



## Biology Department Greenhouse Newsletter May 24, 2006

After following suggestions outlined by Tom Dudek from Michigan State University's Horticultural Extension Program, the greenhouse has undergone noticeable improvement. An outline of the suggestions and improvements are outlined below.

### Improvements

- 1) *Marthon Systemic insecticide treatments would effectively destroy mealybug and scale infestations and occurrences. Granule amount depends on the diameter of the pot.* – This systemic insecticide has been incorporated into all potted plant material (excluding ferns, orchids, and student projects). After only 2 weeks time there was a significant decrease in mealy-bug, scale, and soil-gnats. This application also reduced the need for foliar insecticide, which is now only used during mild outbreaks and incoming plant material.
- 2) *Sticky cards should be placed on several plants throughout the greenhouse. These should be “read” (look at what bugs are on them) weekly.* –Application of the sticky cards directly onto the plant (instead of on the metal cart) increased the capture of insects, particularly soil-gnats.
- 3) *Contact Peters for Soil and test kits. Fertilizer suggestions can be made after these tests are completed.* A water test was completed and analyzed. A 20-10-20 fertilizer was found to meet the needs of the GVSU greenhouse water supply. This fertilizer application has shown marked improvement in overall greening of the greenhouse, especially in the papyrus and ferns, and an increase in growth rate, especially in the coleus, Bolivian jew, wandering jew, and baby tears. A soil test kit is on order.
- 4) *A pH meter and EC meter should be available to the greenhouse. Readings of plant soil should be taken now. The pH meter tests 1 part media (taken from*

- middle of pot with a spoon) to 1 part DI water. The EC meter (Myron-L Agrimeter was suggested) tests 1 part media to 2 parts DI water. Reference materials will be suggested by Tom.* –An EC meter was purchased for the greenhouse and the pH meter in the biology lab prep. Space has been made available for greenhouse use. EC and pH soil testing is performed bi-monthly.
- 5) *If pH is off you can adjust using Fertilizer. Some commercial greenhouses use liquefied lime, sulfuric acid, or phosphoric acid.* –The compiled data will be analyzed in order to make adjustments to the soil. A change in soil pH occurred after the new fertilizer application, so further testing will provide a more stable assessment.
  - 6) *The chemicals should be in locked storage.* –Chemicals are now stored in the greenhouse prep-room cabinet.
  - 7) *Basic soil composition needs to be assessed. Tom does not prefer soil that contains bark because it retains moisture and may deplete nitrogen in the soil.* – Perlite has been added to our potting soil in a 1:4 ratio to increase drainage. There are currently only 15 bags of the basic soil containing bark left in the greenhouse. When this supply is low our stock will be replenished with a basic soil without bark.
  - 8) *We'll need to have a certified worker on site that can apply pesticides.* –I am going to call for exam schedules in order to become certified during the summer. Information was found at [www.michigan.gov](http://www.michigan.gov).

### **Fun Greenhouse Notes:**

- 1) As you can see in the picture above (*Epiphyllum oxypetalum*), our night-blooming cactus has blossomed! It was quite magnificent and very fragrant. This plant was donated to the greenhouse by a friend of Prof. John Shontz.
- 2) The coffee tree has coffee beans on it for the first time (since I have known anyway).
- 3) A *Welwitschia mirabilis* has germinated in the greenhouse. It is only two weeks old, but Diane and I are very excited.

Thanks,

Rachel Schwallier

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