

Large Flowers On sac Plants In Winter Greenhouse, March 2005

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The sac plants currently are about one year old. A year ago the plants were seedlings developing under lengthening days with the approach to summer. During the summer, flower size could have been slightly larger than the *M. sativa* seed parent MBms, but any difference in size was not remarkable.

About November 1, 2004, the sac plants and MBms were cut leaving about 8 inches of stem, and transplanted to the greenhouse where the supplementary lighting was set for 12 hours during the day, and off for 12 hours at night. Night temperature was set at 62 degrees F. and ranged between about 55 and 65 degrees. Day temperature was set at 70 degrees, and was about this temperature on cloudy days, but would range up to 85 degrees when sunny.

By March 1 2005, the flowers of the sac plants were remarkably larger than those of MBms. In the pictures that follow, the small blue flowers are from MBms, and the large variegated ones are from sac plants. *M. arborea* was not flowering when pictures were taken, but there is a picture in the previous report. Quantitative data on flower sizes are being collected in March, and will be collected again in August. The null hypothesis to be tested is that the difference between MBms and the sac plants is the same in the winter and summer months.

M. arborea in its area of adaptation is summer dormant and winter active. Our observations in the seedling year suggest that gene expression for flower size may reflect this cycle. The coming year of growth will be interesting.



Fig. 1: sac raceme with *M. sativa* MBms mother.



Fig. 2: Variegated sac flowers, more than 1cm wide.



Fig. 3: A size and color comparison between MBms flowers (just over .5 cm wide) and two racemes of sac flowers.



Fig. 4: Typical MBms, sac, and *M. arborea* flowers for comparison.