NATIONAL PARK SERVICE

Conserve O Gram

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Guidelines For The Handling Of Pesticide Contaminated Collections

Over 55 compounds have been used on National Park Service collections to eradicate and control pest infestations (see *Conserve O Gram* 2/16). Most of these chemicals are hazardous to one degree or another, and some are extremely dangerous. However, it is difficult and expensive to test for all possible residues. Therefore, for the sake of human health, strict procedures are required to protect visitors, researchers, and staff from the effects of hazardous materials. Following are guidelines for the safe handling of collections specimens that may be contaminated with pesticides and other poisons.

Procedures to be Used by Staff, Researchers, and Visitors Handling Objects

- Wash your hands with soap and water before and after handling collection materials.
- Wear lab coats when working with collection objects. Be sure to completely button the coat. Remove the coat when leaving the collection area and store it in a designated location.
- Store lab coats and cotton gloves in polyethylene containers after use pending washing.
- Maintain separate, specially marked pencil jar and clipboards in work areas for use with contaminated objects.
- Use Nitrile or other approved impermeable gloves for handling all artifacts except for works of art on paper and archival documents; cotton gloves are used for paper materials:
  - If using thick, reusable Nitrile or other impermeable gloves, wash the gloves with soap and water before removing. Always remove gloves in a way so that your hands do not touch the outside of the gloves.
  - Thin, disposable Nitrile gloves are used for detail work. Discard by turning inside out and dispose of in hazardous waste containers.
  - Keep hands (gloved or not) away from the face (eyes, mouth, nose).
  - Do not use gloved hands when touching door handles, phones, computer keyboards,vacuums, camera or cataloging equipment (tape measures, scissors, tools, microscope, etc.).
  - It is all right to use gloved hands when touching storage cabinet handles, ladders, carts, brushes, cleaning tools, marked pencils, and clipboards. These surfaces are to be considerd contaminated and wiped clean periodically.

- Do not chew on pencils or glasses.
- Do not consume food or drink in collection areas.
- After removing gloves and lab coats, wash hands with soap and water before eating or drinking.

Curatorial Responsibility

Collections staff are responsible for the identification of objects that may have been treated with pesticides or other poisons. You may find clues to the kinds of chemicals used in:

- accession and catalog records
- annual reports
- maintenance records
- purchasing records
- informal records from previous curators
- conservation records

Be sure to ask donors if they know about pesticides used on new accessions.

In addition to the general precautions above, adopt the following procedures:

- Work with an industrial hygenist to develop testing programs and safe working procedures.
- Store contaminated collections separately from other collections and mark significantly contaminated objects for restricted access.
- Clearly tag objects, storage containers, and cabinets with appropriate poison or hazardous materials warning signs.
- Use **Caution Hazardous Materials** tapes on cart handles, cabinet handles, and other surfaces to indicate where gloves should be worn.
- Wash table coverings, lab coats, cotton gloves, cabinet handles, ladders, and carts monthly or more frequently as appropriate.
- Vacuum contaminated objects with a HEPA filter vacuum. Do not handle the vacuum hoses with gloved hands to minimize contamination of the vacuum exterior and attachments. Wash vacuum hose and nozzle monthly or more frequently as appropriate.
- Dispose of shelf liners, acid-free tissue wrappings, and polyethylene bags or covers as hazardous waste. (Contact your park or Regional HAZMAT coordinator for further information.)
- Implement periodic air sampling and other testing of work spaces as required.
- Maintain Material Safety Data Sheets (MSDS) on all of the hazardous chemicals that may have been used on collection objects.
- Provide closed containers for those objects that should be worked on only in a specially ventilated environment. Tag those objects to indicate that a fume hood or personal protective equipment is necessary for handling.
- Test all new accessions for pesticide residues. Assume that all mammal and bird specimens collected and prepared before the 1980s may be contaminated with arsenic.

- Limit access to new accessions until testing has been completed or appropriate handling precautions can be implemented.

- Restrict locations where contaminated objects may be used. In general, these objects should never be placed in open exhibitions or used for educational programming. They should not be taken outside of secure work areas without curatorial supervision.

- Disseminate safe handling procedures to all staff and researchers. Thoroughly discuss procedures with staff and researchers and supervise handling of contaminated materials as necessary.

- Provide written handling procedures to researchers and visitors handling collections. Include this statement: "By signing this I acknowledge that I have read the above guidelines and have agreed to follow them in order to provide a safe working environment for my colleagues and myself. If I discover any white powdery or crystalline material on any object, I will stop work immediately and report this to the curator. I recognize that failure to follow these guidelines may result in my collection access privileges being revoked." Require a signature and date on the form, and maintain these records in your files.

- Post standard operating procedures for handling contaminated objects in storage and work spaces.

Resources

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2/1 Hazardous Materials Health and Safety Update

2/3 Arsenic Health and Safety Update (includes testing information)

2/4 Dichlorovos (Vapona) Update

2/10 Hazardous Materials in Your Collection

2/13 An Introduction to Respirator Use in Collections Management

2/14 DDT Health and Safety Update

2/16 Chronology of Pesticides Used on National Park Service Collections

2/17 Physical Properties And Health Effects of Pesticides Used On National Park Service Collections

Museum Handbook, Part I: Museum Collections. "Chapter 11: Curatorial Health and Safety". Washington, D.C. National Park Service, 2000.

U.S. Environmental Protection Agency. *Recognition and Management of Pesticide Poisonings*, 5th Edition. Washington, D.C.: U.S. Environmental Protection Agency, 1999.

World Wide Web Resources

Environmental Protection Agency: <http://www.epa.gov/pesticides>.

Agency for Toxic Substances and Disease Registry, Public Health Service: <http://www.atsdr.cdc.gov>.

The Society for the Preservation of Natural History Collections. Collections Forum <http://www.spnhc.org/documents/CF16-1_2.htm>.

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MSDS information on specific compounds:

MSDS Providers: <http://www.msdsprovider.net/Site/msdsprovider.nsf/about>

Cornell University: <http://msds.pdc.cornell.edu/msdssrch.asp>.

This C*onserve O Gram* was adapted from the handling procedures used at several museums, and from information presented at the symposium "Contaminated Collections: Preservation, Access, and Use", hosted by the Society for the Preservation of Natural History Collections, National Park Service, and the Smithsonian National Museum of the American Indian, April, 2001. Dealing with pesticide contaminated collections is a new area of research. As additional information becomes available, this C*onserve O Gram* will be updated. If you have specific health related concerns about pesticide contamination, contact an industrial health specialist.

The *Conserve O Gram* series is published as a reference on collections management and curatorial issues. Mention of a product, a manufacturer, or a supplier by name in this publication does not constitute an endorsement of that product or supplier by the National Park Service. Sources named are not all inclusive. It is suggested that readers also seek alternative product and vendor information in order to assess the full range of available supplies and equipment.

The series is distributed to all NPS units and is available to non-NPS institutions and interested individuals on line at <http://www.cr.nps.gov/museum/publications/conserveogram/cons_toc.html>. For further information and guidance concerning any of the topics or procedures addressed in the series, contact NPS Museum Management Program, 1849 C Street NW (NC 230), Washington, DC 20240; (202) 343-8142.