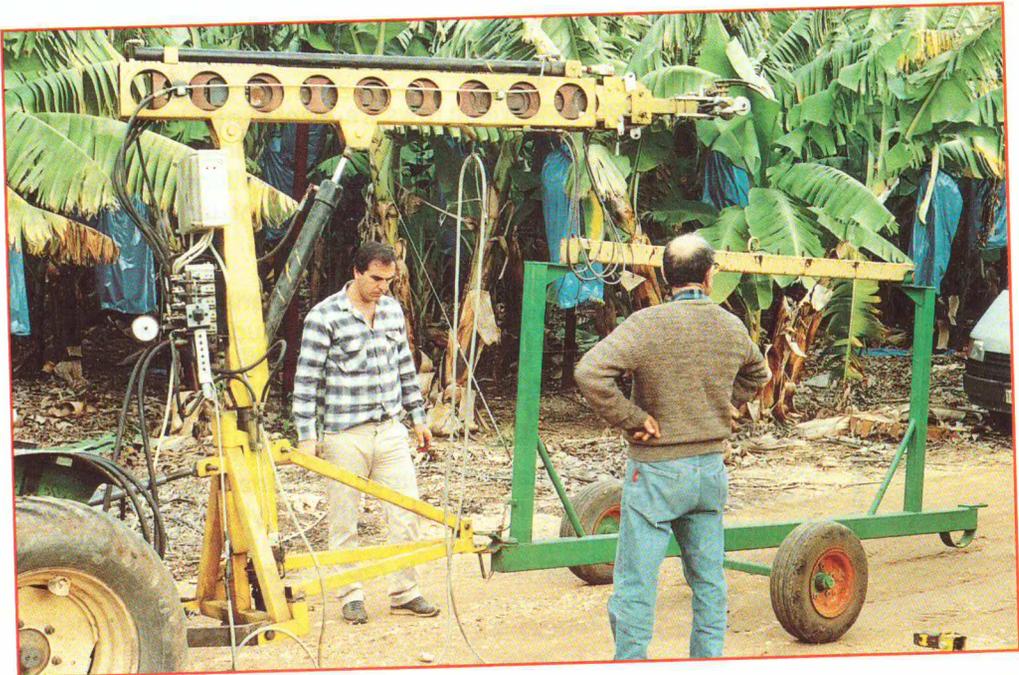


## MECHANICAL HARVESTING OF BANANA BUNCHES

O. Yekutieli, Y. Medan\*

**B**anana harvesting is tedious work because of the heavy bunches the worker has to carry. Most of the harvest is done in winter, sometimes in bad weather conditions, adding difficulties. The most common varieties of bananas grown in Israel are tall and the bunches have to be lowered to the worker's shoulder before cutting the necks, and then carried to the transport wagons. Using a mechanical device for harvesting could ease the work and make it more efficient. The article describes the development of such a device which is connected to the three-point hinge system of a tractor. The device includes a telescoping arm with a knife and a banana-neck catcher. A train of small wagons with special bars for hanging the harvested branches is pulled behind the tractor.



### *Mechanical device for harvesting banana bunches*

**T**he experiments show that the net harvesting rate was not lower than the hand harvesting rate, but several improvements are needed in the hanging bars of the small wagons. The physical work was completely eliminated. There is no more need to carry heavy bunches from the plant to the transport vehicle. Bunches from tall plants were also harvested with no special problems.

**T**he results suggest that the bunch density (no. of bunches to be harvested per unit area unit in one harvest) has considerable influence on the harvesting rate: the higher the density the higher the harvest rate. It appears that at the end of the season (low bunch density) it is better not to use the mechanical harvesting aid. The bunches at the beginning and end of the season are relatively small and can easily be handled manually.

\* Institute of Agricultural Engineering, ARO, Bet-Dagan.