

Plant Biosafety Level 3 Checklist, UF Biosafety Office

PI's Name: _____ Date: _____ Bldg./Rms: _____

Standard Practices

		Yes	No
1	Access to the greenhouse is restricted to only those required for project or support purposes. A facility entry/exit log is used to document access.	<input type="checkbox"/>	<input type="checkbox"/>
2	Visitors are escorted at all times and receive training on safety and maintenance of containment prior to their entry.	<input type="checkbox"/>	<input type="checkbox"/>
3	The greenhouse facility perimeter must remain locked 24/7. Master keys are not permitted. Inner doors may remain unlocked during normal work hours dependent on the organism(s) and project(s) underway.		
4	Prior to working in the greenhouse, personnel are required to read and follow instructions on BSL3-P greenhouse practices and procedures as described in the facility manual. All procedures are performed in accordance with accepted greenhouse practices that are appropriate to the experimental organism.	<input type="checkbox"/>	<input type="checkbox"/>
5	The BSL3-P greenhouse practices and procedures should be reviewed and updated annually, and as projects change.	<input type="checkbox"/>	<input type="checkbox"/>
6	A record is kept of projects, experimental plants, microorganisms, or small animals that are brought into or in use in the greenhouse facility.	<input type="checkbox"/>	<input type="checkbox"/>
7	Experimental plants, microorganisms, or small animals are well identified with sturdy markers or labels that will hold up in a greenhouse environment.		
8	All experimental materials shall be sterilized in an autoclave or rendered biologically inactive by appropriate methods before disposal, including water that comes in contact with experimental microorganisms or with material exposed to such microorganisms, and contaminated equipment and supplies.	<input type="checkbox"/>	<input type="checkbox"/>
9	Materials containing experimental microorganisms, which are brought into or removed from the greenhouse facility in a viable or intact state, are transferred in a closed non-breakable container. The container must be surface disinfected with an appropriate disinfectant.		
10	No live or potentially contaminated items may be removed from the BSL3-P greenhouse/facility without Biosafety Office permission.	<input type="checkbox"/>	<input type="checkbox"/>
11	The Principal Investigator immediately reports any greenhouse accident involving the inadvertent release or spill of microorganisms to the Greenhouse Director and Biosafety Office. As applicable, further reporting to the Institutional Biosafety Committee, NIH/OBA and other appropriate authorities is done by the Biosafety Office. Documentation of any such accident is prepared and maintained.	<input type="checkbox"/>	<input type="checkbox"/>
12	A program is implemented to control undesired species (i.e. weed, rodent, or arthropod pests and pathogens), by methods appropriate to the organisms and in accordance with applicable state and Federal laws.	<input type="checkbox"/>	<input type="checkbox"/>
13	Arthropods and other motile macroorganisms shall be housed in appropriate cages. When appropriate to the organism, experiments shall be conducted within cages designed to contain the motile organisms.	<input type="checkbox"/>	<input type="checkbox"/>
14	The use of insect traps (black light, sticky board, etc) shall be used to monitor for pests or escaped insect vectors.	<input type="checkbox"/>	<input type="checkbox"/>

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| 15 | A greenhouse practices manual is prepared or adopted. The manual should: 1) advise personnel of the potential consequences if such practices are not followed, and 2) outline contingency plans to be implemented in the event of an unintentional release of organisms. | <input type="checkbox"/> | <input type="checkbox"/> |
| 16 | Experiments involving other organisms that require a containment level lower than BSL3-P may be conducted in the greenhouse concurrently with experiments that require BSL3-P containment provided that all work is conducted in accordance with BSL3-P practices. | <input type="checkbox"/> | <input type="checkbox"/> |
| 17 | A sign is posted to indicate that a restricted experiment is in progress. The sign indicates: 1) the name of the responsible individual, 2) the plants in use, and 3) any special requirements for using the area. | <input type="checkbox"/> | <input type="checkbox"/> |
| 18 | If organisms that have a recognized potential for causing serious detrimental impacts on managed or natural ecosystems are used, their presence is indicated on a sign posted on the greenhouse access doors. | <input type="checkbox"/> | <input type="checkbox"/> |
| 19 | If there is a risk to human health, a sign incorporating the universal biosafety symbol is posted. | <input type="checkbox"/> | <input type="checkbox"/> |
| 20 | Disposable clothing (e.g., solid front or wrap-around gowns, scrub suits, or other appropriate clothing) shall be worn in the greenhouse if deemed necessary by the Greenhouse Director because of potential dissemination of the experimental microorganisms. | <input type="checkbox"/> | <input type="checkbox"/> |
| 21 | Protective clothing shall be removed before exiting the greenhouse and decontaminated prior to laundering or disposal. | <input type="checkbox"/> | <input type="checkbox"/> |
| 22 | Personnel are required to thoroughly sanitize/wash their hands upon exiting the greenhouse or greenhouse facility | <input type="checkbox"/> | <input type="checkbox"/> |
| 23 | All procedures shall be performed carefully to minimize the creation of aerosols and excessive splashing of potting material/soil during watering, transplanting, and all experimental manipulations. A biological safety cabinet is recommended for this purpose, and may be required by federal regulation. | <input type="checkbox"/> | <input type="checkbox"/> |
| 24 | Federal permit requirements may specify packages of imported foreign material are opened only in a biological safety cabinet. Packaging must be autoclaved before removal from the BSL3-P facility. | <input type="checkbox"/> | <input type="checkbox"/> |

Facilities and Equipment

- | | | Yes | No |
|----|--|--------------------------|--------------------------|
| 25 | An autoclave shall be available for decontaminating materials within the greenhouse facility. A double-door autoclave is recommended (not required) for the decontamination of materials passing out of the greenhouse facility. | <input type="checkbox"/> | <input type="checkbox"/> |
| 26 | An autoclave log book must be used to document use. | <input type="checkbox"/> | <input type="checkbox"/> |
| 27 | The autoclave must receive regular maintenance. Proper function shall be verified with biological indicator vials at an interval of at least every 40 hrs. of autoclave run time. | <input type="checkbox"/> | <input type="checkbox"/> |
| 28 | Vacuum lines shall be protected with high efficiency particulate air/HEPA or equivalent filters and liquid disinfectant traps. | <input type="checkbox"/> | <input type="checkbox"/> |
| 29 | The term "greenhouse" refers to a structure with walls, a roof, and a floor designed and used principally for growing plants in a controlled and protected environment. The walls and roof are usually constructed of transparent or translucent material to allow passage of sunlight for plant growth. | <input type="checkbox"/> | <input type="checkbox"/> |
| 30 | The term "greenhouse facility" includes the actual greenhouse rooms or compartments for growing plants, including all immediately contiguous hallways and head-house areas and is considered part of the confinement area. | <input type="checkbox"/> | <input type="checkbox"/> |
| 31 | The greenhouse facility shall be surrounded by a security fence or protected by equivalent security measures. | <input type="checkbox"/> | <input type="checkbox"/> |

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- 32 The greenhouse floor shall be composed of concrete or other impervious material with provision for collection and decontamination of liquid run-off. Floor drains shall be capped and sealed unless piped to an effluent decontamination system.
- 33 Windows shall be closed and sealed. All glazing shall be resistant to breakage (e.g., double-pane tempered glass or equivalent).
- 34 The greenhouse shall be a closed self-contained structure with a continuous covering that is separated from areas that are open to unrestricted traffic flow. The minimum requirement for greenhouse entry shall be passage through two sets of self-closing locking doors.
- 35 Directional airflow from clean to dirty and a vestibule (double door entry) to contaminated areas are present. The minimum requirement for greenhouse entry shall be passage through two sets of self-closing locking doors.
- 36 An individual supply and exhaust air ventilation system shall be provided. The system maintains pressure differentials and directional airflow, as required, to assure inward (or zero) airflow from areas outside of the greenhouse.
- 37 The exhaust air from the greenhouse facility shall be filtered through high efficiency particulate air-HEPA filters and discharged to the outside. The filter chambers shall be designed to allow in situ decontamination before filters are removed and to facilitate certification testing after they are replaced.
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- 39 The supply and exhaust airflow shall be interlocked to assure inward (or zero) airflow at all times.
- 40 Internal walls, ceilings, and floors shall be resistant to penetration by liquids and chemicals to facilitate cleaning and decontamination of the area. All penetrations into these structures and surfaces (e.g., plumbing and utilities) shall be sealed.
- 41 Bench tops and other work surfaces should have seamless surfaces that are impervious to water and resistant to acids, alkalis, organic solvents, and moderate heat.
- 42 The greenhouse contains a foot, elbow, or automatically operated sink, which is located near the exit door for hand washing.
- 43 BL3-P greenhouse containment requirements may be satisfied using a growth chamber or growth room within a building provided that the location, access, airflow patterns, and provisions for decontamination of experimental materials and supplies meet the intent of the foregoing clauses.
- 44 Condensate from growth chamber(s) shall be collected and disinfected prior to disposal.
- 45 A biological spill kit is required in the facility in areas where contaminated liquids or soil is located.
- 46 Consideration for the containment and removal of large amounts of potentially contaminated water should be given. The use of thresholds/berms in the facility design is recommended. A HEPA-filtered WetVac or similar should be available.

Comments