



International Journal of Home Science

ISSN: 2395-7476
IJHS 2016; 2(2): 180-186
© 2016 IJHS
www.homesciencejournal.com
Received: 28-02-2016
Accepted: 29-03-2016

Nasreen Jahan
Assistant Professor/ SMS, KVK-
Shuhama, Ganderbal,
SKUAST-K, Shalimar,
Kashmir, India

Nilofer Khan
Professor, Institute of Home
Science, University of Kashmir,
Jammu and Kashmir, India

To study the participation of farm women in various agriculture and allied activities

Nasreen Jahan, Nilofer Khan

Abstract

Women play a distinctive and accepted role in the process of earning a livelihood for the family in both the marketing of products of agriculture and handicrafts. Majority of farm women are engaged in farm activities like sowing, transplanting, harvesting and post harvesting operations. Most of the farm women are found engaged in dairy activities, poultry keeping, goat rearing, sericulture and horticultural operations. Some of them are found engaged in small scale industries and income generating activities.

Keywords: farm women, agriculture, allied, Kashmir

1. Introduction

With the farming as the economic unit of rural community, women perform a variety of tasks both in farms as well as homes. This calls for completion of tasks in accordance with the expectations. Often during peak periods of agricultural operation, home tasks are shifted to the background and the farm women experience an almost insurmountable difficulty in accomplishing both types of tasks satisfactorily, (Ray 1984). Their role performance can be measured by their actual behaviour i.e. the knowledge, the skill the attitude and the actual action. But to measure the role performance of farm women, it is much more essential to know the role expectation of farm women. This expectation may be perceived differently by different individuals. The husbands of the rural farm women will expect some roles and the farm women themselves will expect to perform some roles while the agricultural experts will expect some other, role from them. Without knowing the role expectation, the extent of role performance is difficult to measure, (Paresh 1992).

In post-harvest operations related with agro and social forestry, fisheries and dairy management various studies conducted by researchers and development administration on women in Agriculture in various countries pointedly focus that women contribute for more to agricultural products than has generally been recognized. (Almelu, 1985). Community-wise women participation has been on higher side in the tribals and scheduled castes. In general 60-70% of labour is provided by women in the agriculture and other allied activities (Shashi Kanta Verma 1992). The economy of our country is predominantly agriculture in character and a large percent of total labour force in the country is engaged in agriculture. Even in present age when the country is undergoing the process of industrialization and urbanization more than 75% of country's population live in the villages (Singh, Shardanand 1991).

In Indian economy farm business has been a family enterprise in which both husband and wife participate. Wives and daughters share both work and pleasures. Their roles are generally complementary not only in physical participation at the farm and home related activities but also in respect of the decision making process. (Gill, JK *et al.* 2007) has quoted that in Punjab female work participation in agriculture is recorded as 8.7% as compared to 4.4% a decade ago.

2. Objectives of the study

- To acquire knowledge about the nature and extent of involvement of farm women in various agriculture and allied activities in terms of operations, time spent, years in farming.

Correspondence
Nasreen Jahan
Assistant Professor/ SMS, KVK-
Shuhama, Ganderbal, SKUAST-
K, Shalimar, Kolkata, India

3. Methodology

3.1 Selection of Sample

200 farm women were selected on the following criteria:

- a. 200 farm women represent the said 20 villages.
- b. Each village is represented by 10 households on the basis of:
 - i. Land holding of more than 3 kanals
 - ii. Dealings in animal husbandry.
 - iii. Vegetable cultivation.

The farm women were interviewed while working in their fields. A well-meaning survey questionnaire was framed, on the basis of the objectives. Respondents were interviewed and elaborate discussions were held with them. Based on these discussions, the questionnaires were filled.

3.2 Selection of variables

The variables were selected for the study under following two broad headings:

- A) Independent variables.
- B) Dependent variables.

(A) Independent variables

These variables are related to the general information of a farm women respondent: the inputs about the age, marital status, educational back ground, size of the family, annual income and the total possession of land(irrigated or un-irrigated).

(B) Dependent variables

These variables mostly include the farm related information about each respondent. These variables were incorporated in

questionnaire as under:

- Time spent on the farm and allied activities related to agriculture.
- Role expected.
- Role performed.
- Knowledge about the farming.
- Type of role performed in agriculture and allied activities.
- Livestock holding and role performed.
- Role in vegetable cultivation and marketing.
- Decision making with respect to the adoption of improved agricultural practices.
- Decision making with regard to the implementation of crop technologies available.
- Utilization of spare time.
- Type of income generating activity involved.
- Exposure to the crop technologies.
- Knowledge about the chemicals available to control the plant/animal diseases and fertilizers used to improve production.
- Participation in trainings/workshops organised by the line department.
- Whether recommended package and practices adopted.
- Whether any assistance received from the development departments.

Pre-testing was conducted on 10% (20 respondents) of the total sample to determine the suitability and validity of the questionnaire. In the light of the findings from the pilot study, certain modifications were made in order to make the tool more purposeful

4. Results and Discussion

Table 1: Participation of women as per age in pre-sowing and sowing activities (N= 200; row percentage; multiple choice)

Activity	Age										Total	
	10-20		20-30		30-40		40-50		50-60		Number	Percentage
	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage		
Leveling of land	6	3.7	38	23.6	54	33.5	56	34.8	7	4.3	161	80.5
Ploughing	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	00.0
Removal of trash	5	2.7	45	24.3	60	32.4	63	34.1	12	6.5	185	92.5
Repairing of bunds/ channels	2	3.1	16	24.6	24	36.9	20	30.8	3	4.6	65	32.5
Maintenance of Agriculture Tools/Implements	0	.0	5	23.8	7	33.3	7	33.3	2	9.5	21	10.5
Preparation of Compost/FYM	8	4.2	46	24.2	61	32.1	63	33.2	12	6.3	190	95.0
Seed selection	4	2.5	38	23.9	56	35.2	51	32.1	10	6.3	159	79.5
Seed treatment before sowing	0	.0	13	30.2	17	39.5	10	23.3	3	7.0	43	21.5
Sowing/Transplanting of seedlings	8	4.1	46	23.7	65	33.5	63	32.5	12	6.2	194	97.0
Thinning/Gap –filling	8	4.2	45	23.7	63	33.2	63	33.2	11	5.8	190	95.0
Application/Spreading of fertilizers	8	4.9	42	25.9	51	31.5	53	32.7	8	4.9	162	81.0
Total		2.67		22.53		31.00		29.09		5.58		62.27

In the pre-sowing/sowing operations 62.27% of respondents have participated in all the given activities in the sample of 200 respondents.

Among them 97% have participated in sowing/transplanting of seedlings, 95% in thinning/gap filling and preparation of compost/FYM, 92.5% in the removal of trash, 81% in the application/spreading of fertilizers, and 80.5% in the levelling of land, 79.5% in seed selection, and 21.5% in seed treatment before sowing. However, the minimum participation of 10.5% has been recorded in the maintenance of agricultural tools and

implements. In ploughing, zero participation has been registered by the given age groups.

The maximum participation in all the pre-sowing and sowing activities has been by the age group of 30-40 years with 31% participation, followed by 29.09% by 40-50 years age group, 22.53% by 20-30 years of age group and the minimum participation in the given set of activities has been recorded by the age group of 50-60 years and 10-20 years with 5.58% and 2.67% respectively.

Table 2: Participation of women as per age in post sowing activities (N= 200; row percentage; multiple choice)

Activity	Age										Total	
	10-20		20-30		30-40		40-50		50-60		Number	Percentage
	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage		
Weeding	8	4.1	47	24.2	64	33.0	64	33.0	11	5.7	194	97.00
Scaring of birds	7	3.7	44	23.4	62	33.0	63	33.5	12	6.4	188	94.00
Application of fertilizers	8	4.9	41	25.3	53	32.7	51	31.5	9	5.6	162	81.00
Plant protection measures	0	0	8	28.6	8	28.6	8	28.6	4	14.3	28	14.00
Procurement	0	0	1	16.7	3	50.0	2	33.3	0	0	6	3.00
Storage and carrying of pesticides	0	0	11	16.2	31	45.6	23	33.8	3	4.4	68	34.00
Solution/ Mixture preparation of pesticides	0	0	2	25.0	3	37.5	2	25.0	1	12.5	8	4.00
Spraying/dusting/ plant propagation	0	0	2	13.3	3	20.0	10	66.7	0	0	15	7.50
Manuring	8	4.4	45	24.6	61	33.3	57	31.1	12	6.6	183	91.50
Irrigation	8	4.1	48	24.6	65	33.3	63	32.3	11	5.6	195	97.50
Repair of field channel/ bunds	5	3.8	25	18.9	46	34.8	46	34.8	10	7.6	132	66.00
General inspection of the crop	7	3.9	42	23.6	60	33.7	57	32.0	12	6.7	178	89.00
Total		2.63		24.04		37.77		37.78		6.85		61.68

In the twelve activities of post sowing phase, 61.68% of respondents have taken part in all the activities in the given sample of 200 respondents.

97.50% participation has been in the activity of irrigation, 97% in weeding, 94% in the scaring of birds, 91.50% in manuring, 89% in the general inspection of crops, 81% in the application of fertilizers, 66% in the repair of field channels/bunds, 34% in the storage and carrying of pesticides and 14% in plant protection measures.

7.50%, 4% and 3% participation has been recorded in the

activities of spraying/dusting/plant propagation, solution/mixture preparation of pesticides and procurement activity respectively.

The women in the age groups of 30-40 and 40-50 years are at par with 37.78 and 37.77 % participation in all the given set of activities.

The minimum participation of 6.85% and 2.63% has been by the age groups of 50-60 years and 10-20 years respectively. The respondents of the age group of 20-30 years fall in the medium range with 24.04% participation.

Table 3: Participation of women as per age in harvesting activities (N= 200; row percentage; multiple choice)

Activity	Age										Total	
	10-20		20-30		30-40		40-50		50-60		Number	Percentage
	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage		
Harvesting	8	4.0	48	24.1	66	33.2	65	32.7	12	6.0	199	99.50
Bundling	8	4.2	47	24.6	64	33.5	61	31.9	11	5.8	191	95.50
Hatch making	8	4.3	45	24.1	63	33.7	59	31.6	12	6.4	187	93.50
Threshing	8	4.1	47	24.4	65	33.7	62	32.1	11	5.7	193	96.50
Winnowing	8	4.1	47	24.0	66	33.7	63	32.1	12	6.1	196	98.00
Bagging	8	4.3	47	25.1	62	33.2	59	31.6	11	5.9	187	93.50
Weighing	8	4.7	43	25.3	58	34.1	52	30.6	9	5.3	170	85.00
Transporting of farm produce	8	5.3	35	23.3	50	33.3	50	33.3	7	4.7	150	75.00
loading and unloading of straw	8	5.3	36	23.8	47	31.1	51	33.8	9	6.0	151	75.50
Loading and unloading of grains	7	4.9	37	26.1	41	28.9	49	34.5	8	5.6	142	71.00
Total		4.52		24.48		32.84		32.42		5.75		88.30

The above table reflects that there has been 88.30% participation by the farm women against the activity of harvesting in which ten different kinds of activities are listed.

The highest participation of 99.50% has been recorded in harvesting followed by 98.0% in winnowing, 96.50% in threshing, 95% in bundling and 93.50% in hatch making and bagging. The tasks in which women participation varied between 70-80% were loading and unloading of grains/straw,

transport of farm produce and weighing.

Women in the age group of 30-40 years and 40-50 years are at par in all the harvesting activities with 32.84% and 32.42% participation, followed by age group of 20-30 years with 24.48% participation. Women in the age group of 50-60 years and 10-20 years have registered lowest participation of 5.75% and 4.25% respectively.

Table 4: Participation of women as per age in post-harvest activities (N= 200; row percentage; multiple choice)

Activity	Age										Total	
	10-20		20-30		30-40		40-50		50-60		Number	Percentage
	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage		
Drying	8	4.0	49	24.5	66	33.0	65	32.5	12	6.0	200	100.00
Sorting	8	4.0	49	24.6	66	33.2	64	32.2	12	6.0	199	99.50
Packing	8	4.0	49	24.6	66	33.2	64	32.2	12	6.0	199	99.50
Milling	8	4.3	46	24.6	62	33.2	60	32.1	11	5.9	187	93.50
Dehusking	8	4.2	46	24.0	65	33.9	61	31.8	12	6.3	192	96.00
Grinding	8	4.3	43	23.1	63	33.9	60	32.3	12	6.5	186	93.00
Storage	7	3.7	46	24.5	63	33.5	61	32.4	11	5.9	188	94.00
Total		4.07		24.27		33.41		32.21		6.09		96.50

The above table on the given agricultural activities reflects that 96.50% of respondents of all the age groups have participated. 100% participation has been recorded in drying activity, 99.50% in sorting and packing, 96% in dehusking, 94% in storage, 93.50% percent in milling and 93% in the activity of grinding. The highest participation in the given set of

operations in 33.41% ratio has been by the age group of 30-40 years followed by the age group of 40-50 years with 32.21% participation.

The respondents in 50-60 years and 10-20 years of age groups have registered lowest participation of 6.09% and 4.07% in these operations.

Table 5: Participation of women as per age in vegetable cultivation (N= 200; row percentage; multiple choice)

Activity	Age										Total	
	10-20		20-30		30-40		40-50		50-60		Number	Percentage
	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage		
Land preparation	8	4.0	48	24.2	66	33.3	64	32.3	12	6.1	198	99.00
Application of manure	8	4.0	49	24.7	64	32.3	65	32.8	12	6.1	198	99.00
Weeding and Hoeing	8	4.1	47	24.0	65	33.2	64	32.7	12	6.1	196	98.00
Application of Pesticides/Fungicide	6	3.5	46	26.9	59	34.5	50	29.2	10	5.8	171	85.50
Harvesting	8	4.1	49	24.9	64	32.5	64	32.5	12	6.1	197	98.50
Grading	8	4.4	44	24.0	61	33.3	58	31.7	12	6.6	183	91.50
Marketing	5	8.8	19	33.3	18	31.6	13	22.8	2	3.5	57	28.50
Total		4.70		26.00		32.96		30.57		5.76		85.71

In vegetable cultivation 85.71% women have shown their participation in all the activities. 99% participation has been shown in the land preparation and application of manure, 98.50% in the harvesting activity, 98% in weeding/hoeing, 91.50% in the grading, 28.50% participation has been recorded in the marketing activity.

The age group of 30-40 years has shown highest participation of 32.96% in all these operations followed by the age group of 40-50 years. The age groups of 50-60 years and 10-20 years have recorded lowest participation at 5.76% and 4.70% respectively in all the activities.

Table 6: Participation of women as per age in Animal husbandry activities (N= 200; row percentage; multiple choice)

Activity	Age										Total	
	10-20		20-30		30-40		40-50		50-60		Number	Percentage
	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage		
Bringing & Chaffing the fodder	8	4.2	47	24.6	62	32.5	63	33.0	11	5.8	191	95.50
Health care of animals	8	4.3	47	25.3	60	32.3	60	32.3	11	5.9	186	93.00
Milking	8	4.0	49	24.7	66	33.3	64	32.3	11	5.6	198	99.00
Marketing of milk and milk products	7	5.6	34	27.2	39	31.2	41	32.8	4	3.2	125	62.50
Cleaning of shed and preparing of cow dung cakes	8	4.5	46	26.0	62	35.0	52	29.4	9	5.1	177	88.50
Total		4.52		25.56		32.86		31.96		5.12		87.70

Out of total sample of 200 respondents 87.70% of women have registered their participation in all the activities of animal husbandry. 95.50% have taken part in bringing and chaffing the fodder, 93% in health care of animals, 99% in milking,

62.50% in marketing of milk and milk products and 88.50% in the cleaning of shed and preparing of cow dung cakes.

Women in the age group of 30-40 years have registered 32.86% participation in all these activities, The age group of

40-50 years have recorded 31.96% participation while as women of 50-60 years age group and 10-20 years age group have registered 5.12% and 4.52% participation in these activities respectively.

Table 7: Participation of women as per age in house hold activities (N= 200; row percentage; multiple choice)

Activity	Age										Total	
	10-20		20-30		30-40		40-50		50-60			
	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage
Cooking	8	4.0	49	24.5	66	33.0	65	32.5	12	6.0	200	100.00
Attending of children	8	4.3	45	24.2	61	32.8	60	32.3	12	6.5	186	93.00
Caring of livestock	8	4.2	47	24.7	62	32.6	62	32.6	11	5.8	190	95.00
Meeting neighbours and relatives	8	4.2	46	24.1	63	33.0	62	32.5	12	6.3	191	95.50
Fetching of water	0	0	16	25.8	24	38.7	17	27.4	5	8.1	62	31.00
Collection of firewood and cow dung	4	4.7	23	27.1	28	32.9	24	28.2	6	7.1	85	42.50
Cleaning of house and washing of clothes	8	4.1	47	24.2	65	33.5	63	32.5	11	5.7	194	97.00
Pickle making	8	6.3	34	26.8	39	30.7	40	31.5	6	4.7	127	63.50
Total		3.98		25.18		33.40		31.19		6.28		77.19

In the household activity as per above table the women of all the age groups have registered their participation. In aggregate, 77.19% of women have taken part in all these activities. 100% participation is seen in cooking, 93% in attending the children, 95% in caring of livestock, 95.50% in meeting of neighbours and relatives, 31% in fetching of water, 42.50% in collection of firewood and cow dung, 97% in the cleaning of house and

washing of clothes and 63.50% have shown participation in the pickle making activity.

The age group of 30-40 years has recorded highest participation of 33.40%, age groups of 40-50 years and 20-30 years have recorded participation of 31.19% and 25.18% respectively. The age group of 10-20 years has recorded lowest 3.98% participation in the given set of activities.

Table 8: Participation of women as per age in decision making (N= 200; row percentage; multiple choice)

Activity	Age										Total	
	10-20		20-30		30-40		40-50		50-60			
	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage
Selection of varieties	8	4.3	46	24.9	60	32.4	60	32.4	11	5.9	185	92.50
Choice of substantive crops	7	4.8	34	23.4	48	33.1	46	31.7	10	6.9	145	72.50
Livestock raising	8	4.4	44	24.2	60	33.0	59	32.4	11	6.0	182	91.00
Purchase of agrochemicals/ Farm Machinery	1	1.8	13	23.2	17	30.4	21	37.5	4	7.1	56	28.00
Kind of farm produce to be sold	7	4.0	39	22.4	57	32.8	59	33.9	12	6.9	174	87.00
Marketing of Farm Produce	5	4.7	28	26.4	35	33.0	30	28.3	8	7.5	106	53.00
Total		4.00		24.08		32.45		32.70		6.72		70.67

Women participation in the decision making has been always debatable but as per the above table data 70.67% of women have registered their participation in the decision making activity. 92.50% have recorded decision making participation in the selection of varieties, 72.50% in the choice of substantive crops, 91% in the livestock raising, 87% in the

kind of farm produce to be sold and 53% in the marketing of farm produce and 28% in the purchase of agrochemical/farm machinery. Women in the age groups of 40-50 years and 30-40 years have recorded highest participation of 32.70% & 32.45% respectively. Women in the age groups of and 20-30 years have recorded medium participation of 24.08%.

Table 9: Participation of women as per age in non-fulfillment of expected role (N= 200; row percentage; multiple choice)

Activity	Age										Total	
	10-20		20-30		30-40		40-50		50-60			
	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage	Number	Percentage
Not Applicable	6	3.6	41	24.6	54	32.3	57	34.1	9	5.4	167	83.50
Domestic work	2	6.9	5	17.2	12	41.4	7	24.1	3	10.3	29	14.50
Attending children	2	9.5	3	14.3	9	42.9	5	23.8	2	9.5	21	10.50
Personal health	0	0	5	33.3	5	33.3	4	26.7	1	6.7	15	7.50
Total		3.33		14.90		24.98		18.12		5.32		19.33

Women have registered various reasons for their non fulfillment of assigned roles. However, 83.50% have quoted

that they have no problems in achieving their assigned roles. As per the above given data 19.33% women have given

reasons for their non fulfillment of assigned roles. 14.50% have given attending of children and 7.50% have given personal health reasons for not attaining their assigned roles. Women in the age group of 30-40 years have represented with 24.98% in these reasons, women in the age group of 40-50 years with 18.12% reasons, women in the age group of 20-30 years with 14.90 % reasons and women in the age group of 10-20 years have given 3.33% reasons in the given set of activities.

5. Conclusion

- In the pre-sowing/sowing operations 62.27% of respondents have participated in all the given activities in the sample of 200 respondents. The maximum participation in all the pre-sowing and sowing activities has been by the age group of 30-40 years with 31% participation, followed by 29.09% by 40-50 years age group, 22.53% by 20-30 years of age group and the minimum participation in the given set of activities has been recorded by the age group of 50-60 years and 10-20 years with 5.58% and 2.67% respectively.
- In the twelve activities of post sowing phase, 61.68% of respondents have taken part in all the activities in the given sample of 200 respondents. The minimum participation of 6.85% and 2.63% has been by the age groups of 50-60 years and 10-20 years respectively. The respondents of the age group of 20-30 years fall in the medium range with 24.04% participation.
- The above table reflects that there has been 88.30% participation by the farm women against the activity of harvesting in which ten different kinds of activities are listed. The highest participation of 99.50% has been recorded in harvesting followed by 98.0% in winnowing, 96.50% in threshing, 95% in bundling and 93.50% in hatch making and bagging. The tasks in which women participation varied between 70-80% were loading and unloading of grains/straw, transport of farm produce and weighing.
- Women in the age group of 30-40 years and 40-50 years are at par in all the harvesting activities with 32.84% and 32.42% participation, followed by age group of 20-30 years with 24.48% participation. Women in the age group of 50-60 years and 10-20 years have registered lowest participation of 5.75% and 4.25% respectively.
- In vegetable cultivation 85.71% women have shown their participation in all the activities. 99% participation has been shown in the land preparation and application of manure, 98.50% in the harvesting activity, 98% in weeding/hoeing, 91.50% in the grading, 28.50% participation has been recorded in the marketing activity.
- The age group of 30-40 years has shown highest participation of 32.96% in all these operations followed by the age group of 40-50 years. The age groups of 50-60 years and 10-20 years have recorded lowest participation at 5.76% and 4.70% respectively in all the activities.
- Out of total sample of 200 respondents 87.70% of women have registered their participation in all the activities of animal husbandry. 95.50% have taken part in bringing and chaffing the fodder, 93% in health care of animals, 99% in milking, 62.50% in marketing of milk and milk products and 88.50% in the cleaning of shed and preparing of cow dung cakes. The age group of 30-40 years has recorded highest participation of 33.40%, age groups of 40-50 years and 20-30 years have recorded participation of 31.19% and 25.18% respectively. The age group of 10-20 years

has recorded lowest 3.98% participation in the given set of activities.

- Women in the age groups of 40-50 years and 30-40 years have recorded highest participation of 32.70% & 32.45% respectively. Women in the age groups of 20-30 years have recorded medium participation of 24.08%. Women have registered various reasons for their non fulfillment of assigned roles. However, 83.50% have quoted that they have no problems in achieving their assigned roles. As per the above given data 19.33% women have given reasons for their non fulfillment of assigned roles. 14.50% have given attending of children and 7.50% have given personal health reasons for not attaining their assigned roles.
- Women in the age group of 30-40 years have represented with 24.98% in these reasons, women in the age group of 40-50 years with 18.12% reasons, women in the age group of 20-30 years with 14.90 % reasons and women in the age group of 10-20 years have given 3.33% reasons in the given set of activities.

6. References

1. Borah R, Kalita M. Extent of participation and Postures Adopted in performance of Household tasks by Assamese Farm Women. *J Inter-academicia*. 1999; 3(2):222-229.
2. Boulding E. Labour of US Farm women, a knowledge gap. *Sociology of Work and occupations*. Great Plains Research: A Journal of Natural and Social Sciences. 1980; 7:261-90.
3. *Census International Journal of Rural Studies (IJRS)* 2001, 14.
4. Chayal K, Dhaka BL. Analysis of Role Performance of Women in farm activities, *Indian Res. J Ext Edu*. 2010, 10(2).
5. Chen, Marty, Mitra. *Indian Women- A study of their role in dairy movement 15: CTA-(1993) A Women, rightful Place*, Technical Centre for Agriculture and Rural co-operation. Netherlands, Spore, Bi-Monthly Bulletin, 1986, 44.
6. Choudhary TPS, Sharma BM. Female labour of the Farm Family in Agriculture, *Agricultural Situations in India: 1961*, 16(643).
7. Devadas RP, Thangam-anik S. Mitha. Role of selected farm women in Agricultural operations. *Indian Journal of Home Science*. 1972, 6(49).
8. Dhar A. *Rural Women of India*, Kurukshetra, 1978; 26(4):20.
9. Hissar Kour, Jaswant. A study of differential dairying knowledge and role performance of trained and untrained milk producers and their Wives. M.Sc. Thesis (unpublished) Kurukshetra, 1981.
10. Kulkarni RR. Perception of drudgery by farm women Maha. *J Extn Edu*. 1998; 17:288-290.
11. Kumar K, Mage SL. Training needs of Farm women in Haryana. *Indian Journal. Adult Education* 1974; 35(10):72-73.
12. Malik JS, Kumar R, Sigh M. Role of Indian Women in Different activities of Daily Life Intensive Agril. 1999; 37(1-2):22-23.
13. Marieme Lo. *Women in Agriculture in Sub-Saharan Africa on Line*, 2004. <http://Trochin.human.cornell.edu/gallery/lo/personal/20web/.20page.htm>.
14. Meghwal, Rewet Ran, Singhal Savita. Role of women in agricultural development Int. agr. Directorate of Ext. Min. of agr. GOI, New Delhi 2000; 37(11-12):5-8.

15. Mishra, AK Dubey. Participation of rural women in decision making. *Indian Res. J Ext Edu.* 2009, 9(3).
16. Mishra SK. Study on general dimensions in Rice-Based Farming system M.Sc. (Agri) Thesis (unpublished) Indira Gandhi Agriculture University, Raipur, 2000.
17. Mukherjee AB, Mehata swamit. Female participants in agricultural labour in India Pattern and association, Punjab uni. *Res. Bulletin.* 1973; 4(2):165-179.
18. Nagabhushanam K, Sridhar HP, Nakiso KU. Participation of rural women in agriculture in Kundapur Taluk of Coastal Karnataka, *Indian J Adult Edu.* 1993; 54(4):41-48.
19. Naine M, Kherde RL, Lo Khande MR. Performance of farm women towards food related tasks. *Indian journal of Extension Education.* 1966, 4(35).
20. Nataraju MS, Lovely PG. Extent of participation of rural women in Crop and animal production activities – An analysis. *Indian J Adult Edu.* 1993; 54(3):52-57.
21. Sumathi P. Role of women in farming, allied and off farm activities. *Agricultural update*, 2008; 3(3)&4:247-250.
22. Sunita. An explanatory study on expectation and performance of Women labour engaged in Paddy cultivation M.sc. Thesis, HAU, 1986.
23. Verma OS, Malik BS. Contributions of farm ladies in farm operations. *Journal of Home Science.* 1984; 2:57-59.
24. Verma SK, Sinha BP. Socio-Economic correlation of Drudgery undertaken by women in farm operation *Maharashtra J Extn Edu.* 1991; 10:170-173.