may have become contaminated must be treated with Captan. Repackage treated orchids in clean shipping containers.
		T559-2: Dip in hot water at 132.8 °F for 15 minutes.
<i>Oryza</i> (paddy rice)	<i>Aphelenchoides fragariae</i>	MB T201-e-3-1 or MB T201-e-3-2.
Pineapple slips	Various	MB T201-j.
Pines (<i>Pinus</i> spp.) from Canada and destined to California, Idaho, Oregon, or Utah. Precautionary treatment for pine trees and twigs and branches of all <i>Pinus</i> spp., except that Christmas trees and other pine decorative materials are exempt from treatment from November 1-December 31.	<i>Rhyacionia buoliana</i>	
Plant cuttings:		
Scion wood	External feeders	MB T201-m-1.
Greenwood cuttings of woody plants and herbaceous plant cuttings.	External feeders	MB T201-m-2.
Root cuttings	External feeders	MB T201-m- or MB T201-m-4.
Exceptions to plant cuttings:		
Avocado	External feeders	COM T201-p-1.
<i>Chrysanthemum</i>	External feeders	MB T201-g-1.
<i>Dieffenbachia</i>	External feeders	MB T201-i-1.
<i>Dracaena</i>	External feeders	MB T201-i-2.
<i>Lavandula</i>	External feeders	COM T201-p-1.
Orchids	External feeders	MB T201-k-2.
<i>Philodendron</i>	External feeders	MB T201-i-1.
Plant material not tolerant to fumigation ..	Actionable pests	COM T201-p-1.
<i>Rhododendron</i>	<i>Chrysomyxa</i> spp.	T501-6: Remove infested parts and treat all plants of same species in shipment with 4-4-50 Bordeaux dip or spray; or T505-2-1: Treat with mancozeb or other approved fungicide of equal effectiveness according to the label instructions.
<i>Rosa</i> (except multiflora)	<i>Meloidogyne</i> spp.	T560-1: Dip in hot water at 123 °F for 10 minutes.
<i>Selaginella</i>	External feeders	MB T202-a-1 or MB T202-a-2.
	Internal feeders	MB T202-a-3.
<i>Senecio</i> (Lingularis)	<i>Aphelenchoides fragariae</i>	T568-1: Treat with hot water at 110 °F for 1 hour.
<i>Scilla</i>	<i>Ditylenchus dipsaci</i>	T565-4: Hot water at 110 °F for 4 hours immediately after digging.
<i>Solanum</i> (potato tubers)	<i>Globodera rostochiensis</i> , <i>G. pallida</i>	T565-5: Hot water at 110 °F for 4 hours immediately after digging.
Various plant commodities	<i>Meloidogyne</i> spp.	T553-1: Hot water at 118 °F for 30 minutes.
Yams and sweet potatoes		MB T202-d.

(o) *Railroad cars (empty)*. The treatment schedules for which administration instructions are not provided are in §305.6 for methyl bromide (MB) fumigation.

Pest	Treatment schedule
<i>Globodera rostochiensis</i>	T406-c, steam cleaning: Steam at high pressure until all soil is removed. Treated surfaces must be thoroughly wet and heated.
<i>Pectinophora gossypiella</i>	MB T401-a.

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Pest	Treatment schedule
<i>Trogoderma granarium</i>	MB T401–b.
Nematode cysts	T401–c, high pressure steam cleaning; or formaldehyde wetting spray (one part 40 percent commercial formalin to 9 parts water).

(p) *Rice straw and hulls.* The treatment schedules for which administration instructions are not provided are in §305.25 for dry heat (DH), §305.6 for methyl bromide (MB) fumigation, and §305.23 for steam sterilization (SS).

Plant material	Pest	Treatment schedule
Articles made with rice straw	Fungal diseases of rice or internal feeders.	DH T303–d–1 or SS T303–b–1 or SS T303–d–2.
Articles made with rice straw for indoor use only.	Internal feeders	MB T303–d–2–2 or MB T303–d–2–3.
Brooms made of rice straw	Various rice-related diseases	DH T518–1.
Closely packed rice straw and hulls	Various rice-related diseases	SS T519–1.
Loose rice straw and hulls	Various rice-related diseases	SS T519–2.
Novelties made of rice straw	Various rice-related diseases	DH T518–2–1 or SS T518–2–2.
Rice straw and hulls imported for purposes other than approved processing.	Fungal diseases of rice	SS T303–b–1 or SS T303–b–2.
Rice straw and hulls imported in small lots of 25 pounds or less.	Fungal diseases of rice	DH T303–c–1.

(q) *Seeds.* The treatment schedules for which numbers are specified and administration instructions are not provided are in §305.10 for combination (COM) treatments, §305.25 for dry heat (DH), §305.6 for methyl bromide (MB) fumigation, §305.7 for phosphine (PH), and §305.24 for vapor heat (VH).
 (1) Seeds other than noxious weed seeds.

Type of seeds	Pest	Treatment schedule
Alfalfa (<i>Medicago sativa</i>) from Europe	<i>Verticillium albo-atrum</i>	T520–1–1: Dust with 75 percent Thiram at the rate of 166 grams per 50 kilograms of seed (3.3g/kg); or T520–1–2: Treat with a slurry of Thiram 75 WP at a rate of 166 grams per 360 milliliters of water per 50 kilograms of seed (3.3 g pesticide/7.2 ml water/kg seed).
Avocado (no pulp)	<i>Conotrachelus</i> spp., <i>Heilipus lauri</i> , <i>Caulophilus latinasus</i> , <i>Copturus aguacatae</i> , <i>Stenomoma catenifer</i> .	MB T203–m.
<i>Casuarina</i>	<i>Bootanomyia</i> spp.	MB T203–o–l.
Chestnut and acorn	Internal feeders	MB T203–e.
Citrus (Rutaceae family)	Citrus canker	COM T203–p; or for seed from regions where citrus canker occurs, COM T511–1.
Conifer (species with small seeds, such as <i>Picea</i> spp., <i>Pinus sylvestris</i> , and <i>Pinus mugo</i>).	External feeders	MB T203–i–1.
Conifer (species with small seeds, such as <i>Picea</i> spp., <i>Pinus sylvestris</i> , and <i>Pinus mugo</i> and nutlike seeds or tightly packed seeds so as to make fumigant penetration questionable).	Internal feeders	MB T203–i–2.
Corn (small lots for propagation but not for food, feed, or oil purposes).	Various corn-related diseases	T510–2: Treat seeds with a dry application of Mancozeb in combination with Captan. Disinfect small bags containing corn (bags weighing 60 pounds or less) only with: (1) Dry heat at 212 °F for 1 hour; or (2) steam at 10 pounds pressure at a minimum of 240 °F for 20 minutes. Note: Bags with plastic liners must be opened prior to treatment.
Cottonseed (bagged, packaged, or bulk)	External feeders	MB T203–f–1 or MB T203–f–2 or MB T203–f–3 or PH T203–f–4.

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Type of seeds	Pest	Treatment schedule
<i>Hevea brasiliensis</i>	Seed boring insects	MB T203-j.
Pods and seeds of kenaf, hibiscus, and okra.	Internal feeders	MB T203-g-1 or MB T203-g-2 or PH T203-g-3.
Leguminosae=Fabaceae	<i>Bruchophagus</i> spp. and <i>Eurytoma</i> spp. ..	MB T203-o-3.
	<i>Caryedon</i> spp.	MB T203-c or MB T203-a-2.
	<i>Caryedon</i> spp. (in or with, etc.)	MB T203-o-4-1 or MB T203-o-4-2.
<i>Lonicer</i> a and other seeds	<i>Rhagoletis cerasi</i> pupae (Diptera: Tephritidae).	MB T203-o-5.
Macadamia nut	<i>Cryptophlebia illepid</i> a	MB T203-k.
<i>Rosmarinus</i>	Juvenile <i>Helicella</i> spp. (snails) or internal feeders.	MB T203-h.
<i>Umbelliferae</i>	<i>Systole</i> spp.	MB T203-o-2.
<i>Vicia</i> spp., excluding seeds of <i>Vicia faba</i>	Bruchidae	MB T203-d-1.
<i>Vicia</i> spp., including seeds of <i>Vicia faba</i>	Bruchidae	MB T203-d-2.
Seeds	<i>Trogoderma granarium</i>	MB T203-l.
Seeds (excluding seeds of <i>Vicia</i> spp.)	Bruchidae excluding <i>Caryedon</i> spp. at NAP.	MB T203-b.
Seeds not specifically listed	External feeders	MB T203-a-1.
	Internal feeders	MB T203-a-2.
Seeds with infested pulp	Fruit flies and other pulp infesting insects	T203-n: Place seed in wire basket. Immerse in 118-125 °F water for 25 minutes. Remove pulp from seed under running tap water.

(2) Noxious weed seeds (devitalization treatment).

Weed seeds	Treatment schedule
<i>Asphodelus fistulosus</i> , <i>Digitaria</i> spp., <i>Oryza</i> spp., <i>Paspalum scrobiculatum</i> , <i>Prosopis</i> spp., <i>Solanum viarum</i> , <i>Striga</i> spp., <i>Urochloa panicoides</i> .	DH T412-a.
<i>Cuscuta</i> spp.	DH T412-b-1 or VH T412-b-2.

(r) *Ships, containers, and surrounding area*. The treatment schedules for which administration instructions are not provided are in §305.6 for methyl bromide (MB) fumigation.

Product	Pest	Treatment schedule
Asphalt surfaces and asphalt-base painted surfaces.	<i>Trogoderma granarium</i>	T402-b-3-2: Prepare 3 percent spray by adding 1 pound of 25 percent malathion wettable powder to each gallon of water. Spray at 2 gal/1000 ft ² or to the point of runoff.
Piers and barges	<i>Globodera rostochiensis</i>	T406-c, steam cleaning: Steam at high pressure until all soil is removed. Treated surfaces must be thoroughly wet and heated.
Metal and wood surfaces such as decks, bulkheads, piers, and other areas not subject to fumigations.	<i>Trogoderma granarium</i>	T402-b-3-1: Prepare 3 percent spray by mixing ½ pint emulsifiable concentrate (57 percent premium grade malathion) per gallon of water. Spray at 2 gal/1000 ft ² or to the point of runoff.
Ship holds and any nonplant cargo material within holds.	Quarantine significant snails of the family Achatinidea, including the following genera: <i>Achatina</i> , <i>Archachatina</i> , <i>Lignus</i> , <i>Limicolaria</i> .	MB T402-a-1.
Ship holds and any nonplant cargo material within holds.	Quarantine significant snails of the family Hygromiidae, including the following genera: <i>Canidula</i> , <i>Cernuella</i> , <i>Cochlicella</i> , <i>Helicella</i> , <i>Helicopsis</i> , <i>Monacha</i> , <i>Platytheba</i> , <i>Pseudotrachia</i> , <i>Trochoidea</i> , <i>Xerolenta</i> , <i>Xeropicta</i> , <i>Xerosecta</i> , <i>Xerotricha</i> .	MB T402-a-2.

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Product	Pest	Treatment schedule
Ship holds and any nonplant cargo material within holds.	Quarantine significant snails of the families Helicidae and Succineidae, including the following genera: <i>Caracollina</i> , <i>Cepaea</i> , <i>Cryptomphalus</i> , <i>Helix</i> , <i>Omalyonyx</i> , <i>Otala</i> , <i>Succinea</i> , <i>Theba</i> .	MB T402–a–3.
Ship holds and storerooms with loosely packed material.	<i>Trogoderma granarium</i>	MB T402–b–1.
Ship holds and storerooms with tightly packed material.	<i>Trogoderma granarium</i>	MB T402–b–2.

(s) *Skins (goatskins, lambskins, and sheepskins)*. The treatment schedules for which administration instructions are not provided are in §305.6 for methyl bromide (MB) fumigation.

Pest	Treatment schedule
<i>Trogoderma granarium</i>	MB T416–a–1 or MB T416–a–2 or MB T416–a–3.

(t) *Soil*. The treatment schedules for which numbers are specified and administration instructions are not provided are in §305.6 for methyl bromide (MB) fumigation, §305.23 for steam sterilization (SS), and §305.25 for dry heat (DH).

Product	Pest	Treatment
Herbarium specimens of mosses and liverworts in soil and originating in golden nematode free countries.	Precautionary	MB T408–e–1.
Herbarium specimens of mosses and liverworts in soil and originating in golden nematode free countries.	<i>Globodera rostochiensis</i>	MB T408–e–2.
Soil	Potato cyst nematode	MB T502–3.
Soil	Various pests and pathogens found in soil (including <i>Striga</i>).	DH T408–a.
	Various pests and pathogens found in soil.	SS T408–b.
Soil (friable and moist, but not wet and not more than 12 inches in depth).	<i>Globodera rostochiensis</i>	MB T408–c–2.
Soil	Insects	T408–d–1: Screening through 16 mesh screens will remove most larvae and pupae, except smaller types; or T408–d–2: Freezing—0 °F for 5 days.
Soil (friable and moist, but not wet and not more than 12 inches in depth) in containers with dimensions that do not exceed 24 inches.	<i>Globodera rostochiensis</i>	MB T408–c–1.
Soil on equipment	Various pests and pathogens found in soil.	T408–b–1 (steam cleaning): Steam at high pressure until all soil is removed. Treated surfaces must be thoroughly wet and heated.
Soil contaminated equipment (precautionary treatment).	Soil fungi, nematodes, and certain soil insects.	T408–f, steam cleaning: Steam at high pressure until all soil is removed. Treated surfaces must be thoroughly wet and heated.
Soil contaminated non-food or non-feed commodities (soil must be friable and or moist, but not wet, and must not exceed 12 inches in dimension).	<i>Striga</i>	MB T408–g–1 or MB T408–g–2.

(u) *Sugarcane*.

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Product	Pest	Treatment schedule
Saccharum (seed pieces)	<i>Xanthomonas albilineans</i> and <i>X. vasculorum</i> .	T514-1: Presoak in water at room temperature for 24 hours. Then immerse in water at 122 °F for 3 hours.
Saccharum (true seed fuzz)		T514-2: Immerse in 0.525 percent sodium hypochlorite solution for 30 minutes followed by at least 8 hours air drying before packaging (Dilute 1 part Clorox or similar solution containing 5.25 percent sodium hypochlorite; if using ultra strength chlorine bleach, use only ¾ as much bleach).
Saccharum (bagasse)		T514-3: Dry heat treatment for 2 hours at 158 °F.
Sugarcane (baled)	Various sugarcane-related diseases	T515-1: Introduce live steam into 25" vacuum until pressure reaches 15 to 20 pounds. Hold until center of bale is 220-230 °F and maintain for 30 minutes.
Sugarcane (loose)		T515-2-1: Introduce steam into 25" vacuum (or if with initial vacuum, "bleed" air until steam vapor fills chamber). T515-2-3: Dry heat at 212 °F for 1 hour. T515-2-4: Remove the pulp in water at 190-205 °F, followed by drying at 212 °F for 1 hour. T515-2-5: Flash heated to 1,000 °F (Arnold dryer).

(v) *Wood articles including containers, oak logs and lumber, Christmas trees.* are in §305.6 for methyl bromide (MB) fumigation, §305.8 for sulfuryl fluoride (SF), and §305.28 for kiln sterilization (KS). The treatment schedules for which administration instructions are not provided

Material	Pest	Treatment schedule
Cut conifer Christmas trees	<i>Lymantria dispar</i> egg masses	MB T313-a.
Cut pine Christmas trees and pine logs ..	<i>Tomicus piniperda</i>	MB T313-b.
Wood surfaces (can be combined with other surfaces such as metal or concrete).		SF T404-c-2.
Wood surfaces (can be combined with other surfaces such as metal or concrete).	Borers (wood wasps, cerambycids, and <i>Dinoderus</i>).	T404-b-5-1: (1) The spray must be applied by or under the supervision of pest control operators or other trained personnel responsible for insect control programs; (2) prepare the spray by thoroughly mixing 79 ml (2⅔ fluid ounces) of Dursban 4E with water for a total of 1 gallon of mixture (equivalent to 2.1 gallons in 100 gallons of water); and (3) apply as a 1 percent chlorpyrifos spray with suitable hand- or power-operated ground spray equipment to the point of runoff.
Oak logs	Oak wilt disease	MB T312-a.
Oak lumber	Oak wilt disease	MB T312-b.
Wood products including containers	Borers (wood wasps, cerambycids, and <i>Dinoderus</i>).	MB T404-b-1-1 or MB T404-b-1-2 or SF T404-b-2 or KS T404-b-4.
	<i>Globodera rostochiensis</i>	MB T404-a.
	Termites	MB T404-c-1-1 or MB T404-c-1-2.
	Borers and <i>Trogoderma granarium</i>	MB T404-d.

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[70 FR 33269, June 7, 2005, as amended at 70 FR 36332, June 23, 2005; 70 FR 72886, Dec. 8, 2005; 71 FR 4459, Jan. 27, 2006; 71 FR 25494, May 1, 2006; 71 FR 55089, Sept. 21, 2006; 72 FR 10907, Mar. 12, 2007; 72 FR 8088, Feb. 23, 2007; 72 FR 34175, June 21, 2007; 72 FR 39498, July 18, 2007; 72 FR 52779, Sept. 17, 2007; 72 FR 51988, Sept. 12, 2007; 73 FR 35212, June 20, 2008; 73 FR 30273, May 27, 2008; 73 FR 32439, June 9, 2008; 73 FR 35212, June 20, 2008]

§ 305.3 Monitoring and certification of treatments.

(a) All treatments approved under part 305 are subject to monitoring and verification by APHIS.

(b) Any treatment performed outside the United States must be monitored and certified by an inspector or an official from the national plant protection organization (NPPO) of the exporting country. If monitored and certified by an official of the NPPO of the exporting country, the treated commodities must be accompanied by a phytosanitary certificate issued by the NPPO of the exporting country certifying that treatment was applied in accordance with APHIS regulations. The phytosanitary certificate must be provided to an inspector when the commodity is offered for entry into the United States. During the entire interval between treatment and export, the consignment must be stored and handled in a manner that prevents any infestation by pests and noxious weeds.

[72 FR 39498, July 18, 2007]

§ 305.4 [Reserved]

Subpart—Chemical Treatments

§ 305.5 Treatment requirements.

(a) *Certified facility.* The fumigation treatment facility must be certified by APHIS. Facilities are required to be inspected and recertified annually, or as often as APHIS directs, depending upon treatments performed, commodities handled, and operations conducted at the facility. In order to be certified, a fumigation facility must:

(1) Be capable of administering the required dosage range for the required duration and at the appropriate temperature.

(2) Be adequate to contain the fumigant and be constructed from material that is not reactive to the fumigant.

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(3) For vacuum fumigation facilities, be constructed to withstand required negative pressure.

(b) *Monitoring.* Treatment must be monitored by an official authorized by APHIS to ensure proper administration of the treatment, including that the correct amount of gas reaches the target organism and that an adequate number and placement of blowers, fans, sampling tubes, or monitoring lines are used in the treatment enclosure. An official authorized by APHIS approves, adjusts, or rejects the treatment.

(c) *Treatment procedures.* (1) To kill the pest, all chemical applications must be administered in accordance with an Environmental Protection Agency (EPA) approved pesticide label and the APHIS-approved treatment schedule prescribed in this part. If EPA cancels approval for the use of a pesticide on a commodity, then the treatment schedule prescribed in this part is no longer authorized for that commodity. If the commodity is not listed on the pesticide label and/or a Federal quarantine or crisis exemption in accordance with FIFRA section 18, then no chemical treatment is available.

(2) Temperature/concentration readings must be taken for items known to be sorptive or whose sorptive properties are unknown when treatment is administered in chambers at normal atmospheric pressure.

(3) The volume of the commodity stacked inside the treatment enclosure must not exceed $\frac{2}{3}$ of the volume of the enclosure. Stacking must be approved by an official authorized by APHIS before treatment begins. All commodities undergoing treatment must be listed on the label.

(4) Recording and measuring equipment must be adequate to accurately monitor the gas concentration, to ensure the correct amount of gas reaches the pests, and to detect any leaks in the enclosure. At least three sampling tubes or monitoring lines must be used in the treatment enclosure.

(5) An adequate number of blowers or fans must be used inside of the treatment enclosure to uniformly distribute gas throughout the enclosure. The circulation system must be able to recirculate the entire volume of gas in the enclosure in 3 minutes or less.

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(6) The exposure period begins after all gas has been introduced. **§ 305.6 Methyl bromide fumigation treatment schedules.**

(7) For vacuum fumigation: The vacuum pump must be able to reduce pressure in the treatment enclosure to 1-2 inches of mercury in 15 minutes or less. (a) *Standard schedules.*

Treatment schedule	Pressure	Temperature (°F)	Dosage rate (lb/1000 cubic feet)	Exposure period (hours)
MBOFF	NAP ¹	70 or above	2	3.5
T101-a-1	NAP	80 or above	1.5	2
		70-79	2	2
		60-69	2.5	2
		50-59	3	2
		40-49	4	2
T101-a-2	15" vacuum	90 or above	2	2
		80-89	2.5	2
		70-79	3	2
		60-69	3	2.5
		50-59	3	3
		40-49	3	3.5
T101-a-3	See T101-a-1.			
T101-b-1	See T101-a-1.			
T101-b-1-1	NAP	80 or above	2.5	2
		70-79	3	2
		60-69	4	2
T101-b-2	NAP	70 or above	2	2
		60-69	2.5	2
		50-59	3	2
		45-49	3.5	2
		40-44	4	2
T101-b-3-1	NAP	90 or above	2.5	4
		80-89	3	4
		70-79	3.5	4
		60-69	4	4
T101-c-1	NAP	70 or above	2	4
T101-c-2	26" vacuum	70 or above	3	3.5
		60-69	3	4
		50-59	3	4.5
		40-49	3	5
T101-c-3	NAP	70 or above	2	3.5
		65-69	2	4
T101-c-3-1	NAP	70 or above	3	2
T101-d-1	See T101-a-1.			
T101-d-2	NAP	70 or above	3.5	11
		60-69	3.5	12
		50-59	3.5	13
		40-49	3.5	14
T101-d-3	NAP	70 or above	2	3.5
T101-e-1	NAP	70 or above	3	2.5
		60-69	3	3
		50-59	3	3.5
		40-49	3	4
T101-e-2	15" vacuum	90 or above	2	1.5
		80-89	2	2
		70-79	2.5	2
		60-69	3	2
		50-59	3	3
		40-49	3	4
T101-e-3	See T101-a-1.			
T101-f-2	15" vacuum	90 or above	2	3
		80-89	2.5	3
		70-79	3	3
		60-69	3	3.5
T101-f-3	See T101-b-3-1.			
T101-g-1	See T101-a-2.			
T101-g-1-1	NAP	90 or above	2	3
		80-89	2.5	3
		70-79	3	3
		60-69	3	3.5
		50-59	3	4

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Treatment schedule	Pressure	Temperature (°F)	Dosage rate (lb/1000 cubic feet)	Exposure period (hours)
T101-g-2	NAP	90 or above	2	3
		80-89	2.5	3
		70-79	3	3
		60-69	3	3.5
T101-h-1	See T101-a-1.			
T101-h-2	See T101-a-1.			
T101-h-2-1	NAP	70 or above	2	3.5
		65-69	2	4
		80 or above	1.5	2
T101-h-3	NAP	70-79	2	2
		60-69	2.5	2
		80 or above	1.5	2
T101-i-1	NAP	70-79	2	2
T101-i-1-1	NAP	70 or above	2	3.5
T101-i-2	See T101-a-1.			
T101-i-2-1	See T101-a-1.			
T101-j-1	See T101-b-2.			
T101-j-2	NAP	80 or above	1.5	2
		70-79	1.5	2
		65-69	1.75	2
		80 or above	2.5	2
T101-j-2-1	NAP	80 or above	2.5	2
T101-k-1	See T101-a-1.			
T101-k-2	15" vacuum	90 or above	0.5	1.5
		80-89	1	1.5
		70-79	1.5	1.5
		60-69	2	1.5
		50-59	2.5	1.5
		40-49	3	1.5
		80 or above	1.5	2
		70-79	2	2
T101-k-2-1	NAP	60-69	2.5	2
		50-59	3	2
		80 or above	1.5	2
		70-79	2	2
T101-l-1	See 101-g-1-1.			
T101-l-2	15" vacuum	90 or above	2	2
		80-89	2.5	2
		70-79	3	2
T101-m-1	See T101-a-2.			
T101-m-2	See T101-a-1.			
T101-m-2-1	NAP	70 or above	2	3.5
		65-69	2	4
T101-n-1	See T101-g-2.			
T101-n-2	See T101-b-2.			
T101-n-2-1	See T101-k-2-1.			
T101-n-2-1-1	NAP	70 or above	2	16
		60-69	2	24
		50-59	3	16
		40-49	3	24
T101-o-1	See T101-a-1.			
T101-o-2	See T101-a-1.			
T101-p-1	See T101-a-1.			
T101-p-2	NAP	90 or above	1	2
		80-89	1.5	2
		70-79	2	2
		60-69	2.5	2
		50-59	3	2
		40-49	3.5	2
		90 or above	2	2
		80-89	2.5	2
T101-q-2	NAP	70-79	3	2
		60-69	3	2.5
		50-59	3	3
		40-49	3	3.5
		90 or above	2	2
		80-89	2.5	2
		70-79	3	2
		60-69	3	2.5
T101-r-1	See T101-a-1.	50-59	3	3
		40-49	3	3.5
		90 or above	2	6
		70 or above	2	2
		60-69	2.5	2
T101-r-2	NAP	50-59	3	2
T101-s-1	NAP	40-49	4	2
		90 or above	4	3
		80-89	4	4
		70 or above	4	4
T101-s-2	See T101-a-1.			
T101-t-1	NAP	90 or above	4	3
		80-89	4	4

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Treatment schedule	Pressure	Temperature (°F)	Dosage rate (lb/1000 cubic feet)	Exposure period (hours)
		70-79	5	4
		60-69	5	5
		50-59	6	5
		40-49	6	6
T101-t-2	See T101-a-1.			
T101-u-1	26" vacuum	80 or above	3	2
		70-79	4	2
		60-69	4	3
		50-59	4	4
		40-49	4	5
T101-u-2	NAP	80 or above	2.5	2
		70-79	3	2
T101-v-1	See T101-b-2.			
T101-v-2	NAP	70 or above	2.75	2
T101-w-1	15" vacuum	80 or above	2	2
		70-79	3	2
		60-69	4	2
		50-59	4	3
		40-49	4	4
T101-w-1-2	NAP	70 or above	2	2
T101-w-2	See T101-h-3.			
T101-x-1	See T101-h-3.			
T101-x-1-1	NAP	70 or above	2.5	2.5
T101-x-2	See T101-a-1.			
T101-y-1	See T101-k-2-1.			
T101-y-2	See T101-a-1.			
T101-z-1	NAP	90 or above	2	3
		80-89	2.5	3
		70-79	3	3
		60-69	3	3.5
		50-59	3	4
		40-49	4	4
T101-z-2	See T101-k-2-1.			
T104-a-1	See T101-a-1.			
T104-a-2	See T101-b-1-1.			
T201-a-1/T201-a-2 (except <i>Brachyrhinus</i> larvae).	NAP/26" vacuum	90-96	2	2
		80-89	2.5	2
		70-79	3	2
		60-69	3	2.5
		50-59	3	3
		40-49	3	3.5
T201-a-1/T201-a-2 (<i>Brachyrhinus</i> larvae).	NAP/26" vacuum	90-96	2	2.5
		80-89	2.5	2.5
		70-79	3	2.5
		60-69	3	3
		50-59	3	3.5
		40-49	3	4
T201-b-1 (except <i>Brachyrhinus</i> larvae).	NAP	90-96	1.5	2
		80-89	2	2
		70-79	2.5	2
		60-69	2.5	2.5
		50-59	2.5	3
		40-49	2.5	3.5
T201-b-1 (<i>Brachyrhinus</i> larvae) ...	NAP	90-96	2	2.5
		80-89	2.5	2.5
		70-79	3	2.5
		60-69	3	3
		50-59	3	3.5
		40-49	3	4
T201-c-1 ²	NAP	80-90	1.5	2
		70-79	2	2
		60-69	2.5	2
		50-59	3	2
		40-49	3.5	2
T201-c-2 ³	15" vacuum	80-90	2.5	2
		70-79	3	2
		60-69	3	2.5
		50-59	3	3

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Treatment schedule	Pressure	Temperature (°F)	Dosage rate (lb/1000 cubic feet)	Exposure period (hours)
T201-d-1 (except <i>Brachyrhinus</i> larvae).	NAP	40-49	3	3.5
		90-96	2	2
		80-89	2.5	2
		70-79	3	2
		60-69	3	2.5
T201-d-1 (<i>Brachyrhinus</i> larvae) ...	NAP	50-59	3	3
		40-49	3	3.5
		90-96	2	2.5
		80-89	2.5	2.5
		70-79	3	2.5
T201-d-2	NAP	60-69	3	3
		50-59	3	3.5
		40-49	3	4
		90-96	1	2
		80-89	1.5	2
T201-d-3	15" vacuum	70-79	2	2
		60-69	2.5	2
		50-59	3	2
		40-49	3.5	2
		90-96	3	1
T201-e-1/T201-e-2	NAP/15" vacuum	80-89	3	1.5
		70-79	3	2
		60-69	3	2.5
		50-59	3	3
		40-49	3	3.5
T201-e-3-1	NAP	90-96	2	1.5
		80-89	2	2
		70-79	3	2
		60-69	3	2.5
		50-59	3	3
T201-e-3-2	26" vacuum	90-96	1.5	1.5
		80-89	2	1.5
		70-79	2.5	1.5
		60-69	3	2
		50-59	3	2
T201-f-1/T201-f-2 (except <i>Brachyrhinus</i> larvae).	NAP/15" vacuum	90-96	2	2
		80-89	3	1.5
		70-79	3	2
		60-69	3	2.5
		50-59	3	3
T201-f-1/T201-f-2 (<i>Brachyrhinus</i> larvae).	NAP/15" vacuum	40-49	3	3.5
		90-96	2	2.5
		80-89	2.5	2.5
		70-79	3	2.5
		60-69	3	3
T201-g-1	NAP	50-59	3	3.5
		40-49	3	4
		70 or above	0.75	2
		90-96	2	2
		80-89	2.5	2
T201-h-1/T201-h-2	15" vacuum/26" vacuum	60-79	3	2
		40-59	3	2.5
		90-96	2	1.5
		80-89	2	2
		70-79	3	2
T201-i-1/T201-i-2	NAP/26" vacuum	60-69	3	2.5
		50-59	3	3
		75	4	2
		74	4	2 hrs 1 min
		73	4	2 hrs 2 min
T201-j	NAP	72	4	2 hrs 4 min
		71	4	2 hrs 7 min
		70	4	2 hrs 9 min
		69	4	2 hrs 11min
		68	4	2 hrs 14min

Treatment schedule	Pressure	Temperature (°F)	Dosage rate (lb/1000 cubic feet)	Exposure period (hours)
		67	4	2 hrs 16 min
		66	4	2 hrs 19 min
		65	4	2 hrs 22 min
		64	4	2 hrs 25 min
		63	4	2 hrs 28 min
		62	4	2 hrs 31 min
		61	4	2 hrs 35 min
		60	4	2 hrs 38 min
		59	4	2 hrs 41 min
		58	4	2 hrs 43 min
		57	4	2 hrs 46 min
		56	4	2 hrs 49 min
		55	4	2 hrs 52 min
		54	4	2 hrs 55 min
		53	4	2 hrs 58 min
		52	4	3 hrs 1 min
		51	4	3 hrs 5 min
		50	4	3 hrs 8 min
		49	4	3 hrs 12 min
		48	4	3 hrs 15 min
		47	4	3 hrs 19 min
		46	4	3 hrs 24 min
		45	4	3 hrs 28 min
T201-k-1 (except <i>Brachyrhinus</i> larvae).	NAP	85-96	1	4
		80-84	2	2.5
T201-k-1 (<i>Brachyrhinus</i> larvae) ...	NAP	70-79	2	3.5
		85-96	1.5	4
		80-84	2.5	2.5
		70-79	2	3.5
T201-k-2 (except <i>Brachyrhinus</i> larvae).	NAP	90-96	2	2
		80-89	2.5	2
		70-79	3	2
		60-69	3	2.5
		50-59	3	3
		40-49	3	3.5
T201-k-2 (<i>Brachyrhinus</i> larvae) ...	NAP	90-96	2	2.5
		80-89	2.5	2.5
		70-79	3	2.5
		60-69	3	3
		50-59	3	3.5
		40-49	3	4
T201-l	NAP	90-96	1	2
		80-89	1.25	2
		70-79	1.5	2
		60-69	1.75	2
T201-m-1 (except <i>Brachyrhinus</i> larvae).	NAP	90-96	2	2
		80-89	2.5	2
		70-79	3	2
		60-69	3	2.5
		50-59	3	3
		40-49	3	3.5
T201-m-1 (<i>Brachyrhinus</i> larvae) ..	NAP	90-96	2	2.5
		80-89	2.5	2.5
		70-79	3	2.5
		60-69	3	3
		50-59	3	3.5
		40-49	3	4
T201-m-2	NAP	80-90	1.5	2
		70-79	2	2
		60-69	2.5	2
		50-59	3	2
		40-49	3.5	2
T201-m-3 (except <i>Brachyrhinus</i> larvae).	NAP	90-96	2	2
		80-89	2.5	2
		70-79	3	2
		60-69	3	2.5
		50-59	3	3

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Treatment schedule	Pressure	Temperature (°F)	Dosage rate (lb/1000 cubic feet)	Exposure period (hours)
T201-m-3 (<i>Brachyrhinus</i> larvae) ..	NAP	40-49	3	3.5
		90-96	2	2.5
		80-89	2.5	2.5
		70-79	3	2.5
		60-69	3	3
		50-59	3	3.5
T201-m-4	NAP	40-49	3	4
		90-96	2	2.5
		80-89	2.5	2.5
		70-79	3	2.5
		60-69	3	3
		50-59	3	3.5
T201-n	NAP	40-49	3	4
		85 or above	1	2
		80-85	1.25	2
		70-79	1.5	2
T202-a-1 (except <i>Brachyrhinus</i> larvae).	NAP	65-69	1.75	2
		90-96	2	2
		80-89	2.5	2
		70-79	3	2
		60-69	3	2.5
		50-59	3	3
T202-a-1 (<i>Brachyrhinus</i> larvae) ...	NAP	40-49	3	3.5
		90-96	2	2.5
		80-89	2.5	2.5
		70-79	3	2.5
		60-69	3	3
		50-59	3	3.5
T202-a-2	NAP	40-49	3	4
		90-96	2	2.5
		80-89	2.5	2.5
		70-79	3	2.5
		60-69	3	3
		50-59	3	3.5
T202-a-3 (except <i>Brachyrhinus</i> larvae).	26" vacuum	40-49	3	4
		90-96	2	2
		80-89	2.5	2
		70-79	3	2
		60-69	3	2.5
		50-59	3	3
T202-a-3 (<i>Brachyrhinus</i> larvae) ...	26" vacuum	40-49	3	3.5
		90-96	2	2.5
		80-89	2.5	2.5
		70-79	3	2.5
		60-69	3	3
		50-59	3	3.5
T202-b	26" vacuum	40-49	3	4
		70-96	4	2
		60-69	4	2.5
		50-59	4	3
		40-49	4	4
		90-96	2.5	4
T202-d	NAP	80-89	3	4
		70-79	3.5	4
		60-69	4	4
		90-96	2.5	4
T202-e-1	NAP	90-96	2	3
		80-89	2.5	3
		70-79	3	3
		60-69	3	3.5
		50-59	3	4
		40-49	3	4.5
T202-e-2	26" vacuum	90-96	2	2
		80-89	2.5	2
		70-79	3	2
		60-69	3	2.5
		50-59	3	3
		40-49	3	3.5
T202-f (except <i>Brachyrhinus</i> larvae).	15" vacuum	90-96	2	2
		40-49	3	3.5
		90-96	2	2

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Treatment schedule	Pressure	Temperature (°F)	Dosage rate (lb/1000 cubic feet)	Exposure period (hours)
T202-f (<i>Brachyrhinus</i> larvae)	15" vacuum	80-89	2.5	2
		70-79	3	2
		60-69	3	2.5
		50-59	3	3
		40-49	3	3.5
		90-96	2	2.5
		80-89	2.5	2.5
		70-79	3	2.5
		60-69	3	3
		50-59	3	3.5
T202-g	NAP	40-49	3	4
		90-96	2	3
		80-89	2.5	3
		70-79	3	3
		60-69	3	3.5
		50-59	3	4
T202-h (except <i>Brachyrhinus</i> larvae).	26" vacuum	40-49	3	4.5
		90-96	2	2
		80-89	2.5	2
		70-79	3	2
T202-h (<i>Brachyrhinus</i> larvae)	26" vacuum	80-89	2.5	2
		70-79	3	2
		60-69	3	2.5
		50-59	3	3
		40-49	3	3.5
		90-96	2	2.5
		80-89	2.5	2.5
		70-79	3	2.5
		60-69	3	3
		50-59	3	3.5
T202-i-1	NAP	40-49	3	4
		90-96	3	2
		80-89	3.5	2
		70-79	4	2
		60-69	4	2.5
		50-59	4	3
T202-i-2	NAP	40-49	4	3.5
		90-96	2	2
		80-89	2.5	2
		70-79	3	2
		60-69	3	2.5
		50-59	3	3
T202-j	15" vacuum	40-49	3	3.5
		90-96	2	1.5
		80-89	2	2
		70-79	2.5	2
		60-69	3	2
		50-59	3	3
		40-49	3	3
		80-89	3	4
		90-96	2.5	2.5
		70-79	3	2.5
T203-a-1	NAP	80-89	3	4
		90-96	2.5	2.5
		70-79	3	2.5
		60-69	3	3
		50-59	3	3.5
		40-49	3	4
T203-a-2	26" vacuum	80-89	3	4
		90-96	2.5	2.5
		70-79	3	2.5
		60-69	3	3
		50-59	3	3.5
		40-49	3	4
T203-b (except <i>Caryedon</i> spp.)	26" vacuum	70-96	3	2.5
		60-69	3	3
		50-59	3	3.5
		40-49	3	4
		80-89	3	4
		90-96	5	2
T203-b (<i>Caryedon</i> spp.)	26" vacuum	40-96	5	2
T203-c	NAP	50 or above	2	24
T203-d-1	NAP	70 or above	3.5	11
		60-69	3.5	12
		50-59	3.5	13
		40-49	3.5	14
		70-96	3	2.5
T203-d-2 (except <i>Vicia faba</i>)	26" vacuum	70-96	3	2.5
		60-69	3	3

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Treatment schedule	Pressure	Temperature (°F)	Dosage rate (lb/1000 cubic feet)	Exposure period (hours)
T203-d-2 (<i>Vicia faba</i>)	26" vacuum	50-59	3	3.5
		40-49	3	4
		70-96	3	3.5
		60-69	3	4
T203-e	26" vacuum	50-59	3	4.5
		40-49	3	5
		80-96	3	2
		70-79	4	2
T203-f-1	NAP	60-69	4	3
		50-59	4	4
		40-49	4	5
		60 or above	6	12
T203-f-2	NAP	60 or above	3	24
		40-59	7	12
		40-59	4	24
		60 or above	7	12
T203-f-3	NAP	60 or above	5	24
		40-59	8	12
		40-59	6	24
T203-g-1	NAP	40 or above	4	2
T203-g-2	26" vacuum	60-96	2	12
		60-96	1	24
		40-59	3	12
		40-59	2	24
T203-h	26" vacuum	40 or above	4	2
T203-i-1	NAP	70 or above	4	4
		80-96	2.5	2.5
		70-79	3	2.5
		60-69	3	3
T203-i-2	26" vacuum	50-59	3	3.5
		40-49	3	4
		80-96	2.5	2.5
		70-79	3	2.5
T203-j	NAP	60-69	3	3
		50-59	3	3.5
		40-49	3	4
		80-96	2.5	2
T203-k	NAP	70-79	3	2
		60-69	3	2.5
		70 or above	2	2
		60-69	2.5	2
T203-l	NAP	50-59	3	2
		40-49	3.5	2
		90 or above	2.5	12
		80-89	3.5	12
T203-m 26" vacuum	90-96	2	2	
		80-89	3	2
		70-79	4	2
		60-69	4	3
T203-o-1	26" vacuum	50-59	4	4
		40-49	4	5
		70 or above	3.5	6
		80-86	2.5	3.5
T203-o-2	26" vacuum	70-79	3	3.5
		60-69	3	4
		50-59	3	4.5
		40-49	3	5
T203-o-3	26" vacuum	70 or above	4	4
T203-o-4-1	26" vacuum	50 or above	2	24
T203-o-4-2	26" vacuum	70 or above	3.5	3
T203-o-5	NAP	70 or above	4	8
T301-a-1-1 (bulk shipments)	NAP	60 or above	6	12
		60 or above	4	24
		40-59	7	12
		40-59	5	24
T301-a-1-1 (other than bulk shipments).	NAP	60 or above	6	12
		60 or above	3	24
		40-59	7	12
		40-59	4	24

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Treatment schedule	Pressure	Temperature (°F)	Dosage rate (lb/1000 cubic feet)	Exposure period (hours)
T301-a-1-2	26" vacuum	60 or above	8	3
		40-59	9	3
T301-a-2	NAP	40 or above	7	12
		40 or above	5	24
T301-a-3	NAP	40 or above	7	12
		40 or above	4	24
T301-a-4	NAP	40 or above	7	12
		40 or above	5	24
T301-a-5-1	NAP	40 or above	3	24
T301-a-5-2	26" vacuum	40 or above	4	2
T301-b-1-1	NAP	60 or above	8	24
		40-59	11	24
T301-b-1-2	26" vacuum	60 or above	8	3
		40-59	9	3
T301-b-2	NAP	90 or above	2.5	12
		80-89	3.5	12
T301-b-3	NAP	90 or above	4	24
		80-89	6	24
		70-79	8	24
T301-c	NAP	40 or above	8	16
		40 or above	10.5	12
T301-d-1-1	NAP	90 or above	2.5	2
		80-89	3	2
		70-79	4	2
		60-69	4	3
		55-59	5	3
		50-54	5.5	4
		40-49	6	8
T302-a-1-1	NAP	70 or above	2	6
T302-b-1-2	See T301-a-1-1 or T301-a-1-2.			
T302-c-1	NAP	90 or above	2.5	12
		80-89	3.5	12
		70-79	4.5	12
		60-69	6	12
		50-59	7.5	12
		40-49	9	12
		60 or above	8	3
T302-c-2	26" vacuum	40-59	9	3
		90-96	2.5	12
T302-c-3	26" vacuum	80-89	3.5	12
		70-79	4.5	12
		60-69	6	12
		50-59	7.5	12
		40-49	9	12
		60 or above	8	3
		40-59	9	3
T302-e-1	NAP	80-96	2.5	2.5
		70-79	3	2.5
		60-69	3	3
		50-59	3	3.5
		40-49	3	4
		80-96	2.5	2.5
		70-79	3	2.5
T302-e-2	26" vacuum	60-69	3	3
		50-59	3	3.5
		40-49	3	4
		80-96	2.5	2.5
		70-79	3	2.5
		60-69	3	3
		50-59	3	3.5
T302-g-1	NAP	40-49	3	4
		90-95	4	3
		80-89	4	4
		70-79	5	4
		60-69	5	5
		50-59	6	5
		40-49	6	6
T302-g-2	26" vacuum	80-96	3	2
		70-79	4	2
		60-69	4	3
		50-59	4	4
		40-49	4	5
T303-d-2-2	26" vacuum	60 or above	2.5	2.5
		50-59	3.5	2.5
		40-49	5	2.5
T303-d-2-3	NAP	60 or above	2.5	24
		50-59	3	24
		40-49	4	24

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Treatment schedule	Pressure	Temperature (°F)	Dosage rate (lb/1000 cubic feet)	Exposure period (hours)
T304-a	NAP	60 or above	2.5	32
		50-59	3.5	32
		40-49	4.5	32
T304-b	26" vacuum	60 or above	2.5	2.5
		50-59	3.5	2.5
		40-49	5	2.5
T305-a	NAP	80-89	1.5	2
		70-79	2	2
		60-69	2.5	2
		50-59	3	2
		40-49	3.5	2
T305-b	15" vacuum	80-90	2.5	2
		70-79	3	2
		60-69	3	2.5
		50-59	3	3
		40-49	3	3.5
T305-c	NAP	80 or above	2.5	2
		70-79	3	2
		60-69	4	2
T306-a	26" vacuum	40 or above	8	16
		40 or above	10.5	12
		40 or above	16	8
T306-b (bulk shipments)	NAP	60 or above	6	12
		60 or above	4	24
		40-59	7	12
		40-59	5	24
T306-b (other than bulk shipments).	NAP	60 or above	6	12
		60 or above	3	24
		40-59	7	12
		40-59	4	24
T306-c-1	NAP	90 or above	4	24
		80-89	8	24
		70-79	8	24
		60-69	12	24
		50-59	12	28
		40-49	12	32
T306-c-2	26" vacuum	60 or above	8	3
		40-59	9	3
		90 or above	4	24
T306-d-1	NAP	80-89	6	24
		70-79	8	24
		60-69	12	24
		50-59	12	28
		40-49	12	32
		60 or above	8	3
T306-d-2	26" vacuum	40-59	9	3
		60 or above	2.5	2.5
		50-59	3.5	2.5
T309-a (except sawflies)	26" vacuum	40-49	5	2.5
		60 or above	2.5	5
		50-59	3.5	5
T309-a (sawflies)	26" vacuum	40-49	5	5
		60 or above	2.5	16
		50-59	3.5	16
T309-b-1	NAP	40-49	4.5	16
		60 or above	3	24
		50-59	5	24
T309-b-2	NAP	40-49	7	24
		60 or above	4	3
		80-89	5	3
T310-a	NAP	70-79	6	4
		60-69	7	5
		50-59	8	7
		40-49	8	16
		80 or above	3	2.5
T310-b	26" vacuum	70-79	3	3.5
		60-69	4	4
		50-59	5.5	5
		40 or above	15	72
		40 or above	15	48

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Treatment schedule	Pressure	Temperature (°F)	Dosage rate (lb/1000 cubic feet)	Exposure period (hours)
T313-a	NAP	75 or above	1.5	2.5
		7-74	2	2.5
		60-69	2.5	3
		60-69	3	2.5
		50-59	3	4
		50-59	4	2.5
T313-b	NAP	40-49	3.5	4.5
		40-49	5	2.5
		60 or above	3	4
		60 or above	4	3
		50-59	3.5	4
		50-59	4	3.5
T401-a	NAP	40 or above	4	4
T401-b	NAP	40 or above	8	3
		90 or above	2.5	12
T402-a-1	NAP	80-89	3.5	12
		70-79	4.5	12
		60-69	6	12
		50-59	7.5	12
		40-49	9	12
		55 or above	8	24
T402-a-2	NAP	55 or above	8	72
T402-a-3	NAP	80 or above	6	10
T402-b-1	NAP	55-79	6	16
		40-54	8	24
		90 or above	2.5	12
		80-89	3.5	12
		70-79	4.5	12
		60-69	6	12
T402-b-2	NAP	50-59	7.5	12
		40-49	9	12
		90-96	4	24
		80-89	6	24
		70-79	8	24
		55 or above	8	72
T403-a-2-1	NAP	70 or above	8	16
T403-a-2-2	26" vacuum	90-96	1	2
T403-a-3	NAP	80-89	1.25	2
		70-79	1.5	2
		60-69	1.75	2
		80 or above	6	10
T403-a-4-1	NAP	55-79	6	16
		40-54	8	24
		7 or above	6	6
T403-a-4-2	26" vacuum	80 or above	6	10
T403-a-5-1	NAP	40-79	6	16
T403-a-5-2	26" vacuum	40 or above	6	6
T403-b	Use T401-b or 402-b-2.			
T403-c	26" vacuum	40 or above	8	16
		40 or above	10.5	12
T403-e-1-1	NAP	40 or above	16	8
		90 or above	2.5	12
		80-89	3.5	12
		70-79	4.5	12
		60-69	6	12
		50-59	7.5	12
T403-e-1-2	NAP	40-49	9	12
		90-96	4	24
		80-89	6	24
		70-79	8	24
		60-69	12	24
		50-59	12	28
T403-e-2	NAP	40-49	12	32
T403-f	NAP	40 or above	10	48
		70 or above	3	3
T404-a	26" vacuum	60-69	3.5	3
		50-59	4	3
		45-49	4.5	3
		40-44	5	3
		40 or above	8	16

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Treatment schedule	Pressure	Temperature (°F)	Dosage rate (lb/1000 cubic feet)	Exposure period (hours)
T404-b-1-1	NAP	40 or above	10.5	12
		40 or above	16	8
		70 or above	3	16
		40-69	5	16
T404-b-1-2	26" vacuum	70 or above	4	4
		40-69	4	5
T404-c-1-1	NAP	40 or above	3	24
T404-c-1-2	26" vacuum	70 or above	4	3
		40-69	4	4
T404-d	NAP	80 or above	3.5	24
		70-79	4.5	24
		60-69	6	24
		50-59	7.5	24
		40-49	9	24
		60 or above	15	24
T406-b	NAP	40 or above	4	12
T407	NAP	40 or above	8	3
T408-c-1	See T403-c for loose and friable material only.			
T408-c-2	NAP	60 or above	15	24
T408-e-1	26" vacuum	70 or above	2	3.5
T408-e-2	26" vacuum	40 or above	8	16
		40 or above	10.5	12
T408-g-1	Chamber	60 or above	16	8
		60 or above	10	24
		60 or above	20	15.5
T408-g-2	Tarpaulin	60 or above	15	24
T411	NAP	90-96	2	2.5
		80-89	2.5	2.5
		70-79	3	2.5
		60-69	3	3
		50-59	3	3.5
		40-49	3	4
		90 or above	2.5	12
T413-a	NAP	80-89	3.5	12
		70-79	4.5	12
		60-69	6	12
		50-59	7.5	12
		40-49	9	12
		60 or above	8	3
T413-b	26" vacuum	40-59	9	3
		50 or above	3.5	4
T414	NAP	50 or above	2.5	8
		50 or above	2	16
		40-49	4.5	4
		40-59	3.25	8
		40-49	2.25	16
T416-a-1	NAP	90 or above	2.5	12
		80-89	3.5	12
		70-79	4.5	12
		60-69	6	12
		50-59	7.5	12
		40-49	9	12
T416-a-2	26" vacuum	60 or above	8	3
		40-59	9	3
		90-96	2.5	12
T416-a-3	26" vacuum	80-89	3.5	12
		70-79	4.5	12
		60-69	6	12
		50-59	10	12
		40-49	12	12
		40 or above	8	16
T502-1, T502-2, T502-3	26" vacuum	40 or above	8	16
		40 or above	8	16
T506-1, T506-2-1	26" vacuum	40 or above	10.5	12
		40 or above	16	8
		40 or above	16	8

¹ Normal atmospheric pressure.
² See T201-p-3 (§ 305.35(c)) for material not tolerant to fumigation.
³ See footnote 2.

(b) *MBSFF, fumigation with methyl bromide for sapote fruit fly.* Regulated citrus fruits originating inside an area quarantined for sapote fruit fly that are to be moved outside the quarantined area may be treated with methyl bromide fumigation in APHIS-approved chambers. Exposure period for this treatment is 2 hours. To enhance equal concentrations of methyl bromide throughout the chamber, a fan should be placed near the point of gas introduction, and allowed to run for at least 15 minutes. Fruit pulp temperature must be between 21.1 °C and 29.4 °C (70 °F and 85 °F). This temperature requirement refers to fruit pulp only and not to air temperature within the chamber. Fruit taken from a cooling room may have to be prewarmed before fumigation is attempted. To determine fruit pulp temperature, stab several fruit to the center with a suitable thermometer that reads at least in whole degrees (F or C). The lowest temperature should be used, not the average. The methyl bromide dosage is set at a rate of 2.5 pounds of 100 percent pure, type “Q” (for quarantine use only)

methyl bromide per 1,000 cubic feet of chamber space. Dosage is based upon chamber volume, not the volume of the fruit being treated. Fruit should be in cartons approved for fumigation. Cartons must be placed on pallets. There should be an air space of at least 1 foot between adjacent pallet loads; at least 1 foot between chamber walls and the nearest carton of fruit; and at least 2 feet between the height of the stack and the ceiling of the chamber. The compressed liquid methyl bromide inside the cylinder must be put through a volatilizer prior to injection into the chamber. Water temperature in the volatilizer must never fall below 65.6 °C (150 °F) at any time during gas injection. However, if, prior to treatment, representative sampling reveals a level of infestation greater than 0.5 percent for the lot, then the fruit is ineligible for treatment.

[70 FR 33269, June 7, 2005, as amended at 73 FR 30273, May 27, 2008]

§ 305.7 Phosphine treatment schedules.

Treatment schedule	Pressure	Temperature (°F)	Dosage rate	Exposure period (hours)
T203-f-4	NAP ¹	50 or above	2.1 grams/cubic meter	120
T203-g-3	NAP	50 or above	2.1 grams/cubic meter	120
T301-a-6	NAP	50 or above	60 grams/1000 ft ³	120
T301-d-1-2	NAP	50 or above	36 grams/1000 ft ³	72
T311	NAP	50 or above	60 grams/1000 ft ³	168

¹ Normal atmospheric pressure.

§ 305.8 Sulfuryl fluoride treatment schedules.

Treatment schedule	Pressure	Temperature (°F)	Dosage rate (lb/1000 cubic feet)	Exposure period (hours)
T310-d	NAP ¹	70 or above	2	24
		50-69	2.5	24
		40-49	3	24
DT404-b-2	NAP	70 or above	4	16
		60-69	4	24
		50-59	5	24
		40-49	6.5	24
T404-c-2	NAP	70 or above	5	32
		60-69	1	16
		50-59	1.5	24
			2.5	24

¹ Normal atmospheric pressure.

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§ 305.9 Aerosol spray for aircraft treatment schedule.

[70 FR 33269, June 7, 2005, as amended at 73 FR 30274, May 27, 2008]

(a) *Military aircraft.* Aerosol disinfection of U.S. military aircraft must conform to requirements in the latest edition of "Quarantine Regulations of the Armed Forces" (Army Reg. 40-12; SECNAVINST 6210.2A; AFR 161-4).

(b) *Aerosol schedule.*

Treatment schedule	Aerosol	Rate
T409-b	d-phenothrin (10%)	8g/1,000 ft ³ .

§ 305.10 Treatment schedules for combination treatments.

(a) *Fumigation followed by cold treatment.* (1) Treatment requirements for chemical treatments in §305.5 and for cold treatment in §305.15 must be followed.

(2) Normal atmospheric pressure must be used for the methyl bromide portion of the treatment.

(3) In the following table, CT represents cold treatment, and MB represents methyl bromide fumigation:

Treatment schedule	Type of treatment	Temperature (°F)	Dosage rate (lb/1000 ft ³)	Exposure period	
T108-a-1 ¹	MB	70 or above	2	2 hours.	
	CT	33-37		4 days.	
T108-a-2 ²	MB	38-47		11 days.	
		70 or above	2	2.5 hours.	
	CT	34-40		4 days.	
		41-47		6 days.	
T108-a-3 ³	MB	48-56		10 days.	
		70 or above	2	3 hours.	
	CT	43-47		3 days.	
T108-b	MB	48-56		6 days.	
		50 or above	1.5	2 hours.	
	CT	40-49	2	2 hours.	
		33 or below		21 days.	
	MB&CTMedfly	MB	70 or above	2	2 hours.
		CT	33-37		4 days.
	MB&CTOFF ⁴	MB	38-47		11 days.
			70 or above	2	2.5 hours.
		CT	34-40		4 days.
			41-47		6 days.
MB		48-56		10 days.	
		70 or above	2	3 hours.	
CT		43-47		3 days.	
		48-56		6 days.	
		70 or above	2	2 hours.	
		33-37		4 days.	
MB	CT	38-47		11 days.	
		70 or above	2	2.5 hours.	
	CT	34-40		4 days.	
		41-47		6 days.	
MB	CT	48-56		10 days.	
		70 or above	2	3 hours.	
CT	MB	43-47		3 days.	
		48-56		6 days.	

¹For Hawaiian-grown avocados only, a single transient heat spike of no greater than 39.6 °F (4.2 °C) and no longer than 2 hours, during or after 6 days of cold treatment, does not affect the efficacy of the treatment.

²See footnote 1.

³See footnote 1.

⁴Following fumigation, the fruit must be aerated 2 hours before refrigeration (but refrigeration must begin no more than 24 hours after fumigation is completed).

(b) *Cold treatment followed by fumigation.* (1) Treatment requirements for chemical treatments in §305.5 and for cold treatment in §305.15 must be followed.

(2) Use normal atmospheric pressure for the methyl bromide portion of the treatment.

(3) In the following table, CT represents cold treatment, and MB represents methyl bromide fumigation:

Treatment schedule	Type of treatment	Temperature (°F)	Dosage rate (lb/1000 ft ³)	Exposure period
T109-a-1	CT	34 or below		40 days.
	MB	50 or above	3	2 hours.
T109-a-2	CT	34 or below		40 days.
	MB	59 or above	2 pounds 6 ounces	2 hours.
T109-d-1	CT	33 or below		21 days.
	MB	70 or above	2	2 hours.
		60-69	2.5.	
		40-59	3.	
CT&MBOFF	CT	33		21 days.
		40-59	3	2 hours.
	MB	60-69	2.5	2 hours.
		70-79	2	2 hours.

(c) *T203-p and T511-1, hot water and chemical dip for citrus (Rutaceae) seeds for citrus canker.* (1) If any mucilaginous material, such as pulp, is adhering to the seed, the seed must be washed to remove it.

(2) The seed must be immersed in water heated to 125 °F or above for 10 minutes.

(3) Then the seed must be immersed for at least 2 minutes in a solution containing 200 parts per million sodium hypochlorite at a pH of 6.0 to 7.5.

(4) Seed from regions where citrus canker occurs must be drained, dried, and repacked near original moisture content.

(d) *T201-g-2 and T201-p-2, hand removal plus malathion-carbaryl chemical dip.* (1) Pests must be removed by hand from infested parts.

(2) The solutions must be prepared by adding 3 level tablespoons of 25 percent malathion wettable powder and 3 level tablespoons of 50 percent carbaryl wettable powder to each gallon of water. The addition of a sticker-spreader formulation may be required for hard to wet plants. Fresh chemicals must be used and the dip must be prepared for same day use. (For T201-p-2, when the actionable pests are scale insects or their immature crawlers and the label permits, the solution is prepared as indicated, except the 25 percent malathion wettable powder is increased to 4 level tablespoons.)

(3) The entire plant, including the roots, must be submerged in the chemical dip for 30 seconds.

[70 FR 33269, June 7, 2005, as amended at 73 FR 30274, May 27, 2008]

§305.11 Miscellaneous chemical treatments.

(a) *CC1 for citrus canker.* The fruit must be thoroughly wetted for at least 2 minutes with a solution containing 200 parts per million sodium hypochlorite.

(b) *CC2 for citrus canker.* The fruit must be thoroughly wetted with a solution containing sodium o-phenyl phenate (SOPP) at a concentration of 1.86 to 2.0 percent of the total solution, for 45 seconds if the solution has sufficient soap or detergent to cause a visible foaming action or for 1 minute if the solution does not contain sufficient soap to cause a visible foaming action.

(c) *CC3 for citrus canker.* The fruit must be thoroughly wetted for at least 1 minute with a solution containing 85 parts per million peroxyacetic acid.

[70 FR 33269, June 7, 2005, as amended at 72 FR 65204, Nov. 19, 2007]

§§ 305.12-305.14 [Reserved]

Subpart—Cold Treatments

§ 305.15 Treatment requirements.

(a) *Approval of treatment facilities.* All facilities or locations used for refrigerating fruits or vegetables in accordance with §305.16 must be approved by APHIS. Re-approval of the facility or carrier is required annually, or as often as APHIS directs, depending on treatments performed, commodities handled, and operations conducted at the facility. In order to be approved, facilities and carriers must:

(1) Be capable of keeping treated and untreated fruits, vegetables, or other

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articles separate so as to prevent reinfestation of articles and spread of pests;

(2) Have equipment that is adequate to effectively perform cold treatment.

(b) *Places of treatment; ports of entry.* Precooling and refrigeration may be performed prior to, or upon arrival of fruits and vegetables in the United States, provided treatments are performed in accordance with applicable requirements of this section. Fruits and vegetables that are not treated prior to arrival in the United States must be treated after arrival only in cold storage warehouses approved by the Administrator and located in the area north of 39° longitude and east of 104° latitude or at one of the following ports: The maritime ports of Wilmington, NC; Seattle, WA; Corpus Christi, TX; and Gulfport, MS; Seattle-Tacoma International Airport, Seattle, WA; and Hartsfield-Atlanta International Airport, Atlanta, GA.

(c) *Cold treatment enclosures.* All enclosures in which cold treatment is performed, including refrigerated containers, must:

(1) Be capable of maintaining the treatment temperature before the treatment begins and holding fruit at or below the treatment temperature during the treatment.

(2) Maintain fruit pulp temperatures according to treatment schedules with no more than a 0.39 °C (0.7 °F) variation in temperature.

(3) Be structurally sound and adequate to maintain required temperatures.

(d) *Treatment procedures.* (1) All material, labor, and equipment for cold treatment performed on vessels must be provided by the vessel or vessel agent. An official authorized by APHIS monitors, manages, and advises in order to ensure that the treatment procedures are followed.

(2) Refrigeration must be completed in the container, compartment, or room in which it is begun.

(3) Fruit that may be cold treated must be safeguarded to prevent cross-contamination or mixing with other infested fruit.

(4) Fruit intended for in-transit cold treatment must be precooled to the temperature at which the fruit will be

treated prior to beginning treatment. The in-transit treatment enclosure may not be used for precooling unless an official authorized by APHIS approves the loading of the fruit in the treatment enclosure as adequate to allow for fruit pulp temperatures to be taken prior to beginning treatment. If the fruit is precooled outside the treatment enclosure, an official authorized by APHIS will take pulp temperatures manually from a sample of the fruit as the fruit is loaded for in-transit cold treatment to verify that precooling was completed. If the pulp temperatures for the sample are 0.28 °C (0.5 °F) or more above the temperature at which the fruit will be treated, the pallet from which the sample was taken will be rejected and returned for additional precooling until the fruit reaches the treatment temperature. If fruit is precooled in the treatment enclosure, or if treatment is conducted at a cold treatment facility in the United States, the fruit must be precooled to the temperature at which it will be treated, as verified by an official authorized by APHIS, prior to beginning treatment.

(5) Breaks, damage, etc., in the treatment enclosure that preclude maintaining correct temperatures must be repaired before the enclosure is used. An official authorized by APHIS must approve loading of compartment, number and placement of temperature probes or sensors, and initial fruit temperature readings before beginning the treatment. Hanging decks and hatch coamings within vessels may not be used as enclosures for in-transit cold treatment without prior written approval from APHIS. Double-stacking of pallets is not allowed.

(6) Only the same type of fruit in the same type of package may be treated together in a container; no mixture of fruits in containers may be treated. A numbered seal must be placed on the doors of the loaded container and may be removed only at the port of destination by an official authorized by APHIS.

(7) Temperature recording devices used during treatment must be password-protected and tamperproof. The devices must be able to record the date,

time, and sensor number and automatic and continuous records of the temperature during all calibrations and during treatment. Recording devices must be capable of generating temperature charts for verification by an inspector. If records of calibrations or treatments are found to have been manipulated, the vessel or container in which the treatment is performed may be suspended from conducting cold treatments until proper equipment is installed and an official authorized by APHIS has recertified it. APHIS' decision to recertify a vessel or container will take into account the severity of the infraction that led to suspension.

(8) A minimum of four temperature probes or sensors is required for vessel holds used as treatment enclosures. A minimum of three temperature probes or sensors is required for other treatment enclosures. An official authorized by APHIS will have the option to require that additional temperature probes or sensors be used, depending on the size of the treatment enclosure.

(9) Fruit pulp temperatures must be maintained at the temperature specified in the treatment schedule with no more than a 0.39 C (0.7 °F) variation in temperature between two consecutive hourly readings. Failure to comply with this requirement will result in invalidation of the treatment unless an official authorized by APHIS can verify that the pulp temperature was maintained at or below the treatment temperature for the duration of the treatment.

(10) The time required to complete the treatment begins when all temperature probes reach the prescribed cold treatment schedule temperature. Refrigeration continues until the vessel arrives at the port of destination and the fruit is released for unloading by an inspector even though this may prolong the period required for the cold treatment.

(11) Temperatures must be recorded at intervals no longer than 1 hour apart. Gaps of longer than 1 hour will invalidate the treatment or indicate treatment failure unless an official authorized by APHIS can verify that the pulp temperature was maintained at or below the treatment temperature for the duration of the treatment.

(12) Cold treatment is not completed until so declared by an official authorized by APHIS or the certifying official of the foreign country; consignments of treated commodities may not be discharged until APHIS clearance has been fully completed, including review and approval of treatment record charts.

(13) Cold treatment of fruits in break bulk vessels or containers must be initiated by an official authorized by APHIS if there is not a treatment technician who has been trained to initiate cold treatments for either break bulk vessels or containers.

(14) An official authorized by APHIS may perform audits to ensure that the treatment procedures comply with the regulations in this subpart. The official authorized by APHIS must be given the appropriate materials and access to the facility, container, or vessel necessary to perform the audits.

(15) *Inspection of fruits after cold treatment for Mediterranean fruit fly.* An inspector will sample and cut fruit from each consignment cold treated for Mediterranean fruit fly (Medfly) to monitor treatment effectiveness. If a single live Medfly in any stage of development is found, the consignment will be held until an investigation is completed and appropriate remedial actions have been implemented. If APHIS determines at any time that the safeguards contained in this section do not appear to be effective against the Medfly, APHIS may suspend the importation of fruits from the originating country and conduct an investigation into the cause of the deficiency.

(16) *Caution and disclaimer.* The cold treatments required for the entry of fruit are considered necessary for the elimination of plant pests, and no liability shall attach to the U.S. Department of Agriculture or to any officer or representative of that Department in the event injury results to fruit offered for entry in accordance with these instructions. In prescribing cold treatments of certain fruits, it should be emphasized that inexactness and carelessness in applying the treatments may result in injury to the fruit or its rejection for entry.

(e) *Monitoring.* Treatment must be monitored by an inspector to ensure

proper administration of the treatment. An inspector must also approve the recording devices and sensors used to monitor temperatures and conduct an operational check of the equipment before each use and ensure sensors are calibrated. An inspector may approve, adjust, or reject the treatment.

(f) *Compliance agreements.* Facilities located in the United States must operate under a compliance agreement with APHIS. The compliance agreement must be signed by a representative of the cold treatment facility and APHIS. The compliance agreement must contain requirements for equipment, temperature, circulation, and other operational requirements for performing cold treatment to ensure that treatments are administered properly. Compliance agreements must allow officials of APHIS to inspect the facility to monitor compliance with the regulations.

(g) *Work plans.* Facilities located outside the United States may operate in accordance with a bilateral work plan. The work plan, if and when required, must be signed by a representative of the cold treatment facility, the national plant protection organization (NPPO) of the country of origin, and APHIS. The work plans must contain requirements for equipment, temperature, circulation, and other operational requirements for performing cold treatment to ensure that cold treatments are administered properly. Work plans for facilities outside the United States may also include trust fund agreement information regarding payment of the salaries and expenses of APHIS employees on site. Work plans must allow officials of the NPPO and APHIS to inspect the facility to monitor compliance with APHIS regulations.

(h) *Additional requirements for treatments performed after arrival in the United States.*

(1) *Maritime port of Wilmington, NC.* Consignments of fruit arriving at the maritime port of Wilmington, NC, for cold treatment, in addition to meeting all other applicable requirements of this section, must meet the following special conditions:

(i) Bulk consignments (those consignments which are stowed and unloaded

by the case or bin) of fruit must arrive in fruit fly-proof packaging that prevents the escape of adult, larval, or pupal fruit flies.

(ii) Bulk and containerized consignments of fruit must be cold-treated within the area over which the U.S. Department of Homeland Security is assigned the authority to accept entries of merchandise, to collect duties, and to enforce the various provisions of the customs and navigation laws in force.

(iii) Advance reservations for cold treatment space must be made prior to the departure of a consignment from its port of origin.

(iv) The cold treatment facility must remain locked during non-working hours.

(2) *Maritime port of Seattle, WA.* Consignments of fruit arriving at the maritime port of Seattle, WA, for cold treatment, in addition to meeting all other applicable requirements of this section, must meet the following special conditions:

(i) Bulk consignments (those consignments which are stowed and unloaded by the case or bin) of fruit must arrive in fruit fly-proof packaging that prevents the escape of adult, larval, or pupal fruit flies.

(ii) Bulk and containerized consignments of fruit must be cold treated within the area over which the U.S. Department of Homeland Security is assigned the authority to accept entries of merchandise, to collect duties, and to enforce the various provisions of the customs and navigation laws in force.

(iii) Advance reservations for cold treatment space must be made prior to the departure of a consignment from its port of origin.

(iv) The cold treatment facility must remain locked during non-working hours.

(v) Blacklight or sticky paper must be used within the cold treatment facility, and other trapping methods, including Jackson/methyl eugenol and McPhail traps, must be used within the 4 square miles surrounding the cold treatment facility.

(vi) The cold treatment facility must have contingency plans, approved by the Administrator, for safely destroying or disposing of fruit.

(3) *Airports of Atlanta, GA, and Seattle, WA.* Consignments of fruit arriving at the airports of Atlanta, GA, and Seattle, WA, for cold treatment, in addition to meeting all other applicable requirements of this section, must meet the following special conditions:

(i) Bulk and containerized consignments of fruit must arrive in fruit fly-proof packaging that prevents the escape of adult, larval, or pupal fruit flies.

(ii) Bulk and containerized consignments of fruit arriving for cold treatment must be cold treated within the area over which the U.S. Department of Homeland Security is assigned the authority to accept entries of merchandise, to collect duties, and to enforce the various provisions of the customs and navigation laws in force.

(iii) The cold treatment facility and APHIS must agree in advance on the route by which consignments are allowed to move between the aircraft on which they arrived at the airport and the cold treatment facility. The movement of consignments from aircraft to a cold treatment facility will not be allowed until an acceptable route has been agreed upon.

(iv) Advance reservations for cold treatment space must be made prior to the departure of a consignment from its port of origin.

(v) The cold treatment facility must remain locked during non-working hours.

(vi) Blacklight or sticky paper must be used within the cold treatment facility, and other trapping methods, including Jackson/methyl eugenol and McPhail traps, must be used within the 4 square miles surrounding the cold treatment facility.

(vii) The cold treatment facility must have contingency plans, approved by the Administrator, for safely destroying or disposing of fruit.

(4) *Maritime ports of Gulfport, MS, and Corpus Christi, TX.* Consignments of fruit arriving at the ports of Gulfport, MS, and Corpus Christi, TX, for cold treatment, in addition to meeting all other applicable requirements of this section, must meet the following special conditions:

(i) All fruit entering the port for cold treatment must move in maritime con-

tainers. No bulk consignments (those consignments which are stowed and unloaded by the case or bin) are permitted.

(ii) Within the container, the fruit intended for cold treatment must be enclosed in fruit fly-proof packaging that prevents the escape of adult, larval, or pupal fruit flies.

(iii) All consignments of fruit arriving at the port for cold treatment must be cold treated within the area over which the U.S. Department of Homeland Security is assigned the authority to accept entries of merchandise, to collect duties, and to enforce the various provisions of the customs and navigation laws in force.

(iv) The cold treatment facility and APHIS must agree in advance on the route by which consignments are allowed to move between the vessel on which they arrived at the port and the cold treatment facility. The movement of consignments from vessel to cold treatment facility will not be allowed until an acceptable route has been agreed upon.

(v) Advance reservations for cold treatment space at the port must be made prior to the departure of a consignment from its port of origin.

(vi) Devanning, the unloading of fruit from containers into the cold treatment facility, must adhere to the following requirements:

(A) All containers must be unloaded within the cold treatment facility; and

(B) Untreated fruit may not be exposed to the outdoors under any circumstances.

(vii) The cold treatment facility must remain locked during non-working hours.

(viii) Blacklights or sticky paper must be used within the cold treatment facility, and other trapping methods, including Jackson/methyl eugenol and McPhail traps, must be used within the 4 square miles surrounding the cold treatment facility at the maritime port of Gulfport, MS, and within the 5 square miles surrounding the cold treatment facility at the maritime port of Corpus Christi, TX.

(ix) During cold treatment, a backup system must be available to cold treat the consignments of fruit should the

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primary system malfunction. The facility must also have one or more reefers (cold holding rooms) and methods of identifying lots of treated and untreated fruits.

(x) The cold treatment facility must have the ability to conduct methyl bromide fumigations on site.

(xi) The cold treatment facility must have contingency plans, approved by the Administrator, for safely destroying or disposing of fruit.

[72 FR 39498, July 18, 2007, as amended at 72 FR 35914, July 2, 2007; 72 FR 50202, Aug. 31, 2007; 72 FR 70219, Dec. 11, 2007]

§ 305.16 Cold treatment schedules.

Treatment schedule	Temperature (°F)	Exposure period
T107-a ¹	34 or below ...	14 days.
	35 or below ...	16 days.
	36 or below ...	18 days.
T107-a-1	34 or below ...	15 days.
	35 or below ...	17 days.
T107-b	33 or below ...	18 days.
	34 or below ...	20 days.
	35 or below ...	22 days.
T107-c	32 or below ...	11 days.
	33 or below ...	13 days.
	34 or below ...	15 days.
	35 or below ...	17 days.
T107-d	32 or below ...	13 days.
	33 or below ...	14 days.
	34 or below ...	18 days.
	35 or below ...	20 days.
	36 or below ...	22 days.
T107-e	31 or below ²	22 days.
T107-f	32 or below ...	10 days.
	33 or below ...	11 days.
	34 or below ...	12 days.
	35 or below ...	14 days.
T107-g	0 or below	7 days.
T107-h	33.4 or below	13 days.
	34.5 or below	15 days.
T107-j	34.5 or below	18 days.
	33.8 or below	13 days.
	34.5 or below	18 days.
CTMedfly	34 or below ...	14 days.
	35 or below ...	16 days.
	36 or below ...	18 days.
T403-a-2-3 (for temperatures below 55 °F).	0	48 hours.
T403-a-4-3, T403-a-5-3, T403-a-6-1.	0	48 hours.
T403-a-6-2	0	32 hours.
	10	48 hours.
T403-a-6-3	0	8 hours.
	10	16 hours.
	20	24 hours.

¹ For Hawaiian-grown avocados only, a single transient heat spike of no greater than 39.6 °F (4.2 °C) and no longer than 2 hours, during or after 6 days of cold treatment, does not affect the efficacy of the treatment.

² Commence when sensors are at 31 °F or below. If the temperature exceeds 31.5 °F, extend the treatment one-third of a day for each day, or part of a day, that the temperature is above 31.5 °F. If the exposure period is extended, the temperature during the extension period must be 34 °F or below. If the temperature exceeds 34 °F at any time, the treatment is nullified. Also, some freeze damage may occur if the pulp temperature drops below approximately 29.5 °F. This varies with the commodity.

Subpart—Quick Freeze Treatments

§ 305.17 Authorized treatments; exceptions.

(a) Quick freeze is an authorized treatment for all fruits and vegetables imported into the United States or moved interstate from Hawaii or Puerto Rico, except for those fruits and vegetables listed in paragraph (b) of this section. Quick freeze for fruits and vegetables imported into the United States or moved interstate from Hawaii or Puerto Rico must be conducted in accordance with §§ 318.13-4a, 318.58-4a, and 319.56-12, respectively.

(b) Quick freeze is not an authorized treatment for:

(1) Avocados with seeds from South America, Central America, or Mexico.

(2) Citrus with peel from Afghanistan, Andaman Islands, Argentina, Bangladesh, Brazil, Cambodia, China (People's Republic of), Comoros, Cote d'Ivoire, Federated States of Micronesia, Fiji Islands, Home Island in Cocos (Keeling) Islands, Hong Kong, India, Indonesia, Japan and adjacent islands, Korea, Laos, Madagascar, Malaysia, Maldives, Mauritius, Mozambique, Myanmar, Nepal, Oman, Pakistan, Palau, Papua New Guinea, Paraguay, Philippines, Reunion Islands, Rodrigues Islands, Ryukyu Islands, Saudi Arabia, Seychelles, Sri Lanka, Taiwan, Thailand, Thursday Island, United Arab Emirates, Uruguay, Vietnam, Yemen, and Zaire.

(3) Mangoes with seeds from Barbados, Dominica, French Guiana, Guadeloupe, Martinique, St. Lucia, and all countries outside of North, Central, and South America and their adjacent islands (which include the Caribbean Islands and Bermuda).

(4) Corn-on-the-cob from Albania, Algeria, Bosnia and Hercegovina, Croatia, Cyprus, Egypt, France, Greece, Israel, Italy, Lebanon, Libya, Malta, Macedonia, Morocco, Sardinia, Serbia and Montenegro, Slovenia, Spain, Syria, Tunisia, and Turkey.

(5) Black currants unless authorized in an import permit to specified areas.

(c) Quick freeze may damage commodities and is recommended for thick-skinned fruits and vegetables, such as durian and coconut, that will be processed into another form (*e.g.*, for puree, juice, or mashed vegetables).

[70 FR 33269, June 7, 2005, as amended at 70 FR 41092, July 15, 2005; 72 FR 39501, July 18, 2007]

§ 305.18 Quick freeze treatment schedule.

(a) *T110*. (1) Initially, lower the commodity's temperature to 0 °F or below.

(2) Hold the temperature of the commodity at 20 °F or below for at least 48 hours.

(3) The commodity may be transported during the 48-hour treatment period, but the temperature must be maintained at 20 °F or below prior to release.

(4) The fruits and vegetables may not be removed from the vessel or vehicle transporting them until an inspector has determined that they are in a satisfactory frozen state upon arrival. If the temperature of the fruits or vegetables in any part of a shipment is found to be above 20 °F at the time of inspection upon arrival, the entire shipment must remain on board the vessel or vehicle under such safeguards as may be prescribed by the inspector until the temperature of the shipment is below 20 °F, or the shipment is transported outside the United States or its territorial waters, or is otherwise disposed of to the satisfaction of the inspector.

(b) [Reserved]

§ 305.19 [Reserved]

Subpart—Heat Treatments

§ 305.20 Treatment requirements.

(a) *Certified facility*. The treatment facility must be certified by APHIS. Recertification is required annually, or as often as APHIS directs, depending upon treatments performed, commodities handled, and operations conducted at the facility. In order to be certified, a heat treatment facility must:

(1) Have equipment that is capable of adequately circulating air or water (as relevant to the treatment), changing

the temperature, and maintaining the changed temperature sufficient to meet the treatment schedule parameters.

(2) Have equipment used to record, monitor, or sense temperature, maintained in proper working order.

(3) Keep treated and untreated fruits, vegetables, or articles separate so as to prevent reinfestation and spread of pests.

(b) *Monitoring*. Treatment must be monitored by an official authorized by APHIS to ensure proper administration of the treatment. An official authorized by APHIS approves, adjusts, or rejects the treatment.

(c) *Compliance agreements*. Facilities located in the United States must operate under a compliance agreement with APHIS. The compliance agreement must be signed by a representative of the heat treatment facilities located in the United States and APHIS. The compliance agreement must contain requirements for equipment, temperature, water quality, circulation, and other measures for performing heat treatments to ensure that treatments are administered properly. Compliance agreements must allow officials of APHIS to inspect the facility to monitor compliance with the regulations.

(d) *Work plans*. Facilities located outside the United States must operate in accordance with a work plan. The work plan must be signed by a representative of the heat treatment facilities located outside the United States the national plant protection organization of the country of origin (NPPO), and APHIS. The work plan must contain requirements for equipment, temperature, water quality, circulation, and other measures to ensure that heat treatments are administered properly. Work plans for facilities outside the United States must include trust fund agreement information regarding payment of the salaries and expenses of APHIS employees on site. Work plans must allow officials of the NPPO and APHIS to inspect the facility to monitor compliance with APHIS regulations.

(e) *Treatment procedures*. (1) Before each treatment can begin, an official authorized by APHIS must approve the

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loading of the commodity in the treatment container.

(2) Sensor equipment must be adequate to monitor the treatment, its type and placement must be approved by an official authorized by APHIS, and the equipment must be tested by an official authorized by APHIS prior to beginning the treatment. Sensor equipment must be locked before each treatment to prevent tampering.

(3) Fruits, vegetables, or articles of substantially different sizes must be treated separately; oversized fruit may be rejected by an official authorized by APHIS.

(4) The treatment period begins when the temperature specified by the treatment schedule has been reached. An official authorized by APHIS may abort the treatment if the facility requires an unreasonably long time to achieve the required temperature.

§ 305.21 Hot water dip treatment schedule for mangoes.

Mangoes may be treated using schedule T102-a:

(a) Fruit must be presorted by weight class. Treatment of mixed loads is not allowed.

(b) The mangoes must be treated in the country of origin at a certified facility under the monitoring of an offi-

cial authorized by APHIS. Prior to each use, an official authorized by APHIS must test and determine that the treatment tank, temperature recording device, and other monitoring equipment of the tank are adequate to conduct the treatment.

(c) Water in the treatment tank must be treated or changed regularly to prevent microbial contamination. Chlorinated water must be used.

(d) Pulp temperature must be 70 °F or above before starting the treatment.

(e) Fruit must be submerged at least 4 inches below the water's surface.

(f) Water must circulate constantly and be kept at 115 °F or above throughout the treatment with the following tolerances:

(1) During the first 5 minutes of a treatment, temperatures below 113.7 °F are allowed if the temperature is at least 115 °F at the end of the 5-minute period.

(2) For treatments lasting 65-75 minutes, temperatures may fall no lower than 113.7 °F for no more than 10 minutes under emergency conditions.

(3) For treatments lasting 90-110 minutes, temperatures may fall no lower than 113.7 °F for no more than 15 minutes under emergency conditions.

(g) Dip time is as follows:
(1)

Origin	Shape of mango ¹	Weight (grams)	Dip time ² (minutes)
Puerto Rico, U.S. Virgin Islands, or West Indies (excluding Aruba, Bonaire, Curacao, Margarita, Tortuga, or Trinidad and Tobago).	Flat, elongated varieties	Up to 400	65
		400-570	75
	Rounded varieties	Up to 500	75
		500-700	90
701-900		110	
Central America (north of and including Costa Rica) or Mexico.	Flat, elongated varieties	Up to 375	65
		375-570	75
	Rounded varieties	Up to 500	75
		500-700	90
		701-900	110
		701-900	110
Panama, South America, or West Indies islands of Aruba, Bonaire, Curacao, Margarita, Tortuga, or Trinidad and Tobago.	Flat, elongated varieties	Up to 375	65
		375-570	75
	Rounded varieties	Up to 425	75
		425-650	90

¹ Flat, elongated varieties include Frances, Carrot, Zill, Ataulfo, Carabao, Irwin, and Manila, and rounded varieties include Tommy Atkins, Kent, Hayden, and Keitt.

² See paragraph (g)(2) of this section for required dip times if the fruit is hydrocooled within 30 minutes of removal from the hot water immersion tank.

(2) Dip times in paragraph (g)(1) of this section are valid if the fruit is not hydrocooled within 30 minutes of re-

moval from the hot water immersion tank. If hydrocooling starts immediately after the hot water immersion

treatment, then the original dip time must be extended for an additional 10 minutes. Hydrocooling is optional but may be done only at temperatures of 70 °F or above.

§305.22 Hot water immersion treatment schedules.

(a) *T102-d*. (1) Fruit must be grown and treated in Hawaii.

(2) Fruit must be submerged at least 4 inches below the water's surface in a hot water immersion treatment tank certified by APHIS.

(3) The fruit must be submerged for 20 minutes after the water temperature reaches at least 120.2 °F in all locations of the tank. The water must circulate continually and be kept at 120.2 °F or above for the duration of the treatment. Temperatures exceeding 121.1 °F can cause phytotoxic damage.

(4) Hydrocooling for 20 minutes at 75.2 °F is recommended to prevent injury to the fruit from the hot water immersion treatment.

(b) *T102-d-1*. (1) Fruit must be at ambient temperature before treatment begins.

(2) Fruit must be submerged at least 4 inches below the water's surface in a hot water immersion treatment tank certified by APHIS.

(3) The fruit must be submerged for 20 minutes after the water temperature reaches at least 120.2 °F in all locations of the tank. The water must circulate continually and be kept at 120.2 °F or above for the duration of the treatment. Temperatures exceeding 121.1 °F can cause phytotoxic damage.

(4) Hydrocooling for 20 minutes at 75.2 °F is recommended to prevent injury to the fruit from the hot water immersion treatment.

(c) *T102-e*. (1) Fruit must be submerged at least 4 inches below the water's surface in a hot water immersion treatment tank certified by APHIS.

(2) Water must circulate continually and be kept at 120.2 °F or above for 20 minutes. Treatment time begins when the water temperature reaches at least 120.2 °F in all locations of the tank. Temperatures exceeding 125.6 °F or treatment times significantly exceeding 20 minutes can cause phytotoxic damage.

(3) Cooling and waxing the fruit are both optional and are the sole responsibility of the processor.

§305.23 Steam sterilization treatment schedules.

Treatment schedule	Temperature (°F)	Pressure	Exposure period (minutes)	Directions
T303-b-1		10 lbs	20	Use 28" vacuum. Steam sterilization is not practical for treatment of bales with a density of greater than 30 pounds per cubic foot.
T303-b-2		10 lbs	20	
T303-d-2	260	20 lbs	15	
	250	15 lbs	20	
T309-c	240	10 psi	20	Use 25 Prime vacuum.
T406-d	140	NAP ¹	60	Steam at NAP, tarpaulin or tent. For treatment enclosures of 4,000 ft ³ or less, the minimum air temperature must be 40 °F. For treatment enclosures greater than 4,000 ft ³ and less than or equal to 6,000 ft ³ , the minimum air temperature must be 60 °F. Treatment is not recommended for treatment enclosures greater than 6,000 ft ³ .
T408-b	250	15 psi	30	Preheat laboratory autoclaves. Restrict soil depth to 2 inches when treating quantities of soil in trays. Restrict each package weight to 5 pounds or less when treating individual packages. Load with adequate spacing. Large commercial steam facilities that operate at pressures up to 60 pounds psi will permit treatment of greater soil depth.
T503-1-3 or T503-2-3 (nonbaled).	240	NAP	10	
T503-1-3 or T503-2-3 (baled).	240	10 lbs	20	
T504-1-2, T504-2-2	242	10 lbs	20	

Treatment schedule	Temperature (°F)	Pressure	Exposure period (minutes)	Directions
T506-2-3 Loose masses of material.	.....	20 lbs	10	Introduce live steam into a closed chamber containing the material to be treated until the required temperature and pressure are indicated. The temperature/pressure relationship must be maintained at or above this point for the required exposure period. No initial vacuum is needed, but air must be released until steam escapes.
		15 lbs	15	
		10 lbs	20	
T506-2-3 Closely packed material (such as soil).	.....	.....	.....	Exhaust the air in the chamber to a high vacuum, and then introduce live steam until the required positive pressure is reached.
T510-1	212	.....	.....	Live steam from jet of nozzle into loose masses of material until all parts reach 212 °F.
T518-2-2	260	20 lbs	15	
	250	15 lbs	20	
T519-1 .....	.....	10 lbs	20	Introduce steam into 28" vacuum.
T519-2	259	20 lbs	10	Introduce steam into 28" vacuum (or if without initial vacuum, "bleed" air until steam vapor escapes).
	240	10 lbs	20	

¹ Normal atmospheric pressure.

[70 FR 33269, June 7, 2005, as amended at 70 FR 41092, July 15, 2005]

§ 305.24 Vapor heat treatment schedules.

(a) *T106-a-1, T106-a-2, T106-a-3, T106-a-4.* (1) The temperature of the fruit pulp must be increased gradually to 110 °F until the center of the fruit reaches that temperature in 8 hours.

(2) The fruit temperature must be held at 110 °F for 6 hours.

(b) *T106-a-1-1.* (1) The temperature of the fruit pulp must be increased to 110 °F until the center of fruit reaches that temperature in 6 hours. During the first 2 hours, the temperature must be increased rapidly. The increase over the next 4 hours must be gradual.

(2) The fruit temperature must be held at 110 °F for 4 hours.

(c) *T106-b-1, T106-b-2, T106-b-3, T106-b-4, T106-b-5, T106-b-6, T106-b-7, T106-b-8.* The temperature of the article must be increased using saturated water vapor at 112 °F until the approximate center of the fruit reaches 112 °F. The fruit temperature must be held at 112 °F for 8.75 hours; then immediately cooled.

(d) *T106-c (Quick run-up).* (1) The temperature of the article must be increased until the approximate center of fruit reaches 117 °F in a time period of at least 4 hours.

(2) During the last hour of treatment, the relative humidity in the chamber must be maintained at 90 percent or greater.

(e) *T106-d.* (1) The fruit must be sized before treatment. Temperature probes must be placed in the center of the largest fruits. The temperature of the fruit must be increased using saturated water vapor at 117.5 °F until the pulp temperature near the seed reaches 115.7 °F. The pulp temperature must be held at 115.7 °F or above for 30 minutes; then immediately cooled.

(f) *T106-d-1.* (1) The fruit must be sized before the treatment. Temperature probes must be placed in the center of the largest fruits.

(2) The temperature of the fruit must be increased using saturated water vapor at 117.5 °F until the center of the fruit reaches 114.8 °F in a minimum of 4 hours.

(3) The fruit temperature must be maintained at 114.8 °F for 10 minutes.

(g) *T106-e.* (1) Raise temperature of the fruit using saturated water vapor at 116.6 °F until the approximate center of the fruit reaches 114.8 °F within a minimum time period of 4 hours.

(2) Hold fruit temperature at 114.8 °F or above for 20 minutes. If post-treatment cooling is conducted, wait 30 minutes after the treatment to start the forced cooling process.

(h) *T106-f.* (1) The temperature probes must be placed in the approximate center of the largest fruits at the seed's surface.

(2) The temperature of the fruit must be increased to 117 °F. The total runup time for all sensors must take at least 60 minutes.

(3) The fruit temperature must be held at 117 °F or above for 20 minutes. During the treatment, the relative humidity must be maintained at 90 percent or greater.

(4) The fruit must be hydrocooled under a cool water spray until the fruit sensors reach ambient temperature.

(5) Inspectors will examine the fruit for live quarantine pests. If pests are found, the inspector will reject the treatment.

(i) *T106-g*. (1) The internal temperature of the fruit must be increased using saturated water vapor until the approximate center of fruit reaches 117 °F in a minimum time of 1 hour or longer.

(2) The fruit temperature must be held at 117 °F or above for 20 minutes. During the treatment, the relative humidity must be maintained at 90 percent or greater.

(j) *T412-b-2*. The commodity must be heated to 212 °F for 15 minutes.

(k) *Vapor heat treatment for sweetpotatoes moved interstate from Hawaii*. (1) Temperature probes must be placed in the approximate center of the largest individual sweetpotato roots.

(2) The air surrounding the sweetpotato roots must be heated. After the temperature of the air surrounding the sweetpotato roots reaches 87.8 °F (31 °C), its temperature must be incrementally raised from 87.8 °F (31 °C) to 111.2 °F (44 °C) over a period of 240 minutes.

(3) Using saturated water vapor at 118.4 °F (48 °C), the core temperature of the individual sweetpotato roots must be raised to 116.6 °F (47 °C).

(4) After the core temperature of the sweetpotato roots reaches 116.6 °F (47 °C), the core temperature must then be held at 116.6 °F (47 °C) or higher for 190 minutes.

[70 FR 33269, June 7, 2005, as amended at 71 FR 4460, Jan. 27, 2006]

§ 305.25 Dry heat treatment schedules.

Treatment schedule	Temperature (°F)	Time	Directions
T302-a-1-2	168 minimum	At least 2 hours	Spread the ears of corn in single layers on slats or wire shelves.
T303-c-1	212	1 hour.	
T303-d-1	180-200	2 hours.	
T408-a	230-249	16 hours	Spread soil in layers 0.5 inches in depth to ensure uniform heat penetration.
	250-309	2 hours.	
	310-397	30 minutes.	
	380-429	4 minutes.	
	430-450	2 minutes.	
T412-a	248	15 minutes	Start timing when the entire mass reaches 248 °F. ¹
T412-b-1	212	15 minutes.	
T503-1-4, T503-2-4, T504-1-1, T504-2-1.	212	1 hour	Treat small bales only.
T518-1	170	4.5 hours	May take 2 hours to reach temperature.
T518-2-1	180-200	2 hours.	

¹ A minimum of two temperature probes must be placed in the heat treating equipment in order to determine that all niger seed being treated reaches the target temperature. The treatment temperature must be recorded accurately, precisely, and regularly during treatment. The monitoring equipment must be locked before each treatment begins to prevent tampering. Seed processing equipment must have the capability to divert for retreatment any nontreated seeds or treated seeds that do not meet treatment standards.

§ 305.26 Khapra beetle treatment schedule for feeds and milled products.

Feeds and milled products may be treated for khapra beetle using schedule T307-a. The temperature must be 180 °F in any part of the products, or the temperature must be at 150 °F for a total of 7 minutes. All parts of the commodity being moved through or

manipulated in the heated area must meet the time and temperature requirements. This treatment must be specifically authorized in each case by the Director of Plant Health Programs, PPQ, APHIS.

§ 305.27

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§ 305.27 Forced hot air treatment schedules.

(a) *T103-a-1.* (1) The temperature probes must be placed into the center of the largest fruit in the load. The number and placement of temperature probes must be approved by APHIS' Center for Plant Health Science and Technology (CPHST) before APHIS can authorize treatment. CPHST grants approval of treatment equipment and facilities through a chamber certification procedure.

(2) APHIS may reject the treatment if the size of an individual fruit exceeds the maximum size authorized by APHIS.

(3) Fruit can be sized before or after the heat treatment. The largest fruit in a load can be identified by either sizing all fruit prior to heating and selecting the largest size class in the load or acquiring fruit of the largest permitted maximum commercial size class.

(4) The fruit containing the temperature probes must be placed inside the hot air chamber at chamber locations specified by APHIS during the chamber certification.

(5) Fruit temperature must be increased within specifications:

(i) The fruit center temperature must be increased to 111.2 °F within 90 minutes or more (minimum approach time is 90 minutes) for all temperature probes.

(ii) The fruit center temperature must be kept at 111.2 °F or hotter for 100 minutes.

(iii) The temperature of the fruit center must be recorded every 2 minutes for the duration of the treatment.

(iv) The total treatment time will vary with the time required to reach 111.2 °F.

(v) Fruit must be cooled after the treatment is completed.

(b) *T103-b-1, T103-d-1, and T103-d-2.* (1) Temperature sensors must be inserted into the centers of the largest fruits. The number of sensors must be approved in advance by APHIS. Sensors must be physically placed in various parts of the load so that high, middle, and low areas are all represented.

(2) Fruit (placed in open trays, bulk bins, or ventilated boxes) must be loaded into the treatment chamber, and sensors must be attached to the recorder monitor.

(3) The monitor must be set to record temperatures from all sensors at least once every 5 minutes.

(4) The fruit in the chamber must be heated using forced hot air, until the fruit center temperature (all sensors) reaches at least 117 °F. Treatment time may vary, but in every case, it must be at least 4 hours in duration, which includes the lead-up time. The total time required for the fruit to reach 117 °F is counted as part of the 4-hour minimum treatment time.

(5) The temperature of the forced air used to heat the fruit in the chamber may be constant or increased in a series of two or more steps or ramped over the treatment duration.

(6) The fruit may be cooled by forced air or hydrocooling. Cooling can be initiated immediately after all sensors reach at least 117 °F.

(c) *T103-c-1.* (1) Size and weight of fruit: Standard fruit size 8-14; must not exceed 1½ pounds.

(2) At least three of the largest mangoes must be probed at the seed's surface. Sensors must be inserted into the thickest portion of the fruit's pulp.

(3) The temperature must be recorded at least once every 2 minutes until the treatment is concluded.

(4) Air heated to 122 °F must be introduced in the chamber.

(5) The treatment must be concluded once the temperature at the seed's surface reaches 118 °F.

(d) *T103-e.* (1) The temperature of the fruit must be raised using forced hot air until the fruit center temperature (all sensors) reaches at least 117 °F in a minimum time of 1 hour. Heat the fruit in the chamber.

(2) The fruit temperature must be held at 117 °F or above for 20 minutes. During the treatment, the relative humidity must be maintained at 90 percent or greater.

[70 FR 33269, June 7, 2005, as amended at 70 FR 41092, July 15, 2005]

§ 305.28 Kiln sterilization treatment schedule.

T404-b-4

Dry bulb temperature (°F)	Wet bulb depression (°F)	Percent relative humidity	Percent moisture content	Thickness of lumber (inches)	Exposure (hours)
140	7	82	13.8	1	3
				2	5
				3	7
130	16	60	9.4	1	10
				2	12
				3	14
125	15	61	9.7	1	46
				2	48
				3	50

§ 305.29 Vacuum heat treatment schedule.

T111-a-1. Place bay leaves in a vacuum chamber. Starting at 0 hour, gradually reduce to 0.133 Kpa vacuum at 8 hours. Maintain the vacuum until the end of the treatment. Gradually increase the temperature in the vacuum chamber from ambient temperature at 0 hour to 60 °C at 5 hours. After 5 hours, gradually lower the temperature to 30 °C at 22 hours. The length of the treatment is 22 hours.

[70 FR 36332, June 23, 2005]

§ 305.30 [Reserved]

Subpart—Irradiation Treatments

§ 305.31 Irradiation treatment of imported regulated articles for certain plant pests.

(a) *Approved doses.* Irradiation at the following doses for the specified plant pests, carried out in accordance with the provisions of this section, is approved as a treatment for all regulated articles (i.e., fruits, vegetables, cut flowers, and foliage):

IRRADIATION FOR CERTAIN PLANT PESTS IN IMPORTED REGULATED ARTICLES¹

Scientific name	Common name	Dose (gray)
<i>Anastrepha ludens</i>	Mexican fruit fly	70
<i>Anastrepha obliqua</i>	West Indian fruit fly	70
<i>Anastrepha serpentina</i>	Sapote fruit fly	100
<i>Anastrepha suspensa</i>	Caribbean fruit fly	70
<i>Aspidiotus destructor</i>	Coconut scale	150
<i>Bactrocera jarvisi</i>	Jarvis fruit fly	100
<i>Bactrocera tryoni</i>	Queensland fruit fly	100
<i>Brevipalpus chilensis</i>	False red spider mite	300
<i>Conotrachelus nenuphar</i>	Plum curculio	92
<i>Copitarsia decolora</i>	(No common name)	100
<i>Crotophlebia ombrodelta</i>	Litchi fruit moth	250
<i>Cryptophlebia illepidia</i>	Koa seedworm	250
<i>Cylas formicarius elegantulus</i>	Sweetpotato weevil	150
<i>Cydia pomonella</i>	Codling moth	200
<i>Euscepes postfasciatus</i>	West Indian sweetpotato weevil	150
<i>Grapholita molesta</i>	Oriental fruit moth	200
<i>Omphisa anastomosalis</i>	Sweetpotato vine borer	150
<i>Pseudaulacaspis pentagona</i>	White peach scale	150
<i>Rhagoletis pomonella</i>	Apple maggot	60
<i>Sternochetus mangiferae</i> (Fabricus)	Mango seed weevil	300
Fruit flies of the family <i>Tephritidae</i> not listed above .....	.....	150
Plant pests of the class <i>Insecta</i> not listed above, except pupae and adults of the order <i>Lepidoptera</i> .....	.....	400

¹ There is a possibility that some cut flowers could be damaged by such irradiation. See paragraph (n) of this section.

(b) *Location of facilities.* Where certified irradiation facilities are available, an approved irradiation treatment may be conducted for any articles either prior to shipment to the United States or in the United States.

Irradiation facilities certified under this section may be located in any State on the mainland United States except Alabama, Arizona, California,

Florida, Georgia,¹ Kentucky, Louisiana, Mississippi,¹ Nevada, New Mexico, North Carolina,¹ South Carolina, Tennessee, Texas, and Virginia. Prior to treatment, the articles to be irradiated may not move into or through any of the States listed in this paragraph, except that movement is allowed through Dallas/Fort Worth, Texas, as an authorized stop for air cargo, or as a transloading location for shipments that arrive by air but that are subsequently transloaded into trucks for overland movement from Dallas/Fort Worth into an authorized State by the shortest route.

(c) *Compliance agreement with importers and facility operators for irradiation in the United States.* If irradiation is conducted in the United States, both the importer and the operator of the irradiation facility must sign compliance agreements with the Administrator. In the facility compliance agreement, the facility operator must agree to comply with any additional requirements found necessary by the Administrator to prevent the escape, prior to irradiation, of any fruit flies that may be associated with the articles to be irradiated. In the importer compliance agreement, the importer must agree to comply with any additional requirements found necessary by the Administrator to ensure the shipment is not diverted to a destination other than an approved treatment facility and to prevent escape of plant pests from the articles to be irradiated

¹Irradiation facilities may be located at the maritime ports of Gulfport, MS, or Wilmington, NC, or the airport of Atlanta, GA, if the following special conditions are met: The articles to be irradiated must be imported packaged in accordance with paragraph (g)(2)(i)(A) of this section; the irradiation facility and APHIS must agree in advance on the route by which shipments are allowed to move between the vessel on which they arrive and the irradiation facility; untreated articles may not be removed from their packaging prior to treatment under any circumstances; blacklight or sticky paper must be used within the irradiation facility, and other trapping methods, including Jackson/methyl eugenol and McPhail traps, must be used within the 4 square miles surrounding the facility; and the facility must have contingency plans, approved by APHIS, for safely destroying or disposing of fruit.

during their transit from the port of first arrival to the irradiation facility in the United States.

(d) *Compliance agreement with irradiation facilities outside the United States.* If irradiation is conducted outside the United States, the operator of the irradiation facility must sign a compliance agreement with the Administrator and the plant protection service of the country in which the facility is located. In this agreement, the facility operator must agree to comply with the requirements of this section, and the plant protection service of the country in which the facility is located must agree to monitor that compliance and to inform the Administrator of any noncompliance.

(e) *Certified facility.* The irradiation treatment facility must be certified by the Administrator. Recertification is required in the event of an increase or decrease in the amount of radioisotope, a major modification to equipment that affects the delivered dose, or a change in the owner or managing entity of the facility. Recertification also may be required in cases where a significant variance in dose delivery has been measured by the dosimetry system. In order to be certified, a facility must:

(1) Be capable of administering the minimum absorbed ionizing radiation doses specified in paragraph (a) of this section to the articles;²

(2) Be constructed so as to provide physically separate locations for treated and untreated articles, except that articles traveling by conveyor directly into the irradiation chamber may pass through an area that would otherwise be separated. The locations must be separated by a permanent physical barrier such as a wall or chain link fence 6 or more feet high to prevent transfer of cartons, or some other means approved during certification to prevent reinfestation of articles and spread of pests;

(3) If the facility is located in the United States, the facility will only be

²The maximum absorbed ionizing radiation dose and the irradiation of food is regulated by the Food and Drug Administration under 21 CFR part 179.

certified if the Administrator determines that regulated articles will be safely transported to the facility from the port of arrival without significant risk that plant pests will escape in transit or while the regulated articles are at the facility.

(f) *Monitoring and interagency agreements.* Treatment must be monitored by an inspector. This monitoring will include inspection of treatment records and unannounced inspections of the facility by an inspector, and may include inspection of articles prior to or after irradiation. Facilities that carry out irradiation operations must notify the Director of Preclearance, PPQ, APHIS, 4700 River Road Unit 140, Riverdale, MD 20737-1236, of scheduled operations at least 30 days before operations commence, except where otherwise provided in the facility preclearance work plan. To ensure the appropriate level of monitoring, before articles may be imported in accordance with this section, the following agreements must be signed:

(1) *Irradiation treatment framework equivalency work plan.* The plant protection service of a country from which articles are to be imported into the United States in accordance with this section must sign a framework equivalency work plan with APHIS. In this plan, both the foreign plant protection service and APHIS will specify the following items for their respective countries:

(i) Citations for any requirements that apply to the importation of irradiated articles;

(ii) The type and amount of inspection, monitoring, or other activities that will be required in connection with allowing the importation of irradiated articles into that country; and

(iii) Any other conditions that must be met to allow the importation of irradiated articles into that country.

(2) *Facility preclearance work plan.* Prior to commencing importation into the United States of articles treated at a foreign irradiation facility, APHIS and the plant protection service of the country from which articles are to be imported must jointly develop a preclearance work-plan that details the activities that APHIS and the foreign plant protection service will carry

out in connection with each irradiation facility to verify the facility's compliance with the requirements of this section. Typical activities to be described in this work plan may include frequency of visits to the facility by APHIS and foreign plant protection inspectors, methods for reviewing facility records, and methods for verifying that facilities are in compliance with the requirements for separation of articles, packaging, labeling, and other requirements of this section. This facility preclearance work plan will be reviewed and renewed by APHIS and the foreign plant protection service on an annual basis.

(3) *Trust fund agreement.* Irradiated articles may be imported into the United States in accordance with this section only if the plant protection service of the country in which the irradiation facility is located has entered into a trust fund agreement with APHIS. That agreement requires the plant protection service to pay, in advance of each shipping season, all costs that APHIS estimates it will incur in providing inspection and treatment monitoring services at the irradiation facility during that shipping season. Those costs include administrative expenses and all salaries (including overtime and the Federal share of employee benefits), travel expenses (including per diem expenses), and other incidental expenses incurred by APHIS in performing these services. The agreement will describe the general nature and scope of APHIS services provided at irradiation facilities covered by the agreement, such as whether APHIS inspectors will monitor operations continuously or intermittently, and will generally describe the extent of inspections APHIS will perform on articles prior to and after irradiation. The agreement requires the plant protection service to deposit a certified or cashier's check with APHIS for the amount of those costs, as estimated by APHIS. If the deposit is not sufficient to meet all costs incurred by APHIS, the agreement further requires the plant protection service to deposit with APHIS a certified or cashier's check for the amount of the remaining costs, as determined by APHIS, before any

more articles irradiated in that country may be imported into the United States. After a final audit at the conclusion of each shipping season, any overpayment of funds would be returned to the plant protection service or held on account until needed, at the option of the plant protection service.

(g) *Packaging.* Articles that are irradiated in accordance with this section must be packaged in cartons in the following manner:

(1) All articles treated with irradiation must be shipped in the same cartons in which they are treated. Irradiated articles may not be packaged for shipment in a carton with nonirradiated articles.

(2) For all articles to be irradiated upon arrival in the United States, the articles must be packed in cartons that have no openings that will allow the entry of fruit flies and that are sealed with seals that will visually indicate if the cartons have been opened. They may be constructed of any material that prevents the entry of fruit flies and prevents oviposition by fruit flies into the fruit in the carton.

(3) For all articles irradiated prior to arrival in the United States:

(i) The articles to be irradiated must be packaged either:

(A) In insect-proof cartons that have no openings that will allow the entry of fruit flies. The cartons must be sealed with seals that will visually indicate if the cartons have been opened. The cartons may be constructed of any material that prevents the entry of fruit flies and prevents oviposition by fruit flies into the articles in the carton³; or

(B) In noninsect-proof cartons that are stored immediately after irradiation in a room completely enclosed by walls or screening that completely precludes access by fruit flies. If stored in noninsect-proof cartons in a room that precludes access by fruit flies, prior to leaving the room each pallet of cartons

must be completely enclosed in polyethylene, shrink-wrap, or another solid or netting covering that completely precludes access to the cartons by fruit flies.

(ii) To preserve the identity of treated lots, each pallet-load of cartons containing the articles must be wrapped before leaving the irradiation facility in one of the following ways:

(A) With polyethylene shrink wrap;

(B) With net wrapping; or

(C) With strapping so that each carton on an outside row of the pallet load is constrained by a metal or plastic strap.

(iii) Packaging must be labeled with treatment lot numbers, packing and treatment facility identification and location, and dates of packing and treatment. Pallets that remain intact as one unit until entry into the United States may have one such label per pallet. Pallets that are broken apart into smaller units prior to or during entry into the United States must have the required label information on each individual carton.

(h) *Containers or vans.* Containers or vans that will transport treated commodities must be free of pests prior to loading the treated commodities.

(i) *Phytosanitary certificate.* For each shipment treated in an irradiation facility outside the United States, a phytosanitary certificate, with the treatment section completed and issued by the national plant protection organization, must accompany the shipment.

(j) *Dosimetry systems at the irradiation facility.* (1) Dosimetry mapping must indicate the doses needed to ensure that all the commodity will receive the minimum dose prescribed.

(2) Absorbed dose must be measured using an accurate dosimetry system that ensures that the absorbed dose meets or exceeds the absorbed dose required by paragraph (a) of this section (150, 210, 225, 250, or 300 gray, depending on the target species of fruit fly or seed weevil).

(3) When designing the facility's dosimetry system and procedures for its operation, the facility operator must address guidance and principles from

³If there is a question as to the adequacy of a carton, send a request for approval of the carton, together with a sample carton, to the Animal and Plant Health Inspection Service, Plant Protection and Quarantine, Center for Plant Health Science and Technology, 1730 Varsity Drive, Suite 400, Raleigh, NC 27606.

American Society for Testing and Materials (ASTM) standards⁴ or an equivalent standard recognized by the Administrator.

(k) *Records.* An irradiation processor must maintain records of each treated lot for 1 year following the treatment date and must make these records available for inspection by an inspector during normal business hours (8 a.m. to 4:30 p.m., Monday through Friday, except holidays). These records must include the lot identification, scheduled process, evidence of compliance with the scheduled process, ionizing energy source, source calibration, dosimetry, dose distribution in the product, and the date of irradiation.

(l) *Request for certification and inspection of facility.* Persons requesting certification of an irradiation treatment facility must submit the request for approval in writing to the Animal and Plant Health Inspection Service, Plant Protection and Quarantine, Center for Plant Health Science and Technology, 1730 Varsity Drive, Suite 400, Raleigh, NC 27606. The initial request must identify the owner, location, and radiation source of the facility, and the applicant must supply additional information about the facility construction, treatment protocols, and operations upon request by APHIS if APHIS requires additional information to evaluate the request. Before the Administrator determines whether an irradiation facility is eligible for certification, an inspector will make a personal inspection of the facility to determine whether it complies with the standards of this section.

(m) *Denial and withdrawal of certification.* (1) The Administrator will withdraw the certification of any irradiation treatment facility upon written request from the irradiation processor.

(2) The Administrator will deny or withdraw certification of an irradiation treatment facility when any provision of this section is not met. Before withdrawing or denying certification, the Administrator will inform the irra-

diation processor in writing of the reasons for the proposed action and provide the irradiation processor with an opportunity to respond. The Administrator will give the irradiation processor an opportunity for a hearing regarding any dispute of a material fact, in accordance with rules of practice that will be adopted for the proceeding. However, the Administrator will suspend certification pending final determination in the proceeding if he or she determines that suspension is necessary to prevent the spread of any dangerous insect. The suspension will be effective upon oral or written notification, whichever is earlier, to the irradiation processor. In the event of oral notification, written confirmation will be given to the irradiation processor within 10 days of the oral notification. The suspension will continue in effect pending completion of the proceeding and any judicial review of the proceeding.

(n) *Department not responsible for damage.* This treatment is approved to assure quarantine security against the listed plant pests. From the literature available, the articles authorized for treatment under this section are believed tolerant to the treatment; however, the facility operator and shipper are responsible for determination of tolerance. The Department of Agriculture and its inspectors assume no responsibility for any loss or damage resulting from any treatment prescribed or monitored. Additionally, the Nuclear Regulatory Commission is responsible for ensuring that irradiation facilities are constructed and operated in a safe manner. Further, the Food and Drug Administration is responsible for ensuring that irradiated foods are safe and wholesome for human consumption.

(Approved by the Office of Management and Budget under control number 0579-0155)

[70 FR 33269, June 7, 2005, as amended at 71 FR 4460, Jan. 27, 2006; 72 FR 39501, July 18, 2007; 73 FR 24854, May 6, 2008]

§ 305.32 Irradiation treatment of regulated fruit to be moved interstate from areas quarantined for fruit flies.

Irradiation, carried out in accordance with the provisions of this paragraph,

⁴Designation ISO/ASTM 51261-2002(E), "Standard Guide for Selection and Calibration of Dosimetry Systems for Radiation Processing," American Society for Testing and Materials, *Annual Book of ASTM Standards*.

is approved as a treatment for any berry, fruit, nut, or vegetable listed as a regulated article in §301.32-2(a) of this chapter.

(a) *Approved facility.* The irradiation treatment facility and treatment protocol must be approved by the Animal and Plant Health Inspection Service. In order to be approved, a facility must:

(1) Be capable of administering the approved dose for the fruit fly of concern listed in §305.31(a) to the regulated articles;⁵

(2) Be constructed so as to provide physically separate locations for treated and untreated regulated articles, except that articles traveling by conveyor directly into the irradiation chamber may pass through an area that would otherwise be separated. The locations must be separated by a permanent physical barrier such as a wall or chain link fence 6 or more feet high to prevent transfer of cartons;

(3) Complete a compliance agreement with the Animal and Plant Health Inspection Service as provided in §301.32-6 of this chapter; and

(4) Be certified by Plant Protection and Quarantine for initial use and annually for subsequent use. Recertification is required in the event that an increase or decrease in radioisotope or a major modification to equipment that affects the delivered dose. Recertification may be required in cases where a significant variance in dose delivery is indicated.

(b) *Treatment monitoring.* Treatment must be carried out under the monitoring of an inspector. This monitoring must include inspection of treatment records and unannounced inspection visits to the facility by an inspector. Facilities that carry out continual irradiation operations must notify an inspector at least 24 hours before the date of operations. Facilities that carry out periodic irradiation operations must notify an inspector of scheduled operations at least 24 hours before scheduled operations.⁶

(c) *Packaging.* Fruits and vegetables that are treated within a quarantined

area must be packaged in the following manner:

(1) The cartons must have no openings that will allow the entry of fruit flies and must be sealed with seals that will visually indicate if the cartons have been opened. They may be constructed of any material that prevents the entry of fruit flies and prevents oviposition by fruit flies into the fruit in the carton.⁷

(2) The pallet-load of cartons must be wrapped before it leaves the irradiation facility in one of the following ways:

(i) With polyethylene sheet wrap;

(ii) With net wrapping; or

(iii) With strapping so that each carton on an outside row of the pallet load is constrained by a metal or plastic strap.

(3) Packaging must be labeled with treatment lot numbers, packing and treatment facility identification and location, and dates of packing and treatment.

(d) *Dosage.* The fruits and vegetables must receive the approved dose for the fruit fly of concern listed in §305.31(a).⁸

(e) *Dosimetry systems.* (1) Dosimetry mapping must indicate the dose needed to ensure the fruit will receive the minimum dose prescribed.

(2) Absorbed dose must be measured using an accurate dosimetry system that ensures that the absorbed dose meets or exceeds the approved dose for the fruit fly of concern listed in §305.31(a).

(3) When designing the facility's dosimetry system and procedures for its operation, the facility operator must address guidance and principles from American Society for Testing and Materials (ASTM) standards or an equivalent standard recognized by the Administrator.⁹

(f) *Records.* Records or invoices for each treated lot must be made available for inspection by an inspector during normal business hours (8 a.m. to 4:30 p.m., Monday through Friday, except holidays). An irradiation processor must maintain records as specified in this section for a period of time

⁵ See footnote 2 of this subpart.

⁶ Inspectors are assigned to local offices of the Animal and Plant Health Inspection Service, which are listed in telephone directories.

⁷ See footnote 3 of this subpart.

⁸ See footnote 2 of this subpart.

⁹ See footnote 4 of this subpart.

that exceeds the shelf life of the irradiated food product by 1 year, and must make these records available for inspection by an inspector. These records must include the lot identification, scheduled process, evidence of compliance with the scheduled process, ionizing energy source, source calibration, dosimetry, dose distribution in the product, and the date of irradiation.

(g) *Request for approval and inspection of facility.* Persons requesting approval of an irradiation treatment facility and treatment protocol must submit the request for approval in writing to the Animal and Plant Health Inspection Service, Plant Protection and Quarantine, Center for Plant Health Science and Technology, 1730 Varsity Drive, Suite 400, Raleigh, NC 27606. Before the Administrator determines whether an irradiation facility is eligible for approval, an inspector will make a personal inspection of the facility to determine whether it complies with the standards of paragraph (a) of this section.

(h) *Denial and withdrawal of approval.*

(1) The Administrator will withdraw the approval of any irradiation treatment facility when the irradiation processor requests in writing the withdrawal of approval.

(2) The Administrator will deny or withdraw approval of an irradiation treatment facility when any provision of this section is not met. Before withdrawing or denying approval, the Administrator will inform the irradiation processor in writing of the reasons for the proposed action and provide the irradiation processor with an opportunity to respond. The Administrator will give the irradiation processor an opportunity for a hearing regarding any dispute of a material fact, in accordance with rules of practice that will be adopted for the proceeding. However, the Administrator will suspend approval pending final determination in the proceeding, if he or she determines that suspension is necessary to prevent the spread of any dangerous insect infestation. The suspension will be effective upon oral or written notification, whichever is earlier, to the irradiation processor. In the event of oral notification, written confirmation will be given to the irradiation proc-

essor within 10 days of the oral notification. The suspension will continue in effect pending completion of the proceeding and any judicial review of the proceeding.

(i) *Department not responsible for damage.* This treatment is approved to assure quarantine security against fruit flies. From the literature available, the fruits and vegetables authorized for treatment under this section are believed tolerant to the treatment; however, the facility operator and shipper are responsible for determination of tolerance. The Department of Agriculture and its inspectors assume no responsibility for any loss or damage resulting from any treatment prescribed or supervised. Additionally, the Nuclear Regulatory Commission is responsible for ensuring that irradiation facilities are constructed and operated in a safe manner. Further, the Food and Drug Administration is responsible for ensuring that irradiated foods are safe and wholesome for human consumption.

(Approved by the Office of Management and Budget under control number 0579-0088)

[70 FR 33269, June 7, 2005, as amended at 71 FR 4461, Jan. 27, 2006; 73 FR 24854, May 6, 2008; 73 FR 32439, June 9, 2008]

§ 305.33 [Reserved]

§ 305.34 **Irradiation treatment of certain regulated articles from Hawaii, Puerto Rico, and the U.S. Virgin Islands.**

(a) *Approved irradiation treatment.* (1) *Commodity-specific doses.* Irradiation, carried out in accordance with the provisions of this section, is approved as a treatment for the following fruits and vegetables from Hawaii at the specified dose levels:

IRRADIATION FOR PLANT PESTS IN HAWAIIAN FRUITS AND VEGETABLES

Commodity	Dose (gray)
Abiu	150
Atemoya	150
Breadfruit ^{1,2}	400 or 150.
Capsicum spp. (peppers)	150
Carambola	150
Cowpea pods (and its relatives) ¹	400
Cucurbita spp. (squash)	150
Dragon fruit ^{1,2}	400 or 150.
Eggplant	150
Jackfruit ^{1,2}	400 or 150.
Litchi ¹	150

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IRRADIATION FOR PLANT PESTS IN HAWAIIAN
FRUITS AND VEGETABLES—Continued

Commodity	Dose (gray)
Longan	150
Mango	300
Mangosteen ^{1,2}	400 or 150.
Melon ^{1,2}	400 or 150.
Moringa pods ^{1,2}	400 or 150.
Papaya	150
Pineapple	150
Rambutan	150
Sapodilla	150
Sweetpotato ¹	400 or 150
Tomato	150

¹Breadfruit, cowpea pods, dragon fruit, jackfruit, litchi, mangosteen, melon, moringa pods, and sweetpotato are also subject to the additional inspection and treatment requirements in paragraph (b)(7) of this section.

²Breadfruit, dragon fruit, jackfruit, mangosteen, melon, and moringa pods moving to the continental United States for treatment under limited permit in accordance with the requirements of paragraph (b)(7)(ii) of this section must be treated with the 400 gray dose.

(2) *Pest-specific doses.* Any articles from Puerto Rico or the U.S. Virgin Islands, as well as any articles from Hawaii not listed in paragraph (a)(1) of this section, that are required by part 318 of this chapter to be treated or subjected to inspection to control one or more of the plant pests listed in §305.31(a) may instead be treated with irradiation. Articles treated with irradiation for plant pests listed in §305.31(a) must be irradiated at the doses listed in §305.31(a), and the irradiation treatment must be conducted in accordance with the other requirements of this section.

(b) *Conditions of movement.* Articles from Hawaii, Puerto Rico, or the U.S. Virgin Islands may be authorized for movement in accordance with this section only if the following conditions are met:

(1) *Location.* The irradiation treatment must be carried out at an approved facility in Hawaii, Puerto Rico, or the U.S. Virgin Islands or on the mainland United States. Articles authorized under this section for treatment on the mainland may be treated in any State on the mainland United States except Alabama, Arizona, California, Florida, Georgia, Kentucky, Louisiana, Mississippi, Nevada, New Mexico, North Carolina, South Carolina, Tennessee, Texas, or Virginia. Prior to treatment, the articles may not move into or through Alabama, Arizona, California, Florida, Georgia, Kentucky, Louisiana, Mississippi, Ne-

vada, New Mexico, North Carolina, South Carolina, Tennessee, Texas, or Virginia, except that movement is allowed through Dallas/Fort Worth, Texas, as an authorized stop for air cargo, or as a transloading location for shipments that arrive by air but that are subsequently transloaded into trucks for overland movement from Dallas/Fort Worth into an authorized State by the shortest route.

(2) *Approved facility.* The irradiation treatment facility and treatment protocol must be approved by the Animal and Plant Health Inspection Service. In order to be approved, a facility must:

(i) Be capable of administering the minimum absorbed ionizing radiation doses specified in paragraph (a) of this section to the articles;¹⁰

(ii) Be constructed so as to provide physically separate locations for treated and untreated articles, except articles traveling by conveyor directly into the irradiation chamber may pass through an area that would otherwise be separated. The locations must be separated by a permanent physical barrier such as a wall or chain link fence six or more feet high to prevent transfer of cartons. Untreated articles shipped to the mainland United States from Hawaii, Puerto Rico, or the U.S. Virgin Islands in accordance with this section may not be packaged for shipment in a carton with treated articles;

(iii) Complete a compliance agreement with the Animal and Plant Health Inspection Service as provided in §318.13–4(d) of this chapter; and

(iv) Be certified by Plant Protection and Quarantine for initial use and annually for subsequent use. Recertification is required in the event that an increase or decrease in radioisotope or a major modification to equipment that affects the delivered dose. Recertification may be required in cases where a significant variance in dose delivery is indicated.

(3) *Treatment monitoring.* Treatment must be carried out under the monitoring of an inspector. This monitoring must include inspection of treatment records and unannounced inspectional visits to the facility by an inspector.

¹⁰See footnote 2 of this subpart.

Facilities that carry out continual irradiation operations must notify an inspector at least 24 hours before the date of operations. Facilities that carry out periodic irradiation operations must notify an inspector of scheduled operations at least 24 hours before scheduled operations.¹¹

(4) *Packaging.* (i) Articles that are treated in Hawaii, Puerto Rico, or the U.S. Virgin Islands must be packaged in the following manner:

(A) The cartons must have no openings that will allow the entry of fruit flies and must be sealed with seals that will visually indicate if the cartons have been opened. They may be constructed of any material that prevents the entry of fruit flies and prevents oviposition by fruit flies into the fruit in the carton.¹²

(B) The pallet-load of cartons must be wrapped before it leaves the irradiation facility in one of the following ways:

(1) With polyethylene sheet wrap;

(2) With net wrapping; or

(3) With strapping so that each carton on an outside row of the pallet load is constrained by a metal or plastic strap.

(C) Packaging must be labeled with treatment lot numbers, packing and treatment facility identification and location, and dates of packing and treatment.

(ii) Cartons of untreated articles that are moving to the mainland United States for treatment must be shipped in shipping containers sealed prior to interstate movement with seals that will visually indicate if the shipping containers have been opened.

(iii) Litchi and longan from Hawaii may not be moved interstate into Florida. All cartons in which litchi or longan are packed must be stamped "Not for importation into or distribution in FL."

(5) *Dosage.* The articles must receive the minimum absorbed ionizing radiation dose specified in paragraph (a) of this section.¹³

(6) *Dosimetry systems.* (i) Dosimetry must demonstrate that the absorbed

dose, including areas of minimum and maximum dose, is mapped, controlled, and recorded.

(ii) Absorbed dose must be measured using a dosimeter that can accurately measure the absorbed doses specified in paragraph (a) of this section.

(iii) When designing the facility's dosimetry system and procedures for its operation, the facility operator must address guidance and principles from American Society for Testing and Materials (ASTM) standards¹⁴ or an equivalent standard recognized by the Administrator.

(7)(i) *Certification on basis of treatment.* A certificate shall be issued by an inspector for the movement of articles from Hawaii that have been treated and handled in accordance with this section.

(A) To be certified for interstate movement under this section, litchi from Hawaii must be inspected in Hawaii and found free of the litchi fruit moth (*Cryptophlebia spp.*) and other plant pests by an inspector before undergoing irradiation treatment in Hawaii for fruit flies.

(B) To be certified for interstate movement under this section, sweetpotato from Hawaii must be inspected in Hawaii and found free of the gray pineapple mealybug (*Dysmicoccus neobrevipes*) and the Kona coffee-root knot nematode (*Meloidogyne konaensis*) by an inspector before undergoing irradiation treatment in Hawaii. In addition, sweetpotato from Hawaii to be treated with irradiation at a dose of 150 Gy must be sampled, cut, and inspected in Hawaii and found to be free of the ginger weevil (*Elytrotreinus subtruncatus*) by an inspector before undergoing irradiation treatment in Hawaii. Sampling, cutting, and inspection must be performed under conditions that will prevent any pests that may emerge from the sampled sweetpotatoes from infesting any other sweetpotatoes intended for interstate movement in accordance with this section.

(C) To be certified for interstate movement under this section, breadfruit and jackfruit from Hawaii must be inspected in Hawaii and found free

¹¹ See footnote 6 of this subpart.

¹² See footnote 3 of this subpart.

¹³ See footnote 2 of this subpart.

¹⁴ See footnote 4 of this subpart.

of spiraling whitefly (*Aleurodicus dispersus*), inornate scale (*Aonidiella inornata*), red wax scale (*Ceroplastes rubens*), green scale (*Coccus viridis*), gray pineapple mealybug (*Dysmicoccus neobrevipes*), pink hibiscus mealybug (*Maconellicoccus hirsutus*), spherical mealybug (*Nipaecoccus viridis*), citrus mealybug (*Pseudococcus cryptus*), melon thrips (*Thrips palmi*) and signs of thrip damage before undergoing irradiation treatment in Hawaii at the 150 gray dose. Fruit receiving the 150 gray dose also must either receive a post-harvest dip in accordance with treatment schedule T102-c as provided in §305.42(b) or originate from an orchard or growing area that was previously treated with a broad-spectrum insecticide during the growing season and a pre-harvest inspection of the orchard or growing area found the fruit free of any surface pests as prescribed in a compliance agreement. Post-treatment inspection in Hawaii is not required if the fruit undergoes irradiation treatment at the 400 gray dose. Regardless of irradiation dose, the fruit must be free of stems and leaves and must originate from an orchard that was previously treated with a fungicide appropriate for the fungus *Phytophthora tropicalis* during the growing season and the fruit must be inspected prior to harvest and found free of the fungus or, after irradiation treatment, must receive a post-harvest fungicidal dip appropriate for *Phytophthora tropicalis*.

(D) To be certified for interstate movement under this section, fresh pods of cowpea and its relatives from Hawaii must be inspected in Hawaii and found free of the cassava red mite (*Oligonychus bharensis*) and adults and pupae of the order Lepidoptera before undergoing irradiation treatment. The pods must be free of stems and leaves.

(E) To be certified for interstate movement under this section, dragon fruit from Hawaii presented for inspection must have the sepals removed and must be inspected in Hawaii and found free of gray pineapple mealybug (*Dysmicoccus neobrevipes*), pink hibiscus mealybug (*Maconellicoccus hirsutus*), and citrus mealybug (*Pseudococcus cryptus*) before undergoing irradiation treatment in Hawaii at the 150 gray dose. Fruit receiving the 150 gray dose

also must either receive a post-harvest dip in accordance with treatment schedule T102-c as provided in §305.42(b) or originate from an orchard or growing area that was previously treated with a broad-spectrum insecticide during the growing season and a pre-harvest inspection of the orchard or growing area found the fruit free of any surface pests as prescribed in a compliance agreement. Post-treatment inspection in Hawaii is not required if the fruit undergoes irradiation treatment at the 400 gray dose. Regardless of irradiation dose, the fruit must be free of stems and leaves.

(F) To be certified for interstate movement under this section, mangosteen from Hawaii must have the sepals removed and must be inspected in Hawaii and found free of gray pineapple mealybug (*Dysmicoccus neobrevipes*), pink hibiscus mealybug (*Maconellicoccus hirsutus*), citrus mealybug (*Pseudococcus cryptus*), and *Thrips florum* before undergoing irradiation treatment in Hawaii at the 150 gray dose. Fruit receiving the 150 gray dose also must either receive a post-harvest dip in accordance with treatment schedule T102-c as provided in §305.42(b) or originate from an orchard or growing area that was previously treated with a broad-spectrum insecticide during the growing season and a pre-harvest inspection of the orchard or growing area found the fruit free of any surface pests as prescribed in a compliance agreement. Post-treatment inspection in Hawaii is not required if the fruit undergoes irradiation treatment at the 400 gray dose. Regardless of irradiation dose, the fruit must be free of stems and leaves.

(G) To be certified for interstate movement under this section, melon from Hawaii must be inspected in Hawaii and found free of spiraling whitefly (*Aleurodicus dispersus*) before undergoing irradiation treatment in Hawaii at the 150 gray dose. Fruit receiving the 150 gray dose also must either receive a post-harvest dip in accordance with treatment schedule T102-c as provided in §305.42(b) or originate from an orchard or growing area that was previously treated with a broad-spectrum insecticide during the

growing season and a pre-harvest inspection of the orchard or growing area found the fruit free of any surface pests as prescribed in a compliance agreement. Post-treatment inspection in Hawaii is not required if the fruit undergoes irradiation treatment at the 400 gray dose. Regardless of irradiation dose, melons must be washed to remove dirt and must be free of stems and leaves.

(H) To be certified for interstate movement under this section, moringa pods from Hawaii must be inspected in Hawaii and found free of spiraling whitefly (*Aleurodicus dispersus*), inornate scale (*Aonidiella inornata*), green scale (*Coccus viridis*), and citrus mealybug (*Pseudococcus cryptus*) before undergoing irradiation treatment in Hawaii at the 150 gray dose. Fruit receiving the 150 gray dose also must either receive a post-harvest dip in accordance with treatment schedule T102-c as provided in §305.42(b) or originate from an orchard or growing area that was previously treated with a broad-spectrum insecticide during the growing season and a pre-harvest inspection of the orchard or growing area found the fruit free of any surface pests as prescribed in a compliance agreement. Post-treatment inspection in Hawaii is not required if the fruit undergoes irradiation treatment at the 400 gray dose.

(ii) *Limited permit.* A limited permit shall be issued by an inspector for the interstate movement of untreated articles from Hawaii into the continental United States for treatment in accordance with this section.

(A) To be eligible for a limited permit under this section, untreated litchi from Hawaii must be inspected in Hawaii and found free of the litchi fruit moth (*Cryptophlebia* spp.) and other plant pests by an inspector.

(B) To be eligible for a limited permit under this section, untreated sweetpotato from Hawaii must be inspected in Hawaii and found free of the gray pineapple mealybug (*Dysmicoccus neobrevipes*) and the Kona coffee-root knot nematode (*Meloidogyne konaensis*) by an inspector. In addition, sweetpotato from Hawaii to be treated with irradiation at a dose of 150 Gy must be sampled, cut, and inspected in

Hawaii and found free of the ginger weevil (*Elytrotreinus subtruncatus*) by an inspector. Sampling, cutting, and inspection must be performed under conditions that will prevent any pests that may emerge from the sampled sweetpotatoes from infesting any other sweetpotatoes intended for interstate movement in accordance with this section.

(C) To be eligible for a limited permit under this section, breadfruit and jackfruit from Hawaii must be free of stems and leaves and must originate from an orchard that was previously treated with a fungicide appropriate for the fungus *Phytophthora tropicalis* during the growing season and the fruit must be inspected prior to harvest and found free of the fungus or, after irradiation treatment, must receive a post-harvest fungicidal dip appropriate for *Phytophthora tropicalis*.

(D) To be eligible for a limited permit under this section, fresh pods of cowpea and its relatives from Hawaii must be free of stems and leaves and must be inspected in Hawaii and found free of the cassava red mite (*Oligonychus biharensis*) and adults and pupae of the order Lepidoptera.

(8) *Records.* Records or invoices for each treated lot must be made available for inspection by an inspector during normal business hours (8:00 a.m. to 4:30 p.m., Monday through Friday, except holidays). An irradiation processor must maintain records as specified in this section for a period of time that exceeds the shelf life of the irradiated food product by 1 year, and must make these records available for inspection by an inspector. These records must include the lot identification, scheduled process, evidence of compliance with the scheduled process, ionizing energy source, source calibration, dosimetry, dose distribution in the product, and the date of irradiation.

(c) *Request for approval and inspection of facility.* Persons requesting approval of an irradiation treatment facility and treatment protocol must submit the request for approval in writing to the Animal and Plant Health Inspection Service, Plant Protection and Quarantine, Center for Plant Health Science and Technology, 1730 Varsity Drive, Suite 400, Raleigh, NC 27606. Before the

Administrator determines whether an irradiation facility is eligible for approval, an inspector will make a personal inspection of the facility to determine whether it complies with the standards of paragraph (b)(2) of this section.

(d) *Denial and withdrawal of approval.*

(1) The Administrator will withdraw the approval of any irradiation treatment facility when the irradiation processor requests in writing the withdrawal of approval.

(2) The Administrator will deny or withdraw approval of an irradiation treatment facility when any provision of this section is not met. Before withdrawing or denying approval, the Administrator will inform the irradiation processor in writing of the reasons for the proposed action and provide the irradiation processor with an opportunity to respond. The Administrator will give the irradiation processor an opportunity for a hearing regarding any dispute of a material fact, in accordance with rules of practice that will be adopted for the proceeding. However, the Administrator will suspend approval pending final determination in the proceeding, if he or she determines that suspension is necessary to prevent the spread of any dangerous insect infestation. The suspension will be effective upon oral or written notification, whichever is earlier, to the irradiation processor. In the event of oral notification, written confirmation will be given to the irradiation processor within 10 days of the oral notification. The suspension will continue in effect pending completion of the proceeding and any judicial review of the proceeding.

(e) *Department not responsible for damage.* This treatment is approved to assure quarantine security against the Trifly complex and other plant pests. From the literature available, the articles authorized for treatment under this section are believed tolerant to the treatment; however, the facility operator and shipper are responsible for determination of tolerance. The Department of Agriculture and its inspectors assume no responsibility for any loss or damage resulting from any treatment prescribed or supervised. Additionally, the Nuclear Regulatory

Commission is responsible for ensuring that irradiation facilities are constructed and operated in a safe manner. Further, the Food and Drug Administration is responsible for ensuring that irradiated foods are safe and wholesome for human consumption.

(Approved by the Officer of Management and Budget under control numbers 0579–0198, 0579–0281, and 0579–0331)

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§§ 305.35–305.39 [Reserved]

Subpart—Treatments for Garbage

§ 305.40 Garbage treatment schedules for insect pests and pathogens.

(a) *T415-a, heat treatment.* Incinerate to ash. Caterers under compliance agreement using an incinerator for garbage must comply with the following conditions:

(1) Incinerator must be capable of reducing garbage to ash.

(2) Incinerator must be maintained adequately to ensure operation.

(b) *T415-b, dry heat or steam.* The garbage must be heated to an internal temperature of 212 °F for 30 minutes followed by burial in a landfill.

(1) The sterilizer used to perform the treatment must be capable of heating garbage to an internal temperature of 212 °F and maintaining it at that temperature for a minimum of 30 minutes.

(2) The sterilization cycle must be re-evaluated and adjusted twice a year using thermocouple to recalibrate the temperature recording device. Adjusting the sterilization cycle semiannually will ensure that all garbage processed is heated to a minimum internal temperature of 212 °F for at least 30 minutes and that the temperature recording device accurately reflects the internal temperature of the sterilizer.

(3) The caterer administering the treatment under a compliance agreement must comply with the following conditions:

(i) The operator must date and initial time/temperature records for each batch of garbage sterilized. The supervisor must review and sign each time/temperature record. The facility must

retain records for 6 months for review by APHIS.

(ii) The drain in the bottom of the sterilizer must be cleaned between each cycle to ensure proper heat circulation.

(4) All reevaluations and adjustments must be observed by APHIS.

(c) *T415-c, grinding and discharge into a sewage system.* The sewage system must be approved by the Administrator upon his/her determination that the system is designed and operated in such a way as to preclude the discharge of sewage effluents onto land surface or into lagoons or other stationary waters and otherwise is adequate to prevent the spread of plant pests and livestock or poultry diseases.

§ 305.41 [Reserved]

Subpart—Miscellaneous Treatments

§ 305.42 **Miscellaneous treatment schedules.**

(a) *T102-b, T102-b-1, T102-b-2, soapy water and wax.* (1) The fruit must be immersed in a soapy water bath of one part soap solution (such as Deterfrut) to 3,000 parts water for 20 seconds.

(2) The soapy bath must be followed with a pressure shower rinse to remove all excess soap.

(3) The fruit must be immersed for 20 seconds in an undiluted wax coating (such as Johnson's Wax Primafresh 31 Kosher fruit coating). The wax coating must cover the entire surface of the fruit.

(b) *T102-c, warm, soapy water and brushing for durian and other large fruits such as breadfruit.* (1) Detergent (such as Deterfrut) must be added to warm water (110-120 °F) at the rate of one part detergent or soap to 3,000 parts water.

(2) The fruit must be immersed for at least 1 minute in the warm detergent water.

(3) The fruit must be scrubbed with a brush with stiff bristles to remove any insects.

(4) The fruit must be rinsed with a pressure shower to rinse the fruit free of residue (detergent and dead insects).

(5) An inspector will inspect each brushed and cleaned fruit. If any in-

sects remain, the fruit must be re-treated or destroyed.

(c) *Three alternative treatments for plant material not tolerant to fumigation.* Treatments are based on the character of the plant material and the type of pests that may be found.

(1) T201-p-1: For plant pests, except scale insects, hand removal of pests or infested parts of plants followed by a detailed inspection to ensure plants are pest free may be employed;

(2) See hand removal plus malathion-carbaryl chemical dip T201-p-2 (§305.10(d)) for alternative treatment; or

(3) T201-p-3: Following the hand removal of the visible plant pests or infested plant parts, the plant material must be treated with hot water at 112 °F for 20 minutes. This treatment is not effective against mature scale insects.

PART 318—HAWAIIAN AND TERRITORIAL QUARANTINE NOTICES

Subpart—Hawaiian Fruits, Vegetables, and Flowers

QUARANTINE

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318.13-4b Administrative instructions; conditions governing the interstate movement from Hawaii of certain fruits or vegetables for which treatment is required.

318.13-4c Administrative instructions approving methyl bromide fumigation as a condition for certification of tomatoes for movement from Hawaii.

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318.13e [Reserved]

318.13-4f Administrative instructions prescribing methods for irradiation treatment of certain fruits and vegetables from Hawaii.