

CHANGING NEEDS OF FARM WOMEN IN AGRICULTURE

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Farm women are considered an 'invisible work force' in agriculture even though they participate in most of the agricultural operations. In the changing scenario of agricultural development, dissemination of need based and location specific technologies to farm women assumes greater importance. For consistent growth of agricultural production, stabilization of income in agriculture, it is necessary to involve women in increased adoption of improved farm practices. This could be attained through effective training and extension programmes specially designed and based on technological felt needs of farm women through which their behaviour can be changed in a desired direction, production and productivity can be enhanced.

To develop training content and make training programmes relevant and cost effective, an attempt was made to assess the general training needs of farm women as perceived by themselves and by trainers in Sorghum and additional activities in Kandukur Mandal of Ranga Reddy District. An attempt was also made towards a comparison of these perceived training needs to know the felt need orientation of training programmes.

Material and Methods

A sample of thirty farm women was selected from small and marginal families by proportionate random sampling from Gudur village of Kandukur Mandal of Ranga Reddy District of Andhra Pradesh wherein larger area is under cultivation.

The trainers of Ranga Reddy district Farmer's Training Centre of State Department of Agriculture (n=5) formed the second set of sample.

The general, crop specific and additional training needs in knowledge and skill of farm women as perceived by them and trainers were assessed using

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a three point continuum namely 'greatly needed', 'somewhat needed' and 'least needed' which were assigned scores of 3, 2 and 1 respectively in major subject matter areas and also in specific items under each of the major subject matter area of Sorghum cultivation practices. The frequency of responses from each of the three columns of a specific item under a major subject matter area were tabulated and multiplied by concerned score values. Then, they were added together which gave the total score for each specific item of training based on which specific items were ranked. The ranking of major subject matter areas was done based on mean scores which was obtained by summing up the total scores of all specific items under a major subject matter area and by dividing it by number of specific items under that particular major subject matter area. Assessment of training needs in additional activities was done based on ranks allotted to total scores obtained to each of the activities.

Mann Whitney U – test was used to test the significance of difference in general, crop specific and additional training needs of farm women and trainers.

The total scores of each of the respondents for all the items was calculated and arranged in a combined array and ranks were assigned. Lowest algebraic value was given a rank of one and so on. n_1 is the smaller size of the group. Ties occur, if score of two or more observations are similar. The ranks assigned to these tied observations should be the average of the ranks obtained if the scores were different. The observations of each of the groups were separate. The value of U may be found by substituting the observed values in formula.

$$n_1 (n_1 + 1)$$

$$U = n_1 n_2 + \frac{\quad}{2} - R_1$$

Where n_1 - smaller size of sample

n_2 - larger size of sample

R_1 - smaller sum of ranks

$$U = \frac{n_1 n_2}{2}$$

$$Z = \frac{U - \frac{n_1(n_1+1)}{2} - \frac{n_2(n_2+1)}{2}}{\sqrt{\frac{n_1 n_2 (n_1 + n_2 + 1)}{12}}}$$

The obtained Z value in two tailed test is compared with tabled value at 1% level of significance (2.58). If the observed value is less than tabled value, null hypothesis is accepted and vice versa.

Table 1: Perception of training needs (knowledge and skills) by farm women and trainers in agriculture in general.

S.No.	Particulars of information	n=30				n=5			
		Farm Women				Trainers			
		K		S		K		S	
		TS	R	TS	R	TS	R	TS	R
1	Germination tests	72	2.0	-	-	10	5.0	-	-
2	Soil moisture depletion studies	60	5.0	54	4.0	15	1.5	10	4.0
3	Preparation of compost	78	1.0	75	1.0	11	4.0	12	3.0
4	Procedure of calibration of sprayer	65	4.0	59	3.0	15	1.5	15	1.0
5	Precautions to be followed while spraying	64	3.0	69	2.0	12	3.0	13	2.0

TS – Total Score

R – Rank

Table 1 reveals the training needs of farm women and trainers (knowledge and skills) in general areas of agriculture.

Preparation of compost was the primary preference of farm women as it is generally the farm women who collect and heap the manure at a place. Due to the hike in fertilizer prices, the farm women emphasized on efficient utilization of animal manure through compost preparation.

Germination tests was the second preferred area of the training need as the farm women in most of the areas complained about the seed quality and poor germination of crop. Hence, these tests might help in saving the seed costs and cost of cultivation.

The third preferred area of farm women was precautions to be followed while spraying which help in efficient usage of plant protection chemicals and protect them from severe hazardous effects. Farm women educated on this aspect would better influence their male members to be cautious during spraying and thus promote the health and hygiene of the family.

The other area of preference of farm women was the procedure of calibration of sprayer as their involvement is less in this aspect. Calibrating the sprayer helps prevent the problems of spraying too much which will damage the crop, wasteful and costly, or too little which may not have good control, and therefore it is an important task before spraying the chemicals on the crop. Therefore, the farm women having realized the calibration of sprayer as an important task before spraying the chemicals on the crop might have preferred training in it.

The final preferred area of training need was soil moisture depletion studies under field conditions which help the farm women in judging the time to irrigate the crop.

The perception of training needs of farm women by trainers was primarily soil moisture depletion studies. Timely irrigation of the crop saves water which is a precious input in agriculture. Hence, realizing the importance of this valuable commodity the trainers might have given preference for the area.

The second preferred area was the procedure of calibration of sprayer. Though the farm women were not involved in this activity, the trainers stressed on this area as the indiscriminate usage of pesticide was in vogue and thereby let to pest resurgence, and also ecological imbalance. Hence, the trainers could have given much thrust on this aspect.

The third most preferred area as per perception of trainers was precautions to be followed while spraying. Trainers might have felt that the farm women have to be primarily made aware of the deleterious effects of chemicals and that she can better influence her family members, so that suitable precautionary measures might be taken.

Preparation of compost and germination tests were least preferred in the order of perception of training needs by trainers. Trainers might not have realized the significance of efficient and economic usage of animal manure and importance of germination tests and hence preferred the last.

General Training Needs in Skills of Farm women

Table 2 : Perception of training needs (knowledge & skill) by farm women and trainers in Sorghum Cultivation

S. No	Particulars of information	Mean Scores							
		Knowledge				Skills			
		FW	R	TR	R	FW	R	TR	R
1	Varieties	34.50	9.0	14.50	1.5	-	-	-	-
2	Soil and moisture conservation	84.67	1.0	9.67	6.0	72.50	2.0	7.00	7.0
3	Land preparation and manuring	71.33	6.0	6.67	11.0	45.00	8.0	5.00	8.0
4	Seeds and sowing	80.50	3.0	10.50	5.0	77.67	1.0	11.67	4.0
5	Fertilizer management		7.0	14.50	1.5		4.0	14.00	2.0
6	Intercultivation	31.00	10.0	11.50	4.0	65.00	5.0	12.00	3.0
7	Plant protection	45.00	8.00	13.67	3.0	58.67	6.0	14.33	1.0
8	Harvesting	30.00	11.0	9.00	7.0	50.00	7.0	11.00	5.0
9	Post harvest activities	82.33	2.0	8.33	8.0	72.33	3.0	10.00	5.0
10	Cropping system	79.00	4.0	8.00	9.0	-	-	-	-
11	Crop rotation	73.00	5.0	7.00	10.0	-	-	-	-
FW - Farm Women		R - Rank		TR - Trainers					

The order of preferences of training needs in knowledge as perceived by farm women and discussed here in the order of ranking.

Table 2 presents the training needs of farm women in skills. Farm women lacked knowledge and also skill in the method of preparation of compost, due to which they opted it first. It is purely the activity of women and hence might have been preferred by them.

The farm women lacked skill in spraying due to which they were not involved in the operation. Hence, they might be anxious to acquire the skill and preferred it next.

The procedure of calibration of sprayer was the third preferred area for training need in skills. The respondents realized the importance of calibrating the sprayer and hence might be more enthusiastic in learning the new skill.

The last area of training needs in skills preferred by farm women was soil moisture depletion studies as they are not generally who judge the time of irrigating the field.

The order of perception of training needs in skills by trainers was the procedure of calibration of sprayer. Though farm women were not involved in the operation of spraying, to maintain ecological balance, the trainers might have felt that training the farm women in this aspect is the pressing need of the hour.

The second area in the order of perception of training needs by trainers was the method of spraying. The trainers might have felt that an educated woman will educate the entire family and thus safeguard the health of the family.

The third most preferred area in the perception of training needs by trainers was the method of compost preparation. The trainers might not have realized that organic farming is the need of the hour.

The final preference in the order of perception of training needs by trainers was soil moisture depletion studies. Trainers might have felt that as the women do not decide when to irrigate the field, training her in this aspect to acquire skills may not be much stressed.

Soil and moisture conservation

Due to poor retentive nature of soils on which the crop is cultivated in the area, the primary preference of farm women might be soil and moisture conservation practices followed by soil sampling of degraded red soils in order to assess fertilizer requirements of soil.

Post harvest activities

Poor germination percentage of seeds might have compelled the farm women to primarily gain knowledge on drying. Due to the faulty method of drying that has been in practice in the area (drying in heaps), seeds have lost viability. Storage was the next area preferred which might be to arrest post harvest losses due to improper storage method.

Seed and sowing

Due to increased incidence of stem borer, smut and shootfly on the crop on account of delayed sowings due to late monsoon onset, sowing time might have received top most priority followed by sowing implements which might help them to get relieved of drudgery. The third most preferred area of farm women was plant population which might be due to low yields obtained in close planting. Non-availability of pure, healthy and disease free seed in the area might be the cause for the final preference of farm women to seed treatment.

The other areas were later preferred as shown in Table 2.

The preferences of trainers in training needs in knowledge in Sorghum cultivation practices is presented below.

Varieties

Due to shootfly menace in the area, trainers preferred that farm women must be made aware of the varietal characteristics prior to cultivation.

Fertilizer management

Due to imbalanced fertilizer usage and its non application in splits in the area, trainers might have desired the farm women to gain knowledge on quantity followed by time of fertilizer application.

Plant protection

As chemical control was not in practice in the area, trainers might have felt it as immediate need of farm women followed by skills in identification of pests/diseases which trainers might have felt it as a prerequisite for farm women to proceed further. As majority of pest and diseases do not have mechanical measures of control, they might have been least preferred.

The other areas were the later preferences of farm women in the order of ranking as depicted in Table 2.

The preferences of farm women in training needs in skills are discussed here in the order of ranking.

Seeds and sowing

Visualising poor seed germination despite close planting, poor yields were achieved because of which they desired to gain skill in maintenance of optimum plant stand. Operation of sowing implements was the next most preferred area which might be to ease the drudgery and for trial testing. The procedure of seed treatment was the last preference as they cannot afford to produce healthy seeds.

Soil and moisture conservation

Soil and moisture conservation practices in red soils was the most preferred area due to poor retentive capacity of soil in addition to meagre rainfall received.

Post harvest activities

As most of the seeds have become inviable, having realised the importance of drying, the farm women might have preferred to know about the accurate method of drying. The second most opted area to acquire skills was the method of storage, which might be to combat the seed storage losses.

Fertilizer management

the Method of application was the area in which they desired to acquire skills to make efficient utilization.

The other areas were later preferred by farm women in the order of ranking as shown in Table 2.

The trainers perception of training needs (skills) of farm women is presented here in the order of ranking.

Plant protection

Due to indiscriminate usage of pesticides/fungicides in the area, trainers might have felt that farm women need to be trained in the method of spray fluid preparation followed by skill in identification of symptoms of damage and mechanical methods of control.

Fertilizer management

Due to faulty method of application of fertilizers, inefficient utilization coupled with high expenditure was experienced because of which trainers felt that farm women need to be trained in the method of fertilizer application.

Intercultivation

To compensate reduction losses in yield due to increased weed growth, irrespective of farming situation of crop, trainers might have preferred that farm women need to be trained in preparation of weedicide spray solution.

The other areas that were preferred in the order of ranking by trainers are shown in Table 3.

Table 3 : Additional training needs of farm women as perceived by themselves and by trainers.

S. No.	Activity	Farm Women		Trainers	
		Total scores	Ranks	Total scores	Ranks
1	Horticulture	62	3.0	15	1.0
2	Poultry farming	59	4.0	10	5.0
3	Goat farming	57	5.0	11	4.0
4	Agroforestry	68	2.0	14	2.0
5	Apiculture	51	7.0	9	6.5
6	Sericulture	30	10.5	8	8.0
7	Pisciculture	45	9.0	7	9.0
8	Mushroom cultivation	30	10.5	6	10.0
9	Vermiculture	49	8.0	5	11.0
10	Home Science	55	6.0	9	6.5
11	Cottage industry	75	1.0	12	3.0

The preferences of farm women and trainers in additional activities is discussed below in the order of ranking.

Farm women preferred cottage industry particularly agarbathi making as the foremost area of training which might be due to their keen interest in the enterprise while trainers perceived that economic status of farm women in

arid regions may be enhanced if they are trained in dryland horticulture. The second most preferred area of farm women was agroforestry to secure firewood instead of moving to far off places as it was the immediate need in the area while the trainers preferred agro-forestry as a supplementary source of income for farm women. The other areas were perceived differently by farm women and trainers in the order of ranking.

Significance of difference between the perception of training needs of farm women and trainers in knowledge and skill aspects of general training needs, crop specific training needs and additional training needs was known by applying Mann-Whitney U test . As T calculated value was 3.15 and 3.26 which was more than tabled value (2.58), the null hypothesis was rejected and concluded that there were significant differences between perceptions of farm women and trainers in knowledge and skill training needs respectively in general areas of agriculture.

With respect to crop specific training needs, as T calculated value 3.50 (knowledge) and 2.58 (skill) which were more than and equal to the tabled value (2.58), the null hypothesis was rejected and concluded that there were significant differences between perceptions of farm women and trainers in various cultivation practices of sorghum.

With regard to additional training needs for farm women, as T calculated value 2.58 was equal to tabled value, the null hypothesis was rejected and concluded that there were significant perceptual differences of training needs between farm women and trainers.

Conclusion

Low cost agricultural practices were the primary emphasis of farm women while trainers opted for fertilizer management and plant protection due to imbalanced and indiscriminate usage of fertilizers and plant protection chemicals in the area. Hence, trainers with empathetic and participatory approach have to undertake baseline survey for relevant training need assessment. Due to diversification of agriculture, an integrated approach is needed in training conducted by Department of Agriculture to make

them purposeful. Appropriate formulation of training strategies (holistic and systems approach) will also be possible through need assessment.

Farm women should be empowered through effective training programmes so that they do not deserve the term 'the invisible hands' and 'unheard voices'. The challenge before State Department of Agriculture, therefore lies in integrating brain (technology), brawn (physical work) and bank (credit and other resources) in a mutually supportive manner so that man and woman can play an active role in improving productivity, profitability, stability and sustainability of major farming systems. This will contribute to the second green revolution in our country.

References

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