Since the leafminers usually attack the lower and middle leaves first (34) their effect on net photosynthesis will be minimal. The younger (upper) leaves, which are the most important to the plant and the removal of which would harm the plant more than the removal of the older (lower) ones (6), are normally only slightly damaged. Only in case of very serious outbreaks of leafminers will the mine intensity in the upper portion of the plant increase dramatically and pose a threat to fruit production.

Repeated defoliation at lower levels (20% to 60%) reduces the yield of the first harvest as much as a high level defoliation does over a short period of time. Vigor and transpiration are more severely affected and the plant diverts a large portion of its energy supply to the healing process, delaying development of both vegetative growth and fruit development. In comparison to similar foliar damage in staked tomatoes, one would expect less reduction of fruit yield in the unstaked plants. That at least 60% of the foliage has to be removed to significantly reduce yield of staked 'Walter' tomatoes (13) is probably due to the fact that in those experiments no damage was inflicted to the plants in the especially sensitive prebloom period. The minimal reduction of total yield in the repeated defoliation experiments in this study shows that the overall response of the tomato plants to defoliation is very similar in staked and unstaked tomatoes. However, continuous leaf abscission due to infection of even small numbers of leafmines is a more gradual process than repeated mechanical defoliation and may, therefore, be less detrimental to the plant.

A reduction in the weight of extra large and large fruit is the more serious effect of high levels of defoliation at different times. Since these two largest fruit sizes account for the largest portion of the grower's revenue from the tomato crop, a reduction in their weight will more severely reduce his total income.

Although the weight of the medium-sized fruit may be reduced, the effect of this reduction is a relatively small component of the total net return to the producer.

In the present study all marketable fruit was harvested, irrespective of its position within the canopy. In a tomato grower's field this may not be the case. Pickers will easily overlook some mature fruit, especially the smaller sizes, if the plant's foliage is very dense. Defoliation resulting from leafminer infestations followed by disease development, especially in the last weeks before harvest may therefore be an advantage. Even if the actual fruit set is reduced and the absolute number of extra large and large fruit is less than that of non-defoliated plants, the amount of fruit picked from the defoliated plants and shipped may well be equal or even greater than