

weeks before harvesting (Table 11). Generally speaking, defoliation earlier in the season of 60% or higher led to serious yield reduction of medium-sized fruit in both first and second pickings (Tables 6 and 7).

Plants defoliated 30 days after planting at the three highest levels still showed lush growth at the time of the harvest, while leaves of the plants subjected to other treatments were senescent to varying degrees. Analysis of variance of the fresh weight of all above-ground parts of the plants most severely defoliated at 30, 60 and 100 days after planting, after all fruit had been removed, showed a significantly higher fresh weight for the plants defoliated early in the season than for the plants in the control (Table 9). No significant difference was found in any of the other times or levels of defoliation tested.

The average weight of all marketable fruit was significantly reduced only in the first harvest of the 80U and 100% defoliations 30 days after planting. None of the treatments resulted in significant increases or decreases in the weight of the culled fruit in the first two harvests or in any particular cull category.

In many cases where defoliation significantly reduced the fruit weight, this reduction was more noticeable in the USDA grade 1 fruit than in the USDA grade 2 fruit, especially in the two largest fruit categories (Table 3).

If the data from the first two harvests are combined (Tables 5 and 8) the impact of mechanical defoliation on yield can be summarized. The effect is most pronounced in the plants at first harvest. However, increases in the second harvest tend to compensate for the initial yield loss.

Experiment 2. Analysis of the combination of the two largest fruit sizes (Tables 10 and 11) summarizes the differences in effects of defoliation in the first two harvests. A reduction in the weight of the medium-sized fruit as a result of foliage removal occurred only in the second harvest (Tables 12 and 13). The reduction pattern was very similar to that of the large fruit.

From combining the total yields of the first two harvests (Figure 1) it appears that the only significant reduction due to 60% defoliation occurred in plants defoliated 50 days after planting.

The average weight of all marketable fruit was significantly reduced only in the first harvest by 100% defoliation of the tomato plants 50 days after planting. In the second harvest no significant reductions were found.

The weight of all culled fruit together in any of the treatments showed no significant difference from the control in any of the harvests. However, more sunscalded and decaying fruit were present on plants defoliated 15 days before the first harvest at the 80%