

# **TPSS Magoon Facilities User Policy and Procedures – 2019**

Updated from 2014 April 03, Approved by TPSS Faculty 2019 Sept 12.

The TPSS Magoon Research Facility consists of five glasshouses, four shade-houses and open field areas. The larger shade-house is partially covered. Another glasshouse is set up for use with transgenic plants, if necessary. The head house contains all the support facilities for greenhouses including a shop, cold room, drying oven, pesticide and fertilizer storage and a teaching classroom.

## **EMERGENCY CONTACT NUMBERS** (Reviewed 2019 August 22)

**Security** 956-6911

Craig Okazaki Facility Supervisor(FS) - Tropical Plant & Soil Sciences  
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Jonathan Deenik Department Chair (DC) - Tropical Plant & Soil Sciences  
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Mark Burch CTAHR Health & Safety Specialist  
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## **LOCATION**

The Facility is located at: 2717 Woodlawn Ave. Honolulu HI, 96822 Opposite Manoa Market Place.

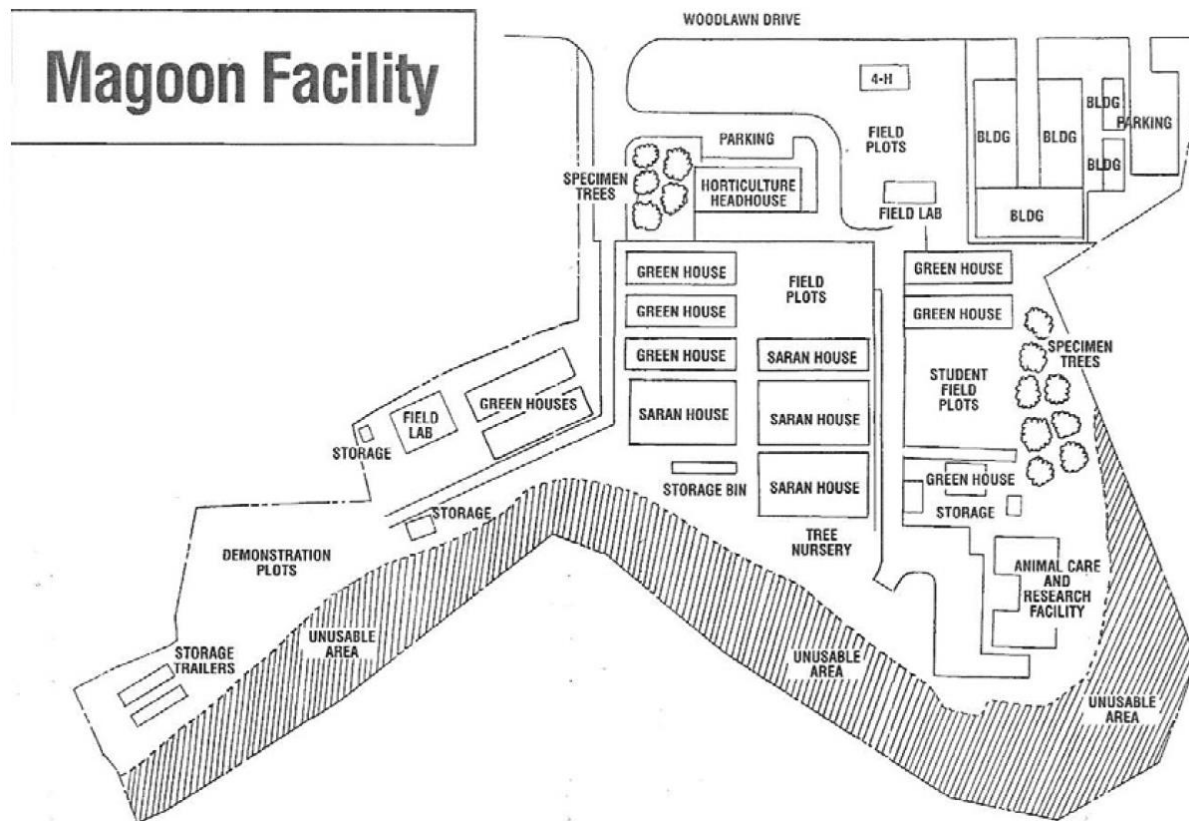
## **HOURS OF OPERATION**

7:00 am to 3:45 pm Monday through Friday (Excluding State and Federal Holidays)

## **GENERAL POLICY**

It is CTAHR's and TPSS policy to provide a safe and secure working environment to the TPSS Magoon Research and Instructional Facilities and its workers. Access and security is crucial at all times. All doors must have limited access (authorized entry only) and kept locked at all times when no authorized users are present. Signs are to be posted "No Unauthorized Entry". Staff must be specifically trained for the specific security needs of the greenhouse facilities.

All Faculty, Staff, Students and authorized users will be issued with a copy of this manual and asked to sign that they have received a copy and they will abide by the rules and procedures when a space allocation is granted.



No.	Structure	
1	Glasshouse	Priority for Student Laboratory Use
2	Glasshouse	
3	Glasshouse	
4	Shadehouse	Anthurium Plant Breeding
5	Shadehouse	
6	Shadehouse	Orchid Breeding
7	Shadehouse	
8	Glasshouse	
12	Glasshouse	Approved for transgenic plants - Biosafety Level 2-P
	Student Field Plots	
	Research Field Plots	
	Research Field Plots	
	Turf plots	

## Summary of Services Provided at Magoon Instructional and Research Facility

The following is a summary of the services provided by the Magoon staff. It is always advisable to check with the Facility Supervisor for staff availability and procedures to request these services. All Instructional related services have priority.

### Can Be Provided

- Proper pesticide, fertilizer, GR, etc. application per user's request based on their interpretation of the label
- Assist with the Experimental setup
- Installation and Maintenance of Irrigation Systems
- Coordinates landscape and grounds maintenance
- Coordinate all inspections by regulatory agencies
- Coordinate and submit all FAC Maintenance work request for the facility

- Coordinate all required safety training for staff
- Operate all Magoon power equipment, bobcat, & carts
- Keep all Hazardous Materials Applications Records
- Proper maintenance of Magoon equipment
- Proper upkeep of safety gear & supplies used by staff
- Department Chair is the direct supervisor for Magoon staff

### **Requiring Special Request**

- Assist with data collection and post harvest records
- Assist with class/lab setup as needed. Ag Tech does not teach; per se
- Assist with college or university events held at the Magoon TPSS facility
- Pickup supplies on "Will Call" for users

### **Cannot Be Done**

- No modifications/repairs to water mains
- No installation/modification to any electrical infrastructure
- No modification of building infrastructure without FAC approval
- No installation/modification to glass structures
- No Restricted Use Pesticide application; unless user has Category 10 Demonstration / Research Pesticide Applications License.

## **VISITORS AND ACCESS TO THE MAGOON FACILITY**

1. Access to Greenhouse Complex is limited to authorized users.
2. FS must be informed of all visits/tours and they must be accompanied by a TPSS/UH representative at all times. Children must be under adult supervision at all times.
3. Approach any visitor that appears to be wandering in the area and ask if you can help direct them.
4. Do not enter a facility where pesticides are being applied and before the safe entry interval have passed and the warning signs removed.
5. After normal business hours, the Magoon head-house doors, gates, greenhouses and shade houses must be locked when not in use. Any authorized after-hour user is responsible for building security. To minimize the likelihood of unauthorized access, all after-hours building users should:
  - i. Avoid providing building access to unfamiliar individuals.
  - ii. Secure doors behind you, check that the doors are secured and locked.

- iii. Immediately report any building security problem to Campus Security or to law enforcement official.

**CTAHR and TPSS reserve the right to restrict admittance to any portion of the TPSS Magoon Research and Instruction Laboratory for security reasons.**

## **FACILITY SUPERVISOR (FS) RESPONSIBILITIES**

1. The Magoon facility supervisor is under the supervision of the Department Chair.
2. The FS acts for the Department Chair in ensuring the facility is operated in a safe and professional manner.
3. The FS in coordination with the TPSS DC will implement Magoon policies. Duties expected of the FS include:
  - i. Coordinates and implements the routine maintenance and sanitation program for the Magoon Facility as outlined in the table below.
  - ii. Submits Work Orders to Facilities Management for repairs and keeps a log of submission date and when the repairs are carried out.
  - iii. The FS will work with TPSS Departmental Staff to coordinate space usage by receiving requests for space
  - iv. Ensures the accuracy of the space allocations and compile a summary report for the DC upon request.
  - v. Coordinate payment of Magoon Facility expenses with the TPSS Office staff from approved user fees.
  - vi. Provide notification to users that fail to follow these policies and request consultation from the DC to address policy violations.
  - vii. Provides facility orientation for new greenhouse users.
  - viii. Take all necessary precautions to ensure that the premises and property is secure. In case of any emergency or other criminal and/or life threatening incident contact the appropriate responder and immediately contacts immediate supervisor of the nature of the emergency.
  - ix. Ensures the proper security measures such as alarm, video camera and perimeter fencing to deter and monitor potential intruders are installed, and working properly.
  - x. Posts appropriate signs and warnings.

- xi. Supervises, coordinates, and participates in the proper maintenance of infrastructure and equipment of the Magoon facility.
- xii. Instructs greenhouse users on operational procedures.
- xiii. Schedules and provides direction to Facility staff for daily activities. xv). Trains and supervises part-time workers directly under his/her supervision. xiv). Assists with the activities of greenhouse users. xv). Provides guidance on pesticide recommendations and schedules application of pesticides as requested with timely notification of all users of planned applications. xvi). Consults and coordinates activities with other University operated greenhouses.

## **FACILITIES USER'S RESPONSIBILITIES**

1. Space is available for use by University faculty, professional staff, or students, and affiliated personnel.
2. Users are responsible for the planning, implementation, maintenance and successful completion of projects conducted in facilities.
3. Users should plan to interact frequently and directly with facility Staff.
4. Faculty members are responsible for the organization and supervision of their students' use of the facilities.
5. All first time users are required to schedule an orientation covering services, facility Policies and Procedures
6. Submit a request for space well in advance of the anticipated experimental start date.
7. The PI is responsible for all materials and supplies that are required for their work.
8. Submit written work requests to the FS indicating any special requirements that are outside of the facilities regular maintenance and sanitation program.
9. It is the responsibility of each user to ensure that plants are healthy and free of diseases and other pests.
10. It is requested that any work activity that produces debris on floors and table surfaces at Magoon be cleaned up prior to leaving for the day. A plastic tarp can be requested to help with clean up in work areas.
11. Glasshouse and shade-house plant and soil recyclable biowaste should be discarded outside the building in the assigned bins outside of Shadehouse #4.

12. Maintain their projects in a professional manner following accepted standards for cleanliness, neatness, and sanitation. To maintain a facility wide appearance of safe and efficient use, dispose of dead plants, store empty pots and seldom used supplies in assigned storage space. Media and other supplies can be retrieved from storage and made available to users with a timely request to the FS. Assigned storage space should be checked regularly; anything deemed unusable (i.e., bags of solidified fertilizer, barrels of hydrated lime and soil etc.) should be removed and disposed of by the PI.
13. Application of pesticides and fertilizers must be requested by the users.
14. **NO alternations may be made to the greenhouse, shade-house structures or the head-house without prior approval.** This includes removal of benches, making attachments to any structure (greenhouse, shade-house), disabling or modification of any utilities (electrical, water, etc.) or control system.
15. On September 30 of each year, a brief progress report (CRIS reports acceptable) is requested to describe how the space was used, what program objectives were achieved. Users are also encouraged to provide electronic copies of all publications connected to space utilization at Magoon. These are valuable information for the Magoon Annual Progress Report as well as prioritizing the space assignment for new and existing users during a shortage of space.
16. Follow proper procedures for the termination of the project and cleanup.

## **APPLYING FOR BENCH SPACE**

1. TPSS faculty and courses have priority in space allocation. Surplus space will be rented to other CTAHR or UHM faculty or student groups upon approval of the FS and DC.
2. Prior to requesting space, a meeting with the FS should be arranged to determine space availability and any special needs and growing conditions that will be required.
3. Application forms may be obtained from the TPSS Web Site at <http://manoa.hawaii.edu/ctahr/tpss/administration> Applications will be reviewed and approved by the FS upon consultation with the DC.
4. Space request forms from TPSS and CTAHR faculty must include the project number of an approved Hatch or Extension Project and an account number that can be accessed with a UH purchase card.
5. Regardless of the time of year that the space request is made, all space requests end on September 30 of each year. A new space request must be submitted within the allocation cycle that starts on Oct 1 of each year and ends on September 30 of the following year.

Current users with an approved space allocation have priority to renew the same space provided requests are submitted and received by September 30 of each year.

6. A space allocation request when recombinant DNA Material is involved must include a copy of the approved Institutional Biosafety Committee number and protocol. Glasshouse (#12) has been set aside for growing transgenic plants. Any plant growing activity in glasshouse #12 must follow all the regulations required of transgenic plants. More details are provided at the end of this document.
7. Educational users are requested to provide a course syllabus at least a week before classes begin to assist the Magoon staff in scheduling. Classes have first priority on the use of space in Glasshouse #1 and outside field areas. Since outside growing space for instruction is limited, requests must be placed no later than 2 months before the semester starts to avoid scheduling conflicts. At the end of each semester, all plant materials, pots and other supplies must be disposed by the instructor to clear room for the next user.
8. Space may be rented out to student associations for growing products for plant sale; TPSS faculty sponsorship is required.
9. All digitally submitted space applications forms should be submitted as soon as possible to ensure that delays do not occur in your research. A 1-month lead time is recommended to insure all users' requirements can be met.
10. To accommodate as many users as possible, in-pot irrigation should be considered whenever possible. Overhead irrigation must be contained within user's assigned space. Magoon staff will assist users with the planning, purchase and setup of bench top irrigation systems. Magoon staff will provide automatic water service to the bench top (as available); users are responsible for all water dispersal hardware. No changes are to be made to the plumbing infrastructure.
11. If small research experiments require accurate and specific light and/or temperature control, users are encouraged to apply for space in the Pope Laboratory greenhouses or the Departmental growth chambers located there.
12. When bench space usage is terminated notify FS as soon as possible, so that the space can be allocated to another user.

## **WORK ORDER REQUEST PROCEDURE**

The Magoon facility (09/30/2019) has 2 technicians to provide a facility-wide assistance for all work orders placed with the FS . The FS will assess the nature of the work requests and the availability of technicians' time and assign the appropriate technician to the project. Users can request help for tasks such as the application of pesticides, potting mix preparation, area clean up, and preparation of cuttings or potting up plants.



1. In order to ensure an efficient work flow, all job orders must be placed at least 1 week ahead of time, preferably by Friday noon, via email, so that the FS has enough time to schedule all job orders for the following week.
2. Given that there are only 2 technicians to assist more than 20 users, services will be provided depending on the availability of technicians and on a first-come first-serve basis.
3. All technicians have been trained in specialized areas of plant production. However, they are not expected to be knowledgeable in all plants and growing tasks. If a particular technician is assigned to an unfamiliar research area or task, it is the responsibility of the user to train the technician in the required technical skill and knowledge for that specific project.

## **CHECK-IN PROCEDURE**

1. Upon approval of your space application, an orientation tour will be available to the principal investigator and their support team to explain procedures and regulations for using the Magoon facilities.
2. Clean and empty benches will be provided to the new approved user.
3. **Plants brought from outside must be free of insects and disease. If you plan to do disease related research you should request space in the PEPS greenhouses. Before bringing any new plants to Magoon facility, user must notify the FS at least 2 working days prior to their arrival. An inspection of plants by the FS and the user will determine if a quarantine period is required prior to exposure to the general population of plants in approved use areas. An on-site quarantine area will be provided to disinfest plants that cannot be treated prior to importation to the Magoon facility. Due to the shared nature of the Magoon facility it is incumbent upon all users to contribute to the safe and efficient management of the plant growing spaces.**
4. It is the responsibility of all users to follow all state and federal quarantine regulations relating to the importation of plants, plant parts and seeds from outside of the state of Hawaii.
5. By October 1<sup>st</sup> (i.e. Federal Fiscal year starts), a request to extend the space allocation into the coming year is due. The FS will review the request will be provide a notification within 15 working days.

## **KEYS**

1. Once greenhouse space is assigned, a facility key will be issued.

2. The issuance of head house requires TPSS Chairman's approval and keys are issued by the TPSS secretary.
3. A deposit is required for all keys issued to students and non-permanent TPSS faculty and staff. Lost keys mean a forfeiture of the original key deposit.
4. Keys should be returned immediately upon completion of the project and the deposit will be returned.

## **CLOSE-OUT PROCEDURES**

1. Upon completion of a project, retirement, or termination of employment, the user will schedule a meeting with the FS one week in advance to carry out an exit interview.
2. All benches, floor below the benches and storage space will be returned to the FS in as good a condition as it was given to user. User is responsible to dispose of all left over plant materials and/or supplies used for the project. Any damages will also be charged to the PI of the project.
3. Keys are to be returned to the TPSS secretary.

## **FEES**

A bench rental service system is required to cover the cost of Facility operations, continuously accommodate space for TPSS users, and facilitate an efficient turnaround of greenhouse space. The pay-for- space system will allow users equal opportunity to rent bench space for research, extension and teaching needs.

1. All TPSS faculty can request 24 ft<sup>2</sup> (8 ft. x 3 ft) of bench at no charge. However, a space request form will be required to obtain this space and all rules for facility usage apply.
2. Current rates for bench space at Magoon facilities:
  - i. Glasshouse benches \$.06/ft<sup>2</sup>/week
  - ii. Saran House benches \$.06/ft<sup>2</sup>/week
  - iii. Outdoor space \$0.06/ft<sup>2</sup>/week.
3. Space used for teaching (including directed research projects for credit) will be billed to TPSS departmental education support account.
4. Payment for space will be made by the withdrawal funds from accounts accessible with a UH P-card. Users will be notified of need to debit their accounts and instructed to sign a P-card reconciliation log and provide a signed account use permission form on or around 14th of each month.

5. Users do not need to be P-card holders but accounts provided to pay fees must be accessible with a UH P-card.
6. Direct transfers to the Magoon UH revolving fund account, once established, can also be used to pay for Magoon users' fees.
7. Special assessments may be made to meet crucial maintenance needs at the Magoon Facility. All users will be first notified of this special assessment and the amount being assessed. After notification has been sent the user's account of record will be used to cover the assessment, unless the user provides an alternative account number.

## Maintenance and Sanitation Table

The Magoon maintenance and sanitation program is intended to maintain the facility in a clean and professional manner. Users are requested to clean up their work areas after activities such as potting up plants, pruning plant parts, soil drying and weed removal from their plants. Magoon staff will not clean up after users that make a mess and then leave for others to remove. Your cooperation will be greatly appreciated.

Wheel barrels will be located in the Magoon Head house for users to fill and then dispose of green waste and non-green waste in designated areas. Do not use and leave trash can(s) in the growth structures, return clean and empty cans when finished with their use.

Activity	
<b>Sanitation</b> 1. Address PI's Pest Scouting report.	For all assigned areas.
<b>Upon PI request to eliminate pest refuges:</b> 1. Sweep, shop vacuum or hose floors, 2 Remove weeds, no spray unless PI agrees. 3. Litter and debris pickup 4. Control weeds around structures	All Areas and Structures.
<b>Common Areas Litter and debris pickup</b>	All Common Areas.
<b>Common &amp; Instructional Resource Areas</b> (does not include areas used by student clubs or fund raising activities) 1. Prune/Water/Fertilize/Weed, beds and trees 2. Mow and edge turf and grass areas	As needed. Mow and edge turf and grass areas at least monthly. Log Work-Order submission to Facilities
<b>Equipment</b> 1. Check visually, all electrical (fans, controller, devices), vents, plumbing, structural, drainage. 2. Lubricate vent mechanism monthly..	Submit work-order for repairs immediately
<b>Irrigation systems</b> Check for leaks, hose couplings etc	Repair immediately or Submit Work-Order, if necessary

## HEALTH AND SAFETY

1. Reporting Accidents and Unsafe Conditions – PI, students and employees should report accidents and deficiencies to the Facility Supervisor and their faculty supervisor or project PI, **immediately**. Employees may also report directly to the TPSS Chairman.

2. All users including students are required to take the University's Laboratory Safety Training available at <http://www.hawaii.edu/ehso/lab/training.htm>. The facility is regarded as a laboratory environment. This means that the wearing of closed toed shoes is required and eye protection where applicable.
3. Know the location of all safety equipment, including fire extinguishers, emergency showers and eyewashes, phones, and first aid kits.
4. Know the emergency evacuation procedure for your area.
5. Know where to find safety information, including material safety data sheets and pesticide labels.
6. Know where emergency phone numbers are posted.
7. No food or drinks are allowed in plant growth areas or areas of possible pesticide contamination. Employees and students handling pesticide-treated plant material are strongly encouraged to wear gloves and to wash their hands after working in a greenhouse.
8. No smoking is allowed in plant growth areas or areas of possible pesticide contamination.
9. All electrical devices for things such as lighting, circulating pumps and timing must be rated for exterior use. These devices are required to have an Underwriters Laboratory UL certificate stamp or other approved certification. Devices must be visually inspected before use and any device that shows obvious damage or with frayed or cracked cords cannot be used.
10. **Extension Cords and Outlets** – Use of extension cords and outlets in a wet environment may lead to electrocution or fire. The EHSO Policy on Extension Cord Usage can be found at: <http://www.hawaii.edu/ehso/industrial/Extension.pdf>. In summary, use extension cords only on a temporary basis (unplugged at the end of the work day) and not as a replacement for permanent wiring. Cords **cannot** be run through holes in walls, ceilings, or floors; through doorways, windows, or similar openings and cannot be attached to building surfaces or in any way concealed behind building walls, ceilings, or floors. The use of unapproved extension cords is a violation of both OSHA, HIOSH and National Fire Protection Association codes. **In addition**, this Magoon Users Policy requires that electrical cord are fully inserted into the outlet. Slack is necessary in flexible electrical cords to prevent tension of electrical terminals. Unplug all cords when not in use. Users must check the integrity of electrical cords regularly. Only three conductor grounded electrical cords rated for outdoor use with a molded three prong plug and sockets and approved by recognized laboratories (such as Underwriters Laboratory) may be used. The cord should be rated for at least 15 amps at 125 VAC (14/3 or 12/3) and not longer than 25 feet. Do not connect a device or devices using an electrical cord that exceeds 12 amps. A waterproof electrical cord cover or box is recommended at the connection to the electrical device.  
[http://www.osha.gov/OshDoc/data\\_Hurricane\\_Facts/elect\\_safety.pdf](http://www.osha.gov/OshDoc/data_Hurricane_Facts/elect_safety.pdf).
11. Any modification to the electrical infrastructure requires pre-inspection by the Facilities Management Electrical Engineer. The electrical engineer will prepare a quote for the electrical work, if required, based on a UH Facilities Work Request. The Work Request is prepared and submitted via an online system by the TPSS office staff. The PI is responsible to cover all costs related to electrical infrastructure modifications. The request for the inspection should be made through the FS.
12. Users are responsible for identifying pesticides labeled for use on their plants. Pesticides must be delivered to FS with a copy of pesticide label and SDS (e.g.

Greenbook.net and CDMS.net ).

13. Magoon staff will only make pesticide applications according to product labeling for crop safety and in compliance with state and federal laws governing the use of pesticides. An actionable pesticide application request will include the following: a) the trade name of the pesticide, b) a PI's description of where on the label their requested application is described, c) a use rate for the requested application and d) a time frame for the application (e.g. "within the next 2-4 business days").
14. Any pesticides and/or fertilizers obtained by the PI can be offered to Magoon management for general station use or removed from the facility. The Magoon facilities will not serve as a clearing house for these items and long term storage on site is not an option.

## General Contingency Plans

The following emergency procedures are recommended if there is fire, explosions, or other accidents including pesticide related accidents. These procedures are intended to limit injuries and minimize damage if an accident should occur.

1. Render assistance to persons involved and remove them from exposure to further injury if necessary and if it can be done without endangering yourself; do not move an injured person not in danger of further harm.
2. In a medical emergency, summon medical help immediately.
3. Contact Campus Security (x66911)
4. Warn personnel in adjacent areas of any potential hazard to their safety.
5. Render immediate first-aid (e.g., beginning resuscitation if breathing has stopped; help washing under a safety shower).
6. In case of fire, call the fire department. If a portable extinguisher is available extinguish the fire.
7. Secure affected area and prevent entry of others until after help has arrived.
8. Contact EHSO (x63201 or x63198) if accident involves as hazardous chemical.
9. Document what happened, why, what was done, and what was learned.

## PLANT CONTAINMENT - RECOMBINANT DNA MATERIAL

1. The Institutional Biosafety Committee (IBC) Policy requires that any research, teaching, or testing activity that involves the use of potentially hazardous agents (biological, chemical or rDNA) or the construction or use of genetically engineered organisms requires review by the Institutional Biosafety Committee (IBC) **before** beginning the project. It is the researcher's responsibility to obtain the required permits for growing transgenic plants and to follow the proper isolation protocols.  
<http://manoa.hawaii.edu/ovcrge/research/ibc/index.html>.
2. A notation of the use of transgenic organisms must be made on the Space Application Form. An inventory of the plant material to be grown is required. A copy of the approved STANDARD OPERATING PROCEDURES (SOP) and BIOSAFETY CHECKLIST FOR PLANT CONTAINMENT must be attached.
3. The principal purpose of plant containment is to avoid the unintentional transmission of a recombinant DNA-containing plant genome, including nuclear or organelle hereditary material or release of recombinant DNA-derived organisms associated with plants.

4. The containment principles are based on the recognition that the organisms that are used pose no health threat to humans or higher animals (unless deliberately modified for that purpose), and that the containment conditions minimize the possibility of an unanticipated deleterious effect on organisms and ecosystems outside of the experimental facility, e.g., the inadvertent spread of a serious pathogen from a greenhouse to a local agricultural crop or the unintentional introduction and establishment of an organism in a new ecosystem.
5. TPSS Facilities Glasshouse #12 may only be used for plants that are not a noxious weed or cannot outcross with one, not easily disseminated and are not a detriment to environment. These are from suggested criteria for assigning biosafety levels (Traynor et al., 2001. "Practical Guide to Containment" Virginia Tech.).

**Two levels of facilities exist at Magoon.** From comparison of standard practices for containment of plants in greenhouses (Traynor et al., 2001. "Practical Guide to Containment" Virginia Tech.)  
 URL: [http://www.isb.vt.edu/greenhouse/green\\_man.intro.cfm](http://www.isb.vt.edu/greenhouse/green_man.intro.cfm)

	<b>BioSafety Level 1-P</b>	<b>Biosafety Level 2-P</b>
<b>Entry</b>		Locks on entry ways Posted Responsible Individual and contact information
<b>Screening</b>	Recommended	30 mesh or higher required
<b>Floors</b>	Impervious walkways recommended	Impervious material: collection of run-off may be required
<b>Other</b>		Autoclave available
<b>Access</b>	Discretionary Personnel must read and follow instructions	Access restricted to required persons only Personnel must read and follow instructions
<b>Procedures</b>	Appropriate for organism. Record of experiments in facility.	Greenhouse manual to advise of consequences; give contingency plans. Records kept of experiments and movement in/out of greenhouse
<b>Containment</b>		Containment required for movement in/out of greenhouse.
<b>Disposal</b>	Biological inactivate experimental organisms at the end of experiment. Pest control program	Biological inactivate experimental organisms at the end of experiment. Decontaminate gravel periodically Pest control program
<b>Controls</b>	Appropriate caging and precautions for escape of motile organisms	Appropriate caging and precautions for escape of motile organisms.