

Integrated Weed Management in Sugarcane: A Success Story

Sugarcane being a long duration and widely spaced (60 to 90 cm row distance) crop provides an ample opportunity for several weeds to grow in vacant space, right from planting to harvesting. There are several weeds infesting sugarcane fields in North India, the predominant among them are *Cyconodon doctylon*, *Cyperus rotundus*, *Echinochloa* spp, *Saccharum* sp among narrow leaved and *Chenopodium album*, *Solanum nigrum*, *Convolvulus aremins* *Trianthema* sp. *Digera arvensis*, *Anagallis arvensis*, *Fumaria* sp. etc. among broad leaved weeds. The intensity of these weeds depends on agro-climatic condition of the region. Research results indicate that more crop-weed competition occurs during early phase of sugarcane growth. If these Weeds are not controlled in the critical period, the yield reduction of sugarcane ranges between 20 to 40 per cent. The critical period of crop-weed competition has been recorded to be 60-120 days after planting in spring cane and 150 days in autumn cane.

“Teen sinchai terah gor, tab dekhien ganne ki por”, this old proverb indicates the effect of hoeing on cane yield. Hoeing not only controls the emergence of weeds but it also improves physical condition of soil which facilitates profuse cane root development and soil aeration. However, the higher wages of labourers with un-sufficient number of its availability, the farmers perform only one or two hoeings resulting into poor weed control in cane fields.

The Indian Institute of Sugarcane Research Lucknow developed a technology named “Integrated Weed Management “ which checks the weeds with less cost involvement. For popularising it, interaction with the farmers under Institute- Village Linkage Programme was made. The practice involves the use of chemicals alongwith hoeing and thus reduces the cost on weed control without hampering the cane yield. Initially, the farmers suspected that use of herbicides may result into less number of millable canes, growth and yield due to adverse effect of chemical on cane but they got satisfied after seeing the research results at the Indian Institute of Sugarcane Research farm. To develop more confidence among the farmers, demonstrations on Integrated Weed Management (IWM) were laid out on their fields.



Weed free Sugarcane crop raised through IWM system

Application of Atrazine @ 1.0 kg a.i./ha with 1000 liters of water after 2-3 days of sugarcane planting under moist condition controlled weeds up to 40-45 days. To manage broad leaved weeds, application of 2,4-D Sodium Salt @ 1.0 kg a.i./ha with 600 liters of water was done at 60 days after planting. Finally, one manual hoeing at 90 days after planting was also followed. The technology thus, controlled all types of weed in sugarcane field. Integrated Weed Management technology produced 79.0-t/ha cane yield with Rs 52530/ha as net return which were 30.0 and 48.0 per cent higher than the farmers' practices, respectively. The input incurred under Integrated Weed Management technology was at par with farmers' practices being followed i.e two hoeings in sugarcane.

Thus, Integrated Weed Management technology controlled the weed resulting higher sugarcane yield. The farmers of area got impressed with the technology and started to communicate it to others for wide adoption.