

## TRIALING AND SEED INCREASE OF PROMISING NEW VEGETABLE VARIETIES FOR ORGANIC SYSTEMS

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This spring we received funding from the Organic Farming Research Foundation to do seed increases and trials of organically bred material we have developed over the last five years. Previous grants from OFRF, USDA-SARE and USDA-OREI provided funding for us to develop improved vegetable varieties for organic producers. These vegetable varieties are based on varieties that were already valued by our organic partners for flavor and quality, to which we have added the earliness, disease resistance and yield traits that were requested to improve producer profitability.

Seed availability for trials and for a pre-production stock for the seed industry has been a limitation of our breeding efforts in pepper and cucurbits. This new capacity provides an opportunity to have a much larger, more consistent stock of seed available of our most requested lines for VBI member companies. If you can anticipate any stock seed needs other than on the following list, please let us know by March 2010 for production in 2010.

At our fields in Freeville we had four 12' x 48' pollination cages that were purchased and assembled according to recommendations from Dr. Larry Robertson, at the NYSAES Geneva. Each had one cucumber, one *C. moschata*, one *C. pepo*, and one melon. With this configuration we can produce seed of 4 summer squash, 4 melons, 4 winter squash, and 4 cucumbers in any one year. The cages (with honey bees) are for isolation to prevent varietal contamination and seedborne diseases like Squash Mosaic Virus, and to produce large quantities of seed without the need to do manual pollinations. The cages were constructed of 8' metal pipe uprights every twelve feet



with 2 feet in the ground leaving 6' exposed. Bent metal cross members were also installed every twelve feet to support the mesh cage. The mesh cage had zippers at each end to access the inside of the cage for weed control, harvest, and bee management. To avoid strain and prevent the zipper from creeping upward, the bottoms of the end pipes are angled inward slightly. The mesh cage had 1.5 foot flaps on the sides and ends that were covered

with soil to prevent insects from getting into the cages. Mesh cost \$850/cage with free delivery with the purchase of 4 or more cages. The cages were sewn by:

Lumite, Inc.  
 2100 Atlanta Hwy Suite C  
 Gainesville, GA 30504  
 (866) 358-6483

to the following specifications: CS20W-Custom Cage 20x20 Amber fabricated UV treated cage 6'H x 12'W x 48'L, 18" flap all bottom edges, all top corners reinforced for added strength, 1-6' zipper in each end.

The metal pipe was bent and welded locally and invoiced at \$25/pipe. Ten upright posts are required per cage. This is a straight 8ft piece of 3/4" schedule 40 pipe with three 2" lengths of 1 1/4" schedule 40 welded flush with the top to serve as receivers for the crossbars. Thirteen crossbars are required. The crossbars are also 3/4" schedule 40 and bent at either end to insert into these uprights. In the future we will reinforce the mesh where it contacts the top of the upright.

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| <p>Top end of upright post with 3 receivers for crossbars.</p>                     | <p>Crossbar inserted into receiver.</p>  | <p>Three crossbars inserted into upright. Two form the top of a wall and the third spans the cage.</p> |

Hives were rented from Larry Robertson for \$80. The total cost per cage is \$1,505 (\$850 mesh, \$575 pipe and \$80 bees).

Cage seed production over the 2009 field was successful despite less than ideal growing conditions throughout the season. Seed yields were best for cucumbers where we harvested 12 fruit per plant. Yields were much less for winter squash (2 fruit per plant), summer squash (2 fruit per plant) and, lastly, melons (1 fruit per plant). An exception was our mini-bicolor butternut "Bright Eyes" that yielded just under 12 fruit per plant.

We have seed (stock and trial quantities) available for seed companies to trial or increase in 2010.