

**SURVEY PROTOCOL FOR CARIBBEAN FRUIT FLY  
OF FLORIDA CITRUS FRUIT TO KOREA  
July 22, 2019**

**I. Areas under Quarantine Safeguards**

- A. **Fruits:** Citrus fruit (grapefruit, orange, and tangerine) from Florida which are certified by USDA as free of Caribbean fruit fly, *Anastrepha suspensa*, based on a pest management system which keeps Caribfly populations below pest-risk levels.
- B. **Production Areas:** The production area of citrus fruit destined to the importing country will be in designated areas specific distances from preferred host plants where the USDA has determined by means such as trap surveys and bait sprays that a Caribfly infestation does not exist. Preferred host plants are defined as common guava, Cattley guava, Surinam cherry, rose apple and loquat which are capable of fruiting.
- C. **Certification Procedures**
  - 1. Citrus fruit can be certified free of Caribfly based on Low Risk Areas or Moderate Risk Areas.
  - 2. Low Risk Areas
    - a) Standard Season Certification (August 1 - April 15)
      - (1) The minimum size of the designated area will be 300 acres (120 ha).
      - (2) The designated area will be surrounded by a buffer zone of 1.5 mile (2.4 km).
      - (3) The buffer zone should not contain preferred host plants. However, in certain situations where a preferred host plant does occur in the 1.5 mile buffer zone, which is determined by the USDA to be a threat to the protocol, ground or aerial bait spray in accordance with I.F. will be applied at 7 to 10 day intervals, beginning 7 days prior to harvest and continuing until the end of harvest.
      - (4) Trap surveys will be conducted by the USDA according to the following standards:
        - (a) Two McPhail traps will be set in the designated area and five McPhail traps will be set in a 300 ft. (91.44 m) monitoring area adjoining the designated area.

- (b) Trap servicing will be conducted weekly beginning 7 days prior to harvest and continuing until the end of harvest or April 15. All traps shall be in place at least seven days prior to the first service.
- (c) McPhail trap attractants will be in accordance with I.E.

### 3. Moderate Risk Areas

#### a) Standard Season Certification (August 1 - April 15)

- (1) The minimum size of the designated area will be 40 acres (16 ha) with an additional 300 ft. (91.44 m) buffer zone. The buffer zone will not contain any preferred host plants.
- (2) McPhail traps will be established in the designated area and buffer zone at the density of 15 traps per square mile (a minimum of 4 traps will be required).
- (3) Trap servicing will be conducted weekly beginning 10 days prior to harvest and continuing until the end of harvest. McPhail trap attractants will be in accordance with I.E.

#### b) Post Standard Certification (April 16 – End of Season)-

- (1) Designated area  $\frac{1}{2}$  mile from numerous preferred hosts (7 or more)
  - (a) The minimum size of the designated area will be 40 acres (16 ha) with an additional 300 ft (91.44 m) buffer zone. The buffer zone will not contain any preferred host plants.
  - (b) The designated area must be at least  $\frac{1}{2}$  mile (0.8 km) from residential or other areas where numerous preferred host plants occur, and all preferred hosts within that  $\frac{1}{2}$  mile must be treated with bait spray at 7 to 10 day intervals until harvest is completed or preferred hosts are removed.
  - (c) McPhail traps will be established in the designated area and 300 ft (91.44 m) buffer zone at the density of 15 traps per square mile (a minimum of 4 traps will be required).

- (d) Trap servicing will be conducted weekly beginning 10 days prior to harvest and continuing until the end of harvest. McPhail trap attractants will be in accordance with I.E.
  - (e) There will be a 10 day negative trapping period in the designated area before it acquires eligibility for export. Aerial bait sprays, in accordance with I.F., will be applied to the designated area and the 300 ft. buffer zone beginning April 16 and throughout the harvest period at 7 to 10 day intervals.
- (2) Designated area within ½ mile of numerous preferred hosts
  - (a) The minimum size of the designated area will be at least 40 acres (16ha) in size. It will be surrounded by a 300 ft (91.44 m) wide buffer zone.
  - (b) The buffer zone will not contain any preferred host plants.
  - (c) McPhail traps shall be set in designated areas and buffer zones at the density of 15 traps (minimum of 4) per square mile.
  - (d) Trap servicing will be conducted weekly beginning 30 days prior to harvest and continuing until the end of harvest. McPhail trap attractants will be in accordance with I.E.
  - (e) There will be a 30 day negative trapping period in the designated area before it acquires eligibility for export. Aerial bait sprays, prepared in accordance with I.F will be applied at 7 to 10 day intervals beginning March 16 until the end of harvest.

**D. Measures to be taken if Caribfly is found in a designated area or its buffer zone.**

1. Immediate Notification: If a Caribfly is found as a result of the trap survey, the importing country will be notified immediately.
2. If any larva or pupa is found during the fruit cutting and the survey in the designated area or in the surrounding buffer zone, the designated area will be immediately withdrawn for the entire protocol season.

3. Caribfly Detection in Low Risk Areas.

a) Standard Season Certification (August 1 - April 15)

(1) Should a fly be caught in a trap in a standard season designated area during the period August 1 through April 15, the following actions shall be taken

(a) 1-3 flies caught within 30days will result in an increase in the density of traps in the surrounding monitoring areas to 15 traps per square mile and continued certification of fruits

(b) Initiation of fruits cutting in areas adjacent to the trap find per FDACS protocols will begin after the detection of the third fly and /or detection of one mated female and continued certification of fruits

(c) Detection of a fourth fly will initiation bate spray for a minimum of 30 days, and continued certification of fruits.

(d) Detection of three additional flies within 30 days of initiation of treatment will warrant removal of the affected area from Standard season designation and initiate reclassification to Post standard season designation

(2) With due consideration to:

(a) number and sex of flies caught,

(b) presence and fertility of eggs in the case of females,

(c) maturity of grapefruit in the affected designated area,

(d) climatic conditions (temperature, day/night ratio, humidity/rainfall data),

(e) previous history of trap catches in the affected designated area,

(f) proximity of trap to any preferred host plants,

(g) status of fruit on preferred host plants,

(h) trap servicing data for the affected trap, and

(i) results of trap inspection in the monitoring zone.

4. Caribfly Detection in Moderate Risk Areas.

a) Standard Season Certification (August 1 – April 15)

(1) If two adult Caribflies are found during the trap survey in the designated area and/or in the 300 ft. buffer zone during a life cycle (30 days), the area will be bait sprayed at 7 to 10 day intervals for 30 days.

(a) If no additional flies are found, bait spray will be discontinued after 30 days.

(b) If an additional fly is found during the 30 day spray period, the 30 day bait spray cycle shall restart. In addition, fruit cutting will be initiated per FDACS protocols subsequent to the additional find.

b) Post Standard Season Certification (April 16 – End of Season)

(1) If one adult Caribfly is found after spraying begins, the area will be withdrawn.

(a) The area may be reinstated after 30 days if no additional fly is trapped (spraying will be continued during the 30 day period and throughout the harvest period after the area is reinstated).

(b) If an additional fly is found during the 30 day spray period or during harvest after reinstatement, the area will be withdrawn for the season .

5. If a particular designated area is suspended due to fly detections and it is necessary to discontinue exports from that specific area, only that designated area will be affected. The loss of certification of citrus fruit from a particular designated area will not affect the certification of fruit from other designated areas.

6. Should Caribfly be trapped in a designated area in Florida after fruit from that designated area has already been shipped and is in transit to the importing country, a more thorough inspection will be conducted upon arrival in the importing country of the fruit that was in transit.

#### **E. Trap survey attractants**

1. The attractants used in the McPhail trap will be 4 or 5 yeast borax protein tablets (5 grams each) dissolved in ½ liter of water and will be changed weekly.

#### **F. Bait spray formulations**

1. Aerial bait spray will consist of a mixture of (1) 2.4 oz. (71.0 ml) 96.5% Malathion and 9.6 oz. (284.16 ml) protein hydrolyzate bait (Nulure) per acre (0.4ha) or (2) 48 oz (1.4 liters) GF-120 Naturalyte (Spinosad) fruit fly bait per acre. Retreatment is required if rain occurs within three hours of application.
2. Ground bait spray will consist of 16.6 oz. (490 ml) protein hydrolyzate bait (Nulure), 4.1 oz. (121.2 ml) 56.44% EC Malathion (Cythion -EPA Reg. No.=5905-196), and up to 39.8 gallons (150.6 liters) of water per acre. Or (2) 3 oz (88.7 ml) of GF-120 Naturalyte (Spinosad) fruit fly bait per tree as a foliar spot spray.

#### **G. Labeling**

1. The term "designated area" and the designated area identification code shall appear on either the top surface of the carton or the side or end of each carton and/or tray.

#### **H. Packing facility**

1. The USDA shall oversee monitoring of fruit packing procedures.
2. Fruit destined to the importing country shall be packed only on well-marked line(s) to insure no mixing of fruit from a designated area with fruit from non-designated areas or other designated areas.
3. Packinghouses shall be 3 miles (4.8 km) or more from a Caribfly infested area, or if a packinghouse is less than 3 miles (4.8 km) from a Caribfly infested area, ground bait sprays will be applied at 7 to 10 day intervals to all preferred host plants within 800 feet (244 m) of the packinghouse when such host plants in the judgment of APHIS present a threat of Caribfly contamination during packing

#### **I. Shipments**

1. Containers in which the fruit is packed shall be secured to prevent any possible contamination before shipping.
2. Certified fruit shall be segregated and safeguarded at all times prior to shipment.
3. Vehicles or carriers transporting citrus fruit from approved shippers to the importing country shall be sealed before leaving Florida under the supervision of a representative of the USDA.

## **J. Inspection**

1. Inspection in the importing country shall be conducted in accordance with their established procedures and regulations.
2. Should a Caribfly be found, the following measures shall be taken:
  - a) The shipment shall be destroyed or re-exported. The relevant shipment or shipments in transit which were harvested in the same designated area shall be destroyed, returned to origin or re-exported.

Until the cause of the problem becomes clear, USDA will suspend the issuance of subsequent phytosanitary certificates for that designated area.

## **K. Additional declaration on the phytosanitary certificate**

1. The phytosanitary certificate accompanying a shipment will have the following additional declarations:

**"This shipment is believed to be free of Caribbean fruit fly as a result of originating from a Florida Caribbean Fruit Fly Protocol designated area and export inspection by APHIS."**

**AND**

**"Florida Caribbean Fruit Fly free area (insert area number), (insert quantity) cartons."**

## **L. Miscellaneous**

1. APHIS shall provide the Animal and Plant Quarantine Agency of Korea (APQA), not less than 30 days prior to harvest with map(s) of the designated areas and a list of orchard corresponding designated area numbers to facilitate their identification. Also, the trapping results should be provided to APQA, if requested.
2. Each time an area in a new county is to be designated and every two export seasons for previously designated areas, the Korean plant quarantine authority shall be invited by the USDA (and funded by the Florida citrus industry) to conduct necessary on-site inspections of the production areas in relation to the determination of certification procedures.

## II. Cold Treatment

### A. Fruits

Grapefruit, orange, and tangerine produced in Florida.

### B. Treatment Schedule

| <u>Pulp Temperature</u> | <u>Days</u> |
|-------------------------|-------------|
| 0.6°C (33°F)            | 14          |
| 0.8°C(33.5°F)           | 16          |
| 1.1°C (34°F)            | 17          |
| 1.4°C (34.5°F)          | 19          |
| 1.7°C (35°F)            | 20          |

### C. Treatment Procedure

1. Vessels and reefer containers designated and certified by the US PPQ shall be used for cold treatment.
2. Temperature values during cold treatment shall be recorded using temperature recorders meeting standards set by the US PPQ.
3. Should reefer containers be used for in transit cold treatment, the loading of the containers on the vessel shall take place only after confirmation that the pulp temperature of fruit to be loaded has reached the treatment temperature. US PPQ will make a statement to Korean plant quarantine authority, according to the information provided by the shipper that "the pulp temperature of the fruit in containers listed above was within treatment temperatures at the time of loading."

### D. Additional Declaration on Phytosanitary Certificate

1. It shall be specified that the treatment method is **"in-transit cold treatment,"** in case of reefer containers and vessels being used for in-transit cold treatment.
2. The following shall be provided in the Treatment Section of the "Phytosanitary Certificate":
  - a) date treatment began
  - b) treatment temperature
  - c) number of treatment days

However, if a Phytosanitary Certificate for several reefer containers in one consignment is prepared, an annexed paper "Certificate of

loading, calibration, and clearance for cold treatment of fruit to Korea in integral containers" shall be prepared for each container.

#### **E. Import Inspection**

1. Upon arrival of consignment at the port of entry in Korea, APQA inspectors shall check the following:
  - a) Phytosanitary certificate and additional declaration on it
  - b) Completion of the cold treatment properly
2. If any problems are found during this check, all or part of the consignment will be rejected. If fruit pulp temperature or number of treatment days on the temperature record is not sufficient, the container can be retreated from the point that the fruit pulp temperature reaches the treatment temperature, under supervision of APQA inspectors. If problems are not found during the check, APQA inspectors will inspect the consignment according to the relevant provisions of the Plant Protection Act and handle it with the result.
3. Should a live Caribfly be found in the inspection at the port of import, subject shipment shall be destroyed or re-exported. The USDA shall immediately suspend all certification procedures, investigate and clarify the cause, and make positive efforts for improvement.

#### **F. Miscellaneous**

1. During the first season that cold treatment is applied, PPQ procedures for in-transit cold treatment shall be inspected by an APQA inspector. This inspection may be done in conjunction with the on-site inspection according to I.L.2. This inspection shall be done before the first consignment of cold treated fruit is shipped to Korea.
2. Cold treatment operations do not require annual oversight, but the APQA can conduct a review during the on-site inspection according to I.L.2.
3. If the cold treatment program suffers continuous problems, NPQS may send an official to Florida to investigate.
4. All costs for oversight of the cold treatment program will be borne by the U.S.

### **III. Amendment of Work Plan**

- A. Amendment of the foregoing provisions is subject to consultations between the parties hereto.