2004-2005 Strawberry Plasticulture Winter Protection Study

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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 potential earlier harvest providing a competitive edge in the market place relative to conventional matted row production systems. Other potential advantages include higher yield and reduced environmental impact from a simpler pest management system. Challenges include: lack of experience with the system among growers, Extension personnel and researchers, cost, and adaptability of suitable varieties to the climate.

This trial compared four winter protection methods (straw, no cover control, .9 and 1.5 oz floating row cover).

METHODS:

Chandler variety 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 States Community College on August 12th. Tips were grown for four weeks with an average day temperature of 75 degrees F and an average night temperature of 65 degrees F. 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 14, 2004. Field preparation included application of 60 units of nitrogen, phosphorus, and potassium pre-planting, plowing, disking and formation of a raised planting bed covered with black plastic and trickle irrigation under the mulch that was formed with a Redick Fumigation bed shaper. The floating row cover and straw treatments was put in place on November 5th. The plant growth was monitored throughout the winter. To control weed growth, annual rye grass was seeded between the rows of plastic prior to planting of berries to the field. The rye grass was then killed off in the spring with an application of Poast EC at 2.5 pints / ac plus 2 pint of a crop oil concentrate. To control disease, a standard commercial fungicide program was followed. Calcium 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:

Winter of 2004-05 was on the mild side for most of the winter months. Total season yields ranged from 3198 lbs to 6086 lbs per acre.

Treatment	Marketable lbs. per plant	Marketable lbs. per acre	Marketable Fruit per acre	Average Fruit Wt. (oz.)
1.5 oz. cover	0.35	6086	221785	0.48
.9 oz. cover	0.32	5741	161785	0.51
Control	0.29	5121	221785	0.52
Straw	0.18	3198	152142	0.43

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