

Maintenance

From labwiki

Maintenance Procedures

There is a check list located on the shelf above the larvae dorms to follow.

Equipment and Plant Maintenance

NOTE: The following must be completed BEFORE handling and insects

1. Water plants in the growth chambers(downstairs and in the greenhouse). Avoid spilling water in the bottom of the chambers.
2. Put away all clean dishes on the drying rack and discard and broken or unusable dishes/equipment. Check to be sure all equipment is to the proper standard of cleanliness and in proper condition. Hang up any dorms that were left to soak, and fold and put away (3rd drawer by the main sink) any dry dorms on the rack.
3. Wash all the dishes, equipment and dorms that were left to soak in the sink or left by the sink using the sponges provided.
4. Wipe out the sinks and drainboards using a cloth. On Tuesdays, clean the sinks and drainboards using the vinegar found in the cabinet under the sink or in the squirt bottle located in the cabinet above the DI squirt bottles. Squirt vinegar inside the sink, scrub with a sponge and rinse with water.
5. Plant 2 trays as follows: Select 2 green trays and 36 green flower pots (18 for each tray). Fill each flower pot with soil and place it in the sink (you may only be able to fit half at a time). Soak all the pots through by moving the little hose on the tap in a sweeping motion. Wait ~5min, then soak them again. Place the pots in the tray, 3x6. Plant seeds (2 rows of pea, one row a fava) about an inch deep. Place trays on the bottom shelf of the growth cart.
6. Water all plants on the growth cart with the watering can. Be sure that each tray/pot is appropriately heavy after watering.
7. Select grown plants for larvae maintenance and to place in the aphid dorms. Check plants for aphid contamination, if needed use to replace plants in aphid dorms and/or for larvae maintenance, if not needed discard.

Aphid Maintenance

1. On Wednesdays, change and date one aphid dorm as follows: Assemble the dorm (materials found in second and third drawer underneath the sink), place two new green trays in the bottom, transfer the healthy plants from the old dorm (the one with the earliest marked date) to the new one, label the date on the new dorm. Disassemble the old dorm and soak the old trays in the main sink and dorm in the sink closest to the dorms.
2. Replace the dirty trays in the dorms. Soak old trays in the sink.
3. Water the plants in the aphid dorms using the watering can, but be sure not to over-water.
4. Transfer droopy plants in the aphid dorms to the predator dorms (put the pot in a petri dish).
5. Add the new plants to the aphid dorms that you selected in step 7 in the 'equipment and plant maintenance' section (max 7 plants per tray)
6. Collect aphids for larvae maintenance by snipping off a few aphid covered leaves and placing them in a big petri dish with a lid.

Predator Maintenance

1. On Thursdays, change and date one predator dorm as follows: Assemble the dorm, place one new clear tray in the bottom, transfer the healthy plants from the old dorm (the one with the earliest marked date) to the new one, transfer all the predators to the new dorm (use a paintbrush), label the date on the new dorm. Disassemble the old dorm and soak the old tray and dorm in the sinks.
2. Wipe down all the predator dorms using a wet sponge. Remove all dishes and dead animals (collect in a petri dish and place in

the freezer for disposable on Thursdays).

3. Replace any dirty trays in the dorms. Soak old trays in the sink.
4. Remove the dead plants from the dorms (max 2 plants per dorm) and check for eggs. If eggs found save plant for step 8. Be sure to remove all ladybugs from the plants. Discard plants.
5. Take the petri dish of ephestia eggs out of the freezer. Use a paint brush to pick up the eggs and place one or two dabs on a petri dish (without a lid) for each dorm. Place the dish on the tray in the dorms, return the eggs to the freezer.
6. Soak a circular sponge in deionized water (the white labeled taps located at both side sinks), and place it in a petri dish, for each dorm. Be sure that there are no water drops on the dish, as the ladybugs will drown in them. Place the dish on the tray in the dorms.
7. Add a scoop of sugar using the scupula from the container of sugar (located in the cabinet with the DI squirt bottles) to the small plastic container provided. Add deionized water and stir to dissolve. Soak 3 small sponges for each dorm in the solution, and place them on a large petri dish (without a lid). If mold is spotted on any of the sponges do not use, discard them. Again, be sure that there are no water drops on the dish. Cut ~1/4 of an apple, cut it into slices and place a few small slices on these large petri dishes fresh-cut side up. Place the dish on the tray in the dorms. Leave a note if you notice there are no more apples.
8. Collect all new eggs as needed from the dorm. Place eggs in a petri dish (with a lid) on a piece of filter paper, and add a moist piece of cotton to the side of the dish. Place plant material into the dishes to help maintain humidity. If larvae found, place larvae in individual petri dishes (with a lid) on a piece of filter paper, and add a moist piece of cotton to the side of the dish, along with a paint brush dab of ephestia eggs, some leaves cut from a pea plant, and some aphids (at least 10 large aphids from the leaves previously collected per dish). Place a weight (ceramic tile) on the stacked dishes and place in the larvae dorm.

Source Larvae Maintenance

1. Take all larvae in their petri dishes out of the dorm. One at a time, maintenance will be carried out for each petri dish.
2. For source larvae/ pupae < 72 hours old, clean the dish (using a stiff paintbrush, brush out old eggs and dead aphids from plate and off of filter paper- if dirty replace filter paper and/or dish completely) and add deionized water to the cotton using the little squirt bottle provided. If filter paper is soaked replace it, if soaked from a previous day replace entire petri dish.
3. For larvae, add a paint brush dab of ephestia eggs, some leaves cut from a pea plant and some aphids (at least 10 large aphids from the leaves previously collected per dish) using a paint brush.
4. If you discover any new pupae or adults, label them with the date of discovery. Pupae will only require a dry filter paper and a moist cotton ball. Make sure the pupae is adhered to something, if not use a mixture of flour and water to "glue" the pupae to the filter paper. If filter paper is soaked and a pupae is stuck to it, cut the piece with the pupae on it and place on a dry filter paper.
5. Release any adults > 72 hours old into a predator dorm. Record the number of ladybugs released.
6. Place a weight (ceramic tile) on the stacked petri dishes (no more than 5 per stack) and place in the larvae dorm.

Lab Maintenance

1. Replace all materials on shelves or in drawers.
2. Wash used paint brushes, metal utensils, petri dishes and sponges, and place them on the drying rack (scrub with sponge in sink then rinse in deionized water).
3. Rinse, then place dirty pots and trays in the sink to soak (pots soaking in the trays).
4. Discard/put away all boxes/misplaced materials and garbage.
5. Wipe all the counters tops and tidy up.
6. Check that all the dorms are securely closed.
7. On Mondays, record the number of insects in the dorms and the number of larvae.
8. On Thursdays, discard of any dead animals in the freezer.

9. On Thursdays, wipe and clean the fridge. The first Thursday of the semester, defrost (as necessary).

10. Sweep the floor.

11. On Fridays, wash the floor.

Be sure to check off all items on the maintenance checklist on the appropriate day and date and initial the sheet.

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- This page was last modified on 2 May 2014, at 15:32.
- This page has been accessed 32 times.