Indian J. Anim. Hlth. (2017), 56(2): 181-186

Research Article

# KNOWLEDGE REGARDING SCIENTIFIC CALF REARING AND CLEAN MILK PRODUCTION PRACTICES AND ITS ADOPTION AMONG RURAL WEAKER SECTIONS IN TAMIL NADU

K. M. SAKTHIVEL*[1], N. NARMATHA AND V. UMA

*Department of Veterinary and Animal Husbandry Extension Education*
*Veterinary College and Research Institute, Namakkal -637 002*
*Tamil Nadu Veterinary and Animal Sciences University*

**A study was conducted to assess the knowledge level of rural weaker sections in scientific calf rearing and clean milk production practices in Vellore and Cuddalore districts of Tamil Nadu. Data were collected from 100 dairy farmers belonging to scheduled caste category in Vellore and Cuddalore districts. The findings of the study revealed that the rural weaker sections of both the districts had poor knowledge in most of the aspects of calf rearing viz. aseptically cutting of umbilical cord, time of first deworming, quantity of milk fed to new born calf, age of introducing green fodder, age of introducing concentrate, dehorning practices and age at weaning. More than 70 % of the farmers of both districts had knowledge regarding time of colostrum feeding, removal of mucus from nostrils, assisting weak calves to suck milk. In regard to clean milk production practices, the rural weaker sections of both the districts were found to be not aware of mastitis detection test, use of teat dip, right method of milking and storage of milk in cool place until dispatching. It could be concluded that rural weaker sections involved in dairying lacked knowledge on the importance of scientific calf rearing and clean milk production practices. Therefore awareness on these aspects should be imparted through various extension programmes and training.**

**Key words :** Dairy farmers, Calf rearing, Clean milk production, Weaker sections

Dairy farming plays a very important role in improving the socio-economic status of the rural poor by reducing the longstanding problems of unemployment and underemployment. As the distribution of livestock is more equitable than that of land, growth in the livestock sector is deemed to be antipoverty and equity-oriented (Ahuja,

*Corresponding Author
[1]Veterinary College and Research Institute, Orathandu

2004). The rapid growth of milk production in India has been mainly because of the increase in the number of animals rather than that of improved productivity (Patil *et al*., 2009).

According to 2011 census, the total scheduled caste population of Tamil Nadu is 14.4 million which is about 20 % of the total population of the state. Most dairy farmers belong to socially and economically disadvantaged communities. Scheduled tribes, scheduled castes and other marginalized classes together constitute about 70 % of the persons employed in the dairy sector (Anjani Kumar *et al.*, 2012). Majority of rural weaker sections maintain one or two dairy animals and income from dairying acts as buffer during non agricultural seasons. Rearing of female calves is an important activity for sustenance of the dairy farming and enhancing milk production. Further, calves need immediate attention from birth as expansion of herd depends on effective scientific rearing of calves. Raw milk being highly susceptible to microbial spoilage adoption of clean milk production practices is essential for enhancing the shelf life of the milk to prevent monetary loss resulting from spoilage. Under this background, the study was taken up with the objective of assessing the knowledge level of rural weaker sections in scientific calf rearing and clean milk production practices and its adoption in Tamil Nadu state.

## MATERIALS AND METHODS

The study was conducted in Vellore and Cuddalore districts of Tamil Nadu which have fairly high scheduled caste population and high dairy animal population. One block from Cuddalore district and one block from Vellore district were selected with the help of State Animal Husbandry Department based on high scheduled caste population dependent on dairying. The selected blocks were Nallur in Cuddalore district and Gudiyatham in Vellore district. The same criteria were followed for selection of village panchyats and accordingly the selected villages' panchayats were varadhareddipalli in Gudiyatham block and Ilanganiyur in Nallur block. Fifty dairy farmers belonging to scheduled caste category were selected from each of the selected village to constitute a total sample size of 100 respondents. Data regarding knowledge level of the respondents on calf rearing and clean milk production practices and its adoption were collected using a pretested structured interview schedule by personal interview method.

## RESULTS

**Type of breed reared:** Jersey crossbred cow was the predominant breed reared by the rural weaker sections of Vellore district (86%) followed by Holstein Friesian crossbred cow (8%) and non-descript breeds (6%) (Table 1). Non-descript breeds (84%) were predominantly kept by the rural weaker

sections of Cuddalore district followed by Jersey crossbred (16%).

**Knowledge regarding scientific calf rearing practices:** Overwhelming majority (96%) of the rural weaker sections of Vellore district and 76% of the rural weaker sections of Cuddalore district had knowledge regarding the time of colostrum feeding to calves after birth (Table 2). The respondents of both districts had meager knowledge in aseptically cutting of umbilical cord. Majority (84%) of the respondents in Vellore district and 70% of the respondents of Cuddalore district possessed knowledge regarding removal of mucus from nostrils of new born calves.

A sizeable number of respondents (88% in Vellore district and 76% in Cuddalore district) had knowledge regarding providing assistance to weak calves to suckle milk. Similar observations were reported by Balusami (2015) that the farmers of North East zone of Tamil Nadu followed the practice of removing mucus from the nostrils and assisted the weak calves to stand.

Very few respondents (14% in Vellore district and 16% in Cuddalore district) had the knowledge regarding the frequency of deworming of calves. However, Balusami (2015) reported that 86% of the farmers belonging to North East zone of Tamil Nadu dewormed the calves.

Only 10% of the respondents in Vellore district and 8% of the respondents in Cuddalore district had knowledge regarding the quantity of milk fed to new born calves. Day old weaning was not practiced and age at weaning was known to 16% the respondents in Cuddalore district and 24% the respondents in Vellore district. But in cuddalore district, respondents allowed the calves till drying of milk since in non-descript cows suckling of the teats by the calves is necessary for letting down of milk.

A negligible four per cent of the respondents in Vellore district and six per cent of the farmers in Cuddalore district had knowledge regarding debudding of horns of calves and none of the farmers followed this practice because of their small herd size. Age of introducing green fodder and concentrate feed was known to around 20% of the respondents in Vellore district and 14% of the respondents in Cuddalore district.More than two fifth (42%) of the respondents in Vellore district and majority (84%) of the respondents in Cuddalore district provided bedding materials to calves.

**Knowledge and adoption of clean milk production practices:** The practice of sun drying of milking utensils was known to one–tenth (10%) of the respondents in Vellore district while it was known and adopted by vast majority (90%) of the respondents in Cuddalore district (Table 3). Vast majority (90%) of the respondents in Vellore district and around three fourth (72%) of the respondents in Cuddalore district had knowledge regarding washing of udder with soap water.

**Table 1. Type of breed reared**

| Sl. No. | Type of breed reared | Vellore district | | Cuddalore district | |
|---|---|---|---|---|---|
| | | No. of farmers | % | No. of farmers | % |
| 1 | Holstein Friesian crossbred | 4 | 8.00 | 0 | 0.00 |
| 2 | Jersey crossbred | 43 | 86.00 | 8 | 16.00 |
| 3 | Non descript | 3 | 6.00 | 42 | 84.00 |
| | **Total** | **50** | **100.00** | **50** | **100.00** |

**Table 2. Knowledge regarding scientific calf rearing practices**

| Sl. No. | Practices | Cuddalore district | | Vellore district | |
|---|---|---|---|---|---|
| | | No. of farmers | % | No. of farmers | % |
| 1 | Time of colostrum feeding | 38 | 76.00 | 48 | 96.00 |
| 2 | Aseptical cutting of umbilical cord | 10 | 20.00 | 24 | 28.00 |
| 3 | Removal of mucus from nostrils | 35 | 70.00 | 42 | 84.00 |
| 4 | Assisting weak calves to suckle milk | 38 | 76.00 | 44 | 88.00 |
| 5 | Time of first deworming | 7 | 14.00 | 8 | 16.00 |
| 6 | Quantity of milk fed to new born calf | 5 | 10.00 | 4 | 8.00 |
| 7 | Age of introducing green fodder | 10 | 20.00 | 7 | 14.00 |
| 8 | Age of introducing concentrate | 11 | 22.00 | 7 | 14.00 |
| 9 | Debudding of horns | 2 | 4.00 | 3 | 6.00 |
| 10 | Provide bedding facilities to new calf | 21 | 42.00 | 42 | 84.00 |
| 11 | Age at weaning | 8 | 16.00 | 12 | 24.00 |

**Table 3. Knowledge and adoption of clean milk production practices**

| Sl. No. | Practices | Knowledge | | Adoption | |
|---|---|---|---|---|---|
| | | Cuddalore district (%) | Vellore district(%) | Cuddalore district (%) | Vellore district(%) |
| 1 | Mastitis test | 0.00 | 0.00 | 0.00 | 0.00 |
| 2 | Right method of milking | 0.00 | 2.00 | 0.00 | 2.00 |
| 3 | Washing of udder with soap water before milking | 72.00 | 90.00 | 40.00 | 36.00 |
| 4 | Cleaning of milking utensils | 100.00 | 100.00 | 100.00 | 100.00 |
| 5 | Sun drying of milking utensils | 86.00 | 10.00 | 86.00 | 10.00 |
| 6 | Use of teat dip | 0.00 | 0.00 | 0.00 | 0.00 |
| 7 | Storage of milk in cool place until dispatching | 0.00 | 2.00 | 0.00 | 2.00 |

Pertaining to clean milk production practices in both the districts, cent per cent of the respondents had knowledge in cleaning of milking utensils and adopted it. Though vast majority (90%) of the farmers in Vellore district and around three fourth (72%) of the respondents in Cuddalore district had knowledge regarding washing of udder with soap water before milking and cleaning of milking utensils, sun drying of milking utensils was adopted by majority of the respondents in Cuddalore district and only by few farmers in Vellore district. The farmers of both the districts were not having knowledge and did not adopt various scientific practices viz. mastitis detection test, use of teat dip, right method of milking and storage of milk in cool place until dispatching.

## DISCUSSION

**Type of breed reared:** The inter district variation in type of breed reared by the rural weaker sections may be attributed to the availability and access to feed and fodder resources in a particular region. The easy availability of paddy straw in Cuddalore district as it is one of the rice belt of Tamil Nadu and access to grazing lands in the nearby areas in the study area Ilanganiyur village, must have motivated the farmers to rear non descript cows which require less external inputs. Varadhareddipalli village, the study area of Vellore district being predominately rain fed and farmers have to completely depend on external inputs might be the reason to rear crossbred cows.

**Knowledge regarding scientific calf rearing practices:** At birth, calves depend entirely on the passive immunity acquired by drinking colostrum from their dam until they develop their own natural ability to resist diseases, through exposure to the disease organisms in the surroundings. Every half an hour after birth when colostrum feeding is delayed; antibody transfer decreases about five per cent. A calf that does not drink colostrum until six hour old has then already lost the opportunity for 30% of the possible antibodies entering its bloodstream. Crossbred cows being more susceptible to infections and contagious diseases and feeding of colostrum is of at most important to prevent infectious diseases like Foot and Mouth disease than non descript indigenous cows which are resistant to those infectious diseases might be the reason for more awareness regarding colostrum feeding time among the respondents of Vellore district than Cuddalore district.

Regarding care of umbilical cord, the respondents informed that they would tie the umbilical cord of the calf with a dry cloth and it would fall without any human intervention after few days once it gets dried up. Nevertheless, none of the respondents reported any umbilical cord infection. The general cleanliness maintained by the respondents by cleaning the floor twice a day might be the reason for non occurrence of umbilical cord infection even though aseptically cutting of umbilical cord is not practiced.

The respondents had the habit of deworming their calves only during animal health camps conducted at the villages. They were also not aware of the deworming schedule and names of deworming drugs. However, Balusami (2015) reported that 86.80% of the farmers belonging to North East zone of Tamil Nadu dewormed the calves. The calves are taken for grazing by the farmers when it attains two months old and it starts eating green grasses and other feeds along with the mother in due course. Gunny bags were provided as bedding material to protect the calves during chill weather conditions by the respondents in both the districts.

The farmers opined that that if they found the cow not cleaning the mucus of the nostrils with its tongue then they would remove it manually using paddy straw. The cows were milked only after allowing the calves to suckle milk from the cow for letting down of the milk and hence day old weaning was not practiced.

**Knowledge and adoption of clean milk production practices:** Pertaining to clean milk production practices in both the districts, the farmers had fairly good knowledge in washing of udder with soap water before milking, cleaning of milking utensils and sun drying of milking utensils and they adopted it. The farmers of both the districts were not aware of mastitis detection test, use of teat dip, right method of milking and storage of milk in cool place until despatching. This necessitates that the farmers need be sensitized on these aspects though various extension programmes and training.

## REFERENCES

Ahuja V, 2004. Livestock and livelihoods: challenges and opportunities for Asia in the emerging market environment. National Dairy Development Board of India and Food and Agriculture Organization of the United Nations, pp 372

Anjani Kumar P, Joshi K and Jongeneel RJ, 2012. Structural changes in the Indian dairy Sector. Asian livestock challenges, opportunities and the response. Proceedings of an international policy forum held in Bangkok, Thailand, 16-17 August, 2012

Balusami C, 2015. Study on managemental practices and mortality pattern of buffalo calves in Tamil Nadu. Int J Food Agri Vet Sci, 5 (1): 66-70

Patil AP, Gawande SH, Gobade MR and Nande MP, 2009. Training needs of dairy farmers in Nagpur district. Vet World, 2(5) : 187-190

*Article received on 02.05.2017 and accepted for publication on 21.06.2017*