2008-2009 Strawberry Plasticulture Winter Protection

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

Plasticulture strawberry production is becoming more popular with 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. This trial compared eight different floating row cover treatments to evaluate what row cover protection may be suitable for 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 first treatment of floating row cover was applied in November with the second application being applied in January. 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:

This year total marketable pounds per acre ranged from 18786 to 16746. Treatment eight, 1.25 oz. applied October + .9 oz. applied January, produced the largest amount of pounds per acre, fruit per plant and marketable pounds per plant. Treatment five, .55 oz. applied October + .55 oz. applied January, had the largest average berry weight at .61 ounces.

Table 1: Winter Protection Totals

Treatment	Marketable lbs. per Acre	Marketable lbs. per Plant	Marketable Fruit Plant	Average Fruit Weight (oz.)
8	18786	1.07	28	.60
5	18189	1.04	27	.61
7	17676	1.01	27	.58
4	16746	.96	25	.59
3	16556	.95	26	.56
2	16171	.92	24	.60
6	15141	.86	24	.57
1	7819	.44	12	.55
LSD	**3156**	**.18**	**4**	**None**

Table 2:

Treatment Number	Row Cover Treatment
1	Control (uncovered)
2	..55 oz applied October
3	.9 oz. applied October
4	1.25 oz. applied October
5	.55 oz. applied October + .55 oz. applied January
6	.9 oz. applied October + .55 oz. applied January
7	1.25 oz. applied October + .55 oz. applied January
8	1.25 oz. applied October + .9 oz. applied January

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