

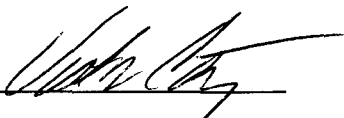
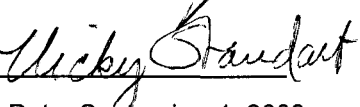
Whole Body Sampling – Inner Dosimeters

Chapter 8:

MATRIX SAMPLES

AHETF-8.A.2.

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1.0 PURPOSE AND SCOPE

- 1.1. This Standard Operating Procedure (SOP) provides a description of procedures for collecting pesticide residues from whole body dosimeters worn by workers (test subjects) during the Agricultural Handlers Exposure Task Force (AHETF) exposure studies.
- 1.1. The inner dosimeter will be used as a collection medium and will be analyzed. The inner dosimeter will be worn over the test subject's own undergarments and directly underneath the specified work clothing and personal protective equipment (PPE), if appropriate.
- 1.2. This SOP was revised to provide guidance for sampling only upper and lower whole body dosimetry, in section 4.5 and 4.6. (*Subsequent section numbers automatically updated.*)

2.0 MATERIALS REQUIRED

- 2.1. The following materials are required for using and collecting whole body dosimeter samples from each worker/replicate:
 - a. 100% cotton, white, long underwear (inner) — with long sleeves, round neckline and no elastic.
 - b. Disposable gloves (*i.e.*, latex)

- c. Scissors
- d. Cleaning solutions (*i.e.*, methanol, isopropanol, alcohol/water mixture, acetone, *etc.*)
- e. Sealable bags or other suitable bags
- f. Aluminum foil wrap
- g. Disposable paper or plastic mat
- h. Hangers, if appropriate
- i. Cooler with dry ice, or freezer

3.0 USE OF WHOLE BODY DOSIMETER

- 3.1. The test subject(s) will be given a new inner dosimeter prior to initiation of each study replicate. The workers will be allowed to change in a clean “privacy area”. Disposable gloves should be worn by the test subject and the field personnel to minimize contamination.
- 3.2. Care should be taken to provide clothing of adequate fit. The inner dosimeter arm and pant cuffs should not extend beyond the work clothing cuffs (wrists and ankles).
- 3.3. Cut the large excess off the pant legs and pull up the inner dosimeter arms so that the inner dosimeter will not come out from underneath the outer dosimeter during the performance of the activity.

4.0 COLLECTION PROCEDURE

- 4.1. Upon completion of the sock sample collection, as described in SOP 8.1, the inner dosimeters will be collected. The inner dosimeters must be collected after all other samples have been collected from the worker.
- 4.2. Disposable paper, plastic mat, or aluminum foil will be placed on the chairs and floor of the changing area to reduce cross-contamination. The materials will be changed after the processing of each worker.

- 4.3. The field personnel collecting samples will always wear disposable gloves when handling any work clothing, dosimeters, and PPE. Gloves will be changed between handling PPE, work clothing, and inner dosimeter collection. Remove garments in a manner to avoid cross-contamination.
- 4.4. Ensure that the scissors have been decontaminated with solvent prior to use. Scissors must be cleaned between each replicate.
- 4.5. As described in the study protocol, the inner dosimeters will be sampled in one of two methods, if the upper/lower method is used, follow section 4.6, if the six section method is used, then follow section 4.7.
- 4.6. Cut the dosimeter into two (2) sections:
 - a. Lower Body (all sections below waist*)
 - b. Upper Body (all sections above waist*)

* Cut just below the second button from the bottom to separate the torso from the lower section.

Proceed to section 4.8 of this SOP.

- 4.7. Cut the inner dosimeter into six (6) sections:
 - a. Right & left upper arms (shoulder to elbow)
 - b. Right & left lower arms (elbow to cuff)
 - c. Front torso (above the waist*)
 - d. Rear torso (above the waist*)
 - e. Right & left upper legs (waist to knee)
 - f. Right and left lower legs (knee to cuff)

* Cut just below the second button from the bottom to separate the torso from the lower section. Cut along the seams to separate the front torso from the rear torso. Refer to Attachment.

Continue on to section 4.8 of this SOP.

- 4.8. Inner dosimeters may be hung on hangers during the sampling as long as the dosimeters do not contact the floor or other dosimeters.
- 4.9. Remove and discard any buttons from clothing.

- 4.10. Place each sample section on a piece of aluminum foil (sufficient size to completely wrap the dosimeter). Do not allow samples to contact any surface before placement onto the foil. Ensure that the edges of the foil wrap are folded together to prevent loss of test material. Place a label on the aluminum foil that identifies the sample and place the sample into a labeled, sealable bag. Seal all bags.
- 4.11. There shall be either two (2) or six (6) inner dosimeter samples per replicate, depending upon the protocol specified sampling method.

5.0 SAMPLING INTERVALS

- 5.1. Inner whole body dosimeters will be collected at the end of each monitoring replicate, unless otherwise instructed by the protocol.

6.0 FIELD STORAGE

- 6.1. Place samples collected during the study in the field in a cooler with dry ice or portable freezer until processed and placed into frozen storage for shipping at the end of the monitoring day (or as soon as practical). If dry ice is not available, the Study Director must be notified before sample collection and other suitable storage conditions must be noted in the raw data.

Attachment

Diagram of Inner Dosimeter

