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Original Research Article

Weed Management in Oilseed and Pulses Inter Cropped With and Without Rice under Upland Condition

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A B S T R A C T

A field experiment was conducted in farmer's field to see the effect of different weed management practices (viz. Pendimethalin & integrated weed management + one H.W. at 40 DAS) in different cropping system (viz. Sole rice; rice + redgram; redgram + groundnut) with 5 replications. For the statistical analysis of the result, the experiment was conducted in split plot design. Result of the experiment showed that the maximum rice equivalent yield (58.32 q/ha.) and net return (Rs. 18205/ha.) was obtained by redgram + groundnut intercropping system followed by rice + redgram intercropping system (32.69 q/ha.) and found to be significantly superior than sole rice (14.43 q/ha.). The per cent increase in rice equivalent yield over sole rice is 304 and 127, respectively. Among weed management practices, combined application of Penimethalin @ 0.75 kg a.i./ha. as pre-emergence followed by one hand weeding at 40 days after sowing recorded highest rice equivalent yield (38.40 q/ha.), net return (Rs. 12204/ha.) and lowest dry biomass of weeds (17.17 and 28.20 g/m2) followed by chemical weed control alone (Pendimethalin @ 0.75 a.i./ha.).

Keywords

Weed Management, Oilseed and Pulses

Introduction

The yield advantages through intercropping over sole cropping are achieved not by means of costly inputs but by growing crops together expediently (Willey, 1974).

Recently, there has been growing interest in adopting the intercropping system as a production over space and time. Productivity of crops in light textured soils of Jharkhand can be increased by growing redgram intercropped with oilseed like groundnut.

Information pertaining to weed control in intercropping system is rather meager, especially in upland cropping systems. Upland crops often suffer most from the severe weeds. On the above background the present study was taken up.

Materials and Methods

A filed experiment on weed management in oilseed and pulses intercropped with and without rice was conducted on farmers's field (village- Baridih, Dumka during kharif (rainy season) of 2005-2006. The experiment consisted of 3 cropping systems (Sole rice; rice + redgram; redgram + groundnut) and 3 weed management practices (Farmers practice; chemical weed control; integrated weed management + one H.W. at 40 DAS) was conducted in split plot

design with 5 replications. Pendimethalin @ 0.75 kg a.i./ha. was used for chemical weed control measure as pre-emergence using a volume sprayer of 600 litres/ha. with the help of knapsack sprayer fitted with flat – fan nozzle. Recommended dose of fertilizers were applied in both the crops at the time of sowing.

Table.1 Performance of oilseed and pulses intercropped with/without rice under upland Condition

Treatments	Dry biomass (g/m2)		Equivalent yield of rice (q/ha.)	Net return (Rs./ha.)
	30 DAS	60DAS		
Cropping System				
Rice	**24.41**	**55.50**	**14.43**	**3805.00**
Rice + Redgram	**21.67**	**49.50**	**32.69**	**9515.00**
Redgram + Groundnut	**23.47**	**44.90**	**58.32**	**18205.00**
CD 5%	**1.13**	**3.15**	**2.70**	**130.00**
Weed Management				
Farmers Practice	**35.40**	**67.60**	**31.29**	**2250.00**
Chemical Weed Control	**16.99**	**53.84**	**35.76**	**5609.00**
Integrated Weed Management	**17.17**	**28.20**	**38.40**	**12204.00**
CD 5%	**1.04**	**2.38**	**1.75**	**128.00**

Results and Discussion

Among cropping system, maximum rice equivalent yield (58.32 q/ha.) and net return (Rs. 18205/ha.) was obtained by redgram + groundnut intercropping system followed by rice + redgram intercropping system (32.69 q/ha.) and found to be significantly superior than sole rice (14.43 q/ha.). The per cent increase in rice equivalent yield over sole rice is 304 and 127, respectively.

Among weed management practices, combined application of Penimethalin @ 0.75 kg a.i./ha. as pre-emergence followed by one hand weeding at 40 days after sowing recorded highest rice equivalent yield (38.40 q/ha.), net return (Rs. 12204/ha.) and lowest dry biomass of weeds (17.17 and 28.20 g/m2) followed by chemical weed control alone (Pendimethalin @ 0.75 a.i./ha.). Similar observations were recorded by Patil and Pandey (1996) and Willey (1979).

References

Patil, B.M. and Pandey, Jitendra (1996). Chemical weed control in pigeonpea intercropped with legume. Indian J.Agron.41 (4):529.

Willey, R.W. (1979). Intercropping, its importance and research needs, competition and yield advance. Field crop Abs. 32 (1):1.

DRR [Directorate of Rice Research]. (2013). Progress Report, 2012, Vol. 3, Crop Production (Agronomy), Soil Science and Plant Physiology), All India Coordinated Rice Improvement Programme (ICAR), Directorate of Rice Research, Rajendranagar, Hyderabad, A.P., India, pp.9.

Dass, A., Shekhawat, K., Choudhary, A.K. Sepat, S., Rathore, S.S., Mahajan, G. and Chauhan, B.S. (2016). Weed management in rice using crop competition- a review. Crop Prot. Available: http://dx.doi.org/10.1016/j.cropro.201

6.08.005 [20 December 2016].

Gopal, R., Jat, R.K., Malik, R.K., Kumar, V., Alam, M.M., Jat, M.L., Mazid, M.A., Saharawat, Y.S., Mc Donald, A., and Gupta, R. (2010). Direct Dry Seeded Rice Production Technology and Weed Management in Rice Based Systems. Technical Bulletin, International Maize and Wheat Improvement Center, New Delhi, India, 28p.

Maity, S.K. and Mukherjee, P.K. (2008). Integrated weed management in dry direct-seeded rice (*Oryza sativa*). Indian J. Agron. 53: 116-120.