

PLANT GROWTH FACILITIES MANAGEMENT AND OPERATIONS POLICY

April 26, 2019 Revision

I. Introduction

The policies and guidelines outlined in this manual have been developed by the College of Agricultural, Human, and Natural Resource Sciences (CAHNRS) Plant Growth Facilities (PGF) Advisory Committee, and have been approved by the Director of the Agricultural Research Center (ARC) to allow for the efficient and effective use of the CAHNRS Plant Growth Facilities. Our mission is to provide quality plant growth space which is functional, clean, and pest-free.

II. Administration - Management of the facilities will be shared among the PGF manager, PGF Advisory Committee, and the ARC Director.

A. ARC Director

B. Advisory Committee - The Advisory Committee is comprised of representatives from WSU faculty, staff, and ARS personnel who work in the plant growth facilities. The committee advises the manager and director on matters related to the PGF.

C. PGF Manager - The manager's responsibilities include:

1. Managing overall operations, application of policies, and training of users (faculty, staff, and graduate students) in use of facilities;
2. Monitoring user compliance to PGF policies and resolving differences;
3. Overseeing the setting of environmental controls (refer to Sect. IV-C, Environmental Controls);
4. Maintaining an inventory of current projects;
5. Monitoring the condition of the facilities and equipment and arranging for repair when necessary;
6. Maintaining accurate records on use assignment and other information pertinent to the management of the PGF;
7. Purchasing and maintaining an inventory of supplies.
8. Managing the budget and invoicing for PGF activities.

D. Conflict Resolution - Any conflict which the PGF manager cannot resolve will be addressed by the following process:

1. ARC Director will be consulted
2. PGF Advisory Committee consulted for advice if requested by ARC Director
3. The decision by the ARC Director will be final.

III. Space Assignment Procedure

The intent of this policy is to ensure efficient and compatible use of all greenhouse and growth chamber space. While every effort will be made to accommodate space requests, compromise is often necessary. Compromise may include reduction in space allocations or requests, relocation of certain activities to other greenhouse/growth chamber facilities, and deferred approval.

Space allocation will be reviewed on an ongoing basis and adjustments made as necessary. It is essential that all users of the PGF greenhouse and growth chambers follow best practices and standards for pest control, sanitation, and disclosure of pesticide use according to the PGF Manager's direction. Non-compliance with these practices, policies and procedures will result in the loss of space, the reassignment of space, or the inability to reserve space.

A. Space use

1. Space is assigned, by request, in the PGF greenhouse and growth chamber facilities which include: 111 (Entomology), 114 East and 114 West, 118, 119, 122 and 122A (wheat research and small grains). CAHNRS departments and affiliated USDA/ARS units are the primary users of space for research and teaching activities.
2. The space within the wheat research and small grains greenhouses, 122 and 122A, is primarily assigned to the departments of Crop and Soil Sciences, Plant Pathology and affiliated USDA/ARS scientists with an emphasis in wheat and grain legume research activities within the disciplines of plant breeding and cultivar development; genetics; biotechnology; plant pathology; entomology; and stress physiology.

B. Space Assignment

1. To reserve PGF greenhouse and/or growth chamber space, a space request form is completed and sent to the PGF manager. Forms are available online at the PGF website (<http://pgf.wsu.edu/greenhouse-goods-services-fees/>). Click on the "Space Request Page" form button.
2. The PGF Manager has been delegated authority to assign space from the Director of the Agricultural Research Center. The PGF Manager's decision will be final.
3. Researchers cannot sublet or share space after assignment.
4. There are no permanent space assignments. Space requests can be renewed but renewals are not guaranteed.
5. Location for research involving pathogens, insects, or herbicides which can create compatibility problems must be mutually agreed upon by the PGF Manager and researcher(s) before space is assigned.
6. Unused or unneeded space reverts back to PGF for reassignment.

IV. Operating Rules

A. Sanitation

1. Project leaders are responsible for seeing that their workers clean all areas in which they work. Equipment will be provided for sweeping and washing.
2. Users are required to keep plant material and debris off of the floor.
3. The greenhouse staff is not responsible for cleaning space after it has been assigned.
4. All plant and soil material not in use must be removed and disposed of properly. Check with the PGF Manager or staff for the correct dumping sites for your space. PGF staff may remove plant materials from PGF if a requested timely removal is not performed.
5. Experiment termination
 - a. Project leader or his/her representative is responsible.

- b. All plant material, soil and supplies must be removed from the growth area when the project is finished. Supplies must be placed in designated areas for cleaning or disposal. Plant and soil materials must be disposed of appropriately.
 - c. Benches and floor will be left clean within one week after an experiment is terminated.
 6. The PGF is not a storage facility or processing area for field research materials.
 7. Cleaning fee: — It is expected that PGF users will abide by PGF policies and leave all common areas and equipment clean and available for the next user. It is also expected that assigned greenhouse and growth chamber space will be used in compliance with sanitation policies and be left clean when vacated. A cleaning or sanitation fee will be assessed if the PGF staff must perform any cleaning or sanitation duties.
- B. Plant Production
 1. Plant maintenance - Researchers will do all potting, crossing, maintenance, harvesting and termination of experiments.
 2. Plants must be grown from seed to seed (or termination) in the same growth area.
 3. Moving plants from one growth environment to another is not allowed without the knowledge and approval of the PGF Manager.
 4. Movement of plants or plant tissues into the PGF facilities requires prior approval by the PGF Manager. Any and all plants may be subject to quarantine. Any plants or plant tissues brought into facilities without the PGF Manager's approval are subject to immediate removal by PGF staff without notification.
 5. PGF users that move or introduce plants into the PGF will jeopardize their future use of PGF space and will be required to cover the control costs of any pests or diseases introduced. The ARC director will be consulted if required.
- C. Environmental controls - including lighting
 1. Controls will be set by the PGF Manager or greenhouse staff. The PGF Manager and greenhouse staff are experienced in the operation of the PGF environmental control systems and how they work. There are many different systems that have their own peculiarities. If researchers receive permission to set their own controls, environmental parameters must be agreed upon between the researcher and the PGF Manager.
 2. Control precedent will be granted to the research project occupying the space first. When more than one project is in one greenhouse, controls will be determined by mutual agreement. The PGF Manager will take these needs into consideration when assigning space.
- D. General
 1. Any modification of the PGF will not be allowed without permission from the PGF Manager.
 2. Equipment provided for general use shall be returned clean and in good repair.
 3. All materials and equipment brought into the PGF must be for use in the facilities. All support materials must be stowed away in designated areas.
 4. Only plant materials should be in the growing area. All support materials should be

stowed away in designated areas.

5. No personal plants are allowed in the PGF.
- E. Growth of controlled plants and microorganisms
1. Growth and disposal of transgenic plants and controlled microorganisms will follow procedures described by federal, state, and WSU guidelines. The Institutional Biosafety Committee (IBC), through the Office of Research Assurances, has a biosafety webpage (www.bio-safety.wsu.edu/biosafety/). Forms and templates and other biosafety information are available from this website. All planned GMO projects must be approved through the ARC office.
- F. Use of hazardous materials (toxic or radioactive)
1. Federal, state and WSU guidelines regarding the use and disposal of hazardous materials must be followed. Information is available at the Environmental Health and Safety website (www.ehs.wsu.edu/) under the heading "Environmental Services/Hazardous Waste."
 2. All use of radioactive materials must be done only by authorized users under the direction of the Radiation Safety Office. Information is available at their website (www.rso.wsu.edu/) under "Basic Guidance for New and Prospective Users."
- V. Services/Supplies
- A. The PGF manager will provide a general potting mix for all users. Potting mixes that are purchased for specific projects must be purchased by that project and stored elsewhere.
 - B. A selection of pre-washed pots and trays of different sizes will be available and listed on the PGF webpage.
 - C. Fertilizer for injectors, and controlled release fertilizer in areas without injectors.
 - D. Hoses, water breakers, wands, etc.
 - E. Selection of plastic pot labels and plant stakes.
 - F. Soil disposal for uncontaminated soil mix and non-GMO plant materials
 1. For Buildings 111, 114, 119, 817, and 817A, there is a disposal site located north of Building 114, section 4.
 - a. Soil and plant material brought to this site are transferred to the Compost Facility and must be free of herbicides, plastic, wood, paper products, metal, or other materials that will not break down quickly with composting. It is the responsibility of the user to remove such material or be charged for its removal.
 - b. Transport of materials to the site should be done with equipment that will contain everything and not leave a trail from the growth area to the site.
 2. Soil and plant materials can also be placed in reddish-brown painted metal bins outside of head houses. These bins are transported by PGF staff to the compost disposal site.
 3. The disposal site for Building 122 is located at the southeast end of the building.
 - a. Soil and plant material brought to this site will be transferred to the compost yard for composting and must be free of herbicides, plastic, wood, paper products, metal, or other materials that will not break down quickly with composting. It is the responsibility of the user to remove such material or be charged for its

- removal.
- b. There are containers provided in the building that are marked for soil and plant materials only and these should be dumped at the disposal site every time they are used.
- G. Disposal of GMO plant and soil materials, and plant materials and soils contaminated with pathogens.
1. Arrangements must be made with PGF staff for method and location of disposal.
 2. Materials must be free of plastics, wood, paper products or metal before disposal.
- H. Disposal of soil and plant materials contaminated with residual herbicides
1. Users are responsible for removal and disposal of these materials including complete sanitation or labeling of plastic trays or carts where this material was used.
 2. No materials that are contaminated with residual herbicides may be disposed of at the composting site.
- I. Pest management at Plant Growth Facilities
1. PGF employees routinely monitor greenhouses for pests and perform control methods which include pesticide application.
 2. Any precautions related to monitoring or pest control must be specified in the space request form.
 3. All users and workers are notified 24 hours in advance of pesticide applications. This includes posting at greenhouse main entry and/or an email. Email will note anticipated restricted entry interval (REI) for area.
 4. Any non-PGF employee making an application of a registered pesticide for research must obtain a Pesticide Applicator license. Any registered product that is licensed as a pesticide must be applied by a licensed Pesticide Applicator who has been pre-approved by the PGF Manager. This includes products such as growth regulators and/or pesticides used for research.
 5. Users must vacate greenhouse facility during pesticide applications. Warning signs are posted.
 6. Greenhouse zones where pesticides have been applied are closed for the REI. Posted warning signs will note reentry time.
 7. All users and workers in the greenhouses are required to attend Worker Protection Standard (WPS) training once every year unless they possess a valid Washington state pesticide license. Classes last one hour and are taught by the PGF staff.
 8. A minimum of 30 days of pesticide application records are kept at a designated central location in the greenhouses. Records are maintained for seven years.
 9. Safety Data Sheets (SDS) and chemical inventory are located at a central location.
- J. Use of Registered Pesticides and Growth Regulators for Research Purposes
1. Make sure that any registered pesticides or growth regulators are part of your approved greenhouse project plan with supporting product documentation, product and SDS label.
 2. Any non-PGF employee making an application of a registered pesticide for research

- must have or obtain a Washington State Department of Agriculture (WSDA) Pesticide Applicator license before any such applications can be performed.
3. Any registered product that is licensed as a pesticide must be applied by a licensed Pesticide Applicator who has been pre-approved by the PGF Manager. This includes products such as growth regulators and/or pesticides used for research.
 4. All Worker Protection Standard guidelines must be followed for all non-PGF employees making pesticide applications.
- K. Mineral soil container storage.
- L. Advice and technical assistance from professional staff.

Signature Page
For

PLANT GROWTH FACILITIES MANAGEMENT AND OPERATIONS POLICY

Please supply this page with your request for greenhouse and growth room/chamber space request.

I accept the terms of the Plant Growth Facilities Management and Operations Policy:

Signature _____

Date _____