2008-2009 Strawberry Plasticulture Space Study

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Plasticulture strawberry production is becoming more popular with Ohio growers. One main advantages of the plasticulture system is a potentially earlier harvest providing a competitive edge in the market place relative to conventional matted row production system. Another potential advantage is reduced environmental impact arising from a simpler pest management system. In certain settings there is the potential for higher yields relative to traditional matted row production systems. Challenges include: higher per acre cost, acclimation of suitable varieties to Ohio, and general lack of experience with the system among producers. This trial compared four different in row plant spacing treatments to evaluate what plant population may be suitable for planting in Ohio.

METHODS:

Tips were planted in 50 cell trays containing Metro Mix 360 soilless media and placed on weed mat under mini wobblers during the month of August. Tips were grown for four weeks outside under ambient conditions. Planting media was kept continually moist with a mist system to promote root development. The resulting plugs were transplanted to the field using a three-point hitch water wheel planter and watered in with Peters 20-20-20 starter fertilizer. Strawberry plants were planted in double rows with 12 inches between rows and plants on September 8, 2009. Field preparation included application of 60 units of nitrogen, phosphorus, and potassium pre-planting, plowing, disking and formation of a raised planting bed Chateau applied then covered with black plastic and trickle irrigation under the mulch that was formed with a Redick Fumigation bed shaper. The floating row cover was put in place on November 13th. The plant growth was monitored throughout the winter. To control weed growth, Spartan II grass was seeded between the rows of plastic prior to planting of berries to the field. To control disease, a standard commercial fungicide program was followed. Calcium nitrate and potassium nitrate was then injected through the trickle tape in the spring as necessary and continued through harvest in an attempt to maintain optimum plant growth and berry production.

RESULTS:

Results from this first year data indicate that there is no significant difference in number of marketable fruit per plant and marketable pounds of fruit per plant. There was a significant difference in total marketable pounds per acre and a slight difference in average fruit weight among the treatments. Total marketable yield per acre was highest for the 8 inch (21,320 pounds/ac.) and 12 inch spacing (17,307 pounds/ac).

From this first year's data, more research is required to indicate if the increased yield at the 8 inch plant spacing would continue to be significant enough to warrant the additional plant expense required. Data does indicate that by reducing the number of plants per acre,

increasing plant spacing, does dramatically reduce yield and probably is not a viable option for growers to consider.

Table 1: Yields

In Row Spacing	Marketable lbs per acre	Marketable fruit per plant	Marketable lbs per plant	Average fruit weight (oz.)
8 inch	21320	23	.97	.67
12 inch	17307	25	.99	.63
16 inch	11626	23	1.06	.72
24 inch	9353	27	1.07	.63
LSD	**4637**	**None**	**None**	**.06**

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