

Dissemination of Improved Sickles for Female Agriculture Workers for Crop Harvesting

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Abstract

The present investigation was carried out with the following objectives to evaluate the weeding efficiency of tools and performance evaluation of weeding activity performed by farm women using newly introduced and traditional tools. Improved sickle resulted in higher field capacity (0.07 ha h⁻¹) than simple sickle. The rate of perceived opinion for improved sickle fall in the category of highly acceptable tool as compared to simple sickle. Average gross return per farm women was increased from Rs. 112.50 to Rs. 150.00 for improved sickle. Results of the study showed that improved sickle was more suitable for crop harvesting by farm women and their preference was shown towards improved sickle as compared to the sickles traditionally used by them.

Key words: Harvesting, sickle, women, drudgery, SWOT.

Introduction

Rural women are critical to the well being of farm households, as they play a vital role both in the management of domestic work as well as farm related work. They work for 14 to 16 hours a day in trying to balance competitive demands in agriculture production, household focused activities and income generation^[1]. Agriculture is an important unorganized sector where majority of the women labour force is engaged either in their own field or in others field. Activities like weeding, cutting, uprooting, picking/doffing, transplanting, removal of stalk and stubble, threshing were found to be maximum drudgery involved agricultural activities performed by women^[2].

Harvesting is perceived as the drudgery prone task in agriculture domain. It accumulates load of work on farm women during peak seasonal period of work. The work environment and the tools used by women in agriculture are also some of the important reasons to lower down the productivity and increase in health hazards. The agricultural women are needed to be mechanized appropriately for increasing their productivity, income and reducing the drudgery involved in various agricultural activities. Hence there is a need to study the SWOT analysis of improved sickle with disseminated approach and their impact on farm women. So the present study was undertaken with objectives to evaluate the weeding efficiency of tools and performance

evaluation of weeding activity performed by farm women using newly introduced and traditional tools.

Materials and Methods

Selection of subjects

Ten farm women actively engaged in harvesting activity were selected for the present study. Care was taken to select farm women who were healthy, non-pregnant, non-lactating, and free from any other serious health hazards. These farm women were randomly selected from 40 farm women of Morena district.

Harvesting efficiency

Following formula was used for calculation of harvesting efficiency:

$$\text{Harvesting efficiency (HE)} = n = (H_1 - H_2) / H_1 \times 100$$

Where H₁ = No. of plants in the plot before operation

H₂ = No. of plants in the plot after operation

n = Harvesting efficiency in percentage

Potential for use of improved sickle for wheat harvesting

SWOT (strengths, weaknesses, opportunities and threats) analysis for use of improved sickle for wheat harvesting by farm women in Morena district is presented in Table 1. It indicates that use of improved tools by farm women for harvesting of wheat crop could be a useful implementation for reducing the drudgery of farm women with increased output. Apart from this, there are certain other advantages, which ensure the possibility of adoption of improved sickle. These are: useful in harvesting of various crops, time saving, more income per unit time and does not require the sharpening of cutting

edge frequently. Thus it could be a good tool for farm women empowerment.

Constraints of using improved sickle

Major conspicuous constraints of using improved sickle is unavailability of improved sickle and lack of awareness among the farm women about benefits of using improved tools, poverty, illiteracy, lack of knowledge of improved tools, poor communication network and hand to mouth leaving attitude of farm women (Table 1).

Dissemination approach of improved tool for harvesting

Keeping in view the drudgery reduction of farm women in harvesting of wheat by using improved sickle, higher efficiency, increase output, etc., it was planned to disseminate the technology of using improved sickle for harvesting in Morena district as an vital tool for empowerment of women. A schematic sketch of approach for the dissemination of use of improved sickle for wheat harvesting in Morena district is depicted in Figure 1. However, for better understanding, the same it has been briefly described here.

Creating awareness and developing desire

Farmers are not always aware of the improvements they could make by using scientific and technological knowledge [3]. Thus, first of all, the attention of farm women was directed towards the women friendly improved farm tools especially of improved sickle by conducting informal meetings and discussion with them. Their interest was stimulated by explaining them how it could contribute towards their drudgery

reduction. This interest was later transferred into desire by continuous persuasions and motivation for use of improved tool.

Capacity building

A training programme for this group of women beneficiaries for their empowerment was organized with the objectives of imparting knowledge and skill of improved farm tools, along with gaining confidence of farm women towards their participation in sustainable development of other aspects.

Follow up: Distribution of improved sickle

After training, the participating farm women were fully motivated for use of improved sickle, but being extremely poor and having no outside support, they showed inability to purchase it and thus needed financial support.

Thus to encourage and disseminate the technology of using improved farm tools, Krishi Vigyan Kendra, Morena ,

arranged improved sickles for harvesting of wheat crop with the condition that they would return back these sickles after harvesting of above said crop, which they agreed to. The women received enough moral support from their families.

Results and Discussion:

Harvesting efficiency

The results obtained from the field evaluation of the sickles have been presented in Figure 2.

Improved sickle resulted in higher field capacity (0.07 ha h⁻¹) than simple sickle. The harvesting efficiency followed similar trend with values of 77.25 and 70.80 incase of improved and simple sickle, respectively .Higher harvesting efficiency incase of improved sickle may be because of less pushing force required to operate the sickle, which might have resulted in higher cutting speed. Improved sickle consists of serrated blade, ferrule and wooden handle. Cutting of crop stalk is

Table 1: SWOT analysis for harvesting of crop using improved sickle

Strengths	<ul style="list-style-type: none"> • Serrated blade • Ferrule and wooden handle • Less weight • Less fatigue on wrist
Weaknesses	<ul style="list-style-type: none"> • Pressure as on specific time • Unawareness and unavailability of improved implements for harvesting • Lack of interest • Input free attitude of farm women
Opportunities	<ul style="list-style-type: none"> • A good tool for farm women empowerment • Useful in harvesting of various crops • Time saving more income per unit time • Does not require the sharpening of cutting edge frequently
Threats	<ul style="list-style-type: none"> • Exploitation of farm women by middle men by purchasing of improved implements at very high rates • Poor care and management by farm women may lead to reduce efficiency by serrated blade

being done with the improved sickle by sawing action as against by impact or pulling action in case of simple sickle. Due to its less weight i.e. about 180 gram, the

fatigue coming on wrist is less and the drudgery involved in harvesting is reduced as compared to local sickles which are heavier i.e. weighing about 359 gram ^[4].

Farm women’s opinion

The opinion of farm women on the use of simple and improved sickle for

harvesting of wheat crop is presented in Table 2.

Table 2: Farm women’s opinion on the use of simple sickle and improved sickle for harvesting of wheat crop

Factor assessed	Maximum attainable score	Attained score		Per cent of attained score over maximum		Remark	
		Simple sickle	Improved sickle	Simple sickle	Improved sickle	Simple sickle	Improved sickle
Stress factor	10	6	9	60.0	90.0	Acceptable	Highly acceptable
Work output	10	6	8	60.0	80.0		
Tool factor	15	10	12	66.7	80.0		
Field acceptability	15	10	13	66.7	86.7		
Over all	50	32	42	63.4	84.2		

The percentage of attained score for simple sickle was found to be 63.4% while incase of improved sickle, it was 84.2 per cent. Thus rate of perceived opinion for improved sickle fall in the category of highly acceptable tool as compared to simple sickle.

Gross return

Dissemination of the improved tool

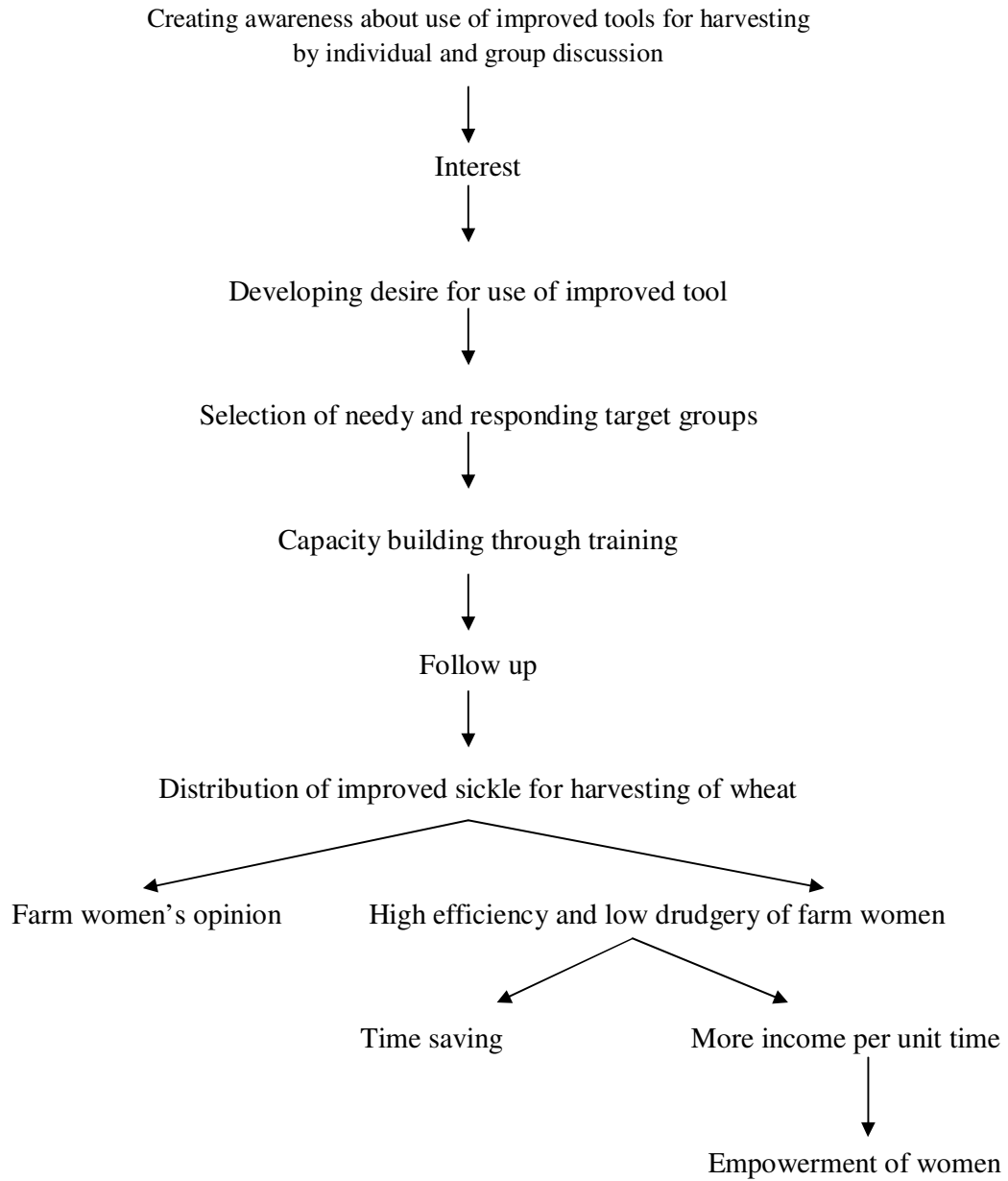
Though, training was provided to women only, the technology for using improved sickle was picked up by men also by just seeing it. The farm women after harvesting of wheat by improved sickle have developed a feeling of economic empowerment. Now they are able to purchase improved sickle at their own which indicates the successful transfer of this improved tool technology to the farm women. Now they build up their self confident and capable to explain

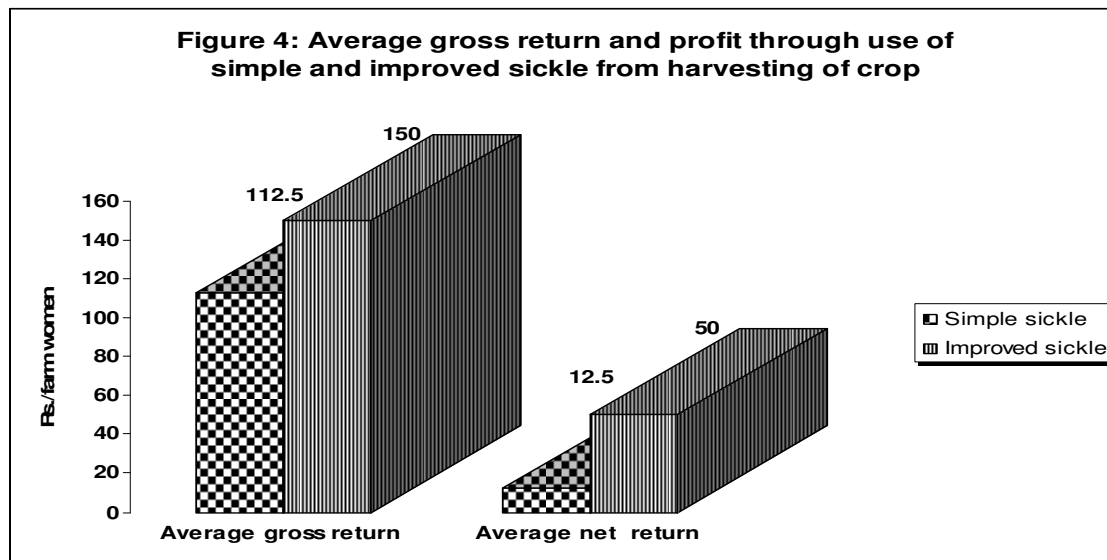
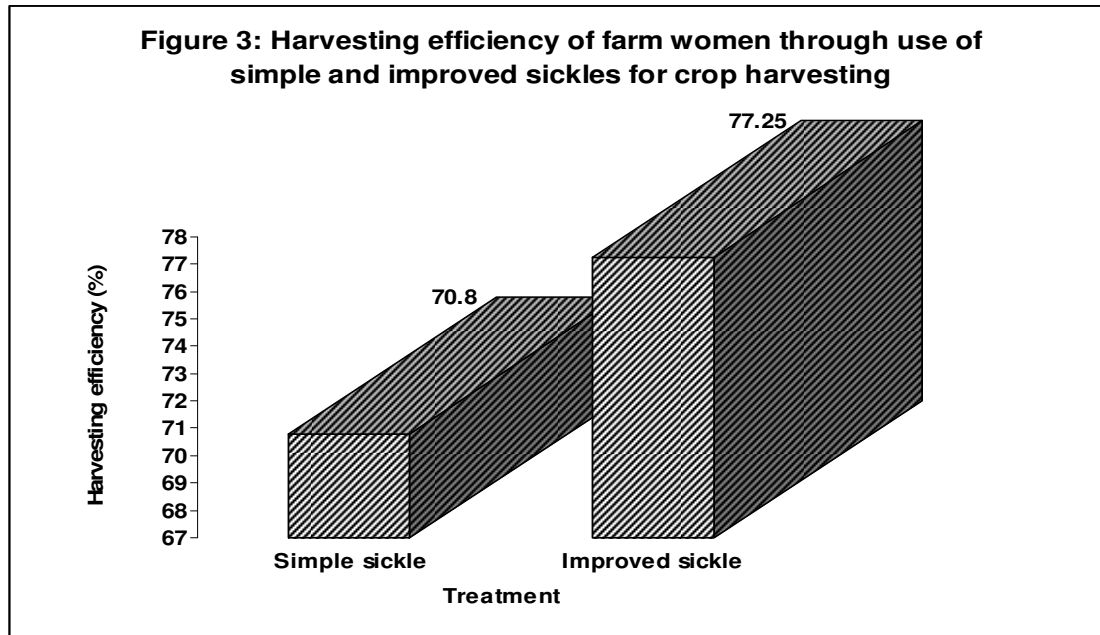
Average gross return per farm women was increased from Rs. 112.50 to Rs. 150.00 for improved sickle (Figure 3). The same trend was observed for profit per farm women after harvesting of wheat crop using improved sickle. However, there is a wide scope to enhance this profit by adopting appropriate time scale.

the proven technology to other needy resource poor farm women.

Conclusively, Results of the study showed that improved sickle was more suitable for crop harvesting by farm women and their preference was shown towards improved sickle as compared to the sickles traditionally used by them. The output was increased with better harvesting efficiency and reduced drudgery by using improved sickle. Thus, improved (serrated) sickle is found suitable for harvesting of crop.

Figure 1: Flow chart showing disseminated approach of improved tool for crop harvesting





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