

10 Years' Experiences with Plasticulture Strawberries in a Colder Area

Charlie O'Dell, Extension Hort. Emeritus and U-Pick Berry Grower

Over the past decade we've produced Chandler strawberries on plastic mulch on one to two acres per year in the mountains of western Virginia at elevation of about 2,400'. For 20 years prior to 1990 we grew similar small U-Pick acreage by matted-row. From growing on plastic mulch in this colder area we've learned:

1. Colder areas are restrictive production areas for California and Florida varieties, i.e., first year yields will seldom average over one-half quart of berries per plant in good years, or 8,500 quarts per acre (about 12,000 lbs/acre). In poorer years, less than one pint of berries per plant is a more realistic expectation, about 5,000 to 6,000 quarts/acre (or about 7,500 to 9,000 lbs/acre). Establishment costs may be covered, but very little net income has been realized the first year in our restrictive yield location.
2. Our second year yields have always, without fail, exceeded our first year yields at this elevation and location, averaging about 12,000 quarts per acre (about 18,000 lbs/acre). In some good years, weather-wise, we've obtained as high as 17,000 quarts per acre (about 25,500 lbs/acre). Had we ended the plantings after only the first year's crop, these higher yields would never have been realized! An annual production system at this restrictive production area financially would have put us out of the berry business.
3. We have always carried over for a third crop year, which also has averaged about 12,000 quarts of berries per acre (about 18,000 lbs/acre). With current varieties we feel this is about our top potential we can expect with plasticulture strawberries here. These yields can only be expected with careful renovation including cleaning of old beds in late winter and re-fertilization of fruiting beds with soluble nutrients through the drip irrigation system. We base nutrient needs on late August soil tests of the old beds plus tissue analysis of the plants going into the second and third fall and spring seasons.
4. We have experimented with carry-over for a fourth year, always with disastrous results, don't do it! Mother plants plus the plastic mulch are worn out after the third cropping year; also the old plants have high crown adventitious roots pushing crowns out of the plastic mulch. It's time to replace the planting and rejuvenate the site! We replenish the site after three crop years with six tons of poultry litter per acre followed by a sweet corn or pumpkin crop before replanting to strawberries. Generally, no nitrogen or phosphate fertilizers are needed for the corn or pumpkin crop or the first year strawberry crop following this poultry litter-based soil rejuvenation program.
5. We tried one three-year crop cycle of Chandlers on new ground that had never been in strawberries, we did not soil fumigate so see if we could survive without it. Along with lower yields and poorer stands, we spent more on hand weeding and soil diseases control than we would have spent for fumigant, even at current fumigant prices! We will not try that again! In our colder, restrictive plasticulture strawberry production area, Methyl Bromide fumigant has provided more vigorous plants, better stands, higher yields, larger berries and greatly reduced cultural practices labor, compared to non-fumigated sites. After a total of 30 years of strawberry production here, all of our U-Pick strawberry sites are re-plant sites. We cannot continue to profitably produce strawberries at our location without a good replacement for Methyl Bromide fumigant.

Originally printed in Virginia Vegetable, Small Fruit and Specialty Crops – February 2002.