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Drudgery Reduction of Farm Women through Improved Tools

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ABSTRACT

The goal of the current study was to provide farm women with technology tools to lessen their labour and increase their output. Three villages were selected purposively from Kurai block of Seoni district in 2020-23. A total of 80 farm women were selected using simple random sampling technique, out of them 15 *viz.,* 5 from each village were participated in drudgery reduction intervention in three years. Data were collected by using an interview schedule that was pre-tested and self-organized. Additionally, field research was conducted to study women's agricultural activities. On comparing energy expenditure of farm women during performing decortications activities the average energy expenditure (KJ/min.) was 9.40 under recommended practices (RP) against 11.11 in farmer's practice (FP) and per cent reduction in energy was observed to be 15.33. Further, it was also found that average output (Kg/hr) of final product (decorticated seed/split) was11.03% from decorticator and the least output average *viz.,* 2.75 per cent from farmers' practice.

Key Words: Drudgery, Farm women, Efficiency, Energy expenditure, Health and Livelihood.

INTRODUCTION

In India, women perform the majority of the agricultural labour. There are about more than 20 million women working in agriculture field out of which 90% live in villages. It is often known that rural women participate in agricultural activities. Thus, farmwomen have really difficult lives (Suma Haslkar *et al,* 2005). A large percentage of women living in rural areas work in agricultural and related fields, such as fisheries, agro/social forestry, crop production, irrigation, manuring, post-harvest operations, and animal activities. The extent of women's involvement and type of activities performed by them in agriculture and allied fields varies according to location. The farmwomen work long hours on the farm and in the homestead, leading difficult lives. Significant fatigue on the body and mind as well as other health issues results from this. The primary causes of all these issues include ignorance, stale methods of carrying out tasks, technological incompatibilities, and mental barriers such innate conservatism and resistance to change (Thakur *et al,* 2013).

Farm labourers, particularly women, frequently accept pain as a necessary aspect of the job and only seek medical attention when it becomes incapacitating or severe (Kumar *et al,* 2019). The same problem affects precautions intended to lower the frequency of musculoskeletal injuries or other dangerous job exposures (Mrunalini and Snehalata, 2010). Most people associate drudgery with physical and mental exhaustion agony, monotony and hardship experienced by human beings (Momin, 2009). However, women report more fatigue than men (Pugliesi, 1999; Macintyre *et al,* 1996). Thus, the situation of Indian farm women is concerning in this sense since they put in long hours without breaks, handle several household responsibilities, and are still limited by unemployment, malnourishment, and illiteracy (Samanta, 1995). The study was designed to full fill the objective to applicability of drudgery reducing technologies and implements.

MATERIALS AND METHODS

Subsequent to the PRA survey, the KVK carried assessment in response to the requirement, evaluating the drudgery in terms of heart rate, energy expenditure, output, time spent, and muscular-skeletal issues to evaluate the

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applicability of drudgery reducing technologies and implements for farmwomen. A large number of tribal farmers of Kurai block of Seoni residing adjoining to forest area use Mahua (*Madhulika longifolia*) in many ways. Out of them the flower and seed collection are important practice to gather additional income for livelihood by farm women's. In the year 2020-23 implements known as manual mahua seed decorticator was procured from Odisha for the study. This implement was used in three villages namely Rampuri, Chikhli and Rajola.

Measurement of heart rate and energy expenditure Heart rate (bpm) and energy expenditure (KJ/min) were recorded by Metamax (Telemetry Metabolic Analyzer), which directly measures the above mentioned parameters. Though well-structured questionnaire, focused group discussion and personal interview were scheduled and data (Table 1 and 2) were collected before the intervention which could prepare the graph of the socioeconomic indicator of the farm families and 80 farm women were selected for training. After that training were conducted and out of them final 15 farmwomen, 5 from each village were selected for assessment. In the study, various types of primary as well secondary data have been analyzed. The main objective was to assess the awareness about drudgery reducing tools and implements and preparedness of the community in context to adoptability of mechanical mahua seed decortications to accept the intervention regarding improved tools (Acharya *et al*, 2018) and (Patel *et al,* 2015).

RESULTS AND DISCUSSION

Results of study revealed that women friendly drudgery reducing implement like mahua seed decorticator used to asses that take account of the different needs and capacities of women's bodies, moderate pain in wrist, arm shoulder and feet (Kumar *et al,* 2011). The scientists also focused on enhancing farmwomen's quality of life at work by raising awareness of the need to use these tools and implements through various channels of activities.

Farm women's social and personal characteristics

The data (Table 1) show that the majority (48%) of farmwomen belonged to middle age group, 20 per cent were of young age and 12 per cent were old. Maximum numbers of farmwomen were (57%) primary school education. The nuclear and joint family types were 40% and 60%, respectively.

Economic Variables of Farm Women

Economic variables included mainly three traits that annual family income (INR), type of farmers and type of house. As per data (Table 2) the highest majority (56.25%) of farmwomen had relatively medium level of annual family income. Majority (55%) of the farmwomen family had marginal size of land holding and 11.25 % were medium farmers. A little more than one-third farmwomen had semi pucca house (38.75%) and 35 per cent had completely pucca house (Chaudhary *et al,* 2017).

Technology adoption rate

It was revealed that majority (61.3%) of farmwomen had high level of adoption. Only 25% of respondents had medium level of adoption of drudgery reducing implement (Table 3).

Performance of drudgery reducing manual mahua seed decorticator assessed

The recommended practices (Moderate pain in wrist, arm and shoulder) were superior to farmer's practice (Light pain in fingers, shoulders and feet). The three years' study showed that the average energy expenditure (KJ/min.) was 9.40 (RP as shown in fig. 2) against the 11.11 (FP as per fig. 1) and per cent reduction in energy was observed to be 15.33. It was also found that average output (Kg/hr) of final product (decorticated seed/split) was 11.03% from decorticator and the least output average *viz.,* 2.75 percent from farmers' practice. Drudgery was minimized, which boosted production, decreased occupational health risks, and increased efficiency. These improvements enhanced family work productivity, food security and livelihood

Table 1. The personal and social profile of respondents (N=80).

Sr. No.	Personal and Social Variable	Frequency	Percent
A	Age (Yr)		
1.	Young (18 -30)	20.00	25.00
2.	Middle (30 -50)	48.00	60.00
3.	Old (Above 50)	12.00	15.00
B	Education		
4.	Illiterate	5.00	6.25
5.	Primary school education (up to 8 th standard)	57.00	71.25
6.	Secondary school education (9 th to10 th standard)	18.00	22.50
C	Type of Family		
7.	Joint family	48.00	60.00
8.	Nuclear family	32.00	40.00
D	Size of family		
9.	Small (up to 5 members)	41.00	51.25
10.	Medium (6 to 9 members)	31.00	38.75
11.	Large (Above 9 members)	8.00	10.00
E	Cast		
12.	General	3.00	3.75
13.	OBC	11.00	13.75
14.	SC / ST	66.00	82.50

Table 2. Distribution of respondents according to economic variables (N=80).

Sr. No.	Economic Variable	Frequency	Percent
A	Annual family income (INR)		
1.	Low (< 1,00,000)	30.00	37.50
2.	Medium (1,00,000 to 3,00,000)	45.00	56.25
3.	High (> 3,00,000)	5.00	6.25
B	Type of farmers		
4.	Marginal farmer (<1.00 ha)	44.00	55.00
5.	Small farmer (=1.00 to 2 ha)	27.00	33.75
6	Medium farmer (> 2.00 ha)	9.00	11.25
C	Type of house		
7.	*Kuchcha*	21.00	26.25
8.	Semi *Pucca*	31.00	38.75
9.	*Pucca*	28.00	35.00

Table 3. Adoption level of drudgery reducing tools and implement (N=80).

Sr.No.	Adoption level	Frequency	Percent
1	Low (< 50)	11.0	13.8
2	Medium (50 to 65)	20.0	25.0
3	High (> 65)	49.0	61.3
	Total	**80.0**	**100.0**

Table 4. Drudgery Reduction in mahua seed decortication (through hand operated machine).

Sr. No.	Year	Technology/implement assessed	Musculoskeletal problem		Average energy expenditure (KJ/min.)			Average output (Kg/hr)		
			FP	RP	FP	RP	Per cent reduction	FP	RP	% increased
1	2021	Mahua seed decorticator	Light pain in fingers, shoulders and feet	Moderate pain in wrist, arm and shoulder	10.65	9.18	13.80	2.50	10.88	335.20
2	2022				11.41	9.66	15.34	2.87	10.95	281.53
3	2023				11.27	9.37	16.86	2.88	11.25	290.63
Average of three years					11.11	9.40	15.33	2.75	11.03	302.45

Fig 1. Farmers' practice

Fig 2. Recommended practice

possibilities (Acharya *et al,* 2018). The findings also indicated that SC/ST (82.50%) farm women who were involved in mahua seed decortication (Chaudhary et al, 2017).

CONCLUSION

Drudgery of farmwomen is a reality although they do not express it and suffers silently. It was concluded that the high output will be helpful to get maximum income with low burden of work and risk related to manual decortication or injuries as well. As the Krishi Vigyan Kendra has set a long vision to strengthen the inherent power of farm women it will motivate the farm women to take initiative roles for adopt improved technologies.

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