

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

SOP No: PDP SAMP PROC-05		Page 1 of 8
Title: Collection, Packaging and Shipping of Delicate Fresh Fruit and Vegetables		
Revision: 04	Replaces: : 4/24/06	Effective: 4/18/07

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:

- Sampling Managers' Conference Call, March 13, 2006
- PDP/MDP Federal State Meeting, Denver, CO, Sept 27-29, 2005
- Sampling Managers Meeting, Manassas, Virginia, June 18-19, 2002
- Program Plan, June-December 2002
- Federal-State Meeting, Seattle, Washington, October 30-November 1, 2001
- 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

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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-02, "Sampling Procedures on Site," and SAMP PROC-03, "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. These internal SOPs must be kept on file by the State Sampling Manager. Both the PDP SOPs and the Sampling Manager's internal SOPs will be used as the measure of compliance in the event of a MPO 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, eggplant, 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 three (3) 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

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possible [refer to PDP SAMP PROC-02, Section 5.2(d) for weight details]. An excessive amount of product significantly increases preparation 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, sample collectors shall be careful to select commodities that are in acceptable condition without any noticeable bruises, decay, fungus, or other exterior damage.
- d. Sample collectors should select fresh commodities with uniform maturity or ripeness.
- e. It is recommended that sample collectors 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. Sample collectors should exercise extreme caution when handling delicate commodities to minimize bruising or crushing.
- g. If the sample collector transports fresh commodities from a location other than the collection site for packaging and shipping, he/she should take necessary precautions to package the product in a container to minimize shifting of product during transit.
- h. When the sample collector transports the product during the warm season, delicate commodities should be packaged in a pre-cooled insulated container 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 (refer to PDP SAMP PROC-05, Section 7).

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- i. If a situation arises where the commodity cannot be packaged and shipped on the same day as sample collection, the commodity must be refrigerated.

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 [refer to PDP SAMP PROC-05, Section 6.1(g)(h)].
- b. The commodity should be culled to sort out bruised, cut, decayed, diseased, rotten or overripe items.
- c. The sample collector shall ensure adequate sanitation during packaging to avoid contamination of product.
- d. Each sample shall be packed by the sample collector and sealed so that any attempt to tamper with the contents would easily be noticed. [Refer to PDP SAMP PROC-02, Section 5.3(c)(4).]
- e. Samples shall be packed in an insulated container (e.g., Styrofoam lined) for shipping.
- f. Sample collectors shall use shipping containers that are the correct size for the commodity being shipped.
- 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 two (2) millimeter thick plastic bag.
- i. Commodities should be arranged compactly inside the insulated container allowing space for coolants.

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- j. Adequate filling materials shall be used to surround the entire sample to prevent shifting of the product during transport. Butcher paper, plain paper, shredded computer paper, bubble wrap, packing peanuts, or any other shipping material that will not contaminate the product may be used to cushion the samples. **Newspaper is not an acceptable packaging material.**
- k. Use as many frozen cold packs as necessary to maintain transit temperature because most products will not be shipped via temperature controlled transportation. Cold packs should be insulated from the commodity by wrapping them with a material that will prevent direct contact with the commodity, thereby preventing any “freezer burn.” Maintaining recommended transit temperature is crucial to ensure that the product arrives in an acceptable condition. **Loose wet ice is NOT an acceptable cooling material.**
- l. If commodities have been paired for collection, it is permissible to ship more than one commodity in the same shipping container. However, if two (2) or more commodities are shipped together, only commodities with similar sizes, weights, and ethylene sensitivities shall be placed in the same container.
- m. For relatively heavy commodities such as nectarines, peaches, and strawberries, no more than two (2) samples shall be shipped together in the same container. For light-weight commodities such as blueberries, raspberries, and blackberries, there is no limit on the number of like samples that may be shipped together in one container, as long as there is no possibility of crushing or damaging the samples.
- n. If a sample collector lines the shipping container with a solid polyethylene liner, the liner should be closed and securely sealed.
- o. Close and securely seal the shipping container.

6.3 Shipping of Delicate Fresh Fruit and Vegetables

- a. The sample collector should take necessary precautions to prevent samples from being damaged in transit by labeling the outside of the box with

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statements such as: 1) FRAGILE, 2) THIS END UP, 3) PERISHABLE PRODUCT, or 4) REQUEST URGENT DELIVERY—REFRIGERATE UPON RECEIPT.

- b. If a sample collector 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 shall be informed that they are to return the containers. Return shipping should be accomplished 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 day following sample collection. Sampling Managers are responsible for follow-up to determine if the samples are arriving within the established timeframe, are in acceptable condition, and/or taking action (e.g., changing delivery services) as needed if they are not.
- d. Samples shall be shipped so that they do not arrive at the receiving laboratory on a Friday, unless prior approval is granted by the receiving laboratory's Director.
- e. Samples may not be shipped on a 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*.

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Revision 6

April 2007

- Updated References
- Updated Effective date.
- The sentence, “DO NOT USE LOOSE WET ICE (e.g., ice cubes).” was replaced with, “Loose wet ice is NOT an acceptable cooling material.” in Section 6.2 (k).
- The sentence, “However, no more than two (2) samples shall be shipped together.” was replaced with, “However, if two (2) or more commodities are shipped together, only commodities with similar sizes, weights, and ethylene sensitivities shall be placed in the same container.” in Section 6.2 (l).
- The sentence, “If two (2) commodities are shipped together, only commodities with similar sizes, weights, and ethylene sensitivities shall be placed in the same container.” was replaced with, “For relatively heavy commodities such as nectarines, peaches, and strawberries, no more than two (2) samples shall be shipped together in the same container. For light-weight commodities such as blueberries, raspberries, and blackberries, there is no limit on the number of like samples that may be shipped together in one container, as long as there is no possibility of crushing or damaging the samples.” in Section 6.2 (m).