

STANDARD OPERATING PROCEDURE

Sampling Plants of Interest to Native Americans


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KEY WORDS

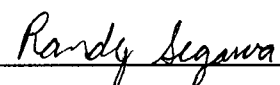
vegetation, basketweaver

APPROVALS

APPROVED BY:  DATE: 4-3-98  
Management

APPROVED BY:  DATE: 3-20-98  
EHAP Senior Scientist

APPROVED BY:  DATE: 4/2/98  
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PREPARED BY:  DATE: 3-26-98

Environmental Hazards Assessment Program (EHAP) organization and personnel such as management, senior scientist, quality assurance officer, project leader, etc. are defined and discussed in SOP ADMN002.

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#### 1.0 INTRODUCTION

##### 1.1 Purpose

This Standard Operating Procedure (SOP) discusses procedures for sampling vegetation used by Native American basketweavers. Refer to the study protocol for information regarding plant type selected, plant parts that are sampled, and storage procedures. The study protocol specifies the manner in which vegetation is selected for sampling but not the procedure for collecting a vegetation sample. Therefore, this SOP describes the method of collecting a vegetation sample for subsequent analysis.

#### 2.0 MATERIALS

- disposable gloves
- glass jars
- collection tool (shovel, trowel, clippers, forceps, scissors)
- storage unit and coolant (ice chest with dry or wet ice)
- balance
- chain of custody
- pen
- clipboard
- alcohol
- deionized water
- Liqui-Nox® liquid cleaning soap
- 2 hand-held nylon bristle brushes (optional)
- Plastic bags (4 inch x 8 inch or larger) - to hold clippers and trowels
- Several plastic garbage bags (13-gallon size)
- Several cleaning sponges or abrasive scrubbing pads

#### 3.0 PROCEDURES

##### 3.1 General

Vegetation sampling in this study is conducted for the purpose of determining the internal residue of a pesticide.

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#### 3.2 Sampling Methods

3.2.1 *Sampling foliage.* Locate the appropriate species within the designated sampling area (inside or outside treatment area). Wearing disposable gloves, use a pre-cleaned cutting tool (scissors, clippers) to cut small amounts of vegetation from the entire plant. Make sure to include foliage from all parts of the canopy: top, bottom, inside, outside, etc. While cutting, hold the glass jar so that foliage falls directly into it. Avoid handling foliage prior to including it in the sample.

3.2.2 *Sampling roots.* Locate the appropriate species within the designated sampling area (inside or outside the treatment area). Using a clean shovel or trowel (depending on digging difficulty), dig a hole around the plant to loosen the roots. Avoid cutting or otherwise breaking roots. Once a sufficient amount of material can be loosened from the soil, prepare to collect the sample. Put on disposable gloves, open the glass jar, shake off excess soil, and place roots in the jar. Use clippers or scissors to cut above-ground foliage from roots. Push disturbed soil back into the hole, bury any excess roots that were dug up but not included in the sample, and otherwise make every effort to return the area back to its original condition.

3.2.3 *Sampling brush.* Locate the appropriate species within the designated sampling area (inside or outside the treatment area). Wearing disposable gloves, use a pre-cleaned cutting tool (scissors, clippers) to cut small amounts of vegetation from the entire plant. Include only new growth (shoots) in the sample, avoiding old (woody) parts. Outer leaves may need to be cut from shoots depending on species (willow, deerbrush).

3.2.4 *Sampling berries.* Locate the appropriate species within the designated sampling area (inside or outside the treatment area). Wearing disposable gloves, pick berries from the entire plant: top, bottom, inside, and outside. Hold collection container (glass jar) up to the plant while collecting, so that berries fall directly into the jar. As much as possible, avoid handling the berries.

#### 3.3. Weighing Samples.

Before collecting a sample, weigh and record the weight (in grams) of each jar used for collection. Do not include the cap in the measurement. Record the weight in the appropriate space provided on the chain of custody (see below). After collecting the sample, record the weight in the appropriate space provided on the chain of custody. Do

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not include the cap in the measurement. Cover the top of the jar with an aluminum foil sheet and screw the cap on tightly. Store samples according to SOP QAQC004 immediately.

#### 3.4. Cleaning Sampling Equipment

This general procedure should be followed for clean or unclean hand clippers. It is always important that the clippers which are designated for use in the pesticide treated areas (**dissipation locations**) be **isolated** from the clippers which are designated for use in the untreated areas (**off-site locations**). Failure to follow these guidelines may result in inadvertant pesticide contamination of plant material samples.

Separately wash the dissipation and off-site location hand clippers in different, *shallow* plastic containers. Each container should be lined with a clean, 13-gallon plastic garbage bag which will contain the cleaning solution.

To each container, add an adequate amount of de-ionized water and Liqui-Nox cleaning soap. Using a clean sponge or abrasive scrubbing pad, vigorously scour the clipper cutting blades to remove all plant residue which may have built up on the cutting surface. Also thoroughly clean the remaining portion of the hand clippers. Rinse copiously with de-ionized water and then with isopropyl alcohol. Let the clippers air dry.

After the sampling equipment is clean and dry, place hand clippers in a clean plastic bag, remembering to isolate the dissipation and off-site clippers into different sampling boxes. Discard the de-ionized wash water, plastic bag, cleaning sponges, and abrasive scrubbing pads. Prepare a new wash solution(s) at each sampling site and follow procedure above.

The general cleaning procedure for hand trowels and shovels is the same as above, although these sampling materials are not separated into dissipation or off-site equipment. After each use all sampling equipment should be cleaned. Always inspect equipment prior to use and clean it if it appears dirty. Cleaned equipment should be stored in plastic bags to avoid contamination.

Using deionized water and a nylon brush, loosen dirt and plant material from the collection tool. Avoid the sharp edges of clippers, scissors, etc. by using the brush, holding the tool by the handle. Rinse with deionized water and repeat as needed. When the collection tool appears clean, rinse three more times with deionized water. Using a squeeze bottle

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filled with isopropyl alcohol, rinse equipment and store it in a plastic bag.

#### 4.0. REPORTING REQUIREMENTS

##### 4.1 Chain of Custody

A chain of custody form should be completed for each sample according to SOP ADMN006. The following information should be recorded on the chain of custody:

- 4.1.1 *Study number*
- 4.1.2 *Sample number*
- 4.1.3 *Sample location*
- 4.1.4 *Date and time of sampling*
- 4.1.5 *Sampling personnel*
- 4.1.6 *Name of field or experimental plot*
- 4.1.7 *Plant species and part*

##### 4.2 Ancillary Information

Additional information should be recorded or included in the experimental notebook, including a map of the sampling location(s), weather conditions, time elapsed after application, general condition of plants.

#### 5.0 STUDY-SPECIFIC DECISIONS

The following study specific decisions are the responsibility of the study project leader, and should be made in consultation with the study field coordinator, senior scientists, and EHAP Quality Assurance Officer.

- 5.0.1 *Sampling location*
- 5.0.2 *Sampling method*
- 5.0.3 *Sample storage*
- 5.0.4 *Sampling duration*

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Previous SOP: FSOT001.00  
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#### **REFERENCES**

Ganapathy, C. 1996. Creating and filling out a chain of custody record. SOP ADMN006.00.

Nordmark, C. 1996. Procedure for packaging and transporting samples. SOP QAQC004.00.