Effect of Plug Tray Cell Size on Maturity of Processing Tomatoes – 2004

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Objectives: Processing tomato fruit maturity depends on several factors such as growing conditions and cultivar selection. Plug tray cell size (and volume) may also affect final yield as well as earliness. The objective of this study was to compare 3 cell sizes and two cultivars of processing tomatoes to determine the effect of cell size on processing tomato seedling development, maturity and earliness.

Materials and Methods: Cultivars 'O7983' and 'RG611' were seeded into 200, 288 and 338 deep cell plug trays on April 1, 2004. Plants were grown in the North Central Agricultural Research Station (NCARS) greenhouse, Fremont, Ohio. Plants were established in the field at NCARS on May 28 into raised beds spaced 5' apart. Row lengths were 25' long and replicated 4 times. Within row plant spacing was 12" apart. Plots were mechanically harvested on September 16. Marketable red fruit, green fruit and culled fruit weights were recorded. Average fruit size was determined from 50 fruit from each plot.

Results: Red marketable T/A was higher in 'RG611' than 'O7983'. Both cultivars showed no differences in yield, percent red fruit and average fruit size within the 3 cell sizes. There were significant differences between the two cultivars for red, green and cull T/A. Percent red fruit at harvest ranged from 79 to 83%. This study showed no differences in yield or earliness in the three cell sizes for both cultivars.

Acknowledgement:

- Thanks and appreciation to Mid-America Food Processors Association for their financial support of this project.

- Special thanks to Sean Mueller, Stan Gahn and the summer crew at the North Central Agricultural Research Station for their help with planting, plot maintenance and harvesting.

- Thanks to Red Gold, Inc., for providing seed and plug trays for this project.

Table 1. Final yield, percent red fruit at harvest and average fruit size for tomato cell size study, Fremont, OH, 2004.

Cultivar	Cell Size	Red T/A	Green T/A	Culls T/A	Percent Red Fruit	Average Fruit Size (lbs)
611	200	27.8	3.3	2.9	82	0.14
611	288	26.7	3.1	2.5	83	0.15
611	338D	26.7	3.6	2.4	82	0.14
7983	200	22.5	1.6	4.5	79	0.15
7983	288	23.5	1.4	4.3	80	0.15
7983	388D	21.6	1.2	3.7	81	0.15
LSD (0.05)		2.89	1.43	1.20	NS	NS
C.V.		12.0	56.0	32.3	4.5	5.7