



A STUDY OF PADDY (*ORYZA SATIVA*) YIELD ALONG WITH COMPARISON OF WHEAT (*TRITICUM AESTIVUM*) YIELD THROUGH ADVANCE AND CONVENTIONAL TILLAGE PRACTICES

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Abstract

The study was conducted during 2009-2010 in Ghazipur district of Uttar Pradesh, Crop was Paddy and Wheat has been taken at different levels of N.P.K. doses concludes that the yield of wheat from zero tillage significantly higher in comparison to conventional tillage practices. This also concludes that the zero tillage techniques are better and fruitful for wheat crop on that field where paddy harvesting was delayed. It was also found that by adopting zero tillage method cost of production was minimized and maximize the production. This techniques also ensure in future if farmers apply all the package of practices properly and timely they will get maximum yield and return.

Key words : Wheat, paddy, yield, zero tillage, conventional tillage.

Introduction

Rice is an important cereal crop for *kharif* season of our country. A large number of peoples of our areas are based on this crop. In other words large number of peoples are depend on this crop. Seventeen amino acids are normally present. The amino acid composition of the proteins determines the nutritional value. How ever, the biological value of protein depends on the ratio of eight essential amino acids to the total amino acids. Rice shows considerable variability in grain size, shape, colour of the hull and the kernel. After rice during rabi season wheat is an most important crop of the country. Both crop occupies larges areas and provide maximum profits. Wheat cultivation has spread to the rice growing areas of Eastern India in recent years in a big way. How ever, the premonsoon showers towards the end of march force the harvesting of the wheat crop by the third week of this month. The cultivation of wheat through zero tillage minimize the cost and maximize the production with good qualities. Rice takes too much time for harvesting, due to this zero tillage practices covers the losses due to delaying

the rice harvesting. After rice a large number of clods and weeds are in the field which creates a problem for field preparations etc. delaying the sowing of wheat. Therefore wheat cultivation through zero tillage system provides much better performances of grain yield and its qualities reported Dhiman *et al.* (2001). Rice is cultivated in puddled soil which reduces the aeration whereas on other side wheat is cultivated in well ploughed soil. Puddled soil creates close and large number of weeds etc. adverse affects the wheat productivity and reduces his qualities also. Zero tillage, direct wheat sowing after rice produced greater field in comparison to conventional tillage technique shut down the fastest germination of phalaris minor reported Mahajan *et al.* (2002). After wheat during *kharif* season when rice has been taken on that fields forms greater yield and good qualities of shows that how zero tillage practices has been better for other crop, Tripathi *et al.* (1999).

Materials and Methods

The present study was conducted in Ghazipur district of Uttar Pradesh during 2009-2010 with farmers-scientist collaboration on the farmers fields. Paliya Bujurga village

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of Bhanwarkol block has been selected randomly, where three farmers has also been selected on random basis. All information's has been collected through survey method and tabular analysis has been used. Family schedule has been used to collect the data from selected farmers to their size of holdings, size of families area of rice and wheat and their production etc. Sarju-52 variety of rice has been taken for conventional methods an the field during second week of July, seed rate was 30 kg. per hectare along with three levels of N.P.K. doses *i.e.* 120:60:40, 120:60:50 and 120:60:60 kg. per hect. has been advised. The soil was loam to sandy loam was there. All the recommended practices from nursery to harvesting has been advised them time to time for the betterment of the crop. During the winter (*Rabi* season) season H.U.W.-234 a variety of wheat has been recommended for that field where rice has been harvested. Sowing of wheat has been completed during second week of November for conventional tillage practices respectively along with three levels of N.P.K. 120:60:40, 130:80:50 & 150:80:60 kg per hectare recommended. Fertilizer cum seed drill, specially designed for zero tillage conditions was used for sowing. To minimize the phaloris minor recommended to use the sulfosulfuron. Recommended does of irrigation, plant protection measures and others has been used time to time for the better management of the crop.

Results and Discussion

From the table 1, yield of paddy has been found 45 Qt./hect., 48 Qt./hect. and 50 Qt./hect. at different levels of N.P.K. doses. It shows increasing trends from first farmer to third farmers where conventional tillage practices has been used. The table 1 revels that there were much more chance of increasing the paddy yield if farmers has been used zero tillage techniques as shown in the table 2. Table 2 shows that wheat yield 38 Qt./hect., 40 Qt./hect. and 42 Qt./hect. through zero tillage techniques has been formed from first one to third ones shows increasing trends at different levels of N.P.K. does, where as 32 Qt./hect., 34 Qt./hect. and 35 Qt./hect. wheat yield has been formed throught conventional tillage practices sown increasing trends also at the same dose of N.P.K. It shows that the farmers when used zero tillage techniques yield was greater than the conventional techniques.

Table 1 : Paddy yield (Qt./hect.) at different fertilizer levels.

No. of farms	Farm size (hect.)	Fertilizer (NPK) kg./hect	Grain yield Qt./hect/
1	1.00	120:60:40	45.00
2	1.00	120:60:50	48.00
3	1.00	120:60:60	50.00

Table 2 : Wheat yield (Qt./hect.) at different fertilizer levels.

No. of Farms	Farm size (hect)	Fertilizer (NPK) Kg./hect.	Grain yield (Qt./hect)	
			ZT	CT
1	1.00	120:60:40	38.00	32.00
2	1.00	120:60:50	40.00	34.00
3	1.00	120:60:60	42.00	35.00

ZT – Zero Tillage, CT – Conventional Tillage.

From the table 2 that zero tillage, directly wheat sowing after the rice exhibited significantly higher yield. The increase in the yield through zero tillage was 10% or more than the conventional tillage. Zero tillage reduces the cost of production and mange the fertilizer placement resulted significantly higher grain yield. In comparision to conventional techniques grain yield was increased From 8 to 10 Qt./hect. The present study safely concludes that the zero tillage carries special significant results in rice-wheat system when the harvesting of rice oftenly delayed the wheat sowing. By adopting zero tillage practices in both rice and wheat crops farmers has also always on safer sides in yield and return, respectively.

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