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Role played by dairy farm women in scientific management of dairy animals in Udaipur district of Rajasthan

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Abstract

Women generally are responsible for the feeding, grazing, fodder collection, milking, processing, dung management, while men who manage the finances generally sale of milk and milk products. The present study was conducted in Girwa and Salubar in Udaipur district of Rajasthan. Total 120 dairy farm women were selected randomly from the study area. In the study the data shade light on the role of dairy farm women in breeding practices. It is alarming to note that the women's role in putting extra care of pregnant animals, arranging material during parturition and identifying the animals in heat. It is encouraging to observe that greater role of women in all milking practices in the study area. Women's role and participation in milking practices is quite high which gives a good signal. It is good to note that dairy farm women are playing their greater role in preparation of milk by products value addition which in turn leads to fetch better prices of the milk. Since, our is a male dominated society, almost all the decision regarding purchase of new animals and selling of male calves are done by male family head. It is better if the women are considered equal partner in making significant decision of dairy unit unless, they are educated and empowered to take part in decision making. The total scenario including dairy farm women cannot be improved in the study area. Therefore, the efforts are to be made in this direction.

Keywords: Dairy farm women, scientific management, dairy animals

Introduction

Farm women spend a lot of time not only in managing their homes but also managing their farms and animals, but most of the time their contribution remains unrecognized. Srivastava, 1985 stated that all farm women irrespective of land status of their family provide 14-18 hours of productive physical labour in different chores, thus depicting the load of drudgery shouldered by them in day-to- day activities.

Women generally are responsible for the feeding, grazing, fodder collection, milking, processing, dung management, while men who manage the finances generally sale of milk and milk products (Sethi, 2010) ^[14].

Women have been involved in animal production under small holder farming system to enhance the family income as well as to meet household food needs. Nearly half of the rural population consists of women who contribute 60 to 80% of labor required for animal rearing (Younas *et al.* 2007) ^[17].

They are the first to rise and last to go to bed (Siddique *et al.* 2009) ^[15]. Rural women carry out both domestic and livestock related activities. Their routine household activities include cleaning of the home, cooking, stitching, raising children while livestock management practices include cleaning of animals shed, taking care of sick animals, calf rearing, feeding, watering to animals, milking and making dairy products like ghee, yogurt and butter.

General observations concerning rural family life and available studies show that male members are mainly responsible for agricultural practices, while besides the household responsibilities, the females are said to actively participate in livestock care and management (Zubair *et al.* 1999) ^[19] In spite discharge of their duties in both domestic and livestock her involvement in decision making process specially related to money matters is low (Raju and Rani, 1991).

Research Methodology

The research was conducted in Girwa & Salumbar tehsils in Udaipur district of Rajasthan. The study was based on the highest number of dairy animals owned by the women respondents. Six villages were selected from each tehsils and ten respondents from identify were selected randomly. Thus, in total 120 respondents (farm women) were selected for the purpose of the study.

Result and Discussion

The level of role played by dairy farm women was categorized into various practices namely breeding, feeding, health-care, management, milking and marketing. The extent of work done by dairy farm women against the practices associated with dairy farming was determined by total obtained score against the total obtainable score of each selected item (sub-practice). On the basis of this, mean scores (MS) and mean per cent scores (MPS) were worked out and then ranks were assigned to the sub-practices accordingly as follows:

Breeding practices

The data presented in table 1 indicate that in Girwa tehsil the dairy farm women involved themselves most often in performing breeding practices like extra care of pregnant animals (MPS=91.67) and arranging materials during parturition (MPS=87.67) hence ranked first and second respectively, while often participation was observed for the practices i.e. selecting the methods of breeding (MPS=73.33), taking animals for reproduction (MPS=63.33), taking decision when to bred animals (MPS=62.67), identify the animals in heat/estrus (MPS=61.00) and taking animals for pregnancy diagnosis (MPS=58.33) there by ranked third, fourth, fifth, sixth and seven in the order.

On the contrary, in Salumbar tehsil the dairy farm women participated more actively in all the breeding practices like extra care of pregnant animals (MPS=97.00), arranging materials during parturition (MPS=93.33), selecting the methods of breeding (MPS=89.33), taking decision when to bred animals (MPS=85.00), identify the animals in heat/estrus (MPS=82.00), taking animals for pregnancy diagnosis (MPS=78.67) and taking animals for reproduction (MPS=77.67) thus raked first, second, third, fourth, fifth, sixth and seventh respectively.

Overall, high level of participation by the dairy farm women was observed for breeding practices like extra care of pregnant animals (MPS=94.33), arranging materials during parturition (MPS=90.33), identify the animals in heat/estrus (MPS=88.00) and selecting the methods of breeding (MPS=81.33) thus allocated first four ranks in the order, while average role was played for the practices i.e. taking decision when to bred animals (MPS=73.60), taking animals for reproduction (MPS=70.83) and taking animals for pregnancy diagnosis (MPS=68.33) therefore assigned last three ranks in the order.

The similar findings were found by Butt *et al.* (2010) [5], Rathod *et al.* (2011) [12], Adisa and Akinkunmi (2012) [1] and Lahoti *et al.* (2012) [9].

Feeding practices

The data shown in table 2 point out that in Girwa tehsil the dairy farm women involved themselves to a great extent in carrying out almost all the feeding practices like feeding the animals (MPS=95.33), watering the animals (MPS=94.33),

preparation of conc. mix. (MPS=93.67), storage of feed and fodder (MPS=91.67), chaffing of fodder (MPS=86.67), collection of fodder and selection of feed and fodder (MPS=85.00 each) thereby ranked first, second, third, fourth, fifth and sixth respectively, while good participation was observed for the practices i.e. harvesting of fodder crops (MPS=83.33) and facilitating animals for grazing (MPS=81.67) thus obtained last two ranks in the order.

Likewise, in Salumbar tehsil majority of the dairy farm women participated most actively in the feeding practices like storage of feed and fodder (MPS=99.33), watering the animals (MPS=97.67), feeding the animals (MPS=96.67), preparation of conc. mix. (MPS=92.67), chaffing of fodder (MPS=91.00), facilitating animals for grazing (MPS=88.67) and collection of fodder (MPS=88.33) thus raked first, second, third, fourth, fifth, sixth and seventh respectively, while good participation was observed for the practices i.e. harvesting of fodder crops (MPS=83.33) and selection of feed and fodder (MPS=81.00) consequently attained last two ranks in the order.

Overall, high level of participation of dairy farm women was observed for the feeding practices namely feeding the animals (MPS=96.33), watering the animals (MPS=96.00), storage of feed and fodder (MPS=95.33), preparation of conc. mix. (MPS=93.33), collection of fodder and chaffing of fodder (MPS=86.67 each) and facilitating animals for grazing (MPS=85.00) thus allocated first six ranks in the order, while good participation was noted for the practices i.e. harvesting of fodder crops (MPS=83.33) and selection of feed and fodder (MPS=83.00) consequently attained last two ranks in the order.

The similar findings were found by Bose *et al.* (2013) [4], Gadroli (2013) [6], Kathiriya *et al.* (2013) [8] and Vikash *et al.* (2013) [16].

Health care practices

The data depicted in table 3 reveal that the respondents in Girwa tehsil had obtained highest mean per cent score i.e. 93.33 and 91.00 per cent for playing role against the health care practices about caring of new born calves and care of sick animals occupied first two ranks in the order, whereas isolating the sick animals (MPS=83.67) and identify the sick animals (MPS=83.33) were next in the order, respectively. Average role was reported for the health care practices i.e. taking animals for vaccination (MPS=77.00) and calling veterinarian for services when needed (MPS=73.67), while poor role was identified about medication to animals against parasites (MPS=47.00) and treating animals with ITK (MPS=36.00) thus allocated last two ranks in the order.

Almost similar results were found in case of Salumbar tehsil, where first two ranks were assigned to caring of new born calves (MPS=90.00) and taking animals for vaccination (MPS=86.67) health care practices as high level participation, whereas care of sick animals (MPS=84.33), calling veterinarian for services when needed (MPS=83.67), identify the sick animals (MPS=82.67) and isolating the sick animals (MPS=81.67) were the practices under good participation category. As usual less involvement of dairy farm women was reported for the practices i.e. medication to animals against parasites (MPS=47.67) and treating animals with ITK (MPS=37.67) occupied last two ranks in the order.

Overall, high level of participation of dairy farm women was reported for the health care practices i.e. caring of new born calves (MPS=90.67) and care of sick animals (MPS=87.67)

thus allocated first two ranks, meanwhile good participation was noticed for the practices i.e. identify the sick animals (MPS=83.00), isolating the sick animals (MPS=82.67), taking animals for vaccination (MPS=81.67) and calling veterinarian for services when needed (MPS=78.67) occupied next three ranks in the order, while poor role was identified for

medication to animals against parasites (MPS=47.33) and treating animals with ITK (MPS=36.67) thereby allocated last two ranks in the order.

The analogous findings were found by Narmatha *et al.* (2009)^[11], Rathod *et al.* (2011)^[12], Bose *et al.* (2013)^[14] Gadroli (2013)^[6] and Lahoti *et al.* (2012)^[9].

Table 1: Level of role played by dairy farm women about breeding aspect of dairy animals

S. No.	Items/Areas	T.S.	Girwa			Salumbar			Overall		
			MS	MPS	Rank	MS	MPS	Rank	MS	MPS	Rank
1.	Taking animals for A.I/Natural service	3	1.91	63.33	IV	2.33	77.67	VII	2.12	70.83	VI
2.	Taking animals for pregnancy diagnosis	3	1.75	58.33	VII	2.36	78.67	VI	2.05	68.33	VII
3.	Identify the animals in heat/estrus	3	1.83	61.00	VI	2.46	82.00	V	2.64	88.00	III
4.	Taking decision when to bred animals	3	1.88	62.67	V	2.55	85.00	IV	2.21	73.60	V
5.	Selecting the method of breeding	3	2.2	73.33	III	2.68	89.33	III	2.44	81.33	IV
6.	Arranging materials during parturition	3	2.63	87.67	II	2.8	93.33	II	2.71	90.33	II
7.	Extra care of pregnant animals	3	2.75	91.67	I	2.91	97.00	I	2.83	94.33	I

Table 2: Level of role played by dairy farm women about feeding aspect of dairy animals

S. No.	Items/Areas	T.S.	Girwa			Salumbar			Overall		
			MS	MPS	Rank	MS	MPS	Rank	MS	MPS	Rank
1.	Selection of feed and fodder	3	2.55	85.00	VI	2.43	81.00	VIII	2.49	83.00	VIII
2.	Harvesting fodder crops	3	2.5	83.33	VII	2.5	83.33	VII	2.5	83.33	VII
3.	Collection of fodder	3	2.55	85.00	VI	2.65	88.33	VII	2.6	86.67	V
4.	Facilitating animal for grazing	3	2.45	81.67	VIII	2.66	88.67	VI	2.55	85.00	VI
5.	Chaffing of fodder	3	2.6	86.67	V	2.73	91.00	V	2.6	86.67	V
6.	Preparation of Concentrate	3	2.81	93.67	III	2.78	92.67	IV	2.8	93.33	IV
7.	Feed animals	3	2.86	95.33	I	2.9	96.67	III	2.89	96.33	I
8.	Watering animals	3	2.83	94.33	II	2.93	97.67	II	2.88	96.00	II
9.	Storage of feed and fodder	3	2.75	91.67	IV	2.98	99.33	I	2.86	95.33	III

Table 3: Level of role played by dairy farm women about health care aspect of dairy animals

S. No.	Items/Areas	T.S.	Girwa			Salumbar			Overall		
			MS	MPS	Rank	MS	MPS	Rank	MS	MPS	Rank
1.	Identify the sick animals	3	2.5	83.33	IV	2.48	82.67	V	2.49	83.00	III
2.	Isolating the sick animals	3	2.51	83.67	III	2.45	81.67	VI	2.48	82.67	IV
3.	Care of sick/ diseased animals	3	2.73	91.00	II	2.53	84.33	III	2.63	87.67	II
4.	Care of new born animals	3	2.8	93.33	I	2.7	90.00	I	2.72	90.67	I
5.	Taking animals for vaccination	3	2.31	77.00	V	2.6	86.67	II	2.45	81.67	V
6.	Taking animals/or calling vety. for services when needed	3	2.21	73.67	VI	2.51	83.67	IV	2.36	78.67	VI
7.	Medication to animal against parasite	3	1.41	47.00	VII	1.43	47.67	VII	1.42	47.33	VII
8.	Treating animals with ITK	3	1.08	36.00	VIII	1.13	37.67	VIII	1.10	36.67	VIII

Table 4: Level of role played by dairy farm women about management aspect of dairy animals

S. No.	Items/Areas	T.S.	Girwa			Salumbar			Overall		
			MS	MPS	Rank	MS	MPS	Rank	MS	MPS	Rank
1.	Weaning of dairy calves	3	2.41	80.33	VIII	2.41	80.33	VIII	2.41	80.33	X
2.	Maintenance of farm records	3	1.26	42.00	IX	1.81	60.33	IX	1.54	51.33	XI
3.	Cleaning and maintenance of animal sheds	6	2.56	85.33	VI	2.73	91.00	VI	2.65	88.33	VII
4.	Cleaning/wallowing of animals	1	2.68	89.33	IV	2.76	92.00	IV	2.72	90.67	IV
5.	Grooming of animals	4	2.56	85.33	VI	2.78	92.67	III	2.67	89.00	VI
6.	Developing temporary animal shed	4	2.45	81.67	VII	2.75	91.67	V	2.6	86.67	VIII
7.	Making and storage of dung cakes	3	2.75	91.67	II	2.8	93.33	II	2.77	92.50	II
8.	Preparing compost	3	2.8	93.33	I	2.81	93.67	I	2.80	93.33	I
9.	Marking animals for identification	3	2.41	80.33	VIII	2.48	82.67	VII	2.45	81.67	IX
10.	Housing of animals	3	2.58	86.00	V	2.78	92.67	III	2.68	89.33	V
11.	Collection of manure and disposal	3	2.73	91.00	III	2.78	92.67	III	2.75	91.67	III
12.	Insurance of animals	3	0.53	17.67	X	0.3	10.00	X	0.41	13.67	XII
13.	Getting loan/ credit from bank cooperatives	3	0.43	14.33	XI	0.16	5.33	XI	0.29	9.67	XIII

Table 5: Level of role played by dairy farm women about milking aspect of dairy animals

S. No.	Items/Areas	T.S.	Girwa			Salumbar			Overall		
			MS	MPS	Rank	MS	MPS	Rank	MS	MPS	Rank
1.	Preparation for milking i.e. washing udder, cleaning vessels etc.	3	2.91	97.00	II	2.75	91.67	II	2.83	94.33	III
2.	Milking of animals	3	2.9	96.67	III	2.88	96.00	I	2.89	96.33	II
3.	Preparation of milk by products (milk processing)	3	2.95	98.33	I	1.98	66.00	III	2.92	97.33	I

Table 6: Level of role played by dairy farm women about marketing aspect of dairy animals

S. No.	Items/Areas	T.S.	Girwa			Salumbar			Overall		
			MS	MPS	Rank	MS	MPS	Rank	MS	MPS	Rank
1.	Purchasing of new animals	3	1.95	65.00	VI	2.3	76.67	IV	2.12	70.00	VI
2.	Culling of animals	3	1.98	66.00	V	2.53	84.33	III	2.25	75.00	V
3.	Selling of milk and its by-products (milk disposal)	3	2.71	90.33	II	2.8	93.33	II	2.75	91.67	III
4.	Selling of male calves	3	2.15	71.67	IV	2.53	84.33	III	2.32	77.33	IV
5.	Selling of Manure and dung cakes	3	2.75	91.67	I	2.8	93.33	II	2.77	92.50	II
6.	Marketing of feed and fodder	3	2.68	89.33	III	2.9	96.67	I	2.79	93.00	I

Management practices

The data presented in table 4 point out that in Girwa tehsil the respondents involved themselves highly in the management practices like preparing compost (MPS=93.33), making and storage of dung cakes (MPS=91.67), collection of manure and its disposal (MPS=91.00), cleaning of animals (MPS=89.33), housing of animals (MPS=86.00), cleaning and maintenance of animal's sheds and grooming of animals (MPS=85.33 each) hence ranked first, second, third, fourth, fifth and sixth in order of work preference performed by them, while in next order good role was played for the practices i.e. developing temporary animal's shed (MPS=81.67), weaning of calves and marking of animals for identification (MPS=80.33 each) occupied next three ranks in the order. However, they were hardly involved in maintaining farm records (MPS=42.00), insurance of farm animals (MPS=17.67) and getting loan from credit agencies (MPS=14.33) assigned last three ranks in the order. Likewise, in Salumbar tehsil the respondents involved themselves most often in the management practices like preparing compost (MPS=93.67), making and storage of dung cakes (MPS=93.33), grooming of animals, housing of animals and collection of manure and its disposal (MPS=92.67 each), cleaning of animals (MPS=92.00), developing temporary animal's shed (MPS=91.67) and cleaning and maintenance of animal's sheds (MPS=91.00) hence ranked first, second, third, fourth, fifth and sixth in order of work preference, while in next order practices like marking of animals for identification (MPS=82.67) and weaning of calves (MPS=80.33) were reported under good role performance by dairy farm women followed by average role performance in the practice of maintaining farm records (MPS=60.33) and very poor role performance for insurance of farm animals (MPS=10.00) and getting loan from credit agencies (MPS=5.33) allocated last two ranks in the order. Overall, high level of role performance of dairy farm women was seen for the management practices i.e. preparing compost (MPS=93.33), making and storage of dung cakes (MPS=92.50), collection of manure and its disposal (MPS=91.67), cleaning of animals (MPS=90.67), housing of animals (MPS=89.33), grooming of animals (MPS=89.00), cleaning and maintenance of animal's sheds (MPS=88.33) and developing temporary animal's sheds (MPS=86.67) hence ranked first, second, third, fourth, fifth, sixth, seventh and eighth, respectively followed by good role performance for the practices i.e. marking of animals for identification (MPS=81.67) and weaning of calves (MPS=80.33) and average role performance for maintaining of farm records

(MPS=51.33). However, very poor role performance was observed for the management practices like insurance of animals (MPS=13.67) and getting loan from credit agencies (MPS=9.66) thus obtained last two ranks.

The analogues findings were also seen in study Javed (2006)^[7], Narmatha *et al.* (2009)^[11], Adisa and Akinkunmi (2012)^[1], Gadroli (2013)^[6] and Zahoor *et al.* (2013)^[18].

Milking practices

The data shown in table 5 clearly indicate that nearly all the dairy farm women in Girwa tehsil participated most actively in all the activities related with milking practice such as preparation of milk by-products (MPS=98.33), preparation before milking (MPS=97.00) and milking of animals (MPS=96.67) hence ranked first, second and third, respectively. On the other hand, in Salumbar tehsil nearly full contribution of dairy farm women was seen for the practices i.e. milking of animals (MPS=96.00) and preparation before milking (MPS=91.67), while average role was played by the dairy farm women for preparation of milk by-products (MPS=66.00).

Overall, all activities related with the milking practice for instance preparation of milk by-products (MPS=97.33), milking of animals (MPS=96.33) and preparation before milking (MPS=94.33) were performed most often by the dairy farm women and obtained first three ranks, respectively.

The similar findings were also seen in study Afzal (2009)^[2], Reshma (2011)^[13], Arshad *et al.* (2013)^[3] and Gadroli (2013)^[6].

Marketing practices

It is apparent from the data in table 6 that in Girwa tehsil a fair majority of dairy farm women were participated most often in the marketing practices i.e. selling of manure and dung cakes (MPS=91.67), selling of milk and milk by-products (MPS=90.33) and marketing of feed and fodder (MPS=89.33) hence ranked first, second and third respectively, while average participation was observed for selling of male calves (MPS=71.67), culling of animals (MPS=66.00) and purchasing of new animals (65.00) occupied last three ranks.

Similarly, in Salumbar tehsil a large majority of dairy farm women involved themselves most often in the marketing practices such as marketing of feed and fodder (MPS=96.67), selling of milk and milk by-products and selling of manure and dung cakes (MPS=90.33 each), selling of male calves and culling of animals (MPS=84.33 each) hence ranked first, second and third respectively, while good participation was

observed only for purchasing of new animals (65.00) obtained last rank in the order.

Overall, high role performance of dairy farm women was spotted for the marketing practices i.e. marketing of feed and fodder (MPS=93.00), selling of manure and dung cakes (MPS=92.50), selling of milk and milk by-products (MPS=91.67) hence ranked first, second and third respectively, followed by good performance for selling of male calves (MPS=77.33) and culling of animals (MPS=75.00) and average participation for purchasing of new animals (65.00) ranked last in the order. The analogous findings were also seen in study Adisa and Akinkunmi (2012)^[1], Lahoti *et al.* (2012)^[9], Gadroli (2013)^[6] and Mulugeta *et al.* (2014)^[10].

Conclusion

The data shade light on the role of dairy farm women in breeding practices. It is alarming to note that the women's role in putting extra care of pregnant animals, arranging material during parturition and identifying the animals in heat. It seems that rest of the operation/ practices are being performed by sharing with their counterparts or may not be performed at all. Breeding being important components of management demands time bound conscious efforts and execution of the practices for better results. It is encouraging to observe that the role of dairy farm women in all 9 areas pertaining to feeding practices was reported quite high that means almost all the feeding practices are performed by the women only and that to with very high MPS. The possible reasons behind their tremendous role in feeding practices may be because of the less technicality involved and technical know-how needed to perform the practices. The importance of health of animal cannot be undermined. The health of animal has an effect on human health and hygiene. The role of dairy farm women in health care practices in all the practices studied was reported high except the two areas in which their role was reported relatively less. The results so arrived are not unexpected less role in treating animals with ITK may be because of the fact that ITK is neither validated nor documentation leading to less reliability in treating animals. It can be understood that dairy farm women are managing the dairy unit scientifically. The role of farm women in almost all the management practices was reported fairly high. Three areas pertaining to management practices were found to have fewer roles played by the women. Obviously getting loan/ credit from bank cooperatives insurance of animals and maintenance of farm records requires literacy level to interact with the officials and filling of form to get work done. It is encouraging to observe that greater role of women in all milking practices in the study area. Women's role and participation in milking practices is quite high which gives a good signal. It is good to note that dairy farm women are playing their greater role in preparation of milk by products value addition which in turn leads to fetch better prices of the milk. Since, our is a male dominated society, almost all the decision regarding purchase of new animals and selling of male calves are done by male family head. This might have led to fewer roles of women in those areas. It is better if the women are considered equal partner in making significant decision of dairy unit unless, they are educated and empowered to take part in decision making. The total scenario including dairy farm women cannot be improved in the study area. Therefore, the efforts are to be made in this direction.

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