

Identifier: **SOP-5134**
(formally ENV-MAQ-701, R7)

Revision: **0**



Effective Date: 2/26/08

Waste and Environmental Services

Standard Operating Procedure

for **PRODUCE SAMPLING**

APPROVAL SIGNATURES:

| Subject Matter Expert: | Organization | Signature | Date |
|-------------------------------|--------------|-------------------|---------|
| Philip Fresquez | WES-GS | Signature On File | 1/25/08 |
| Quality Assurance Specialist: | Organization | Signature | Date |
| Laura Ortega | QA-IQ | Signature On File | 1/25/08 |
| Responsible Line Manager: | Organization | Signature | Date |
| Craig Eberhart | WES-GS | Signature On File | 2/5/08 |

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1.0 PURPOSE AND SCOPE

The purpose of this procedure is to describe the method of collection for domestic and wild edible crop (fruits, vegetables, and grains) samples. This procedure applies to the individual(s) assigned to collect these samples as part of the Foodstuffs Monitoring Program.

2.0 BACKGROUND AND PRECAUTIONS

2.1 Background

This document establishes the basic requirements for collecting domestic and wild edible crop samples. Work performed under this procedure by LANL personnel will occur only after required training to applicable documents has been completed and documented.

Three types of produce are collected:

- fruits: apricots, apples, crabapples, peaches, pears, plums, melons, cherries, etc.
- vegetables: chile, sweet corn, cucumbers, lettuce, pumpkins, squash, tomatoes, etc.
- grain: corn, wheat, oats, etc.
- Wild edible: pinon, wax current, purslane, lambsquarters, prickly pear, etc.

Samples of produce are collected from three areas:

- On-site: Includes sites on Laboratory property.
- Perimeter: Includes Los Alamos townsite, White Rock/ Pajarito Acres, San Ildefonso, and Cochiti.
- Regional background: Includes the Española Valley (from Pojoaque to Velarde), Santa Fe, and Jemez.

2.2 Precautions

Individuals are required to be trained in the following prior to performing this procedure:

- First aid;
- Cardiopulmonary Resuscitation (CPR);
- General Field Safety for All Employees.

A minimum of two (2) people is required to go out in the field. Do not perform work under conditions you consider unsafe. Before beginning work described in this procedure, review safety needs and requirements, identify hazards, and develop hazard mitigation measures.

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3.0 EQUIPMENT AND TOOLS

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|---|---|
| <ul style="list-style-type: none"> • Rubber gloves; • Garden clippers; • Chain-of-custody forms; | <ul style="list-style-type: none"> • Marker for labeling bags; • Ice chest with blue ice; • Ziplock™ bags (one-gallon size); • Personal Protective Equipment (e.g., safety glasses, safety/field shoes, Kevlar safety gloves, and a hat). |
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4.0 STEP-BY-STEP PROCESS DESCRIPTION

4.1 Preparatory Activities

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|------------------------------------|----|---|
| Sampler or Field Team Leader (FTL) | 1. | Determine which locations will be sampled from onsite, perimeter and offsite areas. In general, from 5 to 10 samples per site are collected. A list of sample locations and amounts of samples from each location can be found in past copies of the Environmental Surveillance Report (the most recent is 2007). |
| | 2. | Obtain Chain of Custody forms and labels from the Sampling Management Office. |
| | 3. | Conduct a hazard review in accordance with Attachment 1, Hazard Review for Produce Sampling. |
| | 4. | Before leaving the field, check the condition of the vehicle and the fuel level. |
| | 5. | Identify a Point-of-Contact to provide pertinent information of destination, expected time-in, and methods of notifying the field team. |
| | 6. | When leaving Los Alamos County, notify the group office to place you on travel status. |
| | 7. | Ensure you have a working cell phone and a pager. |

4.2 Produce Sampling Steps

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| Sampler or FTL | 1. | Travel to the sampling location and obtain permission from the garden owner to collect produce. It is best if you can collect the samples directly from the garden. |
| | 2. | Collect approximately three pounds of produce by hand or by using the garden sheers, and place into a Ziplock™ bag. Collect produce as if you were harvesting for human consumption. Wash all samples and towel dry. Fill out the COC label with the sample location, date, time, and your initials, and place on bag. Also, seal the bag with COC tape. |
| | 3. | Place the bags in the cooler with ice for transport back to the laboratory. |
| | 4. | Complete a chain-of-custody form with the appropriate sampling information. Maintain applicable chain-of-custody procedures for samples until submitted to an analytical laboratory for analysis. See chapter <i>Chain-of-custody for samples</i> . |
| | 5. | Obtain an X and Y coordinate for every sample location. |
| | 6. | Once at the lab, store the samples in a freezer until they are submitted to an analytical laboratory. |

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4.3 Maintaining Custody of Samples

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| Sampler or FTL | 1. | Document chain-of-custody for all samples used to demonstrate compliance. |
| | 2. | Verify the possession and handling of samples is traceable at all times. [NOTE: A sample is considered in custody if it is one of the following: <ul style="list-style-type: none"> • In one's physical possession; • In one's view after being in one's physical possession; • In one's physical possession and then locked up so that no one can tamper with it; or • Kept in a secure area where access is restricted to authorized and accountable personnel only. <p>A secured area is an area that is locked (e.g., a room, cooler, vehicle, or refrigerator).]</p> |
| | 3. | If the area cannot be secured, use a custody seal to secure the area or the sample container. |

4.4 Transferring Custody of Samples

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| Sampler or FTL | 1. | Whenever samples are transferred into the custody of another person or organization, complete the "relinquished by/received by" and "date" sections of the form. [NOTE: These sections of the form must provide a complete history of custody of the samples from collection to transfer to the analytical laboratory.] |
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4.5 Broken Chain-of-Custody

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| Sampler or FTL | 1. | Whenever there is a break in the chain-of-custody of a sample, document the failure by initiating a deficiency report in accordance with ISD 322-4, <i>Issues and Corrective Action Management Process</i> . |
| | 2. | Document the occurrence, evaluate the potential impact (if any) on the samples, and propose a fix to prevent recurrence. |

4.6 Emergency Actions to Take in the Event of Control Failure

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| FTL | 1. | Perform First Aid for cuts, as appropriate. |
| | 2. | For all injuries, provide first aid and see that the injured person is taken to Occupational medicine (only if immediate medical attention is not required) or to the nearest hospital. |
| | 3. | Notify the individual's supervisor and group office as soon as possible. |

4.7 Records

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| FTL | 1. | Submit the following records generated by this procedure to the Records Processing Facility: <ul style="list-style-type: none"> • Completed Chain of Custody form. |
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5.0 PROCESS FLOW CHART

Flow chart is to be included at a later date.

6.0 ATTACHMENTS

Attachment 1 Produce Sampling Hazard Review (1 page)

7.0 REVISION HISTORY

Author: Phil Fresquez


| Revision No. <i>[Enter current revision number, beginning with Rev.0]</i> | Effective Date <i>[DCC inserts effective date for revision]</i> | Description of Changes <i>[List specific changes made since the previous revision]</i> | Type of Change <i>[Technical (T) or Editorial (E)]</i> |
|--|--|---|---|
| 0 | 10/4/96 | New Document | T |
| 1 | 3/99 | Reformatted in accordance with LIR300-00-01, Safe Work Practices. | E |
| 2 | 4/01 | Added new Section 9.0, Training. | E |
| 3 | 4/02 | Change in directorate. | E |
| 4 | 4/03 | Team name change to Environmental Surveillance. | E |
| 5 | 5/12/04 | Updated and reformatted document to conform to MAQ procedures. | E |
| 6 | 04/11/05 | Quick-change revision to convert HCP attachment to HR. | T |
| 7 | 04/12/06 | Quick-change revision to revise safety equipment requirements in HR. | T |
| 0 | 1/30/08 | Renumbered and reformatted to WES Division | E |

[Using a CRYPTOCARD, click here to record "self-study" training to this procedure.](#)

If you do not possess a CRYPTOCARD or encounter problems, contact your training specialist.

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| ATTACHMENT 1: HAZARD REVIEW FOR PRODUCE SAMPLING | |
|--|---|
| Hazard Review for Produce Sampling | Records Use only  |

| Work Tasks/Steps | Hazards, Concerns, and Potential Accidents; Likelihood/Severity | Controls, Preventive Measures (e.g., safety equipment, administrative controls, etc.) | Hazard Level (from IMP 300-00-00, Hazard Grading Matrix) |
|--|--|--|--|
| Travel to sampling sites in the field | Various field and outdoor hazards such as seasonal heat and cold extremes, wind, sun exposure, lightning, insects, reptiles, slips, falls, brush remote/moderate = low | Train to “General Field Safety for all Employees”. Wear PPE that includes pants, long-sleeve shirt, safety glasses, field shoes, and gloves. | Low |
| Use garden clippers as needed to collect produce samples according to steps for sample collection in the chapter “Sample Collection” | Cutting fingers, poking eyes with vegetation cutting shears Occasional /moderate = low | Use care when cutting and wear protective (e.g., Kevlar, depending on job) gloves. | Low |

Wastes or Residual Materials

Sample materials will be disposed by analytical laboratory.

Emergency Actions to Take in Event of Control Failure

For cuts, perform First Aid as appropriate. Go to hospital for serious injuries. Go to HSR-2 for evaluation. Notify supervisor ASAP.