

## Milking Managemental Practices and Marketing of Milk in Rayalaseema Region of Andhra Pradesh

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### ABSTRACT

*Dairy farming as an integral part of agriculture which provides sustainable income and reduces unemployment to a large number of rural poor. Hygienic milking plays a crucial role in profitable dairy enterprise. The present study was conducted in Kadapa district of Andhra Pradesh by collecting a data from 120 dairy farmers of different villages of three mandals. The study revealed that majority of the farmers preferred to milk their animals in the same place, where they were tethered. Most of the farmers did not wash the entire body of their animals (86.67%) and hind quarters (80.83%) before milking. Open mouth buckets were used by 98.33% of the farmers for milking the animals. All the milkers cleaned the udder and teats and washed their hands before milking. Clean water was used for cleaning milking pail to avoid high cost of the detergents. Female milkers were deployed and changed frequently to avoid habituation of milch animal. Calf is allowed for suckling twice and in case of death, farmers offered concentrate feed for massaging of teats. Hundred percent farmers practised wet hand milking twice a day at regular milking interval. Even though knuckling method is wrong, 78.34% of farmers have followed in the study area. Majority of the farmers have not practised complete milking, teat dipping in antiseptic lotion after milking and mastitis prevention measures. About 90% of the farmers practised teat sealing at the end of lactation and adopted intermittent milking method (92.5%) for drying of pregnant animals. Only 28.33% of the farmers have consumed milk for family consumption and the rest sold to consumers rather than corporative societies and government / non government organizations. Still there is a gap while implementing the scientific management practices is milking by the farmers. Hence suitable training programmes on improved milking management practices will help the farmers in clean milk production and increase the production performance of the dairy animal as well as generate more additional income to the farming community.*

**Key words:** Milking management, Calf suckling, Washing of udder, Teat dipping, Milker.

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## INTRODUCTION

Dairying in India is a closely interwoven and integral part of agriculture. It is a cream activity and is one of the most important dimensions of diversified agriculture with a lot of potential for socioeconomic development of farming community. India is the highest producer of milk in the world with an estimated quantity of 132.43 million tones, produced in the year 2012-13<sup>2</sup>, but its contribution to international milk market is lower than many countries because our milk quality does not match export standard<sup>3</sup>. Scientific milking management practices like improved milking techniques, hygienic milk production and better milk let down could improve total milk production and quality of milk as well<sup>4</sup>. Although the economic contribution of livestock seems to be quite substantial in the agricultural economy as well as in the national economy, the farmers who raise dairy animals are yet ignorant of scientific management practices. Genetic potentiality of the livestock and its production depends mostly on the managerial practices<sup>7</sup>.

Hence the present study was conducted to document the existing milking management practices adopted by dairy farmers in Rayalaseema region of Andhra Pradesh.

## MATERIALS AND METHODS

The present investigation was undertaken in proddatur, Mydukur and Jammalamadugu mandals of Kadapa district of Andhra Pradesh. Four villages from each mandal and ten dairy farmers from each village were selected randomly, giving a sample size of 120 respondents. The assistance of local Veterinary Assistant surgeon was sought while conducting the survey on milking management practices. The selected farmers were interviewed by contacting them at their doorstep utilizing a pre-tested well structured interview schedule developed for the purpose. While collecting data sufficient time was given to the farmers to arrive at values by the memory recall method. The family members of the farmers were also involved in collection of the data so as to get accurate information as far as possible. The data thus collected, was

analyzed as per the procedures laid down by Snedecor and Cochran<sup>18</sup>.

## RESULTS AND DISCUSSION

The data on milking management practices adopted by dairy farmers is presented in Table 1. The study revealed that majority of the farmers (65.83%) milked the animals at the place of tethering in the shed where they are kept, where as only 34.17% of farmers milked in a separate and dry place. Since the shed remains clean and dry the farmers prefer to milk their animals in the same place. The other probable reason might be the space constraint. These finding were in close association with those reported by Tapas *et al*<sup>20</sup>, Bashir and Kumar<sup>3</sup>, Ahirwar *et al*<sup>1</sup> and Rathore *et al*<sup>16</sup>. Regarding the washing of animals only 13.33% of farmers have washed their animals before milking which indicated that farmers usually do not follow proper hygienic milking practices during milking. The majority of the farmers (86.67%) did not wash the entire body of their animals before milking even in the summer. Similar findings were reported by Kishore *et al*<sup>11</sup> and Ahirwar *et al*<sup>1</sup>.

Most of the farmers (80.83%) have not followed the practice of washing of hind quarters before milking. This indicated that the famers have lack of awareness on contamination due to vaginal discharges, faecal material and urine. The present findings were in close agreement with the reports made by Ahirwar *et al*<sup>1</sup> and Tapas *et al*<sup>20</sup>. All the dairy farmers have cleaned the udder and teat and washed their hands before milking. These results are similar with the earlier findings of Garg *et al*<sup>6</sup> and Rathore *et al*<sup>16</sup> and Meena *et al*<sup>14</sup>. Ahirwar *et al*<sup>1</sup> also reported that 91% of the rural and 94% of the urban farmers practised the washing of udder before milking. Most of the farmers (98.33%) used open mouth bucket for milking the animals. Similar observations were made by Garg *et al*<sup>6</sup>, Rathore *et al*<sup>16</sup>, Tapas *et al*<sup>20</sup> and Kumar and Mishra<sup>12</sup>. Scientific milking pail having a lid through which milk may freely pass into the pail, and during such passage be strained,

hence it is a better option for hygienic milk production.

Perusal of study revealed that 55.83% the farmers used water to clean the milking pail followed by sand / ash (41.67%) and detergent (2.5%). The results obtained from the study are similar as observed by Rathore *et al*<sup>16</sup>, Tapas *et al*<sup>20</sup>. The probable reason for less utilization of detergent might be due to the cost of detergent. Majority of the dairy farmers deployed female milkers (73.34%) for milking the dairy animals. This might be due to the fact that the women are staying in the houses and they have sufficient leisure apart from their house hold activities and hence most of them are involved in dairy activities especially in milking of animals. The results are in corroboration with those reported by Tapas *et al*<sup>20</sup>, Kathiriya *et al*<sup>9</sup>, Radder and Bhanj<sup>15</sup>. The respondents changed milker (71.66%) from time to time because some milch animals will give milk to a particular person if milker is not changed. Our results are almost similar to the earlier findings of Rathore *et al*<sup>16</sup> and encouraging than observed by Tapas *et al*<sup>20</sup> and Malik and Nagpaul<sup>13</sup>.

The study revealed that majority of the farmers (88.34%) allowed calf for suckling before and after milking where as only 11.66% allowed before milking. The calf should be allowed to suckle only before milking to prevent teat injury. Similar findings were reported by Sreedhar and Sreenivas<sup>19</sup>, Tapas *et al*<sup>20</sup>, Rathore *et al*<sup>16</sup> and Meena *et al*<sup>14</sup>. In case of death of calf, most of the farmers (75.83%) opted for teat massage by offering concentrate feed. The oxytocin injection should not be used for milk let down because it is very harmful for lactating cows as well as calves and human beings and legally it is prohibited. The present findings were in line with those reported by Tapas *et al*<sup>20</sup> and Rathore *et al*<sup>16</sup>. All the respondents milked their cows twice a day. The present findings were in agreement with those reported by Meena *et al*<sup>14</sup>, Rathore *et al*<sup>16</sup>, Kishore *et al*<sup>11</sup> and Dubey and Kumar<sup>5</sup> and contrary to Sarkar and Pal<sup>17</sup>, who suggested three times milking per day.

With regard to method of milking 78.34% of the farmers preferred knuckling followed by full hand milking (21.66%). Even though full hand milking is an ideal and scientific method of milking, the farmers believed that full hand milking causes pain to their hands, whereas the knuckling method was more comfortable but unaware that it leads to constant irritation of the teat canal due to pressure of knuckle which in turn may cause mastitis in many cases and thus not recommended. Similar findings were reported by Tapas *et al*<sup>20</sup>, Kishore *et al*<sup>11</sup>, Kumar and Mishra<sup>12</sup>, Ahirwar *et al*<sup>1</sup> and Rathore *et al*<sup>16</sup>. On the contrary to this Bashir and Kumar<sup>3</sup> and Jacob and George<sup>8</sup> have reported that majority of farmers opted for full hand milking due to their higher awareness and knowledge regarding scientific milking practices. But Khupse *et al*<sup>10</sup> reported as 8.18% of the farmers had adopted full hand milking, whereas Malik and Nagpaul<sup>13</sup> found that 36.11% farmers followed the knuckling method of milking in Haryana.

All the farmers milked the dairy animals at regular intervals which indicated that the animals were habituated at particular time intervals. These findings were in line with those reported by Tapas *et al*<sup>20</sup>. Bashire and Kumar<sup>3</sup>, Kishore *et al*<sup>11</sup>, Ahirwar *et al*<sup>1</sup> and Rathore *et al*<sup>16</sup>. The study revealed that majority of the farmers (84.17%) have not practised complete milking where as 15.83% of respondents have practised, because to allow the calf for suckling of the residual milk leftover after milking. None of the farmers practised dry hand milking due to lack of awareness. Hence wet hand milking should be avoided for clean milk production as well as to prevent teat injury. Similar findings were reported by Rathore *et al*<sup>16</sup>. It was encouraging to note that 78.34% of the farmers followed stripping at the end of milking. The results are in consonance with those reported by Rathore *et al*<sup>16</sup> and contrary to those by Varma<sup>21</sup>, who reported that none of the respondents practised stripping at the end of milking. No single farmer wiped the udder and teats just after milking. This might be due to the fact that the practice of not washing the udder after milking

might have been due to allowing the calf to suckle after milking, when the calf consumes all the leftover milk and leaves a layer of saliva on the teats, or it might have been a way to save labour. Similar findings were reported by Kishore *et al*<sup>11</sup> and Rathore *et al*<sup>16</sup>.

Only 24.16% of the dairy farmers have practised teat dipping in antiseptic lotion after milking which indicated that the farmers were not aware about teat dipping in antiseptic lotion will prevent entry of bacteria or virus which cause infection. Majority of the farmers (90.84%) have not taken any care against mastitis prevention programme which is in agreement with Kishore *et al*<sup>11</sup>. Only 9.16% of respondents have sprayed antiseptic lotion over the udder by using hand spray at weekly intervals. Sealing of teat canal with proper ointment should be done at the end of lactation, which ensures prevention of any infection during dry period. These findings are in line with those reported by Rathore *et al*<sup>16</sup>. Majority of the farmers (92.5%) followed

intermittent milking method for drying of pregnant animals followed by incomplete milking method (7.5%). The present findings were in close association with those reported by Rathore *et al*<sup>16</sup>.

Regarding the disposal of milk, only 28.33% of the farmers have consumed milk for family consumption, the remaining farmers have sold the milk in the market. This practice indicated that most of the farmers are interested to get additional income through sale of milk. Similar reports were made by Ahirwar *et al*<sup>1</sup>. With regard to sale of milk 55.84% of the farmers sold milk directly to the consumers followed by co-operative societies (23.34%), vendors (11.66%) and hotels, schools and hotels (9.16%). From these findings it can be concluded that the farmers preferred selling more milk to consumers rather than corporative societies and government / non government organizations. The present findings were in close agreement with the reports made by Ahirwar *et al*<sup>1</sup>.

**Table 1: Milking managerial practices adopted by dairy farmers**

S.No	Milking managerial practices	Frequency (N=120)	Percentage
1.	<b>Place of milking</b>		
	a) Milking at the place of tethering	79	65.83
	b) Milking at the separate and dry place	41	34.17
2.	<b>Washing of animals before milking</b>		
	a) Yes	16	13.33
	b) No	104	86.67
3.	<b>Washing of hind quarter before milking</b>		
	a) Followed	23	19.17
	b) Not followed	97	80.83
4.	<b>Cleaning of udder and teats before milking</b>		
	a) Yes	120	100.0
	b) No	00	00.00
5.	<b>Washing the hands of milker before milking</b>		
	a) Practised	120	100.0
	b) Not practised	00	00.00
6.	<b>Type of milking pail</b>		
	a) Open mouth bucket	118	98.33
	b) Scientific milking pail	02	1.67
7.	<b>Cleaning of milking pail with</b>		
	a) Clean water	67	55.83
	b) Detergent	03	2.50
	c) Sand or ash	50	41.67
8.	<b>Gender of milker</b>		
	a) Male	32	26.66
	b) Female	88	73.34
9.	<b>Change of milker</b>		
	a) Yes	86	71.66
	b) No	34	28.34

<b>10.</b>	<b>Allowing calf suckling</b>		
	a) Before milking	14	11.66
	b) After milking	00	00.00
	c) Both times	106	88.34
<b>11.</b>	<b>Milk let down practice in case of death of calf</b>		
	a) Teat massage by offering concentrate feed	91	75.83
	b) Use of oxytocin injection	29	24.17
<b>12.</b>	<b>Frequency of milking</b>		
	a) Twice	120	100.0
	b) Thrice	00	00.00
<b>13.</b>	<b>Method of milking</b>		
	a) Full hand	26	21.66
	b) Knuckling	94	78.34
	c) Striping	00	00.00
<b>14.</b>	<b>Milking interval</b>		
	a) Regular	120	100.0
	b) Irregular	00	00.00
<b>15.</b>	<b>Complete milking</b>		
	a) Practised	19	15.83
	b) Not practised	101	84.17
<b>16.</b>	<b>Dry hand milking</b>		
	a) Yes	00	00.00
	b) No	120	100.0
<b>17.</b>	<b>Striping at the end of milking</b>		
	a) Practised	94	78.34
	b) Not practised	26	21.66
<b>18.</b>	<b>Wiping udder and teats after milking</b>		
	a) Yes	00	00.00
	b) No	120	100.0
<b>19.</b>	<b>Teat dipping in antiseptic lotion after milking</b>		
	a) Practised	29	24.16
	b) Not practised	91	75.84
<b>20.</b>	<b>Care against mastitis</b>		
	a) Followed	11	9.16
	b) Not followed	109	90.84
<b>21.</b>	<b>Teat sealing at the end of lactation</b>		
	a) Yes	108	90.00
	b) No	12	10.00
<b>22.</b>	<b>Method of drying of pregnant animal</b>		
	a) Incomplete milking	09	7.50
	b) Intermittent milking	111	92.50
	c) Abrupt cessation	00	00.00
<b>23.</b>	<b>Milk consumption</b>		
	a) For family consumption	34	28.33
	b) Sold in market	86	71.67
<b>24.</b>	<b>Sale of milk to</b>		
	a) Vendors	14	11.66
	b) Direct to consumers	67	55.84
	c) Hotels, Schools and Hostels	11	9.16
	d) Co-operative societies	28	23.34

### CONCLUSION

It can be concluded that majority of the farmers milked the animals at the place of tethering due to space constraint. Only a few farmers washed the animals and hind quarters before milking. All the farmers cleaned the udder and teats and washed the hands of

milkers before milking. Due to cost of the detergent most of the farmers used clean water for cleaning milking pail. Majority of the dairy farmers deployed female milkers and changed milker from time to time to avoid habituation of milch animal. Calf is allowed for suckling before and after milking, in case of death of

calf, teat massage is done by majority of the farmers by offering concentrate feed. All the farmers are milking the animals twice a day at regular milking interval. None of the farmers has practised dry hand milking and wiped udder and teat after milking. Most of the farmers have followed knuckling method of milking even through it is wrong, but stripping was practised at the end of milking. Complete milking, teat dipping in antiseptic lotion after milking and care against mastitis were not practised by majority of farmers. Most of the respondednts practised teat sealing at the end of lactation and adopted intermittent milking method for drying of pregnant animals. Only 28.33% of the farmers have consumed milk for family consumption and majority of the farmers preferred selling milk to consumers rather than corporative societies and government / non government organizations. There is a need to organize extension activities through conducting demonstrations and training, on a limited scale but forceful enough to have a catalytic influence on the improvement in the knowledge of the farmers on recommended milking management practices. Closer interaction between researchers, extension workers and farmers through participatory approaches has assumed greater mechanism for improvement of extension system by strengthening vertical linkages among components. An effective extension setup, well equipped with technical know-how and solid infrastructural back up is required to cater the local needs of the dairy farmers.

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