Summary of annual progress report of the IPM Basmati project of the Sir Ratan Tata Trust and the Navajbai Ratan Tata Trust

Introduction

Punjab led the country's Green Revolution of the 1960s and earned the distinction of becoming 'bread basket' of India. The Green Revolution technology worked very well until the beginning of the 1980s, but subsequently agriculture began to show signs of fatigue. At present, agriculture in Punjab is facing many problems especially on account of over exploitation of the natural resources and increased cost of production. The excessive use of fertilizers and chemicals has started polluting ground water and deteriorating quality of food products. Diversification of agriculture through shift in area from paddy to other crops is the only solution of these problems. A part of the area from paddy can safely be shifted under Basmati rice which needs relatively less water. Keeping in view the problems of agriculture, the Sir Ratan Tata Trust, Mumbai, has introduced an initiative for reviving the Green Revolution in Punjab through adoption of diversification in agriculture.

The process

Navajbai Ratan Tata Trust has financed the Basmati-IPM project in the districts of Tarn Taran, Amritsar and Gurdaspur. The project entitled "Promotion of integrated pest management technology in basmati to boost diversification in Punjab" was carried out in the districts of Amritsar, Gurdaspur and Tarn Taran in Punjab. In each district, five blocks were selected. Ten villages were selected from each block, making it 50 villages in the district. One scout was appointed in each village and two field officers in each district for running the project. In this way there were three districts, 15 blocks, 150 villages, 150 scouts, 6 field officers and one consultant in the total project. This project was started in collaboration with the Department of Agriculture, Punjab. The chief agricultural officers, agricultural officers and agricultural development officers were fully involved in the working of this project. In the year 2010, the project made remarkable progress. The area under basmati cultivation increased from 233,949 hectares to 252,886 hectares in 2010 in the selected districts, viz Amritsar, Gurdaspur and Tarn

Taran respectively. Gandiwind and Tarn Taran blocks of Tarn Taran district covered more area under basmati as compared to the other three blocks; whereas, in Amritsar district, Chaugawan and Ajnala blocks covered more area. In Gurdaspur district, Gurdaspur and Dera Baba Nanak blocks covered more area under basmati than other blocks. From all the three districts a total of 2,891 soil samples and 2,640 water samples from the adopted villages were taken and were tested in the state department laboratories.

Results

Seed treatment has increased from 58 per cent to 79 per cent, and, with the setting up of the information centres in the villages, the farmers get proper advice and they treat their seeds before sowing. In these selected districts less than one per cent farmers were treating the nursery in the previous year. But this year, with more emphasis on nursery treatment in the project, a nursery treatment campaign was done in different villages. In the adopted villages 61.86 per cent of the farmers treated the basmati nursery before transplanting. Excessive usage of the urea fertiliser has decreased from 89 per cent to 11 per cent in the districts in comparison to last year. In the previous year, a majority of the farmers used double or triple doses of urea fertiliser in all these three districts. The application of more than recommended doses of weedicide, insecticide and fungicide was very high in the previous year but this year the percentage of farmers using recommended dose increased from 69.05 per cent to 77.15 per cent for weedicide, 30.70 per cent to 77.94 per cent for insecticide and 38.41 per cent to 73.36 per cent for fungicide. Similarly, insecticides like cartap hydrochloride (Padan) were blindly used by the farmers without any need, as borer attacks were negligible in previous years. The expenditure on Padan decreased in this year in the three districts as the use of Padan reduced from 61 per cent to 1.61 per cent, because the farmers gave need-based application of Padan on the basis of ETL. Further, the farmers were persuaded to spray Tilt at the initiation of bearing, as its application increased from 54.08 per cent to 71.15 per cent. The project was very beneficial for saving natural resources, for increasing basmati area and production, for uplifting the socioeconomic level of the farming community by reducing over expenditure on inputs like fertilisers, weedicides, insecticides and fungicides. Non-IPM farmers were spending more than IPM

farmers. Normally a non-IPM farmer spent an average of Rs10,460 per acre for Pusa 1121 and Rs10,039 for Basmati 386 per acre as compared to an IPM farmer who spent Rs8,102 on Pusa 1121 and Rs8,106 on Basmati 386. The average profit of IPM farmers over non-IPM farmers for PUSA 1121 was Rs8,030 and for Basmati 386 was Rs6,001, hence IPM farmers earned more as compared to non-IPM farmers.

Learnings

With the implementation of IPM technology in the selected villages remarkable progress has been made on seed treatment, nursery treatment, plant population, reduced doses of urea and pesticides, particularly Padan, increase in the spraying of Tilt on seed crop, etc. In the year 2011 under this project the emphasis will again be laid on seed treatment and nursery treatment, as this low-cost technology saves the crop from deadly disease, particularly foot rot. As the farmers were convinced this year that the excessive application of urea increased the attack of leaf folder, emphasis will be laid on the application of only recommended doses of urea. Besides this the farmers will be persuaded to grow the crop as per project guidelines following the IPM technology.