

Impact of zero tillage technique on wheat productivity and economy of Gorakhpur, India

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ABSTRACT

A case study of Gorakhpur district was under taken regarding impact of zero till technology on wheat productivity and economy. The study was conducted in 13 blocks out of 19 blocks in Gorakhpur district. The study explores that zero till technology reduced the cost of cultivation Rs. 2391/ha with increase in yield by 4.4% in timely sown wheat and 9.30 percent in late sown wheat. Higher net return and benefit cost ratio was also recorded with zero till wheat compared to conventional method of wheat sowing. It was clear from the data that less number of weeds/m² found in wheat sown with ZT machine compared to wheat-sown with conventional method. Time advancement in sowing of wheat by 6 to 9 days, saving of pumping hrs for irrigation and less use of seed (kg/ha) was also recorded with zero till wheat. Highest number of farmers sown wheat with the machine provided by KVK Gorakhpur. The survey reveals that farmers belong to upper caste adopted ZT in higher (78.2) per cent. The farmers of age group of 30-40 years, having education of intermediate and having other source of income adopted zero till technology maximum. The farmers whose income is in range of Rs.1500-6000/- month and belong to nuclear family with holding size of 2-4 ha adopted zero till technology more interestingly.

Key words : Zero tillage technique, Wheat, Economy.

INTRODUCTION

Gorakhpur is an important district of U.P. having total cultivated land 264828 hectare out of which 188780 ha under wheat and 155395 ha under rice producing about 80% of total food grain production of the district. Rice-wheat cropping system very popular occupying 80% area of total cropped area in the district facing a gradual decline or stagnation in the productivity. Farmers of Gorakhpur having small holding with low net return from this cropping system. A new low cost technology called zero till technology is promoted in Eastern U.P. The zero till technology was introduced in Gorakhpur during 2001 to reduce the cost of cultivation and better utilization of fertilizers. Several experiments and demonstration showed that zero till technology reduced the cost of cultivation without affecting the productivity specially in wheat crop. With the use of this technology wheat seed sown with a zero till machine without any ploughing of the field after harvesting of rice crop. 24 machines were incorporated in Gorakhpur district during 2004-05. Zero till cum ferti seed drill machine sow the seed in line with a standard row distance which placed the fertilizer below the seed. There is no need for ploughing the field before sowing of wheat crop. Hence a study was made to find out the impact of zero till technology on farmers economy in Gorakhpur district with the objective (i) Inquire about the condition in which zero till technology has been

adopted (ii) Effect of zero till technology on productivity (iii) Reducing weed population (iv) Examine the impact on reducing the cost of cultivation and net return.

MATERIALS AND METHODS

During 2004 October, KVK Gorakhpur provided 8 machines to the farmers of 8 block for sowing rabi crop using ZT technique. The machine were provided on custom higher basis with a target of 200 acre area must be sown with a machine. A team of KVK Belipar, Gorakhpur conducted a Participator Rural Appraisal from Feb. to April 2005. The team conducted focus on group discussions with farmers of different villages to understand the impact of using zero till technology in sowing wheat by zero till cum ferti seed drill which revealed the changes in farmers economy by reducing the cost of cultivation. Thirteen blocks of Gorakhpur district were covered in survey to locate the zero till technology adopter with the area & productivity. A total of 776 farmers of 90 villages were sampled. The head of the family interviewed in his villages with other farmers adopted zero till technology. The data on area sown, productivity, cost of cultivation and other information were collected by structured questionnaire developed for this purpose. Yield and yield attributes data were collected by visit of the farmer field.

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