

Research Paper

ADVANCE RESEARCH JOURNAL OF  
**C R P**  
**I M P R O V E M E N T**  
Volume 4 | Issue 1 | June, 2013 | 25-27  
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## Effect of time of sowing and weed control methods in direct seeded rice

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**ABSTRACT :** A field experiment was conducted to find the effect of time of sowing and weed control practices on yield and dry weight of weeds during *Kharif* season of 2010 and 2011 at AICRP on Weed Management, MKV, Parbhani. Sowing of paddy before onset of monsoon produced higher grain yields as compared to sowing after onset of monsoon. Whereas among the different weed control methods PE application of butachlor followed by one hand weeding recorded grain yields at par with weed free treatment.

**Key Words :** Direct seeding, Weed control, Paddy yield

**How to cite this paper :** Jadhav, A.S., Pawar, S.U., Gore, A.K. and Ghokhale, D.N. (2013). Effect of time of sowing and weed control methods in direct seeded rice, *Adv. Res. J. Crop Improv.*, 4 (1) : 25-27.

**Paper History :** Received : 22.11.2012; Revised : 10.03.2013; Accepted : 12.04.2013

Rice is one of the major staples grown in India. Transplanting seedlings in puddled and flooded field is the traditional method of rice growing. High losses of water through puddling, surface evaporation and percolation are some of the disadvantages of this method.

Growing rice under aerobic environment can reduce water losses to greater extent. The water resources both surface and underground are shrinking and water is becoming a limiting factor. Hence, direct seeding instead of conventional transplanting to reduce water losses is being practiced. The productivity of direct seeded rice is often reported to be lower, the main reason behind this is associated with increased weed infestation. Aerobic soil condition and dry tillage practices besides alternate wetting and drying conditions are conducive for germination and growth of highly competitive weeds. According to Mamun *et al.* (1993), weed growth reduced the grain yield by 68-100 per cent for direct seeded *aus* rice, 22-36 per cent for modern *boro* rice and 16-48 per cent for transplanted *aman* rice. Herbicidal weed control methods offer an advantage to save labour and money, as a result, regarded as cost effective (Ahmed *et al.*, 2000). The time of sowing have noticeable impact on weed intensity and probably yield also. Delay in sowing results in slow growth of crop and increased infestation of competing weeds.

In light of above the experiment was conducted to test the effect of time of sowing and weed control methods on weed intensity and yield of direct seeded rice.

### RESEARCH PROCEDURE

A field experiment was conducted at All India Coordinated Research Project on Weed Management, Parbhani during *Kharif* season of 2010 and 2011 in split plot design with three replications. The main plot treatments were two different times of sowing *i.e.* before onset of monsoon and after onset of monsoon, while sub plot treatments were six different weed control methods *viz.*, pretilachlor-S 0.5 kg/ha Pre-em, butachlor 1.5 kg/ha Pre-em + 1 hand weeding, post emergence almix 4 g/ha, sesbania (broadcast) + 2,4-D 0.5 kg/ha at 30 DAS, weedy and weed free. The gross and net plot size were 4.5 x 4.5m and 3.6 x 3.6 m, respectively. The sowing (direct seeding) before onset of monsoon was done on 15/6/2010 and 6/7/2011 during first and second year of experiment, respectively. While sowing after onset of monsoon was done on 1/7/2010 and 18/7/2011 during first and second year of experiment respectively. The recommended dose of NPK and plant protection schedule was followed.

### RESEARCH ANALYSIS AND REASONING

The experimental findings obtained from the present study have been discussed in following heads:

#### Crop weed association :

Among broad leaved weeds *Ipomea maxima*, *Digera arvensis*, *Parthenium hysterophorus*, *Euphorbia geniculata*,