

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

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Title: MDP Sampling Procedures on Site		
Revision: 2	Replaces: 07/01/02	Effective: 4/24/06

1. Purpose:

To standardize the sampling procedures for all States participating in the USDA/AMS Microbiological Data Program (MDP).

2. Scope:

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

3. Outline of Procedure:

- 5.1 Assignment of Sample Collectors
- 5.2 Sample Designation and Amount
- 5.3 Sampling Procedures for Fresh Commodities
- 5.4 Purchasing Samples

4. References:

- PDP/MDP Technical Meeting, Richmond, VA, March 27-31, 2006
- Sampling Managers' Conference Call, March 13, 2006
- PDP/MDP Federal/State Meeting, Denver, CO, September 27-29, 2005
- Sampling Managers' Meeting, Kansas City, MO, October 21, 2003
- Program Plan, July-December 2002
- MDP Public Meeting, Washington, DC, April 15, 2002
- Program Plan, January-June, 2002
- MDP Public Meeting, Washington, DC, January 10, 2002
- Program Plan, April-September 2001
- MDP Federal/State Meeting, Tallahassee, Florida, January 10-11, 2001
- PDP SOPs, SAMP PROC-2, Sampling Procedures on Site, June 1, 2000

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- Work plan for MDP Pilot Study, August 25, 1999

5. Specific Procedures:

5.1 Assignment of Sample Collectors

- a. Each State shall designate individuals to serve as their sample collectors and maintain a list of such personnel (refer to MDP SAMP PROC-01, Section 5.3). Changes to this list shall be provided to the MPO Sampling Manager, or designee, as they occur.
- b. Sample collectors shall have the necessary training and information provided to them prior to collecting any samples. State Sampling Managers shall keep on file a record of the training each sample collector receives. (Refer to SAMP ADMIN-02).
- c. States shall designate the number of commodity samples, with corresponding dates and sites, to be collected by each sample collector per month.
- d. If a sample(s) will not be collected due to personal emergency, plant closure, weather conditions, etc., the sample collector shall report it to the State Sampling Manager for reassignment to a different collector, alternate site, or sampling date.
- e. If it is found that a sample collector cannot sample a product on the scheduled day, he/she shall immediately notify the State Sampling Manager of such scheduled change. The State Sampling Manager (or designee) shall in turn notify MPO and contact the receiving laboratory to arrange for a resampling date.
- f. It is permissible to collect a sample on the month following the scheduled sample collection date **only** under one of the following circumstances: (1) carrier delays result in the sample(s) not arriving in acceptable condition on their scheduled date near the end of a month and it is not possible to resample before the month's end, (2) the sample(s) has arrived at the laboratory in unacceptable

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condition and it is not possible to resample before the month's end, or (3) special circumstances arise where consultation is made between the State and MPO and it is determined that resampling the following month is deemed necessary. In any of these instances, MPO *and* the receiving laboratory must be notified for approval to "make up" the lost sample(s) on a specified day the following month. Frequent make-ups are strongly discouraged. Over time, these actions may introduce undesirable bias in the MDP results. Make-up sampling may not occur at the end of a calendar year because the results would represent sampling efforts from two different years.

5.2 Sample Designation and Amount

- a. Samples collected by State sample collectors from a specific collection site will be termed a "site-sample". Each of three individual sub-samples that make up a site-sample will be termed a "lab-sample". Lab-samples for each site-sample represent commodities from the same lot, i.e., selected from container(s) that have the same lot number.
- b. MPO provides "Fact Sheets" to State Sampling Managers that include collection information for each commodity. Fact Sheets contain statements regarding the size, variety, list of acceptable and unacceptable products for collection, and special packing/shipping instructions. Fact Sheets are not comprehensive, but are provided as a reference to be used in conjunction with MDP SOPs. It is advisable that sample collectors carry applicable Fact Sheets with them in the field for reference when making sample collections.
- c. The amount per sample, as designated by MPO, shall be collected for each commodity. Information regarding the amount of sample collected will be provided in the Shipping Assignment Chart by the MPO Sampling Manager, or designee, prior to the beginning of each new quarter [refer to MDP SAMP PROC 01, Section 5.7]. The minimum sample size will also be noted on each commodity's Fact Sheet.

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- d. For some commodities, one entire unit per lab-sample is required, regardless of its size (for example, cantaloupe). For other commodities, the collection of a specific weight (for example, lettuce) is required. In the instances where a collection weight is specified, the sample collector must collect within $\pm 20\%$ of the specified weight if the specified weight is greater than 100 grams (3.5 ounces) and within $\pm 10\%$ of the specified weight if the specified weight is less than 100 grams.
- e. Sample collectors may not “sub-sample” a commodity that is already pre-packaged in an individual bag or plastic container. Explicitly, sample collectors may not open a previously closed bag or container to remove a portion of the commodity to create a lab-sample. An example would be for the commodity alfalfa sprouts: a 3-lb bag of alfalfa sprouts may not be opened to obtain one, two, or three individual 3-oz. lab-samples. A lab-sample in this case must consist of one unopened bag or plastic container, no matter what its size or weight.

5.3 Sampling Procedures for Fresh Commodities

Fresh commodities refer to raw, whole produce (i.e., lettuce, tomatoes, stalks of celery, etc.). For MDP, "fresh cut" produce, such as salad mixes, bagged/chopped lettuce, or sliced/chopped celery are not acceptable, unless otherwise stated in writing by MPO. Fresh commodities that are merely washed, brushed, or bagged as part of normal packing procedures are acceptable.

- a. Procedures for Selecting Fresh Commodity Samples at Collection Sites
 - 1. Samples shall be collected at sites that include chain store distribution centers, warehouses, brokers, and terminal markets where each vendor is assigned an individual site code. Clustered vendors are located at a centralized facility where all vendors in a terminal market have the same site code; collection at these sites is described in Section 5.4 (b).

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2. When selecting a pallet/group to be sampled at a vendor site, the sample collector shall use an appropriate means of random selection that is outlined in the State's internal Sampling Standard Operating Procedures (SOPs). These SOPs shall be kept on file by the State Sampling Manager. The random selection process used by the sample collectors must be acceptable to both the NASS statistician and the State Sampling Manager.
3. Personnel at collection sites may randomly select a box or crate of product and have it available for the sample collector to pick-up. The sample collector must request that the product remain in a refrigerated area of the collection site until sample pick-up. If site personnel select the box or crate for the sample collector, this fact must be noted on the Sample Information Form (SIF). Collection site personnel may not collect the lab-samples.
4. Once a pallet/group has been randomly chosen, it is permissible to collect the site-sample from one container/box or from a variety of containers/boxes. However, if a site-sample is collected from more than one container/box, the sample collector must ensure that all samples represent *the same lot number*.
5. Sample collectors shall be careful to select individual fruit or vegetables that are in good condition, without any noticeable bruises, fungus, or other exterior damage. Additional information regarding sampling of fresh fruit and vegetables is provided in commodity Fact Sheets.
6. If an entire case or carton of product is purchased, the commodity should, if at all possible, be collected and bagged in the warehouse facility to avoid exposure to inclement weather, high or sub-freezing temperatures, and external contamination possibilities. If necessary, however, the entire case or carton of product may be taken to a more convenient location before selecting the lab-samples, provided that no more than 30 minutes will lapse before removing the lab-sample and sufficient

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precautions are taken to ensure the samples remain in optimum condition and are not contaminated by external factors.

7. Additional information regarding the sampling of specific fresh fruit and vegetables will be provided in writing to State Sampling Managers by the MPO Sampling Manager.
- b. Procedures for Selecting Fresh Commodity Samples at Clustered Vendors:
1. Clustered vendors are all vendors located within a terminal market that have been assigned one site code.
 2. Upon arrival at a site that has clustered vendors, the sample collector should randomly select one vendor from which to sample. The vendor should be selected completely at random in accordance with internal State SOPs, with no subjective judgment by the sample collector.
 3. The vendor chosen at a clustered site is referred to as the primary site.
 4. If the commodity is not available at the primary site within the clustered vendor, the collector shall randomly select an alternate vendor. If the commodity is not available at the alternate vendor, it is permissible to select another alternate vendor. If the sample must be collected the following day, the sample collector shall immediately notify his/her State Sampling Manager, who shall in turn notify the receiving laboratory.
 5. For each primary (or alternate) site, the sample collector shall go through the same process of randomly selecting a pallet and container as described in Section 5.3(a)(2) above.
- c. Special Sampling Techniques for the Collection of MDP Samples

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1. All produce must be collected aseptically. Aseptic collection means that samples will be collected in a manner to avoid contact with any foreign objects which may contaminate the sample.
2. Insulated shipping containers must be pre-cooled to a refrigerated temperature prior to sample collection.
3. Sample collectors must use a separate sterile plastic bag for each individual lab-sample. For example, sample collectors will use three (3) sterile bags to collect three (3) lab-samples of a commodity.
4. The produce boxes/crates and sterile sampling bags must be opened before the sample collector puts on sterile gloves. The produce being sampled must be handled only when wearing sterile gloves.
5. If a sample is wrapped or bagged in a plastic or paper bag or other covering that identifies the domestic State of Origin, grower, packer, distributor or lot number, the sample collector shall aseptically remove and properly discard the covering prior to shipping the sample to the laboratory. If the collector cannot remove this information aseptically or without compromising the integrity of the sample, the collector should not attempt to remove the information.
6. Fresh sterile gloves must be worn each time a lab-sample is collected [i.e., three (3) pairs of new sterile gloves for three (3) lab-samples].
7. Produce must carefully be placed into the sterile lab-sample bag so that the commodities are not broken, bent, or bruised. Do not permit ungloved arms or clothing to enter the sterile bag.
8. If a sterile lab-sample bag is used that does not have a closing mechanism, fold over the top of the bag 2 or 3 times (forcing some air out of the bag) and use several binder clips, clothes pin type clips, or band-aids to close the bag. Laboratory personnel must be able to open the

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sterile lab-sample bags without tearing the bag to avoid potential product contamination. Consequently, masking, nylon, or plastic type waterproof tapes cannot be used to seal the sterile bag.

9. After each lab-sample has been placed in a separate sterile plastic bag, each set of lab-samples shall be placed in a larger plastic bag. (The outer plastic bag contains the entire site-sample.) The outer plastic bag is not required to be sterile. Paper bags are not acceptable because of potential mold spores or cockroach egg infestation.
10. The larger plastic bag should be sealed in a manner that any attempt to tamper with the contents would easily be noticed. MDP will supply details to all States regarding the use of a uniform custody/tamperproofing seal. The tamperproofing seal shall be dated and initialed by the sample collector. Once the sample has been sealed, it may not be transferred to a different bag at a later time. A detailed description of the tamper-proofing method used shall be included as part of the State's internal SOPs for sampling. These SOPs must be kept on file by the State Sampling Manager.
11. Each outer bag that contains a set of 3 lab-samples shall be labeled to identify the sample with the sample identification number, the code number of the primary site if an alternate site is sampled, a "P" for proxy site in the Source ID box (if a proxy site is approved for collection and used), and the sample collector's name. All information may be pre-entered on the label except for the site number, date, and whether an alternate and/or proxy site was sampled. MDP will supply details to all States regarding use of a uniform identification label that will be affixed to every sample bag.
12. The sample identification number is a 17-digit number that uniquely identifies each sample. The identification number must include: 2-digit State of collection, 6-digit date (yy/mm/dd), 4-digit site code number, 2-digit commodity code, and 3-digit receiving laboratory code. An

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example sample identification number is: MD-050819-0046-LT-OH4 (Maryland collected on August 19, 2005 at site 0046 a lettuce sample that will be analyzed by the Reynoldsburg, Ohio laboratory).

13. Pin holes may NOT be placed in the sterile lab-sample bags or the larger, outer plastic bag.
14. After the large plastic bag containing the site-sample has been labeled and tamper-proofed, it must immediately be placed in a pre-cooled insulated shipping container. If the situation requires that a paper Sample Information Form (SIF) be included with the commodities, the completed form must be placed in the shipping container with the commodities in a separate sealed plastic bag [refer to MDP SAMP PROC-03, Section 5.1(g)].
15. Sterile bags and gloves shall be purchased from a source(s) approved by the USDA/AMS Sampling Manager after consultation with the State laboratory(ies) to ensure that both products or lots have been certified as sterile. Sterile whirl paks or sterile non-strainer stomacher bags may be used depending on the size of the sample.
16. When collecting and packaging more than one commodity at the same site (or even on the same day), the sample collector shall prevent potential cross-contamination between the samples.

5.4 Purchasing Samples

- a. The sample collector shall make payment to the appropriate site/vendor(s) as necessary.
- b. Exact method of payment (e.g., cash or State voucher) is determined by the individual States.

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- c. A receipt must be provided by the vendor and retained by the State for all sample payments for a two year period. After two years, State Sampling Managers shall contact MPO for further instructions concerning the disposition or transfer of records.
- d. The sample collector may purchase either the required sample amount or the entire case of product as required by the vendor.
- e. If an entire case is purchased, records must be kept and maintained for two years by the States as to the disposal (donated, left with vendor, etc.) of the unused product. After two years, State Sampling Managers shall contact MPO for further instructions concerning the disposition or transfer of records.
- f. Payment for samples should approximate the local retail price, but an additional amount may be added, as appropriate, for the vendor's time and trouble.
- g. Specific procedures/requirements regarding the purchase of MDP samples shall be explained as part of the State's internal SOPs for sampling.

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