

## **Sugarcane intercropping: A success story**

Average size of land holdings of Indian farmers is decreasing day by day owing to constant increase in human population. Presently, the proportions of marginal, small and big farmers in the country is 58.0, 18.0 and 24.0 per cent, respectively. Therefore, to meet the demand of food viz; cereals, pulses, oilseeds, vegetables, sugar, etc. for the ever increasing population, raising production of these crops is of utmost importance. Since increasing the area under these crops is not possible due to limited availability of agricultural land, the only option is to increase the crop productivity on the available land. The productivity of land could be enhanced substantially by growing intercrops in the space left between sugarcane rows. Sugarcane crop remains in the field for a year or more and the space between sugarcane rows range from 70 to 90 cm providing ample chance for profuse weed growth which draws huge amount of nutrients and moisture from the soil. Hence, besides suppressing weeds in the inter-row spaces, additional production could be taken by growing suitable intercrops in between the cane rows. Some of the Intercrops have been found to have no/negligible adverse effect on sugarcane yield.

It has been proved by the results obtained at the research stations and demonstrations conducted on farmers' fields that the intercropping with sugarcane is beneficial over the growing of sugarcane alone. Keeping the idea in view, a team of scientists under Institution-Village Linkage Programme (IVLP) thoroughly discussed the prospects of intercropping in sugarcane with the farmers. During the discussion, it came to our notice that the farmers of the area have never taken intercrop with sugarcane. They were apprehensive of yield reduction in both sugarcane and intercrop due to less time available for intercultural operations. Generally, the farmers had been growing sugarcane during spring season or after the harvest of rabi crops i.e. March to May. Farmers felt surprised to know about the benefits of growing sugarcane in autumn season. Scientists explained in detail that 20-25 per cent yield and 0.5 unit sugar recovery are increased by growing sugarcane in autumn in comparison to spring planting sugarcane. Normally, there is no yield reduction in intercrops. The farmers thus, got motivated towards intercropping in autumn planted sugarcane.



**Mustard intercropping in sugarcane**



**Sugarcane after the harvest of intercropped Mustard**

In order to instil confidence among farmers, they were brought to the Institute and shown the experiments and demonstrations on intercropping with sugarcane. The farmers got convinced after watching the growth of sugar cane as well as intercrops. Keeping the Principles of Extension, "Seeing is Believing" and "Learning by Doing" in view, six farmers were selected for conducting demonstrations in order to accelerate the adoption of intercropping in sugarcane by the farmers. Since, mustard and peas are extensively grown in the area, these crops were chosen as intercrops with sugarcane. CoPant 90223 and CoS 8432 of sugarcane, Varuna of mustard and Arkel of pea were selected as suitable varieties for intercropping. One row of mustard and two rows of pea were sown in between two rows of sugarcane.

All the operations, from planting/sowing to harvesting of sugarcane/intercropping, were performed in presence of the farmers. Sole sugarcane produced 71.0 t/ha yield, while mustard and pea intercropped with sugarcane gave 0.16 and 0.22 t/ha with 67.0 and 68.0 t/ha sugarcane, respectively, in the demonstrations. Thus, the equivalent cane yield of cane+ mustard (84 t/ha) and Cane + Pea (91.0 t/ha) was found higher by 19.0 and 28.0 per cent over that of the sole sugarcane. Similarly, net return was also higher in cane + mustard (18.0 per cent) and cane + pea (42.0 per cent) than the sole sugarcane.

Thus, important crops of the regions, when taken as intercrops with sugarcane, not only increased the productivity per unit area and time, but also provided mid-season income which eased the burden on the already depleted income of the farmers and provided them with an option for better input management for remaining part of the sugarcane growing season. Neighbouring farmers of the area were positively influenced by the results of the demonstrations and they themselves started convincing other farmers for adoption of the technology on larger areas.