Purdue University Purdue e-Pubs

Purdue Methods for Arabidopsis Growth

Plant Growth Facility

11-4-2008

101 Ways to Try to Grow Arabidopsis: How Can Growing Space Be Optimized?

Robert Eddy
Purdue University, robeddy@purdue.edu

Daniel T. Hahn

Purdue University, dhahn@purdue.edu

Follow this and additional works at: http://docs.lib.purdue.edu/pmag

Suggested Citation

Eddy, Robert and Hahn, Daniel T., "101 Ways to Try to Grow Arabidopsis: How Can Growing Space Be Optimized?" (2008). *Purdue Methods for Arabidopsis Growth.* Paper 21. http://docs.lib.purdue.edu/pmag/21

This document has been made available through Purdue e-Pubs, a service of the Purdue University Libraries. Please contact epubs@purdue.edu for additional information.

Purdue Methods:

Ways to Grow Arabidopsis

How can growing space be optimized?

A simple method is to move plants that are beginning to set seed (but before seed pods can shatter) to another room or unlighted shelf so that the valuable growing space can be used for actively growing plants. Rolling benches are a good choice for a greenhouse. Their legs stay in place but tops roll from side to side on rolling bars. You sacrifice permanent aisles for about 20% more usable space.

We've also taken a commercial A-frame tiered bench (Hummert International, Inc. St. Louis, MO) and modified if to fit Arabidopsis (and wet location fluorescent fixtures). Placed upon an existing bench, it doubles greenhouse space. Place upon rolling benches, space utilization of over 100% of floor space can be achieved.

Given that the room they are located in is temperature controlled, using light shelves is an excellent way to increase the number of plants per unit area of floor. Units that have rolling shelves on a frame system are available in the storage-specialty industry, especially for hospital storage. These could be modified with fluorescent fixtures for plant growth to greatly improve space utilization of growth rooms, perhaps tripling the useful space more economically than building or adding new utilities to a new room. Of course, the additional cooling and electrical requirements need to be considered. We've cooled rooms with air-conditioners and--if there are no windows but floor drain exists—Koldwave portable cooling units that use water to carry the heat away.





Figure 1. Clockwise from upper left: Greenhouse rolling benches; tiered shelf on top of rolling bench; light shelves with wet location fixtures; Koldwave-brand cooling unit