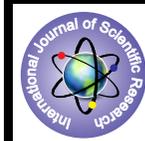


Tools and Implements Used by Hill Farm Women in Himachal Pradesh



Agriculture

KEYWORDS : Hill farm women, Traditional, Improved tools, Drudgery

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ABSTRACT

In recent years, improved implements and machinery have played significant role in accelerating the pace of agricultural mechanization in India. In Himachal Pradesh rural hill farm women form the most productive work force in agriculture sector. Even in present times farm activities in Himachal Pradesh are being carried out manually causing drudgery. Transplanting is one of the most common task performed by women continuously for 7 to 8 hours a day in bending posture. Therefore, there is a need to study the tools and implements used by women and to identify friendly equipments for hill farm women. The study was carried out in District Kangra of Himachal Pradesh Awareness campaigns regarding new tools and machinery were conducted to generate awareness among farm women. Results revealed that cent per cent respondents used traditional tools for preparatory tillage, sowing and manuring. Transplanting and weeding were done with the help of traditional tools. Majority of respondents i.e. 55 per cent performed the activity of harvesting with the help of improved tools as compared to 39 per cent with both traditional and improved tools. The main tools used for Agricultural work were fawda, kudal for preparatory tillage. Manuring, sowing and transplanting were performed manually. In case of weeding (96.67%) of respondents performed the activity with hands. It was concluded that after imparting training regarding improved tools majority of the respondents were willing to purchase the same, which are useful for the farm hill women workers to reduce their drudgery and increasing efficiency, thereby improving health and well being of women involved in farming operations.

Introduction

Agriculture in India is the backbone of the country and is regarded as the largest sector of the country's economic activity (Anonymous 2007). Women historically have played and continue to play an important role in agriculture sector. More than 50 per cent of the farm work is done by women in India (Chandurkar 2001). Rice is the staple food of more than half of world population. Rural women contribute much of labour for rice production and other agricultural activities. Even now a days in Himachal Pradesh farm activities are being carried out manually causing drudgery to workers. Paddy transplanting as one of these activities is being performed continuously for 7-8 hours a day in bending postures with very little rest period in between. Farm workers used traditional tools for many operations like preparatory tillage, sowing and manuring. Transplanting and weeding were also completed with the help of traditional tools. In recent years, improved implements, tools and machinery have played significant role in accelerating the pace of agricultural mechanization in India. Rural women form the most important productive work force in the agriculture sector of majority of the developing nations including India. Thus there is a difference in the technology needs of hill farm women as compared to the rest of the rural masses. Therefore the present study has been planned with the objective to know the tools and implements used by the hill farm women and make them aware about modern tools and implements.

Methodology

The present study was conducted in five villages of Bhawarna block of Kangra District of Himachal Pradesh. Random sampling technique was used in selecting sample of 120 women involved in paddy transplantation. Transplanting is an important activity where most of the farm activities are carried out by rural hill women. Interview schedule and observation methods were used for collecting the data. Some questions / observations were taken after the awareness of improved tool to respondents. Experimental work was conducted on thirty volunteer respondents. Awareness was given about the improved tool used for paddy transplanting that is transplanter. The Agricultural Engineering Department was consulted regarding the improved technology, after gaining all the information about the transplanter awareness training camps were organized for the farm women. Data was collected after awareness through interview schedule. Appropriate statistical tools namely, simple percentage, mean scores were used for the analysis of data.

Results and Discussion

Regarding the background information of the respondents it can be seen from the Table 1 that 48.33 per cent of respondents belonged to the age group of 34-48 years followed by 32.50 per cent in the age group of 49-63 years whereas only 19.16 per cent fall in the category of 18-33 years. 47.50 per cent of the respondents were in the weight category up to 46-55 Kg. Seventy per cent of respondents were having height range between 136-150 cm. Majority of them were housewives (80%). Body Mass Index (BMI) was 23.16 kg/m² which is normal. These results are in line with Dhillon (2007) who studied the involvement of farm women in agricultural and allied activities. Further Table 2 elicits that 65.00 per cent of respondents belonged to nuclear families. Maximum number of respondents 65.83 per cent belonged to the medium family size between four to six. Majority of respondents that is 57.50 per cent having land holding up to 6 kanals. Majority of respondents 54.17 percent were having pukka houses and 47.50 percent of respondents were having income in the range of 3001- 6000, mean average income was 6770.83.

Table 1 Distribution of respondents according to their background characteristics.

N=120

Sr. No	Personal Characteristics	Category	No. of Respondents
1	Age (years)	18-33	23(19.16)
		34-48	58(48.33)
		49-63	39(32.50)
		Total	120(100)
	Mean (years) Standard Deviation		42.58+10.04
2	Weight(Kg)	35-45	24(20.00)
		46-55	57(47.50)
		56-65	27(22.50)
		66-75	12(10.00)
		Total	120(100)
	Mean(Kg) Standard Deviation		51.58+8.21
3	Height	120-135	28(23.33)
		136-150	84(70.00)
		151-165	8(6.66)
		Total	120(100)
	Mean(cm) Standard Deviation		151.14+7.62
4	Occupation	Housewives	96(80.00)

	Daily wages	5(4.17)
	NREGA	14(11.66)
	service	5(4.17)
	Total	120(100)
5	Marital status	Married
		109(90.85)
		Unmarried
		1(0.83)
		Widow
		10(8.33)
	Total	120(100)
6	Body Mass Index(BMI)Average standard Deviation)	23.16+4.85

Table 2 Distribution of respondent according their family characteristics.

N=120

S. No.	Family Characteristics	Category	No. of Respondents
1.	Family type	Nuclear	78(65.0)
		Joint	42(35.0)
	Total		120(100)
2.	Family size	Small(less than 4)	31(25.83)
		Medium(4-6)	79(65.83)
		Large(7and above)	10(8.33)
	Total		120(100)
3.	Land holding	Up to 6 Kanal	69(57.50)
		7-12 Kanal	34(30.91)
		More than 12 Kanal	17(15.45)
	Total		120(100)
4.	Type of house	Kachha	22(18.33)
		paccka	65(54.17)
		Mixed	33(27.50)
	Total		120(100)
5.	Family Income of respondents (in Rs.)	Less than 3000	16(13.33)
		3001-6000	57(47.50)
		6001-9000	18(15.00)
		More than 9000	29(24.70)
	Total		120(100)
	Mean		6770.833
	Standard deviation		+5371.453

Note: Figure in the parenthesis indicates percentages of respondents.

Role of farm women in household, agricultural and animals related activities.

Women along with household and animal work involved in many agricultural operations in the hilly areas. Table 3 shows that majority of the respondents (73.33%) spent less than four hours for household work per day, maximum number of respondents 66.66 per cent spent five to six hours for agricultural work and (50.84%) respondents spent two to three hour for animal husbandry. Singh et al.(2001) reported that the average time spent by women on the farm activities varied from 30 to 240 min/ per day depending on the farming operation being performed.

Table 3 Distribution of respondents according to the time (hours/ day) spent in house hold work, agricultural work and animal care.

N=120

Sr. No.	Type of work	Time duration (Hours/day) & No. of respondents				
		Time	Less than 4	4-5	More than 5	
1.	Household work	Time	20	12	12	
		Respondents	88(73.33)	20(16.66)	12(10.00)	
2.	Agricultural work	Time	2-4	5-6	More than 6	
		Respondents	30(25.00)	80(66.66)	10(8.33)	
3.	Animal care	Time	No time	0-1	2-3	More than 3
		Respondents	20(16.66)	21(17.5)	61(50.84)	18(15.00)

Note: Figure in the parenthesis indicate percentages of respondents.

Tools and techniques used in agricultural work.

Table 4 elicits that cent per cent respondents used traditional tools for preparatory tillage, sowing and manuring. Majority of the respondents liked this work. Transplanting and weeding were also completed with the help of traditional tools but maximum number of farm workers not liked these activities. The task of harvesting was done by 55 per cent of respondents with improved technology, followed by 39.16 per cent with both traditional and improved tools and only 5.83 per cent complete the task of harvesting with only traditional tools. All were doing threshing with the help of traditional ways and also majority of respondents liked this work. Storage was done with the help of improved tools and maximum number of respondents liked this work. The reason being that new improved tools help them to save their time and energy both and helps them in maintaining good health. These findings are in congruence with the study of Sharma et.al (2004) who studied the role of improved agricultural implements and machinery which have been instrumental in not only increasing the cropping intensity in rice growing areas but also helped a lot in reducing the drudgery work in the fields.

Table 4. Distribution of respondents according to type of traditional/ improved tools used in agricultural work. N=120

Sr. No.	Type of work	Traditional tool	Improved tool	Both	Linked work	Disliked work
1.	Preparatory tillage	120(100.00)	-	-	110(91.66)	10(8.33)
2.	Manuring	120(100.00)	-	-	110(91.66)	10(8.33)
3.	Sowing	120(100.00)	-	-	108(90.00)	12(10.00)
4.	Transplanting	120(100.00)	-	-	50(41.66)	70(58.33)
5.	Weeding	120(100.00)	-	-	25(20.83)	95(79.17)
6.	Harvesting	7(5.83)	66(55.00)	47(39.16)	110(91.66)	10(8.33)
7.	Threshing	120(100.00)	-	-	107(89.17)	13(10.83)
8.	Storage	-	120(100.00)	-	114(95.00)	6(5.00)

Note: Figure in the parenthesis indicates percentages of respondents.

Tools used for agricultural work

Most of the activities in hilly area were performed manually or with traditional tools available in the local area. Table 5 presents the information regarding tools used for agricultural work in hilly area. It shows that in case of preparatory tillage all respondents used fawda and 54.17 per cent respondents used both fawda and kudal. Manuring, sowing and transplanting was performed manually, in case of weeding 96.67 per cent of respondents did weeding with the help of hands, whereas 3.33

per cent both hands and sickles. Thresia 2004 also revealed that tedious manual activities such as transplanting, weeding, harvesting, transporting, threshing, drying was wholly done by women and on an average, they got three and half months of work in a year..Harvesting was completed with both traditional and serrated sickles. 50.19 per cent of respondents were aware of serrated sickles. Maximum number of respondents completed threshing with the help of oxen and storage was done in metallic bins .These results are supported by Sujata (1999) who concluded that there is no significant difference between the old and the new sickles from the point of productivity, but according to the farmers the new design sickles performed better than the old ones.

Table 5. Distribution of respondents according to the tools used for the farming activities. N= 120

Sr. No.	Type of activity	Tools Used	No .of users
1	Preparatory tillage		
1.1		Fawda	120(100)
1.2		Fawda and Kudal	65(54.17)
1.3		Fawda , Kudal and clod breaker	1(0.83)
1.4		Fawda , Kudal dandalti	8 (6.66)
1.5		Fawda, kudal and kassi	12(10.0)
2.	Manuring	By hand	120(100)
2.1			
3	Sowing	By hand	120(100)
4	Transplanting	By hand	120(100)
5	Weeding	By hand	116(96.67)
5.1		Both hands and sickles	4(3.33)
6	Harvesting		
6.1		Traditional sickles	7(6.36)
6.2		Serrated sickles	56(50.91)
6.3		Both	47(42.73)
7	Threshing		
7.1		By hand	5(4.17)
7.2		By using oxen	107(89.16)
7.3		Both	8(6.66)
8	Storage		
8.1		Metallic bin	116(96.66)
8.2		Metallic bin, peru and cartons	4(3.33)

Note: Figures in parenthesis indicate percentages of respondents.

Knowledge level of respondents after awareness about the improved technology (Paddy transplanter

Majority of farm women involved in paddy transplanting activity. The feedback was collected after awareness about the improved technology. Table 6 shows that after awareness camps cent percent respondents found that the working of transplanter was very easy ,it saves time ,labour and reduce the drudgery of the farm workers by completing the work easily and quickly .Maintenance of the machine was very easy, power requirement for pulling the machine is almost negligible. They were having knowledge about seedling mat ,its size and appropriate planting depth. Maximum number of respondents 80.00 per cent found that the machine was not very costly and majority of respondents that is 33.33 percent were willing to buy it. These results are in congruence with the results of Sharma et.al (1999) who conducted a comparative study on paddy sown manually and with paddy transplanter. Using the paddy transplanter produced higher grain yield, increased economic return ,and reduced labour requirement, compared to paddy transplanting by using hired labour .It can be conclude d that after imparting the training on improved technology ,majority of the respondents were willing to purchase the same.

Table 6 . Distribution of the respondents according to the knowledge level related to paddy transplanter after awareness camp. N=30

S. No.	Statements	Yes (%)	No (%)
	Part1(Machine)		
1	There is a machine for transplanting paddy in the field.	30(100)	-
2	Working is easy	30(100)	-
3	Not very costly	24(80)	6(20.00)
4	Can be procured easily	30(100)	-
5	Time and labour saving machine	30(100)	-
6	Work can be done faster	30(100)	-
7	Easy to maintain	30(100)	-
8	Easy handling	30(100)	-
9	Have six slots	30(100)	-
10	Requires less power for pulling	30(100)	-
	Part11(SEEDLING MAT)		
1	Seed mat nursery is used for transplanting	30(100)	-
2	Size of the seedling mat on the transplanter is 40x20x2	26(86.66)	4(13.33)
3	Plant to plant spacing can be adjusted according to the farmers need.	24(80.00)	6(20.00)
4	Row to Row spacing cannot be adjusted	23(76.66)	7(23.33)
5	Planting depth of transplanter is appropriate	30(100)	-
6	Seedling mat can be prepared in 20-28 days	30(100)	-
	Part111 (BODY PAINS)		
1	The use of transplanter does not put any stress on my back while working	30(100)	-
2	The use of transplanter does not put any stress on my arm muscles	30(100)	-
3	Transplanter does not develop any pain on my fingers	30(100)	
4	One can walk easily while pulling the machine	30(100)	
5	I am willing to buy it	22(73.33)	8(26.66)

Note: Figures in parenthesis indicate percentages of respondents.

Conclusion

Women in rural India play a major role in shaping the country's economy through their active involvement in various agricultural tasks. They perform the various household tasks along with the most tedious and back-breaking agricultural operations and animal husbandry. Rural women form the most important productive work force in agriculture sector of majority of the areas of the state Himachal Pradesh. Most of the activities are carried out manually causing drudgery and transplanting being one of these activities is being performed continuously for 7-8 hours .Farmers get knowledge about agricultural related information from television followed by Radio and Newspaper. Thus there is a difference in the technology needs of hill farm women as compared to the rest of the rural masses. The awareness programme were also organized in the selected village regarding the use and benefits of the paddy transplanter, which can be transferred to reduce the drudgery and increasing efficiency, thereby improving health and well being of women workers. Findings of the study are beneficial to the women farm workers to reduce their drudgery

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