

## 2003-2004 Strawberry Plasticulture Cultivar Evaluation

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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 nine strawberry cultivars, ('Chandler', 'Camerosa', 'Sweet Charlie', 'JP-4', 'Treasure', 'Festival', 'Ventana', 'Bish' and 'Darselect') for the plasticulture growing system,

### **METHODS:**

All strawberry tips except 'Darselect', were obtained from Strawberry Hill Inc., Bunn NC. All strawberry tips were planted in 50 cell trays containing Metro Mix 360 soilless media and placed in the greenhouse at Southern State Community College during the second week of August. 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 plants and rows and planted on September 12, 2003.

The 1.5oz. Floating row cover was put in place on October 24<sup>th</sup> over all 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:

'Chandler' was consistently the leader in terms of marketable pounds of fruit per acre. 'Sweet Charlie' was the lowest yielding probably due to the early season frost injury with this early blooming cultivar. 'Festival' a popular cultivar grown in Florida had the lowest average fruit weight whereas 'Ventana', a popular cultivar grown in California, had the highest average fruit weight.

<u>Cultivar</u>	<u>Marketable lbs/acre</u>	<u>Average Fruit Weight. (oz.)</u>
Chandler	6241	.44
Camerosa	2900	.45
Sweet Charlie	1753	.44
JP-4	3130	.51
Treasure	3330	.49
Festival	2678	.35
Ventana	3210	.52
Bish	3395	.43
Darselect	2640	.46

## DISCUSSION

The Winter of 03-04 was significantly colder than the Winter of 02-03. Based solely on the results of this test we would recommend 'Chandler' and 'Camerosa' as the most proven cultivars for use in a plasticulture strawberry production system under Ohio conditions. This does not take into account consumer preference. 'Sweet Charlie' is preferred for fresh consumption by many evaluators over 'Chandler' or 'Camerosa'. Growing conditions during the Spring resulted in some early season frost injury and heavy spring rainfall, this contributed to poor pollination conditions and fruit set, resulting in about half the overall yield from the 02-03 season. We are continuing this project to evaluate eastern and western cultivars for their performance in a plasticulture strawberry production system under more typical Ohio Winter weather conditions.

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