Success Story

Simple advisory bumper production: success story of integrated nutrient and pest management (INPM) package in boosting sugarcane production in Mandawali village of Uttarakhand

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Village Mandawali is located in Narson Block of District Haridwar (Uttarakhand). The total geographical area of the village is 125 ha with net cultivated area of 105 ha. Total population of village is 2100 with 400 households. Out of total 400 households, 75 % are having cultivated lands and falling under large, medium, small and marginal categories. Maximum cultivated area of the village is owned by small and medium categories of farmers. The major cropping systems of the village sugarcane (plant crop)- sugarcane (ratoon crop)- wheat. Sugarcane is major crop of the village occupying about 80% of net cultivated area among crops and main source of income and livelihood security of the farmers. The yield of sugarcane was comparatively medium (600q/ha). Four varieties of sugarcane i.e. Co 0238, Co J 88, Co S 8432 and Co J 98014 are occupying most of the cultivated area by sugarcane. The major problem of sugarcane identified through PRA was its lower productivity due to imbalance use of fertilizers, higher incidence of insect-pests and diseases. In sugarcane, farmers have been found to apply 2-2.5 times higher doses of nitrogen through urea as compared to the recommended one (150kg/ha). Application of phosphorus was more or less in the range of recommended range (60kg/ha). However, there was almost nil application of potash and micronutrients (sulphur, zinc, and iron). Imbalanced use of fertilizers was also linked with heavy infestation of insect-pests and diseases in sugarcane. The major insect-pests of sugarcane were early shoot borer (*Chilo infuscatellus*) and top borer (*Scirpophaga* ***excerptalis***) were responsible for heavy damage of crop and ultimately the yield losses to the tune of 20-30%. Recently a new emerging disease of sugarcane known as *Pokkah boeng* was also noticed in many fields of sugarcane. Farmers of the village were helpless in managing the pests and were dependent on local pesticide dealers whose major intension was to make profit by providing substandard quality of pesticides without giving any recommended advisory. This also led to the heavy application of pesticides by the farmers with lower degree of pest control.

Keeping above problems in view the scientists of Group A of ICAR-IIFSR given time to time advisory to farmers through field visits, telephonic conversation etc. to incorporate integrated nutrient and pest management (INPM) package in ratoon and plant crop of sugarcane in an area of about 30 ha. under *Mera Gaon Mera Gaurav* programme. Recommended doses of NPK (150, 60, 60 kg/ha) and other nutrients i.e. sulphur (25kg/ha), zinc sulphate (25kg/ha) and ferrous sulphate (8kg/ha) were applied in the plant crop and 25% higher doses of urea in case of ratoon crop. For managing early shoot borer, a basal application of carbofuran 3% CG was done. For controlling top borer and other borers in advance stage of crop one application of chlorantranilipore (0.4% GR) was done in the month of June or July. The affected field with

pokkah boeng disease were sprayed with 1% carbendazim. Observations on the incidence of insect-pests and diseases and yield of sugarcane were recorded at end of the season. Views of farmers were also taken on the visible results of the interventions. There was tremendous increase in the yield of sugarcane due to application of integrated nutrient and pest management technology. On an average, yield of plant crop increased to 1100 q/ha from 800 q/ha (37.5%) on the field of selected farmers. The impact of technology was much more visible in case of ratoon crop (50% increase in yield) where it reaches to 1200 q/ha in INPM fields when compared to 800 q/ha in non-INPM fields. On an average, the net benefit of Rs. 90000 to Rs. 120000/ha was recorded with additional Rs. 4000-5000/ha expenditure on INPM package. The green top weight was also increased in the INPM fields which assures green fodder supply to animals. There was 50 to 100% decrease in the attack of different borers and *pokkah boeng* disease in sugarcane crop with INPM package. Farmers of the village are very much impressed with the INPM technology in sugarcane and it has also changed the mindset of other farmers for adopting the technology. The success of the INPM technology in Mandawali village conveys the message that, there is scope for increasing the productivity of sugarcane in a sustainable way in the region to the tune of 30-50%.