2002-2003 Strawberry Plasticulture Cultivar Evaluation

Brad R. Bergefurd, Thomas Harker, Dr. Shawn Wright
The Ohio State University South Centers
1864 Shyville Road, Piketon, Ohio 45661-9749
Phone: (740) 289-3727

Plasticulture strawberry production is a relatively new innovation for Ohio growers. One of the main advantages of the system is a potentially earlier harvest providing a competitive edge in the market place relative to conventional matted row production systems. 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, researchers and Extension personnel.

This trial compared four strawberry cultivars ('Camerosa', 'Chandler', 'Sweet Charlie' and 'Gaviotta') for the plasticulture growing system,

METHODS:

Strawberry tips, obtained from where Strawberry Hill Inc., Bunn NC, were planted in 50 cell trays containing Metro Mix 360 soilless media and placed in the greenhouse at Southern State Community College on August 19th. Tips were grown for four weeks with an average day temperature of 75° F and an average night temperature of 65° F. Planting media was kept continually moist with a mist system to promote root development. The resulting plugs were transplanted to the field (OSU Enterprise Center, Hillsboro) using a three-point hitch water wheel planter and watered in with Peters 20-20-20 starter fertilizer. The soil is a Haubstadt Silt loam. Field preparation included pre-plant application of 60 units each of nitrogen, phosphorus, and potassium, plowing, disking. A raised bed was formed with a Redick Fumigation bed shaper and covered with black plastic mulch. Trickle irrigation tape was installed under the mulch. Strawberry plants were planted in double rows with 12 inches between rows and planted on September 18, 2002.

The 1.5oz. Floating row cover was put in place on November 12th over all four cultivars. The plant growth was monitored throughout the winter. To control weed growth between rows, annual rye grass was seeded prior to berry planting. The rye grass was then killed off in the spring with an application of Poast EC (sethoxydim) at 2.5 pints/ac + 2 pint of a crop oil concentrate. A standard commercial fungicide program was followed to control disease.

Petiole nitrate levels were monitored and calcium nitrate injected through the trickle tape in the spring as necessary and through harvest to maintain optimum plant growth and berry production.

RESULTS:

'Camerosa' was consistently the leader in terms of marketable fruit in terms of weight and number and average fruit weight. 'Chandler' performed similarly to 'Camerosa' and 'Sweet Charlie' falling between the two in ranking. 'Gaviotta' was the lowest yielding and had the lowest average fruit weight.

Table 1. 02-03 Cultivar Evaluation Yield

Cultivar	Marketable lbs/plant		Marketable lbs/acre	Marketable fruit/acre	Average Fruit Weight. (oz.)	
Camerosa	A	0.43	7419	175227	A	1.24
Chandler	AB	0.24	4217	118864	AB	1.10
Sweet Charlie	B	0.05	891	28409	ABC	0.99
Gaviotta	B	0.04	671	27045	C	0.78
LSD		**0.23**	**4022**	**87222**		**0.27**

DISCUSSION

The Winter of 02-03 was significantly colder than the Winter of 01-02. We are continuing this project to evaluate performance during what we hope to be a more typical Winter weather season. Based solely on the results of this test we would recommend Camerosa and Chandler over Gaviotta for yield. This does not take into account consumer preference. 'Sweet Charlie' is preferred for fresh consumption by many of the evaluators over Chandler or Camerosa. Growing conditions during the spring were excellent with mild temperatures and adequate rainfall.