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Bioefficacy of Clincher (Chyalofop butyl) in transplanted rice (*Oryza sativa* L.)

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ABSTRACT

A field experiment was conducted at Central Research Farm, Gayeshpur, Bidhan Chandra Krishi Viswavidyalaya, West Bengal during summer season (2000) to study the efficacy of clincher on transplanted rice. The experiment was conducted in Randomised Block Design with six replications. It was observed that application of clincher (Chyalofop butyl) @ 2000 cc/ha and 2500 cc/ha significantly reduced the number and dry weight of weeds over weedy check and lower dose. Number of grains/panicle, grain and straw yields were higher with application of clincher @ 2000 cc/ha and 2500 cc/ha. So clincher @ 2000 cc/ha may be applied for controlling of weeds and getting economic yield of transplanted rice.

Rice is the important cereal crop in West Bengal. Rice-Rice is the predominant cropping system in the state. In low land, there is no other alternative but to grow rice particularly in *kharif* season. So, in lowlands and medium lands rice-rice system is followed extensively year after year. Continuous cultivation of rice in the same land results in dominance of some weeds particularly the *Echinochloa* sp. It has been observed in farmers field also that the incidence of *Echinochloa* sp. is increasing year after year. Another problem is that it is very difficult to indentify the weed seedling and rice seedling at early phase of growth. Sometimes, *Echinochloa* sp. seedlings are also grown in the same hill along with rice seedlings and it can not be separated until flowering stage. The manual weeding is labour intensive and costly. So, the weeds particularly *Echinochloa* sp. is to be effectively controlled in rice –rice system. Park *et al.* (1994) reported that *Echinochloa crusgalli* seedling growth was completely inhibited when applied at 180 ppm at four leaf stage. Buehring *et al.* (2001) and Scherder *et al.* (2001) repoted effective control of barnyard grass in USA through application of clincher.

MATERIALS AND METHODS

A field experiment was conducted at Central Research Farm, Gayeshpur, Bidhan Chandra Krishi Viswavidyalaya, involving clincher (Chyalofop butyl), a post-emergence herbicide in transplanted rice in summer season. There were three levels of clincher *viz.*, 1500 cc/ha., 2000 cc/ha. and 2500 cc/ha. along with weedy check. The experiment was conducted in Randomised Block Design (RBD) with six replications. Plot size was 4 m x 3 m.IET-4094 (Khitish) variety of rice was transplanted on 18th February, 2000 at a spacing of 20cm x10cm. The fertilizer schedule used was 100 kg N, 60 kg P_2O_5 and 40 kg K_2O/ha. respectively with urea, sigle super phosphate (SSP) and muriate of patash (MOP) as source. Clincher was applied 10 days after transplanting as post-emergence application. The experimental soil had a pH 6.8, total N 0.048%, available P_2O_5 25 kg/ha and

available K_2O 198 kg/ha. The density and biomass of weeds were recorded by using quadrates of 0.5 m^2 at random. The crop was harvested on 7th June, 2000. *Echinochloa* sp. was the predominant weed followed by *Scirpus* sp. and *Cyperus rotundus* and few broad leaf weeds. Clincher was effective against *Echinochloa* sp. When clincher was applied beyond 2000 cc/ha there was some toxic effect on rice seedling.

RESULTS AND DISCUSSION

It is seen from the Table-1 that application of clincher reduced the total number as well as dry weight of weeds. Application of clincher @ 2000 cc/ha and 2500 cc/ha significantly reduced the number as well as dry weight of weeds over weedy check and lower dose of clincher . There was no significant variation in number of panicles /m^2 and unfilled grains/panicle. Number of filled grains/panicle was higher with application of clincher @ 2000 cc/ha over weedy check. The grain and straw yields were highest with application of clincher @ 2500 cc/ha followed by 2000 cc/ha. So, it may be concluded that clincher @ 2000 cc/ha may be applied for effective control of weeds as well as getting economic yield of summer rice. The results corroborate the findings of Park *et al.* (1994), Scherder *et al.* (2001) and Singh (2001).

Table 1 Effect of clincher on number and dry weight of weeds and yield and yield components of transplanted rice (2000)

Treatment	No. of weeds/m^2	Dry weight of weeds (g/m^2)	No. of panicles/m^2	No. of grains/panicle	Straw yield (kg/ha)	Grain yield (kg/ha)
Weedy check	17.4	30.1	508	63.6	5730	4130
Clincher (1500 cc/ha)	11.2	31.6	512	71.8	5850	4680
Clincher (2000 cc/ha)	7.0	18.2	530	75.8	6380	4750
Clincher (2500 cc/ha)	7.1	17.6	537	71.5	7200	5260
S.Em±	0.97	2.14	19.5	2.69	278	146
C.D. (0.05)	2.68	6.02	NS	7.81	780	415

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