

# Soil Samples – Storage and Processing

## Standard Operating Procedures

For more details on related procedures and the Soil Import Permit and Compliance Agreement, see the materials available in the front of the Soils logbooks.

*All soil is considered quarantined material until sterilized.*

### Upon Receipt of Samples

- All samples are to be stored in the ARF Wet Lab (Room 14, 2251 College Building) until sterilized.
- Upon arrival all samples must be logged into the SOILS log book:
  - a) Each sample receives a separate number, consisting of the year and a consecutive number for each sample (e.g., 99-34, indicating the 34<sup>th</sup> sample logged in 1999).
  - b) For each sample, log in: Date of Arrival, Origin, and Amount (in grams). Also record name/initials of who collected the sample, and where stored (Wet Lab/Room 14, 2251 College Building).

### Storage and Labels

- Samples must remain sealed in original bags (double-bagged) until processed, and bags must be stored securely on shelf trays, within closed container, or within cabinets. Samples should not be left on tables or elsewhere when not in use.
- All stored, unsterilized soil samples must be labeled with tags stating "Quarantine Soil – Sterilize Before Disposal." Attach labels to trays or boxes where samples are stored, making sure tag is prominently displayed.
- Any individual soil samples that are out of their storage area and/or being processed must also be clearly labeled to indicate whether or not they have been sterilized.
- Label all sterilized soils and residues so that it is clear that they have been sterilized and may be disposed of.

### Sterilization and Disposal of Samples, Residues, and Packing Materials

- All soil samples must be sterilized by dry heat treatment at 200° C for a minimum of 4 minutes, or by one of the other approved methods (see additional documentation in Soils log book).
- All residues must be properly sterilized in the same manner.
- Once emptied, all containers (shipping boxes, plastic bags) must be sterilized/disposed of properly by burning, or if containers are to be re-used they must be decontaminated by an approved heat treatment method (see additional documentation).

### Log Book

- In addition to data logged upon arrival (see above), log entries for each sample must include method of treatment and date of disposal (after sample has been processed).
- If relevant, also log sample provenience, reasons for collection, and types of analysis performed.

## ATTACHMENT ONE - STIPULATION FOR HANDLING SOIL SAMPLES

(DJH-1/96)

Soil sample shipments of any size may be received for processing provided the following requirements are met:

### I. Sampling, Shipping and Receiving Soil Samples

In areas that are subject to Federal and State cooperative domestic plant quarantines, the sampling equipment should be thoroughly cleaned of all soil residues at the collection site.

Soil samples must be shipped in sturdy, leak-proof containers, and declared as "Soil Samples". If samples are of foreign origin, the import sticker (PPQ550) must be attached to containers or import documents.

When received the containers must be opened and examined inside a closed room area of the approved facility. The lab personnel will take all precautions to prevent the escape of any potential pest which may be in the soil. Keep soil under quarantine conditions and in closed containers until sterilized. Keep soil in a designated storage area labeled "Quarantine Soil" when not in use. A standard operating procedure should be developed for all lab personnel to follow.

Reshipment of soil samples to other labs is not allowed unless sterilized or the receiving labs are also on the USDA-APHIS-PPQ "LIST OF LABORATORIES APPROVED TO RECEIVE SOIL". A detailed request to reship these soils must be submitted to the enforcing agricultural inspectors.

Soil containers will be decontaminated using approved treatments before being reused or discarded.

### II. Soil Residue

All soil that is not rendered sterile by harsh analysis, incineration, destructive treatment, or buried long term as hazardous waste, must be sterilized by one of the approved methods below:

A. Dry Heat	Temperature	Exposure Period
	235-249 F or 110-120 C	16 hours
	250-309 F or 121-154 C	2 hours
	310-379 F or 155-192 C	30 minutes
	380-429 F or 193-220 C	4 minutes
	430-450 F or 221-232 C	2 minutes

Place soil in trays no more than two inches deep and do not start counting time until entire mass has reached the required temperature.

B. Steam Heat 250-F or 121-C @ 15 lbs. pressure for 30 minutes  
(standard autoclave sterilization procedures)

C. Fumigation plus miscellaneous treatments: T-408 of USDA-APHIS-PPQ treatment manual.

Any other treatment procedure must be approved by agricultural officials.

III. Cleaning and disinfecting equipment; may be accomplished by soaking in 70% isopropyl alcohol for one hour, or soak and wash in hot water with detergent for 30 minutes. Any of the approved treatments for soil may also be used.

#### IV. Water Used to Process Sample

Whenever water is utilized in processing a sample, including initial rinse water of contaminated equipment, the contaminated water shall be disposed of by one of the following methods:

- A. Boiling the water for One Minute.
- B. Treating with a strong detergent for 30 minutes.
- C. Filtering through a 100 mesh screen or suitable paper filter. The residues left in the filter should be burned or sterilized as soil residue above.
- D. water from soil residue may flow down drains only into a tertiary city sewage treatment system.

IV. IMPORT PERMITS and COMPLIANCE AGREEMENTS; Requests for permits to import soil from foreign sources should be directed to the California State Plant Health Director, USDA APHIS PPQ, 9550 Micron Avenue Suite G, Sacramento, CA 95827, Phone 916-857-6241, fax 916-857-6248, or the CDFA Pest Exclusion, Office of Permits and Operations, 1220 N Street, Room A-372, Sacramento, CA 95814, phone 916-653-1440, fax 916-654-0986.

Adhere to all California State Interior and Exterior Quarantines dealing with soil. If there are any questions, please contact the local County Agricultural Commissioners Office for details.

V. PLANTS and PLANT MATERIAL PERMITS; If domestic (CONUS) plant material is to be received, obtain a valid laboratory permit from the California Department of Food & Agriculture, Pest Exclusion, 1220 N Street, Room A-372, Sacramento, CA. 95814, or the local County Agricultural Commissioner's Office. This is covered under CDFA quarantine circular #209.

Importation of live plants or plant parts from foreign sources requires a USDA, APHIS, PPQ Port Operations "plant import permit". Applications may be obtained from the California State Plant Health director, USDA, APHIS, PPQ, 9550 Micron Avenue, Suite G, Sacramento, CA 95827, or any PPQ other Office.