Effect of pruning on growth, leaf yield and pod yields of okra (Abelmoschus esculentus (L.) Moench)

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SUMMARY

Young leaves and pods of okra (Abelmoschus esculentus (L.) Moench) are edible, and so a crop management strategy for removing edible leaves while sustaining good pod yields is required. Pruning treatments were imposed on apically debudded okra plants for 3 years to assess effects of removing a quarter, half or three-quarters of the primary branches on growth and fresh leaf and pod yields. Pruning significantly ($P<0·05$) delayed fruiting by 8–10 days, extended length of harvest duration by 12–15 days and increased number of pods/plant by 10–40% and pod yield by 9–36% more than the control plants which had neither apical bud removal nor pruning. However, no difference in pod weight or pod length was found between these treatments and the control. Three-quarters pruning significantly ($P<0·05$) increased fresh leaf yield by 29–49%, but not all the leaves were desirable for consumption because of high fibre content. Decreases were seen in the numbers of secondary branches, shoot dry weight and pod yields (by 40–57, 22–36 and 22–30%, respectively, more than a quarter or half pruning). Although early production of pods in the control plants is often important for early maturity and high market prices, the present study found that a delay in fruiting, an extension in length of harvest duration and an increase in pod yield in plants with a quarter or half pruning enhanced staggered production and maximal pod yield. This helps to ensure a better market price and to enable growers avoid a glut on the market. A direct promotional effect of pruning on pod yields provides a possible strategy for growing okra for both leaf and pod harvests. A quarter or half pruning from the upper parts of the main stems of apically debudded plants to ensure good production and quality of leaves and pods is therefore recommended if okra is to be grown for both leaf and pod yields.