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Growth and yield attributes of transplanted rice as influenced by weed control methods

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ABSTRACT

A experiment was conducted to investigate the effect of different methods of weed control on growth, yield and yield attributes of transplanted rice, the experiment consisting of twenty treatments. High plant population+ 1 hand weeding was recorded with highest 255panicle number /m^2 All the weed control treatments significantly increased the grain yield of crop (5.4 to7.4 t/ha) when compared with non weeded control (4.2t/ha). This increase was accompanied with increase in yield attributes. Anilophos +sand at 0.4kg ai/ha could not produced yield at par with Butachlor, the herbicide check. All weed control treatments did not have any significant effect on plant height of the rice crop.

Key words : Transplanted rice, Weed control, Growth, Yield

INTRODUCTION

Rice is the principal food grain crop of India and occupies highest acreas among cereal crops. Weeds reduce rice yield depending upon their competition intensity for nutrients, water, light and space. A sever crop weed competition leads to sever reduction in yield, if weeds are not properly checked. Manual weeding is tedious time consuming and can be done only after when the weeds have attained certain height for obtaining proper grip. So with the help of various weed control measures one can obtain higher grain yield. The grain yield of rice is a function of its different yield contributing characters such as number of panicle per unit area, filled spikelets percentage, grain weight per panicle, and 1000 –grain weight. So the present study was carried out to investigate the effect of different methods of weed control on growth, yield and yield attributes of transplanted rice.

MATERIALS AND METHODS

The experiment was conducted with twenty treatments. Treatments consisting of different herbicides, their combination and dose, manual and cultural methods were studied in a Randomized Block design with four replications.

Herbicides were applied 3 days after transplanting (pre-emergence) as spray in solution form at the rate of 800-1000 l/ha. Granular formulation of Anilophos was applied directly in granule form. Weeding in weed free and two hand weeding treatments were done manually. Rice variety “Pant dhan-4” a cross of IR x Ramadja was used in the experiment. Seedlings were transplanted in rows manually at 20 cm x 20 cm distance except high plant population+1hand weeding where 15 cm x 15 cm distance was kept. After seedling establishment 5 cm standing water level was maintained up to milk dough stage. The data on yield and nutrient uptake were analyzed by using the analysis of variance technique as suggested by Panse and Sukhatme (1967).

RESULTS AND DISCUSSION

Grain yield recorded under different treatments ranged from 42 to 31 percent higher than the yield recorded under non-weeded control. Thus all weed control treatments were found promising and resulted in an increase in grain yield. The grain yield of rice is a function of its different yield contributing characters such as the number of panicles per unit area, filled spikelets, and 1000-grain weight. Among the herbicides, Anilophos+2,4 DEE (T_8) gave yield (7.3 t /ha) which was found at par with two hand weedings and weed free check (T_{19}). None of the herbicide was found significantly superior to the herbicide check, Butachlor (T_9). However, Anilophos+2,4-DEE (T_8), Anilophos (T_4), Anilophos+2,4-DEE (T_7), high plant population +1 hand weeding (T_{17}), Oxadiazone (T_{15}), Butachlor + 2,4-DEE (T_{10}), 2,4-DEE (T_2), Anilophos (T_6), Pretilachlor(T_{11} and T_{12}), 2,4 –DEE (T_1),

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