Guidelines for Pesticide Use in Plant Growth Facilities, CALS

Pesticides are an integral part of research and routine pest control maintenance at the College of Agriculture and Life Sciences, Cornell University. The Federal Environmental Pest Control Act (FEPCA) of 1972 and pesticide laws of New York State require that persons using "general use" and/or "restricted use" pesticides and employed by business or public institutions be certified applicators. The Cornell Pesticide Use Policy [part of Health and Safety Policy 8.6] also requires that anyone who applies pesticides, or supervises someone who applies pesticides become a certified pesticide applicator.

The Pesticide Management Education Program and Cornell Cooperative Extension are typically responsible for pesticide applicator training. Core and category training, are offered each winter and spring by the CALS Occupational and Environmental Health Program and is considered mandatory for applicators at Cornell.

I. General Guidelines

A. Be familiar with the Best Management Practices used in greenhouses; see your facility manager.

B. Be aware that the use of pesticides in growth chambers is PROHIBITED.

II. Pesticide Use

A. Personal Protective Equipment (PPE)

- Store PPE separately from pesticides.
- Be aware, in greenhouse applications, that the enclosed environment may increase the degree of toxicity of all pesticides regardless of whether they are labeled highly toxic or not.
- Read the label for proper PPE and clothing to be worn. The use of a respirator or air supply system will depend on the pesticide used. If a cartridge respirator is used, make sure the correct cartridge replacements are available on site.
- For all registered pesticide uses follow the direction on the label for PPE, clothing, and handling procedures.
- Consider all "experimental use" pesticides to be highly toxic (signal word: Danger), unless full toxicity date is available, and select PPE accordingly.

B. Preparation for Application

1. All pesticides used in the greenhouse should be clearly labeled for greenhouse use. All unlabeled uses require the applicator to have files containing efficacy data recorded on the form "Use of a Registered Pesticide in Research Mode." Be sure to record any special considerations of appropriate PPE for greenhouse environmental considerations.

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2. One area should be identified (posted) and used only for weighing and mixing pesticides. This should be located near soap, water and equipment storage.

C. Application

1. Greenhouse

Designated areas should be assigned for plants that need to be routinely sprayed so biological cultures (insects, diseases, etc.) will not be affected. The spray area should have appropriate posted signs and ventilation equipment.

Applicators should be familiar with Section I of the most recent Cornell Guidelines for Greenhouse Florist Crops, which contains general information about pesticides as well as directions for safe and effective use.

All areas where pesticides are used must be posted as required by the Worker Protection Standard. All experimental materials or unlabeled materials being tested should be treated as highly toxic for all purposes, including posting, unless full toxicity data is available.

All warning signs should be removed as soon as the Restricted Entry Interval has expired.

2. Growth Chambers

a. The use of pesticides in the form of sprays, dusts, aerosols and fumigants within the growth chamber is **PROHIBITED**. This prohibition is based on past experiences, which have shown that spraying has caused the following:

- The rapid deterioration of the reflective surfaces of the walls of the chambers.
- Decreased efficiency of the heating/cooling system due to the deterioration of component parts and the mechanical plugging of airways.
- Increased volatilization of the sprayed material due to the rapid air exchange within the chamber. This poses a potential hazard to individuals who must enter the chamber to make repairs or care for plant materials.
- Infiltration of sprayed materials into adjacent growth chambers due to inadequate seals on chamber doors.
- A residual presence of the sprayed material due to entrapment within the heating/cooling system.

b. Plant material in growth chambers found to be infested with insects or other pests should be removed to an appropriate location and treated. After drying time has passed, ventilation criteria have been met, and reentry time has passed per the pesticide label, plants may be returned to the growth chamber. Treated plants placed in the growth chamber should be labeled and a notice of treatment should be posted on the door.

c. The use of systemic insecticides is discouraged. If the use is unavoidable, the growth chamber door must be posted to serve as notice to potential entrants of the growth chamber. Include the following information:

i. the name of the systemic material used,
ii. name and phone number of the applicator,
iii. date of application, and
iv. any special precautions which should be taken prior to entry.

D. Clean Up and Disposal

Mix only enough pesticide for the job. If an excess amount is mixed it can be:

1. used on other plant materials listed on the pesticide label,
2. stored for future use, if stable, in a well-labeled container (follow label requirements for service containers), or
3. bottled and labeled for EH&S hazardous waste pickup. This is very undesirable and should be avoided, if at all possible.

Follow directions on the label for disposing of empty pesticide containers. Triple-rinsed containers may be legally disposed of in the dumpster. Exercise sensitivity toward any potential exposure of trash collection personnel through contact with residues.

Greenhouse sprayers should be filled and emptied inside of secondary containment.

Wash and clean reusable protective equipment after each use.

Proper disposal containers should be available and labeled for discarding contaminated equipment (gloves, pipettes, etc.).

E. Records

1. State law requires that a record of all pesticide applications be kept for a minimum of three years. You must be able to produce these records on demand.

2. For each unlabeled pesticide use, efficacy and other data required on the form “Use of a Registered Pesticide in Research Mode” must be kept on file.

3. A copy of the label and a copy of a Safety Data Sheet (SDS) for each formulation in use should be easily accessible to the building community with the location of this information clearly stated at the central posting location.

III. Storage of Pesticides

Store pesticides in the original intact container. All pesticide containers should be dated upon receipt and checked periodically for leakage and container integrity. See the handout "Fall Pesticide Cleanup Checklist" for further instructions. Materials that have passed the useful shelf life should be discarded through a hazardous waste pickup by Environmental Health & Safety.

Waterproof signs must identify pesticide storage areas.

Keep storage areas locked. Post name(s) and telephone number(s) of the person(s) responsible for access.

Telephone numbers for Emergencies (911), Cornell Police (5-1111), Environmental Health and Safety (5-8200) and the Central New York Poison Control Center (1-800-222-1222) are to be conspicuously posted on the pesticide storage facility and the nearest telephone.

Post an inventory list inside or close to the storage area. Update the inventory at least annually. Send a copy of the annual update to CALS Occupational and Environmental Health (attention: Eric Harrington), 416 Kennedy Hall, 215 Garden Ave.

Greenhouse personnel involved with pesticide storage should be knowledgeable about cleaning up after pesticide spills and decontamination. Spill control materials should be available at the storage site or mixing area for use in soaking up minor spills. Absorptive corn cob product (Slikwik^{R}) and other absorptive products are available through catalogs and local distributors.