Journal Homepage: - www.journalijar.com

INTERNATIONAL JOURNAL OF ADVANCED RESEARCH (IJAR)

Article DOI: 10.21474/IJAR01/12489
DOI URL: http://dx.doi.org/10.21474/IJAR01/12489

RESEARCH ARTICLE

ADOPTION OF SELECTED DRUDGERY REDUCTION TECHNOLOGIES RELATED TO AGRICULTURE BY THE FARM WOMEN

Dr. Neha Tiwari[1] and Dr. Jiju N. Vyas[2]

1. Scientist, KVK, JAU Amreli Gujarat.
2. Associate Professor SDAU Dantiwada Gujarat.

Manuscript Info

Manuscript History
Received: 15 December 2020
Final Accepted: 18 January 2021
Published: February 2021

Abstract

The present study was conducted in Gonda district of Uttar Prades. The purpose of the study was to know the adoption of selected drudgery reduction technologies related to agriculture by the farm women. The 100 farm women were randomly selected for technological empowerment through training from two purposively selected panchayat samities. Personal interview technique was used for collecting data. The findings of the study reveal that manual bund former, serrated sickle and maize sheller were the main technologies used by majority of the respondents as indicated by higher adoption index (60%). This may be due to reason that the technologies were easy to use and handle, cheap in cost, require less effort while operation as compared to traditional methods. Wheel hoe, manual seed drill and knapsack sprayer were the other technologies adopted by more than half of the respondents with adoption index 47.5- 50 per cent followed by manual rice transplanter and ground nut decorticator with adoption index 35-43 percent.

Introduction:-

Rural women form the most productive work force in the economy of majority of the developing nations including India. The work participation of female in our country has increased from 19.7 per cent in 1981, 25.7 per cent in 2001 and 35.5 per cent in 2011 (Census 2011). They are nowimportant partners in agriculture work forcesince 89.3 per cent of female work force isconcentrated in agriculture sector (Census 2011). They play a significant and crucial role in agricultural development and allied fields including the main crop production, livestock production, horticulture, post-harvest operations, agro/social forestry, fisheries, etc. They are responsible for farm operations like land preparation, seed treatment, sowing, planting, weeding, intercultural operation, irrigation of crop, application of fertilizers and manures, protecting crop from birds, harvesting, threshing, storage etc. There is hardly any activity in agricultural production, except ploughing in which women are not actively involved. In some of the farm activities like processing and storage, women predominate so strongly that man workers are numerically insignificant (Aggarwal, 2003). They use conventionaltools with little efficiency and facedrudgery while working in the field orhome.Being generally illiterate andignorant they have no or very little accessto new technologies, scientific achievementand modernization in agriculture. Drudgery is generally conceived as physical and mental strain, agony, monotony and hardship experienced by human being, while all these result in decline in living and working conditions affecting men and women alike. Drudgery is a term used to represent the dissatisfaction experiences that constrain work performance.

Corresponding Author:- Dr. NehaTiwari
Address:- Scientist, KVK, JAU Amreli Gujarat.

Almost all women suffer physical drudgery in various operations like hard physical work in care and management, harvesting, threshing/ processing, marketing and bartering of produce, harvesting by bending, weeding with conventional implements by hand in hot sun, rain and cold for long hours, dehusking/ shelling, pounding, grinding of cereals and pulses by hand, collecting and carrying fuel over long distance, fetching of water from cooking and drinking from distant places. The farm women put in hard physical labour beyond their capacity. All these factors result in physical and mental fatigue, monotony hardship, exploitation, pain, economic stress etc. The plight of the women in this regard is alarming as they are constrained by illiteracy, poor health, unemployment and low technical knowhow and skill. The result is that women's needs for comfortable work participation remain neglected. Drudgery reduction is possible outcome that makes women work with improved productivity capacity and health. A desired change in the life of rural women, which is full of drudgery, can be brought by the use of application of simple, scientific and appropriate technologies. Such an outcome needs location specific package of technologies and a systematic approach of intervention.

Material and methods:-

The study was conducted in two purposively selected panchayatsamities of Gonda district of Uttar Pradesh, namely Paraspur and Jhanjhari. For technological empowerment of farm women in selected drudgery reducing technologies 3 technologies related to animal husbandry were selected. Five training programme each of 4 days duration were organized for a group of 20 farm women. Thus 100 farm women were covered for technological empowerment of farm women through training. The training were organized at KrishiVigyan Kendra, Gonda, U.P, as per plan for technological empowerment of farm women through different training methods like interactive lecturette, interactive demonstration and practice session supplemented with leaflets, folders and a film. Post test was conducted to find out gain in knowledge of farm women in selected drudgery reducing technologies related to animal husbandry. After one month of training intervention was organized. During intervention period all the technologies were given to the women to use for at least 8-10 days.

Results and Discussion:-

Background information of the respondents:

This section deals with the general information of the respondents like age, education, marital status, occupation, caste, family size and type, ownership of the fixed assets, household assets, live stock ownership and their socio-economic status.

Age:

Data in Table 1.1 reveal that half of the respondents (50%) belonged to the middle age group i.e. 31-45 years, whereas one fourth of the respondents (25%) were in the age group 18-30 years and 46-60 years.

Marital status:

Table 1.1 reveals that majority of the respondents (84.58%) were married, while 12.5 per cent of the respondents were unmarried and very few of the respondents were widow (2.91%)

Table 1.1:- Distribution of respondents by their personal variables n=240.

S. No.	Variables	f	%
1.	**Age**		
	a) 18 - 30 years	60	25.0
	b) 31-45 years	120	50.0
	c) 46-60 years	60	25.0
2.	**Marital Status**		
	a) Unmarried	30	12.5
	b) Married	203	84.58
	c) Widow	7	2.91

Caste:

It is evident from Table 1.2 that 45.83 per cent of the respondents belonged to upper caste, while 33.33 and 20.83 per cent respondents belonged to the schedule and other backward caste respectively.

Family structure:
Data in Table 1.2 clearly indicate that majority of the respondents (67.5%) were from joint families and 32.5 per cent respondents were from nuclear families. Regarding size of the family, the table further reveals that half of the respondents (50%) had large size family and about one fourth had medium (25.83%) and small size family (24.16%).

Table 1.2:- Distribution of respondents by their social variables n=240.

S. No.	Variables	f	%
1.	**Caste**		
	a) SC/ST	80	33.33
	b) Other backward caste	50	20.83
	c) Upper middle caste	0	0.0
	d) Upper caste	110	45.83
2.	**Family structure**		
i.	Family type		
	a) Nuclear	78	32.50
	b) Joint	162	67.50
ii.	Family size		
	a) Small(upto4 members)	58	24.16
	b) Medium (5-8 members)	62	25.83
	c) Large (above 8)	120	50.00
3.	**Education**		
	a) Illiterate	26	10.83
	b) Read and Write	28	11.66
	c) Primary school	125	52.08
	d) Middle	50	20.83
	e) High school	11	4.58
4.	**Occupation**		
i.	Main occupation		
	a) Farming	240	100
	b) Business/ Service	0	0.0
	c) Artisan/craftman	0	0.0
	d) Farm labour	0	0.0
ii.	Subsidiary occupation		
	a) One	100	41.66
5.	**Organizational membership**		
	No membership	240	100

Education:
Education is one of the most important determinants of a person's social status. Regarding educational level of the respondents, Table 1.2 indicates that more than half of the respondents (52.08%) were educated up to primary level, while, 20.83 per cent of the respondents were educated up to middle school, whereas 11.66 per cent respondents could read and write. Only 4.58 per cent respondents were educated up to high school level and 10.83 per cent respondents were illiterate. Most of the respondents mentioned that their education was discontinued due to early marriage.

Occupation:
Table 1.2 regarding occupation of the respondents reveal that all the respondents (100%) had farming as their main occupation, whereas 41.66 per cent respondents had one subsidiary occupation. They were involved in the activities like bamboo work, stitching, knitting, soft toys and potato chips making in slack period of agriculture work.

Organizational membership:
Data presented in Table 1.2 show that all the respondents (100%) were not the member of any organization.

Table 1.3:- Distribution of respondents by their economic variable n=240.

S.No.	Variables	f	%
1.	**Land holding**		
	a) Landless	0	0.0
	b) Upto 4.9 bighas(marginal)	27	11.25
	c) 5-9.9 bighas(small)	143	59.58
	d) 10-13 bighas	58	24.16
	e) Above 13 bighas	12	5.0
2.	**Housing**		
	a) Kutcha house	20	8.33
	b) Mixed house	130	54.16
	c) Pucca house	90	37.50
3.	**Live stock ownership**		
	a) Small herd size (1-3)	55	22.91
	b) Medium herd size (4-10)	147	61.25
	c) Large herd size (Above 10)	38	15.83
4.	**Dwelling for livestock**		
	a) Open/nil	15	6.25
	b) Thatched/kutcha	165	68.75
	c) Pucca	60	25.0
5.	**Media ownership**		
	a) Nil	25	10.4
	b) News paper/magazines	70	29.16
	c) Radio/transistor	160	66.66
	d) Television	90	37.5

Land Holding:
Data in Table 1.3 show that majority of the respondents (59.58%) had small land holding i.e. upto 5-9.9 bighas. Nearly one fourth respondents (24.16%) had 10-13 bighas land and only few respondents (5%) had above 13 bighas land. None of them were landless.

Housing:
Table 1.3 further reveal that more than half of the respondents (54.16%) were residing in mixed house whereas 37.5 per cent of the respondents had pucca house and only 8.33 percent of the respondents had kutcha house

Livestock ownership:
Data in Table 1.3 indicate that more than half of the respondents (61.25 %) had medium herd size, whereas 22.91 and 15.83 per cent of the respondents had small and large herd size respectively. The table further reveal that majority of the respondents (68.75%) had kutcha dwelling for livestock and only 25.0 per cent of the respondents had pucca dwelling.

Media Ownership:
Table 1.3 shows that more than half of the respondents (66.66%) had radio, whereas 37.5 percent of the respondents possessed television. Newspaper was subscribed by 29.16 per cent of the respondents, while 10.4 per cent respondents had no media ownership.

Table 1.4:- Distribution of respondents by their socio-economic status n=240.

S.No.	Categories	f	%
1.	High socio-economic status	0	0
2.	Medium socio-economic status	10	4.16
3.	Low socio-economic status	230	95.83

Socio- economic status:
On the basis of scores obtained by the respondents in different aspects of socio-economic status scale, the respondents were categorized in high, medium and low socio-economic status. Data in Table 1.4 point out that most

of the respondents (95.83%) were from low socio-economic status. However only 4.16 percent of the respondents were from medium socio-economic status and none of the respondents had high socio-economic status.

Adoption of selected drudgery reduction technologies related to agriculture by the farm women:-

1. Symbolic adoption of selected agriculture technologies by the farm women.
2. Adoption of selected agriculture technologies by the farm women

Adoption of selected drudgery reducing technology related to agriculture and animal husbandry by the respondents was measured after six months of intervention. The response of farm women regarding use of these technologies was recorded on three point continuum i.e. always, some time and never.

The data presented in this section gives the information about the way of procurement, adoption behavior, extent of use and the adoption index for each technologies, and level of adoption of selected drudgery reducing technologies by the respondents.

Table:1.5:- Percentage distribution of the respondents according to way of procurement of selected drudgery reducing technologies related to agriculture n=100.

S. No.	Technologies	Way of procurement		
		Purchased		Borrowed From KVK
		Individually	In group	
1.	Wheel hoe	15	30	20
2.	Rice transplanter	10	20	20
3.	Manual seed drill	20	20	25
4.	Knapsack Sprayer	15	30	25
5.	Manual Bund former	20	40	20
6.	Serrated Sickle	20	20	25
7.	Maize Sheller	28	30	25
8.	Ground nut decorticator	18	20	20

Perusal of the Table 1.5 indicates that 10-28 per cent of the respondents purchased all the selected technologies individually from KrishiVigyan Kendra, Gonda whereas 20- 40 per cent of the respondents purchased the technologies in group due to limited availability in market and for the financial reasons. Further data reveal that 20-25 per cent of the respondents borrowed the technology from KrishiVigyan Kendra, Gonda as the institution lended these to the farm women free of charge.

Table-1.6:- Adoption behavior of the selected drudgery reducing technologies related to agriculture by the respondents. n=100

S. No.	Technologies	Adoption (f/%)	Discontinuance (f/%)	Non adoption (f/%)
1.	Wheel hoe	60	5.0	35
2.	Rice transplanter	40	10	50
3.	Manual seed drill	55	10	35
4.	Knapsack sprayer	60	10	30
5.	Manual bund former	70	10	20
6.	Serrated sickle	70	5.0	25
7.	Maize sheller	60	12	18
8.	Ground nut decorticator	48	10	42

Data in Table 1.6 regarding adoption of selected drudgery reducing technologies reveal that majority of the respondents (70%) adopted the technologies like manual bund former and serrated sickle. This may be due to the reason that respondents found the technologies as time, labour saving, easy to use, light in weight, and decrease the incidence of injuries, whereas more than half of the respondents (60%) adopted wheel hoe, knapsack sprayer and maize sheller. Rice transplanter, ground nut decorticator and manual seed drill were adopted by 40, 48 and 55 per cent of the respondents respectively. Further table reveal that 5-12 per cent of the respondents discontinued the use of all selected agriculture technologies for several reasons like heavy weight of technology, more acquaintance with

the use of traditional method and difficulty in use. Data regarding non-adoption of selected technologies reveal that rice transplanter was the only technology not adopted by half of the respondents (50%) followed by ground nut decorticator (42%), wheel hoe (35%) manual seed drill (35%) and knapsack sprayer (20%).The reasons for non-adoption reported by the respondents were lack of availability in market, financial problem and heavy weight of the technologies. Some respondents reported conservative attitude, difficulty in use, resistance of family members for non-adoption of wheel hoe, rice transplanterand ground nut decorticator.

Table 1.7:-Distribution of the respondents by their adoption of drudgery reduction technologies related to agriculture n=100.

S. No.	Items	Extent of use (%)			Adoption Index (%)
		Always (f/%)	Some times (f/%)	Never (f/%)	
1.	Wheel hoe for uproot and cut weeds	40	20	40	50.0
2.	Manual rice transplanter for transplanting mat type rice seeding in puddle soils grains	30	10	60	35.0
3.	Manual bund former for preparing of bunds and furrows	50	20	30	60.0
4.	Manual seed drill for uniform sowing of seed	40	15	45	47.5
5.	Knapsack sprayer for uniform broadcasting of insecticide and pesticide.	40	20	40	50.0
6.	Serrated sickle for harvesting of crop	50	20	30	60.0
7.	Maize sheller for sheeling of maize from dehusked cobs	50	20	30	60.0
8.	Ground nut decorticator decortications of groundnut pods to separated kernels	38	10	52	43.0

Wheel hoe:
Data in Table 1.7 regarding adoption of selected drudgery reducing technology related to agriculture reveal that 40 per cent of the respondents always used wheel hoe for uprooting and cutting weeds while one fifth of the respondents (20%) used it sometimes. More than one third of the respondents (40%) never used the wheel hoe. Probe into the matter revealed that they were habitual of using khurpa, a traditional tool and they were resistant to use wheel hoe. The adoption index reveal that wheel hoe was adopted to the extent of 50 per cent.

Manual rice transplanter:
Findings presented in Table 1.7 reveal that 30 per cent of the respondents always used manual rice transplanter for transplanting mat type rice seeding in puddle soils grains, whereas 10 per cent of the respondents used it sometimes only. Rest of them (60%) never used it as they found it difficult to use. The adoption index point out that rice transplanter was adopted to an extent of 35 per cent.

Manual seed drill:
Table 1.7 clearly indicates that more than one third of the respondents (40%) always used seed drill for uniform sowing of seed as it save time and seeds, reduce health hazards whereas 15 per cent used it sometimes and 45 per cent of the respondents never used it. The adoption index reveal that the manual seed drill was adopted to an extent of 47.5 per cent.

Manual bund former:
Table 1.7 clearly reveal that half of the respondents (50%) always used manual bund former for preparation of bund and furrows as it was easy in use, cost of operation was less, easy to handle, reduced health hazards, whereas one fourth of the respondents (20%) used it sometimes and 30 per cent respondents never used it as it required two persons. The respondents who used tractor for bund formation found use of tractor easy as compared to manual bund former. The adoption index reveal that manual bund former was adopted to good extent (60%)

Knapsack sprayer:
Perusal of table shows that knapsack sprayer was always used for uniform broadcasting of insecticide and pesticide by 40 per cent of the respondents and one fifth of the respondents (20%) used it sometimes for the same purpose with adoption index 50.0 per cent.

Serrated sickle:
Adoption index presented in the Table 1.7 reveal that serrated sickle was adopted for harvesting of crop to the extent of 60 per cent which may be due to the reasons that the respondents found it easy to use, output was more, saved time and labour and reduced health hazards in comparison to traditional sickle.

Maize sheller:
use of maize sheller helps to increase output, saving of time, labour and hand injuries are avoided by using it half of the respondents (50%) always used maize sheller for sheeling of maize from dehusked cobs for the above mentioned benefits. One fifth of the respondents (20%) used it sometimes for shelling of maize and 30 per cent of the respondents never used it due to their personal reasons like resistance of family member. The adoption index point out that maize sheller was adopted to good extent (60%).

Ground nut decorticator:
Table1.7 indicate that more than one third of the respondents (38%) always used ground nut decorticatorto separate kernels and 10 per cent of the respondents some times used it with adoption index 43 per cent. Half of the respondents (52%) never used it as they found it difficult to use.

It can be concluded that manual bund former, serrated sickle and maize sheller were the main technologies used by majority of the respondents as indicated by higher adoption index (60%). This may be due to reason that the technologies were easy to use and handle, cheap in cost, require less effort while operation as compared to traditional methods. Wheel hoe, manual seed drill and knapsack sprayer were the other technologies adopted by more than half of the respondents with adoption index 47.5- 50 per cent followed by manual rice transplanter and ground nut decorticator with adoption index 35-43 per cent.

Table: 1.8:- Level of adoption of selected drudgery reducing technologies related to agriculture by the respondents n=100.

S.No.	Technologies	Level of adoption (f/%)		
		Low	Medium	High
1.	Wheel hoe	0.0	20.0	40.0
2.	Manual rice transplanter	0.0	10.0	30.0
3.	Manual seed drill	0.0	15.0	40.0
4.	Knapsack Sprayer	0.0	20.0	40.0
5.	Manual bund former	0.0	20.0	50.0
6.	Serrated sickle	0.0	20.0	50.0
7.	Maize Sheller	0.0	20.0	50.0
8.	Ground nut Decorticator	0.0	10	38

Further an effort was made to categorize the respondents on the basis of their adoption of selected drudgery reducing technologies related to agriculture and animal husbandry.Perusal of Table 1.8 reveals that half of the respondents (50%) were in the category of high level of adoption of manual bund former, serrated sickle and maize sheller closely followed by wheel hoe (40%), manual seed drill (40%) and knapsack sprayer (40%). Further data reveal that 10-20 per cent of the respondents had medium level of adoption regarding all the selected agriculture technologies. None of the respondents were in the category of low level of adoption (Fig. 1.1)

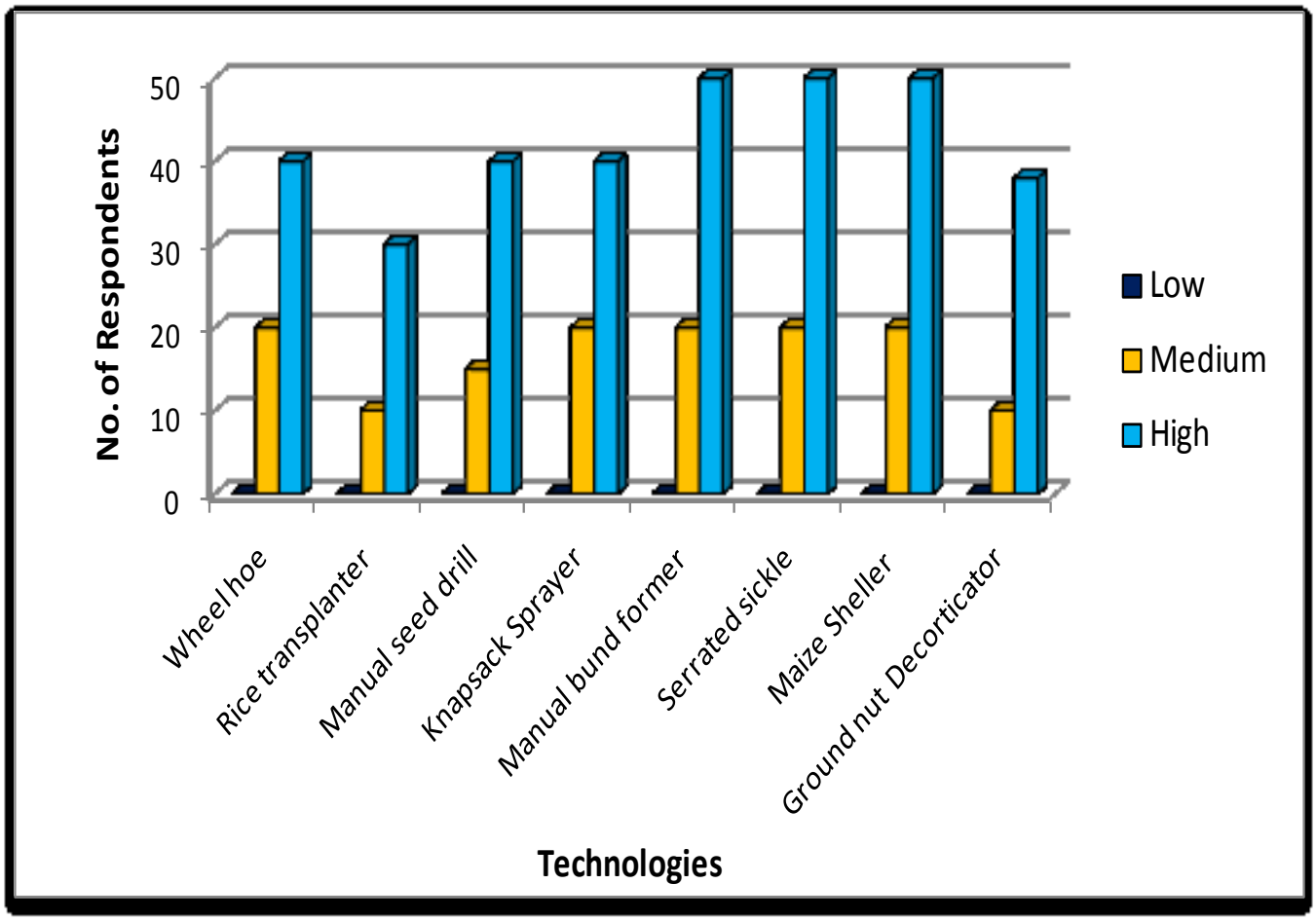

Fig. .1.1:- Level of adoption of selected drudgery reducing technologies related to agriculture by the responden.

Conclusion:-

It can be concluded from the above study that training of drudgery reduction technologies help in further adoption of technologies All the respondents were satisfied with the technologies and exhibited interest in adoption. After six month of intervention, all the selected technologies were adopted by almost half of the respondents.

References:-

1. Chander, M., Thakur, D. 2006. Mcgrawhill Study Material. Tata Mcgrawhill Publication, New Delhi. :164.
2. Census, 2011.Cited from http://agcensus.nic.in/document/agcensus2010/a llindia201011H.pdf retrieved on May 25th, 2015.
3. Jhanwar, V. 2005. Adoption of Animal Husbandry Technologies Prompted Under NATP on Empowerment of Women in Agriculture. M.Sc. thesis submitted to MaharanaPratap University of Agriculture and Technology, Udaipur, Rajasthan.
4. NATP Progress Report. 2004. Mission mode projects on "Empowerment of woman" College of Home Science, MPUAT, Udaipur, Rajasthan.