

§ 305.21

7 CFR Ch. III (1-1-10 Edition)

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

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 official 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	
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 removal 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.