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Research Paper :

Development of Cycle hoe

M.M. PACHARNE, S.R. SAVLE, R.V. SANGLIKAR AND D.T. PACHARNE

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See end of the article for authors' affiliations

Correspondence to:
M.M. PACHARNE
All India Co-ordinated Research Project for Dryland Agriculture, MPKV, SOLAPUR (M.S.) INDIA

ABSTRACT

Interculturing is one of the most important operations in dryland farming. At least 3-4 hoeings should be done which not only are used for controlling weeds but also for soil and moisture conservation and creation of soil mulch. Weeding and intercultivation operations were very costly mainly due to high drudgery, initial cost of implements and non availability of field labours.

Key words : Interculture, Cycle hoe, Weeding efficiency

Weeds are the one of the major problems in the crop production. In India annual loss due to weeds have been estimated to the tune of about Rs.1000 crores. The traditional method of weed control is to remove weed manually by weeding hoe. This is time consuming process involving large number of manual labour. Due to the shortage and drudgery of labour, weeding cannot be completed in the time by the farmers which resulted in reduction of yield and decrease per hectare production (Jadhav *et al*., 1991). Nearly one third of cost of cultivation is spent for weeding and interculturing operation. Further, nearly 20 per cent of labour is required for theses operation (Progress report 2004-2006).In view to reduce drudgery of work and cost of operation, cycle hoe was developed.

METHODOLOGY

The weeding hoe like wheel hoe, split blade hoe, entire blade hoe are being used for weeding and interculturing in row crops in dryland region. In this practice of interculturing in row crops two to three hoe are attached to one wooden beam and drawn by a pair of bullock. In this method draft and persons required are more. In view to reduce drudgery of work and cost of operation, cycle hoe was developed. This original cycle hoe was made up of old bicycle parts like wheel, handle and a blade. Since it was difficult to get the old cycle parts, modifications were made by replacing the old cycle wheel by a wheel made up of mild steel. Cycle hoe is cost effective as well as easy to operate. One man can easily perform the hoeing on 0.4 ha land per day. The data of field trials is presented in Table 1 which, revealed that the cycle hoe was more comfortable as well as economical as compared to manual method and hand hoe.

RESULTS AND DISCUSSION

One man can easily perform the hoeing on 0.4 ha land per day. The data of field trials is presented in Table 1. It revealed that the cycle hoe was more comfortable as well as economical to manual method and hand hoe. Manual method (khurpi) was used as weeding tool for comparison. These trials were conducted during year 2001-2004 for pigeonpea crop at DRY Farming Research Station, Solapur. Though the weeding efficiency of the manual weeding is higher the benefit was lost in its cost of operation (Sthool and Shinde, 2004)

Advantages of cycle hoe :

– Initial cost of implement is very less *i.e.* Rs.450/- only. So, the marginal poor farmers can also afford this

Table1 : The field performance of cycle hoe

Sr. No.	Particulars	Cycle hoe	Manual Method	Hand hoe
1.	Width of operation, cm	30	-	12
2.	Area covered ha/day	0.4	0.4	0.14
3.	Cost of operation, (Rs./ha)	250	1500	714
4.	Operators comfort	More comfortable	-	Less comfortable
5.	Drudgery	Less	Medium	More
6.	Crop	Pigeon pea	Pigeon pea	Pigeon pea

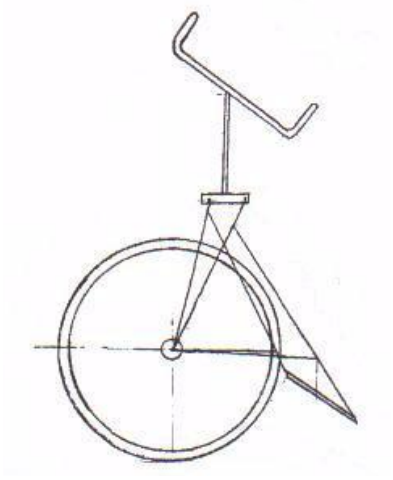

Fig. 1 : Sketch of cycle hoe

implement.

– Drudgery of work during operation is very much reduced.

– Design of cycle hoe is so simple that any local village fabricator can manufacture.

– The blade can be replaced by different sizes of blade to suit for operation in different row spacing of the plants.

– Thus this technology has potential to generate rural employment.

Conclusion:

One man can easily perform the hoeing on 0.4 ha land per day. That's why cycle hoe is becoming very popular amongst the farmers in that region. Local manufacturers have started production of this implement to meet the demand from the farmers. This technology has great potential to provide job to unemployed village youth

Authors' affiliations:
S.R. SAVLE, R.V. SANGLIKAR AND D.T. PACHARNE, All India Co-ordinated Research Project for Dryland Agriculture, SOLAPUR (M.S.) INDIA

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