

**United States Department of Agriculture  
Agricultural Marketing Service, Science & Technology  
Pesticide Data Program**

SOP No: PDP SAMP PROC-5		Page 1 of 8
Title: Collection, Packaging and Shipping of Delicate Fresh Fruit and Vegetables		
Revision: 02	Replaces: : 07/01/02	Effective: 01/01/03

**1. Purpose:**

To provide standard procedures for the collection, packaging and shipping of delicate fresh fruit and vegetable samples for the USDA/AMS Pesticide Data Program (PDP).

**2. Scope:**

This Standard Operating Procedure (SOP) shall be followed by all sample collectors during the entire sample collection process as required by PDP.

**3. Outline of Procedures:**

- 6.1 Collection of Delicate Fresh Fruit and Vegetable samples
- 6.2 Packaging of Delicate Fresh Fruit and Vegetable samples
- 6.3 Shipping of Delicate Fresh Fruit and Vegetable samples
- 7.0 General Guidelines for Individual Commodities

**4. References:**

- June 18-19, 2002, Sampling Managers Meeting, Manassas, Virginia
- Program Plan, June-December 2002
- October 30-November 1, 2001, Federal-State Meeting, Seattle, Washington
- USDA Tropical Products Transport Handbook, September 1989
- USDA Agricultural Export Transportation Handbook, August 1997
- The Packer--1999 Produce Availability and Merchandising Guide
- Federal/State Meeting, October 26-28, 1999
- USDA, AMS, Transportation and Marketing Programs; Protecting Perishable Food During Transport; August 1999
- FedEx Guide to Proper Packaging
- FedEx Guide on Packaging Perishable Shipments

**United States Department of Agriculture  
Agricultural Marketing Service, Science & Technology  
Pesticide Data Program**

SOP No: PDP SAMP PROC-5		Page 2 of 8
Title: Collection, Packaging and Shipping of Delicate Fresh Fruit and Vegetables		
Revision: 02	Replaces: : 07/01/02	Effective: 01/01/03

**5. Background:**

During the October 1999, Federal/State meeting, participants reported that various fresh products had been arriving in laboratories in unacceptable condition. Consequently, laboratories had not been able to analyze the commodity. PDP is issuing this SOP to minimize future fresh commodity damage.

In general, sampling procedures for delicate fresh commodities and packaging and shipping procedures will be the same as outlined in SAMP PROC-2, "Sampling Procedures on Site," and SAMP PROC-3, "Packing and Shipment of Samples." However, these procedures have been designed to provide additional guidance when collecting, packaging, and shipping delicate commodities.

**6. Specific Procedures:**

This SOP represents general recommendations for the collection, packaging, and shipping of delicate fresh fruits and vegetables. Each sampling State shall, as part of their internal SOPs, include specific details concerning the materials and procedures they use. Both the USDA/AMS SOPs and the Sampling Manager's internal SOPs will be used as the measure of compliance in the event of a USDA/AMS sampling review.

**6.1 Collection of Delicate Fresh Fruit and Vegetables**

For the purpose of this SOP, delicate commodities are referred to as fresh perishable produce (e.g., cherries, strawberries, peaches, and tomatoes) that are susceptible to bruising or crushing during collection, packaging, and shipping or may deteriorate if exposed to excessive temperature or humidity.

- a. Minimum quantity for collection of fresh small clustered commodities is two (2) pounds, unless otherwise noted on PDP Quarterly Shipping Charts, memos, or by PDP Sampling Manager.
- b. Although a minimum amount of sample is designated, collectors should be as careful as possible not to ship an excessive amount above that minimum if possible. An excessive amount of product significantly increases preparation

**United States Department of Agriculture  
Agricultural Marketing Service, Science & Technology  
Pesticide Data Program**

SOP No: PDP SAMP PROC-5		Page 3 of 8
Title: Collection, Packaging and Shipping of Delicate Fresh Fruit and Vegetables		
Revision: 02	Replaces: : 07/01/02	Effective: 01/01/03

time and distorts the number of units in each sample, thus reducing the laboratory's ability to process and analyze the commodity in a timely manner.

- c. Once the pallet/group has been chosen, collectors shall be careful to select commodities that are in acceptable condition without any noticeable bruises, decay, fungus, or other exterior damage.
- d. Collector may sample fresh commodities with uniform maturity or ripeness.
- e. Collector may select fresh commodities that are not fully matured or ripened to ensure that the sample arrives to the laboratory in acceptable condition. For example, strawberries that contain a small amount of green outside flesh are acceptable. Some commodities may be difficult to determine maturity or ripeness, but collectors should use their best professional judgment when collecting samples. Because ripeness or maturity of fruit is not an issue with the laboratory, collection of under ripe or immature product is encouraged.
- f. Collector should exercise extreme caution while handling delicate commodities to minimize bruising or crushing.
- g. If the collector transports fresh commodities from a location other than the collection site for packaging and shipping, the collector should take necessary precautions to package the product in a container to minimize shifting of product during transit.
- h. If the collector transports product during warm temperatures, delicate commodities should be packaged in a pre-cooled insulated container--cooler with ice--to minimize damage from heat and humidity during transit. Maintaining recommended transit temperature for fresh delicate commodities is crucial in ensuring that the product arrives at the lab in acceptable condition (See section 7.1 General Guidelines).
- i. If the commodity is not packaged and shipped on the same day, it must be refrigerated.

**United States Department of Agriculture  
Agricultural Marketing Service, Science & Technology  
Pesticide Data Program**

SOP No: PDP SAMP PROC-5		Page 4 of 8
Title: Collection, Packaging and Shipping of Delicate Fresh Fruit and Vegetables		
Revision: 02	Replaces: : 07/01/02	Effective: 01/01/03

6.2 Packaging Delicate Fresh Fruit and Vegetables

- a. Samples may be prepared for shipment at the collection site or transported to a State office or shipping facility (See section 6.1(g)(h)).
- b. Ensure adequate sanitation during packaging to avoid contamination of product.
- c. Each sample shall be packed by the sample collector and sealed so that any attempt to tamper with the contents would be noticed easily.
- d. Product should be culled to sort out bruised, cut, decayed, diseased, rotten or overripe items.
- e. Samples shall be packed in an insulated container (e.g., Styrofoam lined) for shipping.
- f. Use shipping containers that are the correct size for the commodity being shipped. Inadequate filling may cause shifting of product during transport, which results in bruising and/or crushing of product.
- g. Collectors shall place a solid polyethylene bag liner in the insulated container.
- h. Loose samples or prepackaged containers (e.g., clamshells) shall be bagged using a two (2) millimeter thick plastic bag or heavy paper bag, if paper is acceptable for the commodity. If a paper bag is used, such sample shall also be placed inside a (2) millimeter thick plastic bag.
- i. Commodities should be arranged compactly inside the insulated container allowing space for coolants (i.e., dry ice, gel packs).
- j. Use butcher paper, plain paper, packing peanuts, or any other shipping material that will minimize movement of product during transit and not contaminate product. **Shredded newspaper is not an acceptable packaging material.**

**United States Department of Agriculture  
Agricultural Marketing Service, Science & Technology  
Pesticide Data Program**

SOP No: PDP SAMP PROC-5		Page 5 of 8
Title: Collection, Packaging and Shipping of Delicate Fresh Fruit and Vegetables		
Revision: 02	Replaces: : 07/01/02	Effective: 01/01/03

- k. Use as many gel packs as necessary to maintain transit temperature because most products will not be shipped via temperature controlled transportation. Maintaining recommended transit temperature is crucial in ensuring product arrives in reasonable condition. **DO NOT USE LOOSE WET ICE (e.g., ice cubes).**
- l. If commodities have been paired for collection, it is permissible to ship more than one commodity in the same shipping container. However, no more than two (2) samples shall be shipped together.
- m. If two (2) commodities are shipped together, only commodities with similar sizes and weights shall be placed in the same container, to prevent crushing.
- n. If a collector lines the shipping container with a solid polyethylene liner, close and seal the liner securely.
- o. Close and securely seal the shipping container.

6.3 Shipping of Delicate Fresh Fruit and Vegetables

- a. The collector should take necessary precautions to prevent samples from being damaged in transit by labeling the outside of the box with statements such as: 1) FRAGILE, 2) THIS END UP, 3) PERISHABLE PRODUCT, or 4) REQUEST URGENT DELIVERY—REFRIGERATE UPON RECEIPT.
- b. If a sampler chooses to ship PDP samples in reusable containers (e.g., ice chests or insulated boxes) the return address must be clearly indicated on the outside of the container, and the laboratory receiving the samples informed that they are to return the containers. Return shipping should be by the most cost effective means possible, as overnight delivery of empty coolers is not usually required.
- c. All samples must be shipped by a service that results in the sample arriving at the assigned laboratory no later than the following day. Sampling Managers are responsible for follow-up to determine if the samples are arriving within the established timeframe, and/or taking action (e.g., changing delivery services) as needed if they are not.

**United States Department of Agriculture  
Agricultural Marketing Service, Science & Technology  
Pesticide Data Program**

SOP No: PDP SAMP PROC-5		Page 6 of 8
Title: Collection, Packaging and Shipping of Delicate Fresh Fruit and Vegetables		
Revision: 02	Replaces: : 07/01/02	Effective: 01/01/03

- d. Ship samples so that they arrive in the laboratory before Friday, unless prior approval is granted by the receiving laboratory's Director.
- e. Do not ship samples on Friday or the day before a Federal or State holiday.

**7. General Guidelines for Individual Commodities:**

Specific information regarding individual commodities is available on the PDP Commodity Sample Fact Sheet. General guidelines are provided in the USDA, AMS, Transportation and Marketing Programs handbook *Protecting Perishable Food During Transport*.

**United States Department of Agriculture  
Agricultural Marketing Service, Science & Technology  
Pesticide Data Program**

SOP No: PDP SAMP PROC-5		Page 7 of 8
Title: Collection, Packaging and Shipping of Delicate Fresh Fruit and Vegetables		
Revision: 02	Replaces: : 07/01/02	Effective: 01/01/03

*Patricia Moe*

*12/16/02*

Prepared by: Patricia Moe  
Sampling Manager, Monitoring Programs Office  
8609 Sudley Road; Suite 206  
Manassas, VA 20110  
(703) 330-2300

Date

*Diana Haynes*

*12/16/02*

Reviewed By: Diana Haynes  
Quality Assurance Officer, Monitoring Programs Office  
8609 Sudley Road, Suite 206  
Manassas, VA 20110  
(703) 330-2300

Date

*Martha Lamont*

*12/16/02*

Approved By: Martha Lamont  
Director, Monitoring Programs Office  
8609 Sudley Road, Suite 206  
Manassas, VA 20110  
(703) 330-2300

Date

**United States Department of Agriculture  
Agricultural Marketing Service, Science & Technology  
Pesticide Data Program**

SOP No: PDP SAMP PROC-5		Page 8 of 8
Title: Collection, Packaging and Shipping of Delicate Fresh Fruit and Vegetables		
Revision: 02	Replaces: : 07/01/02	Effective: 01/01/03

Revision 02                                      October 2002                                      Monitoring Programs Office

- Updated delicate commodity examples (subsection 6.1)
- Removed Styrofoam requirement, retaining reference to the brand name (subsection 6.2)
- Updated shipping material specifications (subsection 6.2)
- Inserted statement regarding use of most cost effective means for return shipping of sample containers (subsection 6.3)
- Inserted reference to PDP Commodity Fact Sheets for specific information (section 7)