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March 27, 2007

To: Bio 301 Students

From: Dale Kristensen

Re: Plant Care Guidelines and Protocols

Each group will be assigned 3 pots of soybean (3 plants per pot) to use in their experimental trials, although there is a limited option for some groups to use corn. Plants will be mature, but non-flowering at this time and are being raised in growth chambers under the following conditions:

Light Level: 450 ue
Photoperiod: 16 h
Humidity: 70%
Temperature: 22C
Media: Pro-mix peat based media
Fertilizing: once per week, standard 20-20-20 (N-P-K) at 1.5 g/l

IMPORTANT NOTES:

1. ***Groups will take over care of their plants upon return from the Reading Week break. At that time, groups are to label their plants as to group name, and ensure their regular care according to an established protocol (see below). Phytotron staff will not tend to plants after this date.***
2. **Groups are welcome to take over plant care before the break, particularly if their experimental protocol requires longer-term plant exposure to nutrient limited conditions, or other stressors. Please discuss with Phytotron Manager beforehand!**
3. **We have limited options for alternate environments (photoperiod, temperature); please see Phytotron Manager for scheduling if this is required.**
4. **Nutrient solutions, chemical mixes and experimental equipment should be readied beforehand. Please see your Course Instructor (J. Jones) for details.**

GENERAL PLANT CARE INSTRUCTIONS (STANDARD)

NOTE: All plants require regular watering and feeding! Hoagland's Solution can be used to provide both water and nutrients, but the formulation must be appropriate to your plant type and experimental conditions. Generally corn gets more N than soybean, and requires less frequent watering. Below are some general guidelines for plant care:

- 1. Soybeans:** Keep soil media moderately moist (not wet!). Remember that as the plants grow, they will require increasing amounts of water. Daily inspection is absolutely critical!
- 2. Corn** prefers slightly drier soil media (too wet will rot roots). Watering should be done only if required, but daily inspection is critical. Plants will dry out quicker as they grow. Check below the soil surface to determine true moisture content. If plants begin to yellow it is probably a case of too much water, rather than not enough fertilizer.
- 3. If you choose not to use Hoagland's Solution, then weekly fertilizing is necessary for both corn and soybean. Once per week a 1.5 g/l of 20-20-20 general purpose fertilizer solution is used.**
- 4. Soybean will get tangled up with other plants as it grows – be gentle in moving them.**

OTHER CRITICAL ITEMS

- 1. This is a multi-user facility. It is imperative that you keep the potting room and growth chamber area clean and organized after use, and that you ask first before using equipment and supplies.**
- 2. Failure to comply with these instructions may result in termination of your experiment.**

Thank you,

Dale Kristensen
Phytotron Manager
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