

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

SOP No: MDP SAMP PROC-1		Page 1 of 13
Title: Sampling Plans and Documentation for MDP		
Revision: 1	Replaces: 04/01/01	Effective: 07/01/02

**1. Purpose:**

To standardize the development of quarterly sampling plans and sampling documentation for all States participating in the USDA/AMS Microbiological Data Program (MDP).

**2. Scope:**

This Standard Operating Procedure (SOP) shall be followed by all State personnel involved in the management of sample collection for MDP.

**3. Outline of Procedure:**

- 5.1 Sample Availability
- 5.2 State Sample Allocation
- 5.3 State Sample Collectors List
- 5.4 Master List of Sampling Sites
- 5.5 Relative Volume Information for Sampling Sites
- 5.6 Quarterly Selection of Sampling Sites and Dates
- 5.7 Quarterly Sampling Plans

**4. References:**

- April 15, 2002, MDP Public Meeting, Washington, DC
- January 10, 2002, Public Meeting, Washington, DC
- Program Plan, July-December 2002
- Program Plan, January-June, 2002
- Program Plan, April-September 2001
- MDP Federal/State Meeting, Tallahassee, Florida, January 10-11, 2001
- January-June 2001, Pesticide Data Program (PDP) Semi-Annual Program Plan
- October 31-November 2, 2000, PDP Federal/State Meeting, Dulles, Virginia
- PDP SOP, SAMP PROC-1, Sampling Plans and Documentation, June 1, 2000.
- Workplan for MDP Pilot Study, August 25, 1999

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

SOP No: MDP SAMP PROC-1		Page 2 of 13
Title: Sampling Plans and Documentation for MDP		
Revision: 1	Replaces: 04/01/01	Effective: 07/01/02

**5. Specific Procedures:**

5.1 Sample Availability

- a. It is permissible for States to call ahead to the sampling site up to one business day in advance of the assigned sampling date to inquire about the availability of the commodity(ies) to be sampled. If it is determined that the commodity(ies) will not be available at either the primary or alternate site, States may follow the random selection procedures to choose a new primary and alternate site. If feasible, the new sites should be of similar "weight" as the original sites.
- b. If a sample collector is not provided access to the collection site, personnel at that site may randomly select a box or crate of product and have it available for the sampler. This collection method shall be an exception and not as a common collection practice. The collector must document such sampling practices on the Sample Information Form (SIF).
- c. If a sample collector calls ahead to have the product available upon arrival, the collector shall request that such product be stored in a refrigerated area until pick up.
- d. "Proxy sites" (direct retail store outlet within close proximity of site) cannot be used for the collection of MDP samples.

5.2 State Sample Allocation

- a. Each participating State shall be assigned a number of samples to collect per commodity each month. This number shall be determined by the USDA/AMS Program Director, in consultation with the USDA National Agricultural Statistics Service (NASS) statistician.
- b. The assigned number of samples per month is based on State population. This number shall remain constant from month-to-month throughout the calendar year, unless otherwise indicated.

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

SOP No: MDP SAMP PROC-1		Page 3 of 13
Title: Sampling Plans and Documentation for MDP		
Revision: 1	Replaces: 04/01/01	Effective: 07/01/02

- c. States performing MDP sample collection may be required to ship samples to one or more State or Federal laboratories for analysis. Specific information regarding such assignments is provided in the "MDP Sample Shipping Assignment Charts."
- d. The "MDP Sample Shipping Assignment Charts" shall be revised as needed by the USDA/AMS Sampling Manager to reflect program changes, and provided to the USDA/AMS Program Director, the State Sampling Managers, and all other applicable personnel.

5.3 State Sample Collectors List

- a. Each participating State shall maintain a list of personnel involved in the collection of MDP samples. This list shall include the following for each sample collector:
  - Name.
  - Assignment of sampling sites, cities, or geographical regions.
  - Whether the collector works on MDP full-time or part-time.
  - The estimated number of full-time equivalents (FTEs) used to fulfill the requirements of MDP sampling. This includes ALL aspects of sampling-sample collection, management of the program, tracking samples, clerical duties, etc.
- b. Changes to the sample collectors' information or FTEs, if needed, shall be made quarterly in conjunction with the development of the sampling plan. The revised list shall be included with the sampling plan when it is provided to the USDA/AMS Sampling Manager. The date of revision shall be included on the list.

5.4 Master List of Sampling Sites

- a. Each State participating in MDP sample collection shall utilize its Pesticide Data Program (PDP) master list of sampling sites for MDP sample site

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

SOP No: MDP SAMP PROC-1		Page 4 of 13
Title: Sampling Plans and Documentation for MDP		
Revision: 1	Replaces: 04/01/01	Effective: 07/01/02

selection. If necessary, each State shall be responsible for developing and maintaining a master site list, which includes all MDP collection sites.

- b. The master site list shall include the following information for each sampling site:
- Site code.
  - Region or other geographical division (optional).
  - Facility name and mailing address.
  - Date of inclusion or date of deletion from the site list, clearly marked as such. Deleted sites must remain on the master list, but shall be marked through with one single line and dated to signify they are no longer included in active sampling. Deleted sites may become "active" again later if appropriate.
  - Type of facility (e.g., terminal market, chain store distribution center, etc.).
  - Type(s) of commodities available at that site (i.e., fresh/canned/frozen fruit and vegetables, etc.). This information will be used by the USDA/AMS to code the sites in the MDP database so that individual commodity type lists can be printed.
- c. The number of collection sites for each commodity or commodity type will vary from State to State, and specific guidance on whether to include particular sites will be given by USDA/AMS on a case-by-case basis. A State's internal SOPs shall explain the basic criteria used to determine which sites to include/exclude.
- d. Small, remote sampling sites that are too expensive or difficult to access to collect a sample may be deleted from the State's sampling site list by the State Sampling Manager. However, the State Sampling Manager shall notify the USDA/AMS Sampling Manager and the NASS statistician of such change.
- e. For all types of sampling facilities, except terminal markets, States shall assign each site a unique numerical reference code per USDA/AMS instructions. This "site code" will be included as part of the sample's permanent identification number.

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

SOP No: MDP SAMP PROC-1		Page 5 of 13
Title: Sampling Plans and Documentation for MDP		
Revision: 1	Replaces: 04/01/01	Effective: 07/01/02

- f. For terminal markets, States may choose to either: (1) assign one site code under the name of the entire terminal market, which incorporates all vendors within the market, or (2) assign a site code to each vendor within the market.
- g. If site codes are assigned based on a particular organizational structure, rather than random numerical or alphabetical order, this numbering system shall be easily identifiable on the site list. For example, a State may divide its sites into geographical regions and assign the site codes accordingly (e.g., 100's for Region 1, 200's for Region 2, etc.).
- h. Changes to the master site list, if needed, shall be made at a minimum on a quarterly basis in conjunction with the development of the sampling plan. Revised site lists shall include the date of revision at the top of the list and shall be accompanied by a cover memo indicating the specific changes that have been made by site number. It is imperative that any changes regarding the sampling sites are clearly indicated so that they may be revised in the MDP database without having to search through the entire list one site at a time. Information on site changes shall be provided to both the USDA/AMS Sampling Manager and the NASS statistician. NASS must be aware that sites have been deleted or made inactive so that they are removed from the quarterly selection process. Likewise, if new sites are added or previous sites are reinstated as active, they should be included in the selection process.
- i. The Monitoring Programs Office (MPO) shall be responsible for updating the MDP database to reflect sampling site changes. Each State's contact person for Remote Data Entry (RDE) shall be responsible for linking to the database at the beginning of each quarter to download the updated site lists to their system. This process will automatically download the sites for ALL participating States.
- j. Periodically, USDA/AMS Sampling Manager will provide State Sampling Managers with a printout of their State's master sampling site code list, which will include the codes for the type of commodities sampled at each site (i.e., fresh fruit and vegetables). The State Sampling Managers will be responsible for comparing the database printouts with their records to detect

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

SOP No: MDP SAMP PROC-1		Page 6 of 13
Title: Sampling Plans and Documentation for MDP		
Revision: 1	Replaces: 04/01/01	Effective: 07/01/02

and report any discrepancies to the USDA/AMS Sampling Manager. USDA/AMS Sampling Manager will make corrections, as needed, to update the information and prepare it for downloading the following quarter by the RDE contact.

- k. Site codes shall be assigned only once. If the physical location and facility remains the same (only the name changes) the site may retain the original site number. The old and new name should be shown on the master site list for referencing samples collected prior to the name change.
- l. If the site name remains the same, but the physical location of the facility is moved to a new address, the site may retain the original site code number.
- m. If a site has been deleted from active sampling, and is later reinstated, it must retain the same site number as before.
- n. Additions to a master site list shall be given a new number, with the date of addition provided. The reason for adding the site (i.e., just discovered, decided to participate, etc.) should be provided in the cover memo. When locations are added to a master site list, their corresponding relative volume information shall also be provided. The revised master site list and annual volume information shall be included with the quarterly sampling plan when it is provided to NASS.
- o. The site code, and all other information pertaining to a deleted site, shall remain on the master site list for future reference. However, it shall be clearly marked as having been deleted from active sampling, with the date of deletion provided. The reason for deleting the site (i.e., no longer carries commodities needed, no longer participate, occasionally denies access, etc.) shall be provided in the cover memo. Deletions may be indicated by drawing a single line through the site information.

#### 5.5 Relative Volume Information for Sampling Sites

Each State shall provide relative volume information (quantity of the commodity distributed on an annual basis) or a proxy for the relative volume

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

SOP No: MDP SAMP PROC-1		Page 7 of 13
Title: Sampling Plans and Documentation for MDP		
Revision: 1	Replaces: 04/01/01	Effective: 07/01/02

for each of the sampling sites on their master site list. This information will be used to determine the “weighting factors” for the sites. It is very important that States keep the NASS statistician up-to-date on any changes in the sites that will affect the weighting factors. Weighting factors may be updated quarterly along with the site code list. If the State Sampling Managers encounter any problems in getting this volume information, they should inform the USDA/AMS Sampling Manager.

- a. The weighting factors shall be the basis of the probability proportional to size (PPS) site selection, and shall be combined in a reasonable and documented way if commodities are grouped for sampling. For example, on a scale of 1-10, a site distributing 100,000 pounds of produce may be given a weighting factor of 10 while a site distributing 10,000 pounds of produce may be given a factor of 1. Therefore, the site weighted "10" would be ten times more likely to be selected during any one quarter than the site weighted "1."
- b. When possible, States should further break down the volume information for a site into the individual commodities. However, it is permissible to report one amount for all commodities, or different types of the same commodity, if necessary. The NASS statistician is available to assist the States in making these determinations.
- c. State internal SOPs for each State shall explain how the weighting factors were determined. States have the option, if they desire, of using the services of the NASS statistician to perform their quarterly site selection for them. If a State chooses to select their own sites, they shall confer with the NASS statistician to determine the statistically defensible method to use.
- d. The relative size information and subsequent weighting factors may be included on the master site list or provided as a separate document.

5.6 Quarterly Selection of Sampling Sites and Dates

- a. Sampling Sites for Commodities:

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

SOP No: MDP SAMP PROC-1		Page 8 of 13
Title: Sampling Plans and Documentation for MDP		
Revision: 1	Replaces: 04/01/01	Effective: 07/01/02

1. Primary and alternate collection sites for MDP samples will be as close to the point of consumption as possible.
2. Sites shall be chosen for the entire quarter. Afterwards, they may be separated into three distinct groups of equal size at the convenience of the State (e.g., based on geographical location). The three groups may then be randomly assigned in a one-to-one manner to each of the three months in the quarter.
3. Site selection shall be based on PPS random sampling utilizing the weighting factors.
4. Each participating State has the option of seeking advice and/or assistance from the NASS statistician regarding the quarterly site selection process. Even if a State chooses to perform their own quarterly site selection, the NASS statistician should be provided with all relevant information regarding the site selection process for his/her approval.
5. A site may be sampled more than once a month for the same commodity, but never more than one sample per day for the same commodity. However, if the relative volume of a commodity distributed by the site is high enough, relative to the number of samples collected each month, a site may be required to be sampled every month for that commodity or for a number of commodities.
6. States should make every reasonable effort to ensure that the assigned number of samples is collected. Good communication between the sample collectors and their Sampling Managers, as well as between the State Sampling Managers and the laboratories is essential for detecting and correcting problems with missing/unavailable samples. State Sampling Managers are encouraged to request assistance from the USDA/AMS Program Director or USDA/AMS Sampling Manager, if needed, to facilitate this process.

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

SOP No: MDP SAMP PROC-1		Page 9 of 13
Title: Sampling Plans and Documentation for MDP		
Revision: 1	Replaces: 04/01/01	Effective: 07/01/02

7. The use of alternate sites may be handled in one of two ways: 1) one alternate site may be selected at the same time as the primary site and listed on the quarterly sampling plan, or 2) collectors may select an alternate site at the time of collection from those within a reasonable distance of the primary site. Proxy sites cannot be used as an alternate site. Alternate sites can be selected using the same random selection process as the original site, and should be of the same approximate size (relative volume) whenever possible.
  8. The selection of an alternate site number or vendor within a terminal market shall be totally objective in nature.
  9. If commodities have been grouped for sampling at the same site on the same date, all may be sampled from the primary or an alternate site/vendor, based on availability. All do NOT have to be sampled at the same site.
  10. If the alternate site/vendor also does not have the commodity(ies) needed, the sample collectors may procure samples from another site on their site code list as long as the site has not been sampled for the same commodity as long as the site has not been sampled for the same commodity during the month .
  11. For primary and alternate site sample collection, samplers should refer to SOP SAMP-PROC-2, Section 5.3, Sampling Procedures for MDP Commodities.
- b. Sampling Dates for Commodities:
1. USDA/AMS Sampling Manager, or designee, will coordinate with State Sampling Managers and laboratories to select specific sampling weeks for the collection of the assigned number of samples per commodity. When coordinating sampling weeks, each participant must also be made aware of any holidays or other days when samples cannot be received at the laboratory.

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

SOP No: MDP SAMP PROC-1		Page 10 of 13
Title: Sampling Plans and Documentation for MDP		
Revision: 1	Replaces: 04/01/01	Effective: 07/01/02

2. States may "group" different commodities for collection on the same day at the same site.
3. Days of the week included in the date selection process may vary from State to State but shall include a minimum of three working days per week.
4. States that collect samples, but have their analyses performed by one or more other laboratory facilities, shall ensure that they adhere to the same schedule as other States shipping the same commodity to that laboratory, unless approved in advance by the receiving laboratory(ies).
5. Friday sampling is not permitted.
6. Samples required for overnight shipping must not be shipped the day before a holiday. However, States that "hand" deliver samples directly to the laboratory may arrive the day before a holiday if prior arrangements have been made with the laboratory.
7. Additional information regarding sample collection, packaging, and shipping will be provided in writing by the USDA/AMS Sampling Manager 30 days prior to the beginning of the next quarter.

5.7 Quarterly Sampling Plans

- a. The USDA/AMS Sampling Manager will provide the State Sampling Managers and Laboratory Directors with a tentative quarterly schedule for commodities to be collected 45 days prior to the beginning of the next quarter. The final schedule will be distributed 30 days prior to the beginning of the next quarter.
- b. The State Sampling Manager shall send a copy of their completed quarterly sampling plan to the USDA/AMS Sampling Manager and to each State or Federal laboratory(ies) by the 15th of the month prior to the beginning of the next quarter.

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

SOP No: MDP SAMP PROC-1		Page 11 of 13
Title: Sampling Plans and Documentation for MDP		
Revision: 1	Replaces: 04/01/01	Effective: 07/01/02

- c. The quarterly sampling plan shall be divided into the three months of the quarter.
- d. Each month's plan shall include at least the following information:
  - Sampling weeks and commodity(ies) to be sampled.
  - Primary site numbers for each commodity(ies).
  - Alternate site numbers where applicable.
- e. Quarterly sampling plans should never include any sites that are inactive, have declined participation in the program, or do not carry the commodity or commodity type to be sampled. This should not occur if the site lists are kept current and the USDA/AMS Sampling Manager and NASS statistician are made aware of any changes.

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

SOP No: MDP SAMP PROC-1		Page 12 of 13
Title: Sampling Plans and Documentation for MDP		
Revision: 1	Replaces: 04/01/01	Effective: 07/01/02

*Kenneth R. Payne*

06/26/02

---

Prepared by: Kenneth R. Payne  
Sampling Manager, Monitoring Programs Office  
8609 Sudley Road, Suite 206  
Manassas, VA 20110  
(703) 330-2300

---

Date

*Diana Haynes*

06/26/02

---

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

---

Date

*Anita Okrend*

06/26/02

---

Approved by: Anita Okrend  
Technical Services Branch, Chief  
USDA, AMS, Science and Technology  
P.O. Box 96456, Room 3521-S  
Washington, D.C. 20090-6456  
(202) 690-0621

---

Date

*Martha Lamont*

06/26/02

---

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  
Microbiological Data Program**

SOP No: MDP SAMP PROC-1		Page 13 of 13
Title: Sampling Plans and Documentation for MDP		
Revision: 1	Replaces: 04/01/01	Effective: 07/01/02

Revision 1

July 2002

- Spelling and grammatical changes.
- Updated signature page position titles and office name and address.
- Updated References.
- Updated Effective date.
- Added second sentence under 5.1(b).
- Added paragraph 5.1 (c)
- Removed “fruit and vegetable” under 5.2 (b) between “of” and “samples”.
- Removed “(site should be added or deleted at the beginning of the quarter.)” under paragraph 5.4(b); fourth bullet; first sentence.
- Added “..at a minimum on a quarterly basis..” under 5.4(h)
- Removed “not used before” under paragraph 5.4(n) between “number” and “with” in the first sentence.
- Removed “..while maintaining the origin of the samples (i.e., grower, packer and /or distributor” under 5.6(a)(1).
- Removed paragraph 5.6(a)(5) and inserted new paragraph.
- Added “...as long as the site has not been sampled for the same commodity during the month” under 5.6(a)(10).
- Moved paragraphs 5.6(b)(5) and (6) to section 5.7 (a) and (b). Changed “1<sup>st</sup> of the month to 45 days under paragraph (a). Added last sentence under (a). Changed “15<sup>th</sup> of the month” to 30 days under paragraph (b).
- Removed 5.7(a)—repetitive.