Greenhouse Use Policy

College of Agriculture & Life Sciences
Cornell University

Policy Last Updated: November 8, 2007
Fees Updated: September 3, 2013
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1.0 Introduction and Mission Statement

This document is intended to define policy for the CALS greenhouses at Ithaca, inform facility users, and serve as a guide for day to day greenhouse operations. While there are some policy and operational differences among the individual greenhouse facilities, they are all managed in adherence to this general policy.

Mission

To provide the highest quality plant care services and facilities in support of the University's teaching, research, and extension programs.

Vision

To be a world-class plant care institution through continuous improvements in facilities, dedication to service, and employee development.

Focus

Service orientation and attention to the needs of all greenhouse users.
2.0 Greenhouse Management Structure

- The CALS research and teaching greenhouses are located as shown in the maps in Appendix A.
- Some greenhouse facilities have more specific policies that fall under this general greenhouse policy.
- The greenhouse manager recommends greenhouse policy to and reviews greenhouse space request trends with the CALS administration.
- The Greenhouse Faculty Advisory Committee evaluates and ratifies CALS greenhouse policy.
- Refer to Section 3.0 for personnel contact information.
3.0 **Contact Information**

**Cornell Police:**

**Emergency – 911.** 24-hour/day service  
Police, Fire, or Medical  
**For any situation in which there is an immediate concern to preserve life or property**

Non-emergency – 255-1111. 24-hour/day  
Police and security-related services for the Cornell community

**Environmental Health and Safety:**

255-8200 for 24-hour/day response to emergencies including chemical spills and environmental contamination. Provides chemical safety training and fire safety education.

**Facilities Customer Service:**

255-5322 to report urgent problems with building and infrastructure services, such as flooding or broken water lines.

**Greenhouse Management:**

Andy Leed (Manager) ARL6 at cornell.edu, 254-7266  
After hours 227-4595 or 659-3469

Melissa Brechner (Greenhouse Supervisor) MLK38 at cornell.edu, 255-2527  
After hours 227-5890

John Jantz (Greenhouse Supervisor) JPJ4 at cornell.edu, 255-2211  
After hours 327-2849 or 659-5845
4.0 Greenhouse Space Requests

- The Caldwell Road and Tower Road Greenhouse Complexes are available for use by Cornell-affiliated programs.
- Requests to use the greenhouses must be made through the Greenhouse Space Request website (URL and instructions available from greenhouse staff) before space can be allocated.
- Prospective users of the greenhouses are encouraged to contact the greenhouse managers to discuss their needs prior to submitting a formal space request.
- Information collected from the website requests is used by CALS and CCF to:
  - monitor greenhouse use;
  - assess demand for particular greenhouse features, such as evaporative cooling or supplemental lighting;
  - assist in policy formation and prioritizing facility renovation and construction projects.
- Users must provide a valid University account number before occupying the assigned space.
- Space will be assigned on a first-come first-served basis, consistent with policies governing the specific greenhouse requested.
- Requests for large areas, or having special requirements, may not be able to be filled without considerable delay. In these cases early consultation with the greenhouse manager is particularly important.
5.0 Fees

- Greenhouse space charges are collected to offset expenses for supplies, equipment, and personnel. Space charges are set by the CALS Administration in consultation with the Greenhouse Faculty Advisory Committee and the Greenhouse Management Committee.

- Greenhouse space charges are levied based on the bench area occupied. Where benches are not used, the fee will be based on the bench area that would normally be installed in the space, or the area actually used, whichever is greater.

- Greenhouse use charges are calculated on a monthly basis and billed for at the end of each calendar quarter.

- Space charges are the sum of two components:
  - Facility Use Charge (either of two levels)
    - Level One facility (neither HID lighting nor evaporative cooling available): $0.22 per square foot of bench area per month.
    - Level Two facility (either HID lighting or evaporative cooling available): $0.29 per square foot of bench area per month.
  - Labor Service Charge (Basic Plant Care – see Services Provided, Section 9.0 for more information)
    - $0.19/ft²/mo between July 1, 2013 and June 30, 2014
    - $0.21/ft²/mo between July 1, 2014 and June 30, 2015
    - $0.23/ft²/mo between July 1, 2015 and June 30, 2016

- Labor for Advanced Plant Care (see Services Provided, Section 9.0) will be charged for at a rate of $20.00 per hour, in quarter hour increments.

- Certain supplies, such as standard stock potting media, pots and trays, are included in the space charge; see Supplied Provided, Section 10.0. Supplies used for projects outside the greenhouses are not included in the space charge.

- These rates are current at the revision date of this document, and are subject to change and approval by the Division of Financial Affairs.

- Non-standard potting media and supplies not normally covered by the Facility Use Charge are billed for on a cost recovery basis. These charges are included in the quarterly billing.

- The following tables indicate the total monthly charge per square foot of bench area:
### July 1, 2013 – June 30, 2014 (FY2014)

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<tr>
<th></th>
<th>Level One Facility ($0.22)</th>
<th>Level Two Facility ($0.29)</th>
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<tr>
<td><strong>Basic Plant Care</strong></td>
<td>$0.41</td>
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### July 1, 2014 – June 30, 2015 (FY2015)

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### July 1, 2015 – June 30, 2016 (FY2016)

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<td>$0.52</td>
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6.0 Annual Renewal of Space Requests

- Long-term users of a greenhouse (greater than one year) must renew their space requests annually at the anniversary date via the Greenhouse Space Request website.
- Failure to renew the space request in a timely manner may result in the space being assigned to another user.
7.0 Exit Date

- In order to provide for efficient space allocation and the orderly transition from one greenhouse user to the next, users are required to provide a firm exit date with their space requests.
- If it becomes apparent that a project will extend beyond the stated exit date, contact the greenhouse supervisor or manager as soon as possible. Extension of the exit date may not be possible if a commitment has been made to provide the space to another user.
- Greenhouse users will be held to the stated exit date if another user is waiting to use the space.
- Users vacating greenhouse space before their stated exit date will continue to be charged until the stated exit date if no other user can be found to occupy the space.
- Users anticipating long-term occupancy (over one year) with an indefinite exit date should so indicate on the space request.
- When the completion date of a long term project is determined the space request must be renewed with a firm exit date, at least six months before vacating the greenhouse.
8.0  **Space Held in Reserve**

- To promote the fullest utilization of the greenhouses, unoccupied areas held in reserve at a user’s request *will be charged for* as if the space were occupied.
  - The fee for unoccupied space will equal the applicable facility use charge (Level I or Level II) plus the rate for basic plant care.
  - An exception to this is a period of up to 4 weeks before the user moves into an area vacated by another user.
  - Users wishing to reserve an unoccupied space for longer periods may ask the greenhouse manager to attempt to find a short-term user for the interim. There is, however, no guarantee that such an attempt will be successful.
9.0 Services Provided by Greenhouse Personnel

All plant material receives basic plant care unless the greenhouse user requests otherwise. The fee for basic plant care will be charged even if some or all components are declined by the user.

9.1 Basic Plant Care

- Watering 365 days a year
- Pest and disease scouting
- Cultural, biological and chemical pest and disease control
- Environmental control and setpoint adjustment
- Photoperiod control where possible
- Greenhouse maintenance
- Routine greenhouse sanitation
- Plant material autoclaving when needed (material must be harvested and properly bagged by the user)
- Routine application of fertilizer in accordance with user’s request
- Seasonal application of shade material

9.2 Advanced Plant Care

- Requests for Advanced Plant Care should be included on the Greenhouse Space Request and negotiated with the greenhouse manager prior to the occupation of space.
- Advanced Plant Care is optional and charges for at a rate of $20.00 per hour.
- Advanced Plant Care is provided as resources allow.
- All Basic Plant Care is included, plus ANY of the following:
  o Plant propagation (seed sowing, cuttings, grafting etc.)
  o Transplanting or re-potting of material
  o Pruning or trimming
  o Staking or tying off plant material
  o Harvesting
  o Extra services requested by the greenhouse user
10.0 Supplies Provided

The following routine supplies will be provided:

- Standard potting media, currently:
  - Lambert LM-111 growing mix
  - Lambert germination mix
  - Cornell mix (prepared on-site)
- Selected sizes and styles of bamboo stakes, twist ties and pot labels
- Plastic trays with various cell pack inserts
- 4” and 6” pots
- 1, 2 and 3 gallon nursery pots
- Selected cell trays
- Pesticides and biocontrol organisms in quantities and types typically sufficient

There will be a charge for supplies that are removed from the greenhouses, rendered unfit for reuse (if normally reused) or used in large quantities in short cycles. This charge will be determined based on actual supply usage above that typical for the area and duration of greenhouse occupancy.

The following supplies will be provided at an additional charge:

- Special order or custom potting mixes:
  - Soilless
  - Soil-based
- Mix components:
  - Vermiculite
  - Perlite
  - Peat
  - Sand
- Pest control materials above and beyond the norm in quantity or type:
  - Specialized pesticides required by the greenhouse user
  - Excessive applications of beneficial insects or other biocontrol agents

NOTE: Contact greenhouse staff for details regarding supply use and location.
11.0 **Greenhouse Users’ Responsibilities**

Facility users must share the responsibility for quality plant care with the greenhouse staff. Open communication regarding plant care needs will facilitate optimum plant care, reduce problems and promote productive relationships between users and staff.

Greenhouse users are financially responsible for all aspects of project-specific greenhouse or research equipment. Permission must be obtained from the greenhouse manager prior to installing equipment as it could interfere with greenhouse controls and function, or the work of other greenhouse users. Examples include shade and blackout curtains, humidification systems, lights of any sort, mist benches, tanks and trellises not included in the basic greenhouse infrastructure.

**User responsibilities include:**

- Thoughtfully completing the web-based greenhouse space request (see Section 4.0) with particular attention to the following:
  - space requirements
  - supplies needed
  - start up date
  - exit date
- Potting and spacing plants properly to ensure air movement, access for watering and pest control measures (see Sections 14.0 and 15.0).
- Communicating plant care issues (pests and diseases, fertility, etc.) promptly to appropriate greenhouse staff.
- Keeping growth and work areas sanitary and orderly.
- Using proper pot size and pot filling technique to provide plant stability and reduce watering demands.
- Repotting, supporting and pruning of plants as needed to keep them manageable.
- Taking care to keep potting soil out of sink and floor drains.
- Terminating experiments and discarding plants in a timely manner.
- Providing proper bags for autoclaving plant material when necessary.
- Submitting a list of names and photocopies of identification cards of all certified applicators and WPS (Section 19.0) trained personnel in the user group.
- Communicating with greenhouse management BEFORE bringing any plant material into the greenhouses (Section 13.0).
- Receiving clearance from the greenhouse manager prior to installation or placement of project-specific greenhouse or research equipment.
12.0 Communication

- So that the greenhouse staff can best address users’ needs, please promptly inform the greenhouse staff and/or manager of:
  - alarms
  - pests on plants
  - malfunctioning equipment
  - any situation that you think may require attention
- Users should respond without delay to queries or requests from greenhouse staff.
- Notify the greenhouse manager promptly of changes in project requirements.
- If requested, the greenhouse staff will give users advance notice of pesticide applications or other greenhouse closures by email.
- Whenever possible, notice of pesticide applications will be posted on the entrance to the affected greenhouse section 24 hours in advance.
13.0 Bringing Plants into the Greenhouses

- The greenhouse supervisor or manager must be given reasonable advance notice before plants are brought into the greenhouses.
- Incoming plants will be inspected for pests and diseases.
- Pest control measures or quarantine may be required before moving plants into the assigned greenhouse.
- In certain cases of pest infestation or disease, plants may not be allowed into the greenhouses.
- If plants are brought into the greenhouses without advance notification, it cannot be guaranteed that they will receive care.
14.0 Potting

- Consult with the greenhouse supervisor or manager before choosing a pot size.
- Pots must be of adequate size to support the expected size of the plants and to reduce watering requirements.
- Fill pots to 80-85% full (or just above the shoulder) after settling, in order to provide sufficient headspace for watering.
- Repot into larger pots before plants require watering more than twice daily.
- Repot into larger pots before tall plants become prone to toppling over.
- If these requirements are incompatible with the experimental design, consult the greenhouse manager.
15.0 Spacing Plants

- Consult with the greenhouse supervisor or manager before determining the plant spacing to be used.
- Plants must be spaced far enough apart to allow for:
  - adequate airflow
  - watering without wetting foliage
  - scouting for pests
  - access for pest control measures
- Request enough greenhouse space to accommodate plants at their ultimate size and spacing.
16.0 Housekeeping

16.1 General

Integrated Pest Management starts with a clean greenhouse. The greenhouse facilities are in operation 365 days per year and may be toured or inspected at any time. Users are required to assist with general clean up to maintain a safe, sanitary, and orderly work environment for fellow researchers and support staff.

General housekeeping requirements for users are:
- Clean worktables and/or potting benches after potting.
- Clean floors and benches during and after terminating experiments.
- Discard material from large experiments as they are terminated directly to outdoor compost bins.
- Use compost and trash cans provided. Replace lids to reduce insect and disease potential.
- Clean sinks after each use and limit the amount of soil going down drains.

The greenhouse staff also performs general clean up, but needs assistance from users when work demand is high and/or large experiments are being discarded. In cooperation with the users, the staff will:

- Wash and/or sweep floors of greenhouses and potting areas at least once per week;
- Empty trash and compost cans once per week;
- Sanitize and disinfect houses between users, or whenever possible in continuous use areas;
- When possible ASSIST projects with large clean up tasks.

16.2 Storage

Storage space within the greenhouse facilities is limited. Please contact facility management to discuss storage options. Items left in the greenhouse without prior approval from management may be removed by the greenhouse staff.
17.0 Best Management Practices at Cornell

All greenhouses on the Cornell campus in Ithaca practice Best Management Practices (BMPs).

BMPs are practices that achieve environmentally optimum management of water, nutrients and pest control materials in greenhouses.

All individuals who work in and around greenhouses on the Ithaca campus -- including greenhouse staff, faculty, technicians, undergraduate and graduate students, the CU Grounds Department, and maintenance staff -- must follow the Cornell BMPs.

The Best Management Practices are divided into eight major categories of greenhouse activities:

1. Pesticide Storage
2. Fertilizer Storage and Nutrient Management
3. Pest Control
4. Interior and Exterior Weed Control
5. Housekeeping
6. Composting
7. Maintenance
8. Renovation and New Construction

Greenhouse staff are fully trained in the expectations of Cornell's BMPs. All other faculty, staff and students are expected to work with the greenhouse staff to minimize the potential or actual discharge of pesticides and fertilizers to the drain system.

At a minimum, all greenhouse users must:

- Store all pesticides and fertilizers in designated locations and follow facility procedures for secondary containment and labeling.
- Mix pesticides and fertilizers over secondary containment.
- Keep greenhouses clean to prevent the development of disease and insect problems.
- Water with care.
- Report maintenance problems (e.g., leaky pipes, damaged glazing) to the greenhouse staff and/or manager.

For a complete copy of Cornell's BMP Plan, visit http://oeh.cals.cornell.edu/BMPplan.htm or contact Mary-Lynn Cummings, 607-255-2557 or mc101 at cornell.edu.
18.0 General Safety

- Safety takes the highest priority at Cornell.
- Communicate with the greenhouse managers when you see an unsafe condition or act.
- Cooperate with the managers to ensure your own safety, as well as that of your colleagues.
- Know the location of all safety equipment, including fire extinguishers, emergency showers and eyewashes, phones, and first aid kits.
- Know the emergency evacuation procedure for your area.
- Know where to find safety information, including material safety data sheets and pesticide labels.
- Know where emergency phone numbers are posted.
- Closed-toed shoes must be worn.
- No food or drinks are allowed in plant growth areas or areas of possible pesticide contamination.
- No smoking is allowed in plant growth areas or areas of possible pesticide contamination.
- Attend Worker Protection Standard training if you will work with pesticide-treated plant materials.
- Employees and students handling pesticide-treated plant material are strongly encouraged to wear gloves and to wash their hands after working in a greenhouse.
- Only a commercial pesticide apprentice, certified commercial technician, or certified commercial pesticide applicator may make pesticide applications at Cornell.
19.0  Pesticide Use and Selection

This section delineates the specific procedures for application of pesticides in greenhouses operated by the College of Agriculture and Life Sciences (CALS) in Ithaca. For more detailed information about pest control in greenhouses, please refer to the following:

- *Integrated Pest Management for Bedding Plants: A Scouting and Pest Management Guide*
- *Guide for the Integrated Management of Greenhouse Florist Crops*
- *Cornell University Health and Safety Policy 2.4*  
  (http://www.univco.cornell.edu/policy/HS.for.html)

*Pest Management Guidelines* can be ordered from the Cornell Resource Center, 607-255-2080.

All pesticide applications must be in compliance with the Cornell University Health and Safety Policy 2.4, New York State and Federal regulations.

Requirements

- Any person who applies pesticides in a CALS greenhouse will be a New York State (NYS) certified commercial applicator, technician or apprentice.
- Whenever possible, pesticides will be used that are labeled for greenhouses, the correct crop and the identified pest.
- Whenever possible, pesticides used in the greenhouse will have a 12-hour or less restricted-entry interval (REI).
- Given two products with the same active ingredient, the NYS Department of Environmental Conservation (DEC) considers the greenhouse-labeled product to be formulated such that it is more effective and less harmful to workers than a field-labeled product.
- The Federal Worker Protection Standard must be complied with at all times.

Basic Procedure

- This document applies to all pesticides and experimental pesticidal products applied in CALS greenhouses, including granulars, horticultural soaps, plant growth regulators and oils. A pesticide is considered to be any product that has a federal EPA registration number or is exempted from the requirement for a registration number based on 40 CFR 152.25. Experimental products are dealt with in detail in a later section.
- The greenhouse staff makes pesticide applications in CALS greenhouses on an as-needed basis.
- A researcher may not make pesticide applications to his/her own crop in the greenhouse unless approved by the greenhouse supervisor or manager.

Worker Protection Standard (WPS) Posting

The Worker Protection Standard requires two kinds of posting: 1) application information
displayed in a central area and 2) a warning sign displayed near a treated area.

Central Posting: The WPS requires that a pesticide application list be posted at the central posting area. The pesticide application list must include:
- the location and description of the area to be treated,
- product name, EPA registration number, and active ingredient(s) of the pesticide,
- time and date the pesticide is scheduled to be applied, and
- restricted-entry interval for the pesticide.

The pesticide application information should be recorded on the application list and displayed before the application takes place. If the pesticide is not applied as scheduled, the applicator must list the corrected time and date that the application takes place, either before the application or as soon as practical thereafter.

Pesticide-specific information must be displayed until:
- at least 30 days after the restricted-entry interval expires, or
- at least 30 days after the end of the application, if there is no restricted-entry interval for the pesticide.
- removed by the greenhouse supervisor/manager or designated trained staff.

Posting Warning Signs: In greenhouses, “Keep Out” signs must be posted so that they can be seen from all points where workers usually enter the treated area, including doorways, aisles, and other walking routes. When there are no usual points of worker entry to the treated area, the signs must be posted in the corners of the treated area or in places where they will be seen easily.

- Post signs 24 hours or less before the scheduled application of the pesticide.
- Keep signs posted during the application and throughout the restricted-entry interval. If the REI = 0, the signs can be removed when the application is complete.
- Remove the signs within 3 days after the end of the restricted-entry interval. If there is no restricted-entry interval, remove the signs within 3 days after the end of the application.
- Keep workers out of treated area during the entire time the signs are posted (except for trained and equipped early entry handlers).
- Keep signs visible and legible while they are posted.
- Certified pesticide applicators or designated trained staff are responsible for WPS central posting and warning sign display/removal.

Responsibilities for WPS Implementation in CALS Greenhouses

Note: For more information about the Worker Protection Standard, see Section 20.0

- If a crop is treated in a designated area and returned to the greenhouse when the residues are dry, then the greenhouse or the treated crop must be posted with the warning sign throughout the restricted-entry interval. Workers can enter the treated
area without early entry Personal Protective Equipment (PPE) (as identified on the product label) if they have no contact with pesticide residues on the plants, in the soil or planting medium or in water (drainage water or hydroponic solutions).

- The applicator is responsible for updating the pesticide application list on the central posting board.
- The applicator or designated greenhouse staff will ensure that the label notebook in the central posting area contains a current label and MSDS for all products used in the greenhouse.

**Pesticide Products Registered for Use in the Field**

Given the choice between two or more products with the same active ingredient, the product labeled for greenhouse use will be preferable to that labeled for field use, even if the field product lists the crop on the label and the greenhouse label does not list the crop. Pesticide selection based on greenhouse site takes precedence over crop. When a greenhouse label that does not include the crop is used instead of a field label, small-scale phytotoxicity testing will be needed to verify the product’s efficacy and lack of harm to the crop. Field products will only be given consideration in cases where phytotoxicity testing reveals a problem with the greenhouse product or existing greenhouse products with the pest on the label are no longer effective.

The greenhouse supervisor/manager will keep a master list of products that will include efficacy and phytotoxicity data for tested crops. Research groups can access the list in order to make pest control decisions in consultation with the greenhouse supervisor/manager.

Field products can be used in CALS greenhouses under a very limited number of circumstances:

- Existing greenhouse products with the pest on the label are no longer effective or cause physiologically relevant phytotoxicity.
- There is not a product with the same active ingredient registered for use in greenhouses.

In the case that field products must be applied, the following conditions must apply:

- The greenhouse staff must make the maintenance pesticide application and are responsible for complying with WPS requirements.
- Because of unknown consequences of using field products indoors, the REI is automatically doubled. If the doubled REI is greater than 12 hours, then the product must be applied in a designated area determined by agreement between the researcher and the greenhouse supervisor/manager.

**Experimental Products**

For purposes of this discussion, an experimental product is any product intended for pest
control or plant growth regulation that is not registered in New York State for the intended use. An experimental product may have federal registration but not NY registration, or it may not be registered at all. Three circumstances may require the application of experimental products onto crops grown in CALS greenhouses:

1. Research is being conducted on the efficacy of the experimental product,
2. The crop requires a maintenance application, and no registered greenhouse or field product is available for the particular crop/pest complex, or
3. No registered greenhouse product is available for the particular crop/pest complex, the crop requires a maintenance application, and an experimental product has a shorter REI or other environmental or health benefit that justifies its preferred use over a registered field product.

When experimental products without federal registration are applied, the following conditions apply:

- WPS does not apply to experimental products being tested for efficacious properties. Therefore, there is no requirement for posting the application area, or for posting pesticide applications on the designated central posting board within the greenhouse [Ref. 40 CFR 170.103(j)]. However, the Greenhouse Management Committee in consultation with the Assistant Director, CALS OEH strongly recommend that WPS posting procedures be followed in the interest of employee safety and health.
- The Greenhouse Management Committee in consultation with the Assistant Director, CALS OEH strongly recommends that researchers and pesticide applicators should consult MSDS and the Assistant Director to determine proper PPE when working with compounds without WPS requirements.
- Plant maintenance staff should wear nitrile gloves when in the posted area for three days after the application if they will come into contact with pesticide residues on plants, in the soil or planting medium, or in water (drainage water or hydroponic solutions).
- If the active ingredient does not have a tolerance or an exemption from a tolerance, then any food or feed commodity to which it is applied must be destroyed.

When experimental products with an EPA registration number, but without New York State registration are applied, the following conditions must be met under a research mode:

- If the REI is for field applications, then the REI must be doubled, per the requirements for field products applied in the greenhouse. If no REI has been identified for the product, then a 72-hour REI will be enforced. Any REI > 12 hours requires that the plants be treated in a designated area determined by agreement between the researcher and the greenhouse supervisor/manager.
- If multiple products with multiple REIs are being applied to crops within one greenhouse during overlapping periods, the entire house will be under a REI until 1) the REI with the last expiration time is completed or 2) until three days (72 hours) after the last application. Note: Method 2 simplifies calculations but may result in a
more conservative REI.

- The pesticide applicator is responsible for posting warning signs in the treated area throughout the REI.

- Plant maintenance tasks in the designated research area will be done by either greenhouse or research staff who possess a minimum of WPS Handler training. The determination of plant maintenance responsibilities will be by agreement between the researcher and greenhouse manager.

- If plant maintenance staff will come into contact with pesticide residues on plants, in the soil or planting medium, or in water (drainage water or hydroponic solutions), then they must wear the PPE identified on the pesticide label of the product with the most protective PPE required for early entry work.

**Interpretation**

Any questions regarding interpretation of this document and/or any questions about specific pesticide application decisions in the CALS greenhouses should be brought to the attention of the greenhouse supervisor/manager. When necessary, these discussions will be referred to pest management experts within the College.
20.0 The Worker Protection Standard

The Worker Protection Standard (WPS) is a federal regulation intended to reduce the risk of pesticide poisonings and injuries among agricultural workers who are exposed to pesticide residues. At Cornell, the WPS applies to all employees, including undergraduate student employees and graduate students, who handle pesticide-treated plant materials.

The WPS requires Cornell to assure that untrained workers receive basic pesticide information before they work with treated agricultural plants. Any employee, including students, and students who handle agricultural plant materials as part of a research project must attend a training session 1) if those plant materials are treated with any type of pesticide, and 2) if the work with the plant material occurs within 30 days of the expiration of the restricted entry interval of the pesticide. Any employee who has not attended the complete WPS training before initial exposure to pesticides or pesticide residues must complete a form entitled “Basic Pesticide Training Requirements for Workers” [http://oeh.cals.cornell.edu/basicwps.html].

Employees must attend WPS training within 5 days of beginning to work with pesticide-treated plant material. Certified pesticide applicators do not need to attend.

All individuals who work in a greenhouse must be aware of:

- the location of the central posting board for their work area. The central posting board contains pesticide safety information, emergency numbers, and a pesticide application list for the facility.
- the need to attend and understand WPS training.
- the location of a decontamination site, equipped with clean water, soap and single-use towels, and a change of clothes (e.g., a coverall or Tyvek® suit).
- their right to receive emergency assistance should there be reason to believe that they have been poisoned or injured by a pesticide.
- the required posting of all greenhouse applications (the “Keep Out” sign).
- the severe restrictions on access to treated areas during the restricted-entry interval (REI).

Untrained visitors (those not holding NYS pesticide applicator or WPS handler certification) must not enter the posted area during the REI.

All untrained visitors must receive training to enter a greenhouse when an REI is not in effect. Training is related to the amount of time spent in the greenhouse.

- Visitors who will be in CALS greenhouses for up to 8 hours must receive instruction regarding precautions via the “WPS Instructor’s Prompt” (available from the greenhouse supervisors or manager).
- Visitors who will be in CALS greenhouses for more than 8 hours will need to
attend Worker Protection Standard training.

More about REIs

Access to greenhouses is severely restricted during a restricted-entry interval (REI) when the “Keep Out” sign is posted on the greenhouse door. The WPS allows entry into a treated area that remains under a REI only in three specific work situations:

- Short-term tasks that last less than 1 hour and do not involve hand labor,
- Emergency tasks that take place because of an agricultural emergency, and
- Specific tasks approved by EPA through a formal exception process.

Anyone that must perform an early entry task must:

- Wait at least 4 hours after the pesticide application is completed, and
- Wait at least until any inhalation exposure level listed on the product labeling has been reached or any WPS ventilation criteria have been met, and
- Spend no more than 1 hour in a 24-hour period on short-term early-entry tasks or do only those tasks relating to mitigating an emergency situation.

Anyone performing early-entry work must be provided with:

- Personal protective equipment
- Any protections required by the pesticide labeling for early-entry tasks
- Protections that are the same as for other workers:
  - Information at a central location
  - Emergency assistance
  - Restrictions during applications
  - Notice about applications
- Training and instructions
- Decontamination sites

Cornell strongly discourages any greenhouse entry during a restricted-entry interval.

More information about the Worker Protection Standard is available from the greenhouse supervisors or manager.
21.0 Biohazardous and Transgenic Plant Materials

All research involving transgenic plants must be registered with the Institutional Biosafety Committee (IBC). For more information, visit http://www.osp.cornell.edu/Compliance/IBC.html.

Certain plants must be autoclaved before disposal, including those that are:

- transgenic
- virus-infected
- legally quarantined
- otherwise biologically hazardous
- otherwise required to be autoclave by research protocols

Project personnel are responsible for:

- purchasing autoclave bags;
- bagging hazardous plant material;
- working with greenhouse staff to ensure the material is autoclaved, and
- depositing the autoclaved bags directly into dumpsters, not into building garbage cans.

Autoclave users must be trained and must follow facility scheduling procedures. Autoclave bags with biohazard symbols or wording must not be used.
22.0 Keys

- Requests for keys should be directed to the greenhouse supervisor and/or manager.
- A security deposit is required.
- A record is kept of all keys issued to provide improved security and a tracking method for lost keys.
- Facility keys must NOT be copied.

Contacts for key requests:

- Caldwell Road Greenhouse Complex:
  John Jantz (GH Supervisor) JPJ4 at cornell.edu, 255-2211
  Andy Leed (Manager) ARL6 at cornell.edu, 254-7266

- Tower Road Greenhouse Complex:
  Melissa Brechner (GH Supervisor) MLK38 at cornell.edu, 255-2527
  Andy Leed (Manager) ARL6 at cornell.edu, 254-7266
23.0 When Things Go Wrong

If there is an immediate concern to preserve life or property, call 911.

Caring for the diverse collection of plant material in the campus greenhouses requires a wide range of skills and understanding by all staff members. The greenhouse staff are trained and experienced in most aspects of plant care, and are here to provide service and assistance to greenhouse users. In situations where care does not meet expectations, communication failure is most likely the problem. If your expectations are unmet, we ask that you first share your concern directly with the staff member in your area. The greenhouse staff members are expected listen to and try to understand your concerns, attempt to resolve the situation, and inform the greenhouse supervisor when appropriate. All greenhouse staff members are trained to promote dialogue that will enhance plant care and address the concerns of the users. If you have previously approached a staff member regarding a concern, and have not received satisfactory results, please contact the supervisor or manager of the area. The supervisor and manager are responsible for coverage of the facility and can be reached at the addresses and numbers listed in Section 3.0 of this policy.
24.0 When Things Go Right

Year round coverage for specialized teaching and research material can be quite demanding, and we know that the reliability and dedication of the greenhouse worker who bears the brunt of this load is appreciated. Please take the time to express your appreciation for a job well done to the support person in your area, or their supervisor.
25.0 Chemical Use

No chemical may be taken into the greenhouses or associated facilities without prior consent of the greenhouse supervisor or manager. Permission to use chemicals is temporary and only those that are being actively used (at least once per month) may be stored in the greenhouses. Chemicals used less frequently must be transported to and from the greenhouse for each use unless special arrangement is made with the greenhouse manager.

It is the user’s responsibility to ensure that all applicable chemical labeling, signage, notification, transportation, storage, exposure, and usage laws and regulations are fully complied with.

The greenhouse manager may ask that University Environmental Health and Safety personnel be consulted before giving permission for use of potentially hazardous materials.

Greenhouse users must:
- Contact the greenhouse supervisor or manager before bringing any chemicals into the greenhouse or associated non-laboratory areas such as growth chambers, headhouses, hallways and storage cabinets.
- Comply with all applicable OSHA Hazard Communication Standard (29 CFR 1910.1200) requirements, including those for labeling, Material Safety Data Sheets (MSDSs), and inventories. Refer to the fact sheet “Using Chemicals in CALS Greenhouses” for guidance.
- Label containers with owner’s name and telephone number.
- Work with the greenhouse supervisor or manager to ensure that Material Safety Data Sheets are readily accessible to all employees.
- Work with the greenhouse supervisor or manager to maintain an up to date on-site inventory of all chemicals used or stored at the facility.
Greenhouse Use Policy

Appendix A: Site Plans

Cornell Ithaca Campus
Caldwell Road Greenhouse Complex
Tower Road Greenhouse Complex