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Effect of cultural practices and post emergence herbicides against weed control in soybean

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ABSTRACT

A field experiment on the "Effect of cultural practices and post emergence herbicides against weed control in soybean" was undertaken during *kharif* 2005 at Department of Agronomy. The experiment was laid out in Randomised Block Design with eight treatment combination in three replications. The treatment consist of post emergence application of imazethapyr 70 % @ 52.5, 75 and 87.5 g a.i. ha^{-1}, chlorimuran ethyl 25 % WP @ 9.37 g a.i. $ha^{-1}$and one hoeing (20 DAS) + two hand weedings (30 and 60 DAS), weedy check and water spray. Soybean (cv. DS-228) was sown @ 75 kg seed ha^{-1} at spacing of 30 x 10 cm on 31st July 2005. The yield attributing characters were significantly higher under mechanical weed control however, all these values were at par with application of imazethapyr @ 87.5 g a.i. ha^{-1}. Weed control efficiency, dry matter of weed were observed significantly highest in application of imazethapyr @ 87.5 g a.i. followed by @ 75 g a.i. ha^{-1} at harvest.

Key words : Soybean, Herbicides, Mechanical methods, Cultural practices.

INTRODUCTION

Soybean is one of the most important pulse and oilseed crops grown in *kharif* season, which has become a miracle crop of the 20th century and often designated as "Golden Bean". Among the various pulse the soybean is recognized as an excellent source of high protein and oil. It is also rich in phosphorus, sulphur and vitamins, hence it is called "poor man's meat".

In the advanced countries, soybean oil is used for cooking and manufacturing of sweets, ghee, varnishes, surface coating, printing, inks, resins, greases and lubricants etc. Soybean is also the best crop for crop rotation. During the year 2004-2005 the area under this crop is India was 69 lakh ha with production of 75 lakh tonnes and in Maharashtra area is 21.02 lakh with production of 18.82 lakh tonnes with productivity of 900 kg/ha (Anonymous, 2006).

Due to growing season of soybean is *kharif*, weed control problem become a serious problem. Weed computational for light, moisture space and nutrients.

MATERIALS AND METHODS

A field experiment on the "Effect of cultural practices and post emergence herbicides against weed control in soybean" was undertaken during *kharif* 2005 at Department of Agronomy. The experiment was laid out in Randomised Block Design with eight treatment combination in three replications. The treatment consist of post emergence application of imazethapyr 70 % @ 52.5, 75 and 87.5 g a.i. ha^{-1}, chlorimuran ethyl 25 % WP @ 9.37 g a.i. $ha^{-1}$and one hoeing (20 DAS) + two hand weedings (30 and 60 DAS), weedy check and water spray. Soybean (cv. DS-228) was sown @ 75 kg seed ha^{-1} at spacing of 30 x 10 cm on 31st July 2005.

Weed control efficiency (WCE) % :

Weed control efficiency (WCE) was calculated by using following formula proposed by Gautam *et al.* (1975).

$$WCE = \frac{WPC - WPT}{WPC} \times 100$$

Where,

WCE	=	Weed control efficiency
WPC	=	Weed population in control plot
WPT	=	Weed population in treated plot.

RESULTS AND DISCUSSION

Dry matter of weeds (g ha^{-1}) :

The significantly lowest dry matter of weeds was recorded in treatment T_6 i.e. one hoeing 20 DAS + two hand weeding at 30 and 60 DAS (0.46 q ha^{-1}). Among the herbicides significantly lowest dry matter of weed was recorded in imazethapyr @ 87.5 g a.i. ha^{-1} (2.76 q ha^{-1}) and it was at par with imazethapyr @ 75 g a.i. ha^{-1} (3.27 q ha^{-1}). From the weed dry matter data it indicates that total dry matter of weeds reduced with increase in rate f application of imazethapyr.

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