Prune leaves of summer-planted strawberries sparingly

Severe pruning reduces yields

Norman C. Welch

Pruning leaves from first-year summer-planted strawberries is an established practice among growers. Reasons for pruning range from making the plants easier to pull through plastic mulch, thus reducing labor costs, to sanitation — removing the older leaves that may have disease or insects on them. The most frequent questions asked by growers and field representatives are how many leaves should be removed and at what time of the year.

This series of experiments was designed to measure effects of amounts of leaves removed, dates of leaf pruning, and use of plastic mulch on total yield. The treatments consisted of light and severe deleafing, with early deleafing on January 3 and late deleafing on March 5. Early and late applications of plastic mulches occurred on the same dates.

These treatments encompassed the range of grower practices. Severe pruning, as performed by a significant part of the industry, consists of removing all mature leaves and leaving only the immature center leaves. On lightly deleafed plants, only the discolored, older, senescent leaves are removed.

Plastic mulch applied in these experiments covered the entire bed, including the shoulders. Holes were burned in the plastic over the tops of the plants so that they could be pulled through the sheets. Plots without mulch had a 12-inch strip of plastic placed on the center of the bed over the drip lines on March 5 to prevent fruit rot on wet soil.

These experiments were conducted over three years using the cultivars Tioga, Aiko, and Pajaro planted at approximately 20,500 plants per acre. Planting dates were August 5, 20 and 28 for Tioga, Pajaro, and Aiko, respectively. Slow-release Osmocote fertilizer at a rate of 60 pounds of nitrogen per acre was applied in the planting slot about 1 inch below the root zone just before transplanting. An additional 70 pounds of nitrogen (using Osmocote) were sidedressed onto the top of the bed just under the drip lines in late November. Runners were removed early and the plants developed rapidly, having an average of four well-developed crowns by early January for each variety. Each plot for all varieties contained 24 plants. Each treatment was replicated four times, and fruit was picked on a weekly schedule.

Early severe pruning of all these varieties resulted in significant loss of yield (see table). Severe deleafing, whether early or late, proved to be detrimental to total yield of strawberries. Early application of plastic to severely pruned plants helped to increase yield, but resulted in rougher, less attractive fruits.

Aiko and Pajaro plots without plastic mulch tended to yield less than comparable plots with mulch. Early, light pruning reduced yields significantly as compared with late, light pruning. Early plastic on light-pruned strawberry plants usually resulted in earlier production with somewhat less attractive fruit and a tendency toward higher yields, although this difference was not significant in these tests.

Influence of leaf removal and plastic mulch treatments on yields of three summer-planted strawberry cultivars

Deleafing time and severity	Plastic mulch	Total yield*		
		Tioga	Aiko	Pajaro
		tons/acre		
Early:				
Severe	Early	27.7 b	35.6 b	21.8 b
Severe	Late	19.0 a	30.6 a	17.4 a
Severe	None	—	29.6 a	17.0 a
Light	None	—	41.9 c	23.9 c
Light	Early	26.7 c	44.0 d	26.4 d
Light	Late	26.3 c	43.0 d	26.1 d
Late				
Severe	Early	24.2 b	42.3 c	24.4 c
Severe	Late	23.6 b	41.5 c	23.7 c
Light	Early	28.1 d	46.5 c	28.8 e
Light	Late	27.9 d	46.2 e	28.5 e

* Includes fresh, freezer, and juice berries. Numbers not connected by a common letter are significantly different at the 5 percent level.

Conclusions

Severe leaf pruning of first-year, summer-planted strawberry cultivars reduced yields and should not be done at any stage of plant development. The leaves are the food-manufacturing parts of the plant, and care should be taken not to remove functional leaves. Light pruning of strawberry plants should not be done before mid- to late February. On plants that have grown poorly, were planted late, or have grown through a very cold winter, it may be necessary to remove only the dead leaves.

Applying plastic when days are becoming longer and air temperature is increasing, shortly after the first of the year, usually results in early, poor-quality fruit. If early plastic mulch is needed to stimulate growth and development of weak plants or late plantings, it should be laid down in the early winter during periods of shorter days and colder temperatures.

Norman C. Welch is Farm Advisor, University of California Cooperative Extension, Santa Cruz and Monterey counties.