



ON FARM VERIFICATION OF PERFORMANCE OF WEEDERS IN KANDHAMAL DISTRICT OF ODISHA, INDIA

C R Subudhi

Associate Professor, CAET,OUAT,Bhubaneswar, India.

Abstract

A trial was conducted in on farm to find out the best performance of weeder during 2006-08 at AICRPDA, Phulbani center. The area of Phulbani consists of hill ranges which belong to main line of Eastern Ghats along with some plains and Valleys lying between the hill ranges. Cultivation of rice in Kharif is main crop in this zone due to basic need of the farmers. Weeds are the most important factors reducing productivity of this crop. Farmers control weeds by hand picking and hoeing which substantially become more expensive and add to the cost of cultivation. Weeding by mechanical devices reduces the cost of labour and also time. Three weeding devices were tested in groundnut crop against hand weeding under on-farm trial. Among four weeders tested in Phulbani during 2006-08 in on farm to control weeds in groundnut crop, and their efficiency was compared with hand weeding. Considering the mean performance over three years Phulbani dryland weeder which gave 35.1% higher pod yield than hand weeding may recommended for this region.

Introduction

The area of Phulbani consists of hill ranges which belong to main line of Eastern Ghats along with some plains and Valleys lying between the hill ranges. Cultivation of rice in Kharif is main crop in this zone due to basic need of the farmers. Weeds are the most important factors reducing productivity of this crop. Farmers control weeds by hand picking and hoeing which substantially become more expensive and add to the cost of cultivation. Weeding by mechanical devices reduces the cost of labour and also time.

A trial was conducted in Phulbani to test the weeders for weeding groundnut and Phulbani dryland weeder was found suitable. (Anonymous-2006-08) Experiments were conducted during dry season of 2010 to 2012 to study the field efficiency of weeders, developed at Central Rice Research Institute, Cuttack. The weeders, namely bullock drawn, self propelled, star-cono and finger weeders, reduced the cost of weeding by 68%, 61%, 60% and 34%, respectively, compared to manual weeding (Mahapatra et al. 2013)

Materials and Methods

Three weeding devices were tested in groundnut crop against hand weeding under on-farm trial. Among four weeders tested in Phulbani during 2006-08 (3 years) in on farm to control weeds in groundnut crop, and their efficiency was compared with hand weeding. The treatments were as shown below

Treatment
T1-Phulbani Dry land weeder
T2-Wheel finger weeder
T3-Local Gadi
T4-Hand weeding

Result and Discussion

Phulbani dry land weeder gave benefit: cost ratio of 1.56 as compared to the B:C ratio of 1.01 with hand weeding. Three weeding devices were tested in groundnut crop against hand weeding under on-farm trial. Wheel finger weeder recorded highest field capacity (0.097 ha/hr) followed by Phulbani dry land weeder (0.076 ha/day) (Table 1). Phulbani dry land weeder (Fig.1) gave the highest pod yield of groundnut (15.4 q/ha) and benefit cost ratio of 1.56 during 2008-09 followed by Wheel finger weeder which gave groundnut pod yield of 14.6q/ha and B:C ratio of 1.50. Considering the mean performance over three years Phulbani dry land weeder gave 35.1% higher pod yield than hand weeding. Manual weeding gave lowest pod yield of 11.4 q/ha and lowest benefit cost ratio of 1.01 during 2008-09. Phulbani Dry land weeder is easily acceptable by farmers due to its low cost (Rs20/- per piece) and higher effective field capacity.



Table- 1 Groundnut pod yield and B: C ratio in different treatments

Treatment	Groundnut pod yield/ha				Effective field cap(ha/day)	Gross return, Rs/ha	Net return, Rs/ha	B:C Ratio
	2006-07	2007-08	2008-09	Mean				
T1-Phulbani Dry land weeder	15.1	15.7	15.4	15.4	0.076	30,700	11,054	1.56
T2-Wheel finger weeder	14.9	14.7	14.6	14.8	0.097	29,200	9,714	1.50
T3-Local Gadi	13.2	13.3	12.5	13.0	0.03	24,960	4,966	1.25
T4-Hand weeding	11.2	11.5	11.4	11.4	0.015	22,800	204	1.01
Mean	13.6	13.8	13.5	13.6	0.055	26915	6484.5	1.33
SEm±	0.5	0.1	0.12	0.18				
CD(5%)	1.53	0.3	0.36	0.56				



Fig.1 Weeding by Phulbani Dryland weeder

Conclusion

Considering the mean performance over three years Phulbani dryland weeder which gave 35.1% higher pod yield than hand weeding may recommended for this region.

References

1. Anonymous.(2006-08) Annual report of AICRPDA ,Phulbani.
2. Mohapatra P C*, Patel S P, Din M, Mishra P (2013) Performance evaluation of weeders in rice cultivation. ORYZA.50(2):169:173.