

## Communication Behaviour of Dairy Farmers: A Source for Milk Quality Improvement

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### ABSTRACT

The present study was conducted in dairy cooperative system of Rajasthan state in organized sector i.e. Rajasthan Cooperative Dairy Federation (RCDF). A multistage proportionate random sampling procedure was applied to draw the sample for the study. Out of 21 unions four district milk unions were selected for the present study viz. Alwar, Bhilwara, Bikaner and Hanumangarh. A total of 120 farmers were selected on the basis of proportionate random sampling. The results of this study revealed that most of the dairy farmers used friends, progressive milk producers, veterinary officers and neighbours as information sources; group discussion, group meetings, newspaper and Dairy Cooperative Society (DCS) were important channels for information seeking about proper 'cattle shed' and 'milking procedure'. However, Milk route supervisor, progressive milk producer, friends and neighbours were found as major information sources; whereas, DCS, educational tour and group discussion were important channels for information used by the dairy farmers for information seeking about 'cleaning of utensil' and 'post milking practices'.

### Keywords:

### INTRODUCTION

Creating social change through media is not about the tools you use, the technologies, the perceived quality of the media produced. It's about a real and deep understanding of needs: knowing what will work for your community. Professor Clemencia Rodriguez - Colombia.

Use of right information at the right time is the key success in any endeavor. The real challenge is not to producing information or storing information, but making people to use information. Information is a critical input in the operation and management of organizations. Timely availability of relevant information is vital for effective performance of managerial functions such as planning, organizing, leading and controlling (Babu, et.al. 1997). In the information age, extension has a major role in devising way to increase the use of knowledge and information by the people and for the people. As Buford (1990) pointed out, the effectiveness of Agricultural Extension depends to a large extent on information exchange between and among farmers on the one hand, and broad range of other actors on the other hand. Extension, along with education and research are typically seen as service provider public or private agency that responds to the needs of farmers and rural people for knowledge that they can use to improve their farm productivity, incomes and welfare and to manage natural resources, on which they depend in a sustainable way. It brings information and new technologies to farming

communities, allowing them to improve their production, incomes, and standards of living. Considering the situation, extension has little choice but to become information-based. This article identifies information sources and channels they use to get information and their extent of utilization with information disseminating behaviour.

### METHODOLOGY

The present study was conducted in dairy cooperative system of Rajasthan state of India, which was purposively selected due to the growth rate of milk procurement and its packed milk marketing was highest in organized sector i.e. Rajasthan Cooperative Dairy Federation (RCDF). This federation is having 21 district cooperative milk unions. A multistage proportionate random sampling procedure was applied to draw the sample for the study. Out of 21 unions four district milk unions were selected for the present study viz. Alwar, Bhilwara, Bikaner and Hanumangarh. A total of 120 farmers were selected on the basis of proportionate random sampling. The data were collected finally from all the selected 16 DCSs and 120 respondents.

**Communication behaviour:** The communication behaviour referred to the tendency of farmers to seek and share technical information related to farming for enhancing their knowledge and skill. It was studied under two dimensions, namely; Information seeking behaviour and information disseminating behaviour.

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**Information Seeking Behaviour:** Operationally it was defined as the behaviour which is characterized by the number of sources and channels used and frequency of use of sources and channels as perceived by farmers (Khan, *et. al.* 2011).

The data were collected against four aspects of CMP *viz.* cattle shed, milking procedure, cleaning of utensils and posts milking practices for measuring the use of information sources and channels. (Here, the sources were defined as individuals or institutions who, develop or disseminate the information on the basis demand of an information seeker; whereas channels were used as method for disseminate this information). To measure the frequency of use of sources and channels on four point continuum scale *viz.* most often, often, some time and never by giving the score of 3, 2, 1 and 0 respectively.

**Information Disseminating Behaviour:** Following equation was used for evaluating scores of individual dairy farmer under study:

$$IDiB = \sum Nd + \sum Fd$$

Where,

IDiB = Information Disseminating Behaviour,  
Nd = Number of fellow farmer being disseminated,  
Fd = Frequency of dissemination.

Here, four CMP aspects were used for this purpose *viz.*, cattle shed (which comprises all aspects of housing, animal health management, feeding and use of scarce resources), milking procedure (it included all the aspects of pre milking, actual milking and post milking), cleaning of utensils (type of utensils, cleaning agents with procedure, management of utensil) and post milking practices (it consider about the time between pail to DCS, disposal and cooling of milk).

## RESULTS AND DISCUSSION

**Use of information sources for different CMP practices:** The findings in relation to number of dairy farmers using different sources of information about individual CMP practices presented in Table-1 (A). The critical view of this data revealed that, Cleaning of Utensil and Cattle Shed 'friends' as a source of information was used by all the respondents with 15.96 percent, while progressive milk producers and Veterinary Officer (VO) were used by same number (14.48%) respondents. The neighbours were found as a source of information to 13.14 percent farmers. It was followed by relatives and progressive milk producers (10.59%). On the other hand

NGOs and agricultural graduates were used by very less numbers of farmers.

A perusal of the Figure-1 showed that the friends were maximum frequency and was ranked first followed by, progressive milk producers and VO who got second rank, respectively. The research stations/ KVK and agriculture graduates were on the least ranks.

Regarding the Milking Procedure also, friends were used as source by all the respondents amounting to 17.77 percent, while 15.52 percent contacted progressive milk producer for the same. However, neighbours were used as a source of by 15.07 percent of farmers, followed by VO (14.62%), and milk route supervisor (13.43%). At the same time A.T.I.C. and agriculture graduates were used by very less number of farmers *i.e.* 0.89 and 0.29 percent, respectively.

**Figure-1: Use of Information Sources**

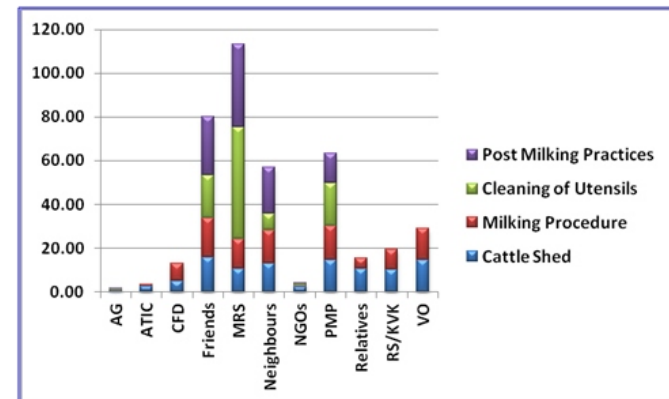


Figure-1 is revealed that, milk route supervisor was used as the main source of information by majority of dairy farmers (51.41%), followed by friends and progressive milk producer with same score 19.82 percent. Here neighbours were used by only 7.54 percent farmers. It is very important to know that not a single farmer used cattle feed dealer, VO, research stations/ KVK, and A.T.I.C as source of information for the cleaning of utensils. The rank order indicated that Milk route supervisor was ahead as a source of information to all other sources, followed by friends and progressive milk producers, neighbours, NGOs, agricultural graduates, and relatives.

As far as the information of Post Milking Practices is concerned, more than one third of respondents (37.74%) used milk route supervisor, followed by friends (26.74%), neighbours (21.06%), progressive milk producers (13.53%), NGOs (0.62%) as a source of information and agriculture graduates were used by only one farmer. But

not a single farmer was a used cattle feed dealer, VO, research stations/ KVK and A.T.I.C. as the source of information for this aspect. The above discussed results showed that friends, neighbours, progressive milk producers, and milk routes supervisors used as source of information by the farmers for all four practices. At the same time cattle feed dealer, VO, research stations/ KVK, and A.T.I.C were not used by farmers for latter two practices. The close observation in the study area and field experience of researcher pointed that, the “farmers were very suspicious in the nature and they did not believe in the information furnished by the individuals who are not in contact with them.

They accepted an idea or innovation about farm practices from his friends, neighbours, progressive milk producers' relatives and milk route supervisors, who always lived with DCS members. In case of VOs, KVKs, A.T.I.C. and agriculture graduates' conditions were different because first all they were very less in study area of all milk unions and secondly they did not have any relation with cleaning of utensils and post milking practices. These results are having similarity with the findings of Khan, *et. al.* (2010), Kumari and Jaharana (2014), and Singh and Singh 2012, Lawrence and Ganguli (2012).

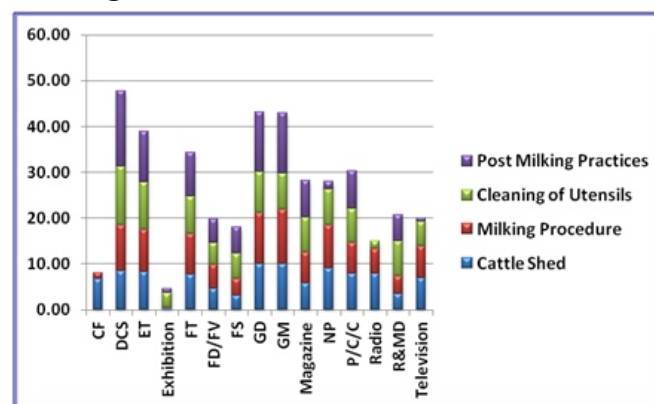
**Table 1: Use of information sources and channels for different CMP practices**

Sources & Channels	Cattle Shed (%)	Milking Procedure (%)	Cleaning of Utensils (%)	Post Milking Practices
<b>A. Sources of Information</b>				
Agriculture Graduates (AG)	0.67	0.29	0.47	0.31
Agriculture Technology Information Centre (ATIC)	2.54	0.89	0.00	0.00
Cattle Feed Dealers (CFD)	4.96	7.92	0.00	0.00
Friends	15.96	17.77	19.82	26.74
Milk Route Supervisors (MRS)	10.59	13.43	51.41	37.74
Neighbours	13.14	15.07	7.54	21.06
Non-Governmental Organization (NGOs)	2.27	0.29	0.94	0.62
Progressive Milk Producers (PMP)	14.48	15.52	19.82	13.53
Relatives	10.59	4.93	0.00	0.00
Research Stations (RS)/KVK	10.32	9.26	0.00	0.00
Veterinary Officers (VO)	14.48	14.62	0.00	0.00
<b>B. Channels of Information</b>				
Cattle Fair (CF)	6.70	1.38	0.00	0.00
Dairy Cooperative Society (DCS)	8.38	9.99	12.99	16.48
Education Tour (ET)	8.20	9.20	10.49	11.11
Exhibition	0.33	0.09	3.18	0.96
Farmer's Training (FT)	7.62	8.91	8.23	9.60
Filed Day (FD) /Filed Visit (FV)	4.52	5.28	4.77	5.21
Film Show (FS)	3.09	3.62	5.57	5.76
Group Discussion (GD)	10.05	10.98	9.02	13.16
Group Meeting (GM)	10.05	11.76	7.97	13.16
Magazine	5.78	6.75	7.69	7.96
News Paper (NP)	9.04	9.30	7.97	1.78
Posters /Charts /Circulars	7.96	6.66	7.42	8.24
Radio	7.96	5.19	1.85	0.00
R&MD	3.44	3.91	7.56	5.76
Television	6.88	6.98	5.30	0.82

**Use of information channels for different CMP practices:** The Table-1 (B) also incorporated the findings related to the frequencies of farmers using different channels of information about individual CMP practices. The table appraised that for the information on properly constructed and maintained cattle shed group discussion and group meeting were used by all the respondents with 10.05 percent adopting recommended practices. Newspaper was used as a source of information by 9.04 percent farmers, followed by DCS, educational tour, poster/ charts/ circulars with 8.38, 8.20, and 7.96 percent, respectively. Whereas, exhibition, film show and field day were used by very less number of farmers as a channel or source of information for the cattle shed. The rank order of channels of information used by farmers Figure-2 showed that group discussion and group meeting were on first rank, followed by, newspaper, DCS, educational tour, posters/ charts/ circulars as third, fourth, and fifth rank, respectively.

The table revealed that group meeting was highly preferred by the farmers as a channel of information for milking procedure and ranked first with 11.76 percent. Whereas, group discussion was on second rank with 10.98 percent farmers, followed by DCS (9.99%), newspaper (9.30%) as on third and fourth ranks, respectively. Meanwhile, film show, cattle fair and exhibition were in least ranks with 3.62, 1.38 and 0.09 percent, respectively.

**Figure-2: Use of Information Channels**



Regarding cleaning of utensils, DCS was used as a source of information by maximum farmers (12.99%) with first rank, followed by educational tour (10.49%), group discussion (9.02%) and farmer's training (8.23%) with second, third and fourth rank, respectively. On the other hand field day/ field visit provided information only to 4.77 percent farmers, followed by exhibition and radio with 3.18 and 1.85 percent of respondents respectively and fall as least rankers. Cattle fair was not listed as a source of information by any of the respondents. For

obtaining the information about post milking practices, DCS was found obtaining first rank with 16.47 per cent respondents, who concerned it as channel of information whereas, farmers training and group discussion was on second rank with the number (13.16%) of respondents. However, educational tour (11.11%), farmers training (9.60%) and posters/ charts/ circulars (8.24%) were in descending order of use and rank for the post milking practices.

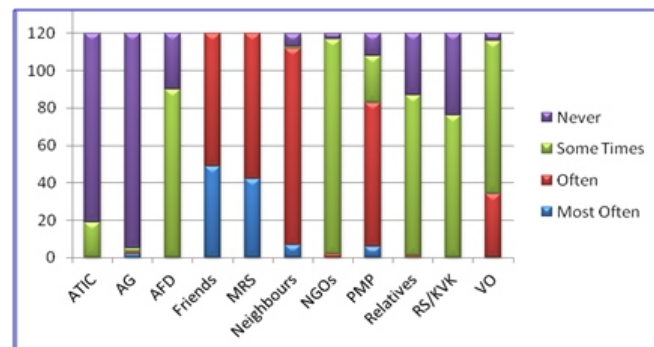
At the same time exhibition (0.96%) and television (0.82%) were in the last rank order in the table as a sequence. At the same time cattle fair and radio were not used by all the respondents. It might be due to less number of cattle fairs in the study area. Radio was also not used by a single farmer because of lack of programmes related to these practices. These results are having similarity with the findings of Yadav, *et. al.* (2011), Babu, *et. al.* (2012), Lawrence and Ganguli (2012), and Cukur (2013).

The above discussed results are also showing it's clear growth in Figure-2, where DCS, group discussion (GD), group meetings (GM) and educational tours (ET) were used by dairy farmers with maximum priority for good cattle shed and milking procedures. It might be due to the DCS being the place where, members participate in fortnightly meetings, monthly meetings, election meetings, demonstrations for improved dairy husbandry practices, management committee meetings, which provide chances to them for discussion about their own problems and issues related to animal husbandry practices.

On the other side DCS, educational tour, farmers training and group discussion were used as a source of information by dairy farmers with maximum priority for cleaning of utensils and post milking practices. It might be because these two practices are directly related to CMP, which involves new practices. All the milk unions of study area were sending their selected milk producers on educational tours for CMP training or visiting places like Anand, Mehasana, Barodara, Surat and Khera in Gujrat, Warangal, (Andhra Pradesh), NDRI (Haryana), Ludhiana (Punjab) for improving milk quality by adopting good practices.

**Extent of use of information sources as perceived by dairy farmers:** The Table-2 (A) revealed that the friends were most utilized by dairy farmers for seeking information about CMP practices, with 2.40 MS, as it was perceived MO by 40.80 percent farmers and often by 59.20 percent of them.

**Figure-3: Extent of Use of Information Sources**



The milk route supervisor was on second rank with 2.35 MS, whereas, neighbours were on third rank with 1.93 MS. The fourth rank occupied by progressive milk producers (1.64 MS), followed by VO (1.25 MS), cattle feed dealer (0.75 MS), and relatives with 0.73 MS. On the hand agriculture graduate were least utilized by dairy farmers with 0.02 MS, it might be due to availability of very less number of agriculture graduates in the study area (the responses regarding agriculture graduates were found better in Hanumangarh union, where one agriculture college was there in Sangaria town of the district.). The Figure-3 also revealed these results in a critical manner where, friends and milk route supervisor (MRS) was mostly used by dairy farmers for their information need. But, agriculture graduates (AG) and ATIC was least used by farmers due to unavailability in the study area.

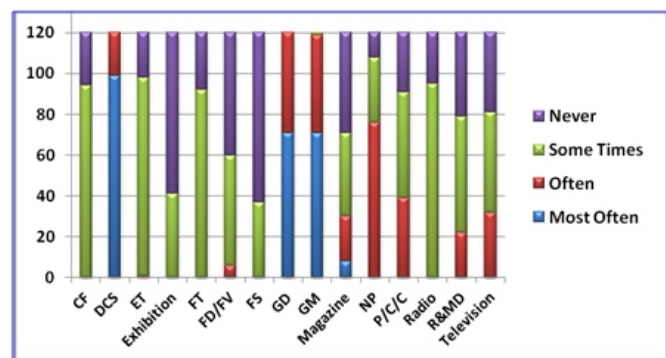
**Extent of use of information channels as perceived by dairy farmers:** The Table-2 (B) also revealed that DCS was ranked first by the dairy farmers with 2.82 MS, as it was most often utilized by 82.50 percent, and often utilized by 17.50 percent of respondents. The group discussion was on second rank with 2.59 MS, whereas group meetings got third rank with 2.58 MS. It was followed by, newspaper (1.53 MS), posters/ charts/ circulars (1.08 MS), television (0.94 MS) which were ranked fourth, fifth and sixth, respectively. The least rank was awarded to film show, which might be due to lack multimedia and films related to CMP. However, presently a change is occurring in use of Information and Communication Technologies (ICT) for educating farmers on CMP. These results also predicts from Figure-4 where it is clearly shown that DCS, group discussion (GD), and group meetings were used by most of the farmers, whereas film show (FS) and exhibition were used very less for getting their need based information for milk quality improvement. Such studies were also organized in India and abroad similar results by Nande, *et. al.* (2009), Khan (2010 & 2011), Dhayal, *et. al.* (2012), Ansari and Sunetha (2014).



**Table 2: Extent of utilization of information sources and channels as perceived by dairy farmers**

Sources and Channels	Most Often (%)	Often (%)	Some Times (%)	Never (%)	Mean Score	Rank
<b>A. Sources of Information</b>						
Agriculture Graduates (AG)	2.00	1.00	2.00	115.00	0.02	XI
Agriculture Technology Information Centre (ATIC)	0.00	0.00	19.00	101.00	0.15	IX
Cattle Feed Dealers (CFD)	0.00	0.00	90.00	30.00	0.75	VI
Friends	49.00	71.00	0.00	0.00	2.40	I
Milk Route Supervisors (MRS)	42.00	78.00	0.00	0.00	2.35	II
Neighbours	7.00	105.00	1.00	7.00	1.93	III
Non-Governmental Organization (NGOs)	0.00	2.00	115.00	3.00	0.15	IX
Progressive Milk Producers (PMP)	6.00	77.00	25.00	12.00	1.64	IV
Relatives	0.00	1.00	86.00	33.00	0.73	VII
Research Stations (RS)/KVK	0.00	0.00	76.00	44.00	0.63	VIII
Veterinary Officers (VO)	0.00	34.00	82.00	4.00	1.25	V
<b>B. Channels of Information</b>						
Cattle Fair (CF)	0.00	0.00	94.00	26.00	0.78	XI
Dairy Cooperative Society (DCS)	99.00	21.00	0.00	0.00	2.82	I
Education Tour (ET)	0.00	1.00	97.00	22.00	0.82	IX
Exhibition	0.00	0.00	41.00	79.00	0.34	XIV
Farmer's Training (FT)	0.00	0.00	92.00	28.00	0.76	XII
Filed Day (FD) /Filed Visit (FV)	0.00	6.00	54.00	60.00	0.55	XIII
Film Show (FS)	0.00	0.00	37.00	83.00	0.30	XV
Group Discussion (GD)	71.00	49.00	0.00	0.00	2.59	II
Group Meeting (GM)	71.00	48.00	1.00	0.00	2.58	III
Magazine	8.00	22.00	41.00	49.00	0.90	VII
News Paper (NP)	0.00	76.00	32.00	12.00	1.53	IV
Posters /Charts /Circulars	0.00	39.00	52.00	29.00	1.08	V
Radio	0.00	0.00	95.00	25.00	0.79	X
R&MD	0.00	22.00	57.00	41.00	0.84	VIII
Television	0.00	32.00	49.00	39.00	0.94	VI

**Figure-4: Extent of Use of Information Channels**



Seven milk unions of Rajasthan have purchased the video Compact Disc (CD) on CMP produced by Dairy Extension Division of NDRI and are very widely used for educating farmers on CMP.

**Information Disseminating Behaviour of Dairy Farmers:** The information disseminating behaviour comprised of two sub-components, viz., information dissemination count and frequency of information dissemination. Table 3 incorporated that a large number of dairy farmers (79.16%) who were in medium category for information dissemination count i.e. 6 to 18 persons. It means a dairy farmer disseminate his idea or news or innovation to his 6 to 18 fellow farmers. In the same line 14.18 percent dairy farmers were in high category with more than 17 fellow farmers.

**Table 3: Information disseminating behaviour of dairy farmers**

Information Dissemination Count				Frequency of Information Dissemination			
Category	Criteria	Frequency	Per-cent	Category	Frequency	Per-cent	Mean score
Low	< 6	8	06.66	Most often	41	34.20	2.15
Medium	6 to 18	95	79.16	Often	57	47.50	
High	> 18	17	14.18	Some time	22	18.30	
<b>Information Disseminating Behaviour</b>							
	<b>Criteria</b>	<b>Frequency</b>	<b>Percent</b>	<b>14.35</b>			
Low	< 8.09	9	07.50				
Medium	8.09 to 20.61	93	77.50				
High	>20.61	18	15.00				

Only 8 farmers belonged to low category with less than six farmers as dissemination count. In the next part of table, frequency of dissemination indicate that almost half (47.50%) of the respondents were in category of 'often' to disseminate their information to fellow farmers, followed by 'most often' with 34.20 percent and 18.30 percent dairy farmers in 'some times' category of frequency. While taking information disseminating behaviour of dairy farmers for categorization, it was noted from the lower part of table that 77.50 percent of dairy farmers fell in the category of medium followed by high and low with 15 and 7.50 percent, respectively.

The mean score was 14.35, from which it could be concluded that generally a dairy farmer disseminates his acquired information to 14 fellow farmers. These results are having similarity with the findings of Khan, *et al.* (2010), Kumari and Jaharana (2014), and Lawrence and Ganguli (2012).

These findings confirmed that higher the information disseminating behaviour of an individual, greater was his communication behaviour.

The possible explanation may be that those dairy farmers who had more information disseminating behaviour, usually not only received and decode more information, but also at the same time they took the initiative of disseminating more information. Those who do acquire and comprehend more information can be expected to share it with others. Conversely, those who may not have enough information may have little to share with others.

It was observed in the study area that, educational tour, training at union level and milk route supervisor were major source for collecting information and DCS was the most vital place for disseminating it with fellow farmers.

**Table 4: Communication behaviour of dairy farmers regarding CMP practices**

Components	Category	Criteria score	Frequency (n=120)	Percent	Mean score
Information Seeking Behaviour	Low	<94.32	29	24.16	130.66
	Medium	94.32 to 167.01	66	55.00	
	High	>167.01	25	20.84	
Information Disseminating Behaviour	Low	< 8.09	9	07.50	14.35
	Medium	8.09 to 20.61	93	77.50	
	High	>20.61	18	15.00	
Communication Behaviour	Low	<108.33	25	20.83	145.01
	Medium	108.33 to 182.67	69	57.50	
	High	>182.67	26	21.67	

After discussing about both the components of communication behaviour viz., information seeking behaviour and information disseminating behaviour, Table-4 summarized that majority of dairy farmers (57.50%) were in medium category for their communication behaviour, followed by almost same number of dairy farmers in low and high categories of distribution. The explanation of all these findings of communication behaviour which were showing good results might be, due to good use of sources and channels of information by dairy farmers. Such studies were also organized in India and abroad with similar results by Hossain, *et. al.* (2011), Cukur (2013), Phukan, *et. al.* (2013), Punitha, *et. al.* (2013), and Rastogi and Hasan (2014).

### CONCLUSION

Most of the dairy farmers used friends, progressive milk producer, veterinary officer and neighbours as information sources; group discussion, group meetings, newspaper and DCS were important channels for information seeking about proper 'cattle shed' and 'milking procedure'. However, Milk route supervisor, progressive milk producer, friends and neighbours were found as major information sources; whereas, DCS, educational tour and group discussion were important channels for information used by the dairy farmers for information seeking about 'cleaning of utensil' and 'post milking practices'.

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