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Housing management practices of dairy cows in Villupuram district of Tamil Nadu

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Abstract

Of the 1000 respondents, 80.7 per cent of the dairy farmers provided housing to their animals. The allotted floor space for adults, heifer and calves were 3.7, 2.3 and 1.6 square meter respectively. Majority of houses consisted of mud floor (80.19 per cent), with side wall (64. per cent) with either asbestos (72.2 per cent) or thatches (27.8 per cent) as roofing material. The sheds had good ventilation and were without any manger facilities. Water was supplied in separate buckets individually, in limited quantity, in the morning and evening before milking.

Keywords: Housing management, dairy cows

Introduction

Animal Husbandry sector plays a vital role in sustaining rural livelihoods and improving the economy of rural population. The live animals are important natural assets for the poor, which can be easily liquidated for cash during emergency. Livestock have remained an integral part of the socio-economic fabric of rural people since time immemorial, not only as a source of livelihood but also as a provider of draught energy, manure and fuel. Livestock production is an important source of income for the rural poor in India. About 70 per cent of the livestock production is in the hands of small and marginal farmers and landless labourers who own less than 30 per cent of the land area. Dairy sector is important not only as the producer of highly nutritious food products, but also for the sustenance of poor farmers and over all prosperity of the farming community.

Materials and Method

Pilot study

The semi-structured interview schedule was designed to obtain data on the various parameters of the study. It was pre-tested among 20 dairy cattle owners. Based on the pilot study, some questions were modified, some deleted and some added.

The pilot study also gave an idea on the time taken to interview each respondent.

Sampling design and size

The sampling procedure followed for this study was random sampling and the sample size was 1000.

Orientation: It refers to the orientation of housing like East -West / North -South.

Type of housing: It refers to the type of housing like kutchra / pucca, separate housing / part of residence.

Type of floor: It refers to the type of floor material used like brick / RCC / wood / mud / mooram / kadappa / stones / others.

Floor space: It refers to the floor space per animal measured in square meter.

Number of animals in a shed: It refers to the number of animals in a particular shed.

Manger: It refers to the type of manger used to feed the animal like individual / common, linear / circular.

Manure pit: Method of disposal of manure like biogas plant / dry manure / liquid manure / waste / dung cake for fuel.

Results and Discussion

Housing management

It is recorded that 80.7 per cent of dairy farmers having housing facilities for their dairy animals.

However, about 10.3 and 9 per cent of the dairy farmers are using tree shade and road side respectively. Among the dairy farmers separate housing facility was noted in 60.1 per cent and attached with residence with residence system of housing was noted in 39.9 per cent of dairy farmers. In viewing the types of animal houses, it is noted that about 63 per cent of dairy farmers provided semi pucca houses for their dairy animals. However 31.0 per cent of the dairy farmers provided kutcha houses to shelter their animals. More number of kutcha housing system when compared with urban. Among the methods of housing more number of single row systems of housing (70 per cent) was recorded when compared to double row system (30 per cent). However in double row method head to head system was more prevalent when compared with tail to tail system (40.4 per cent).

This observation is similar with the findings of Ramkumar *et al.*, (2001) [7] who found that in Puducherry dairy farmers having Kutchashed in is rural area 35% and urban area 5%. Road housing is rural area 6% and urban area 35%. Tree shade rural 12% hasurban 24% and not pucca, clean or built in scientific lines, majority of the landless (68.8 per cent) had a separate shed for their cattle in Puducherry. Senthilkumar *et al.*, (2005) who found that socio - economic level of urban dairy farmers in Chennai reported that 48 per cent of farmers maintained dairy animals in thatched sheds, 19 per cent in kutcha sheds and remaining did not provide any shelter. In West Bengal, on an average 86 per cent of the rural farmers and 82 per cent semi-urban households provided separate stall for their dairy cattle within or outside the human dwelling (Roy *et al.*, 2007) [10]. Rathore *et al.*, (2010) [8] who found that housing practice of crossbred cattle owners in Rajasthan and reported that 65 per cent of the farmers kept their cattle near dwelling house and 86.33 per cent had kutcha floor in the shed. Paramasivam *et al.*, (2012) [6] who found that 43.10 per cent of animal houses attached to farmers' dwelling in Tamil Nadu. This observation is contrast with the findings of Divekar and Saiyad (2010) [3, 11] who found that majority of the cattle owners (94 per cent) did not provide shed to their animals and kept them in open in Gujarat. Sabapara *et al.* (2010) [11] who found that in Gujarat 98 per cent of tribal dairy farmers had closed type of animal house and among these, 90 per cent had kutcha type housing and the remaining 10 per cent had pucca type house for their animals. Reddy (2013) [9] who found that among selected farmers 91.6% farmers provided housing and the remaining 8.4% did not provide sheds. Paramasivam *et al.*, (2012) [6] who found that 68.96 per cent of farmers followed single row system and 31.03 per cent of farmers followed double row system of housing in Tamil Nadu. Among livestock sheds, 55.8% were covered with thatched roof, 33.63% were with asbestos roof and the remaining 3.2% were pucca sheds. With regard to flooring, 12.1% sheds were with cement flooring and the remaining 87.9% houses were with kutcha flooring only in Chittoor District of Andhra Pradesh.

Orientation

Majority of the dairy animal shed (73.0 per cent) s oriented in east west direction when compared to north south orientation

(27.0). The orientation of building shows that dairy farmers have certain basic knowledge about animal housing. This finding is contrary to the result are almost similar to Paramasivam *et al.*, (2012) [6] who found East west 37.93 per cent, North south 50.0 per cent and others 12.06 per cent in Tamil Nadu.

Floor space

The recommended floor space for cow, heifer and calf are 3.7, 2.3 and 1.6 sq.m respectively. It is noted that all the dairy farmers provided recommended floor space for their animals. Irrespective of communes and municipalities the animals were maintained with adequate floor space. Regarding number of animals per shed it is observed that none of the animal shed was overcrowded.

These findings are line with Sastry and Thomas (2015) [15] who found that floor space requirement for cow in covered and open paddock is 12.0 and 120.0 meter square respectively. Floor space requirement for heifer in covered and open paddock is 2.0 and 4.0 meter square respectively. Floor space requirement for calf in covered and open paddock is 1.0 and 2.0 meter square respectively.

Floor

In the dairy animal housing system, majority of the dairy farmers were using mud floors (80.19 per cent) when compared with brick floor (19.81 per cent).

This observation is almost similar with Ahiwar *et al.*, 2009 who found that in rural area majority (65.33 per cent) of animal sheds had mud floor, followed by concrete (31.33 per cent) and the least was (3.33 per cent) brick floor. Paramasivam *et al.*, (2012) [6] who found that 41.7 per cent of animal houses made up mud floor, 29.31 per cent made up of RCC floor and 29.31 per cent made up of stone floor.

Side wall and material

More than 64.00 per cent of the dairy farmers provided sidewalls for their animal shelter. The side wall material used for construction is mainly made up of mud (54.00 per cent).

This observation is almost similar with Paramasivam *et al.*, (2012) [6] who found that 37.93 per cent of animal house had side wall in Tamil Nadu. This observation is contradiction with Sinha *et al.*, (2009) [15] found that majority of the animal houses (54-74 per cent) had full wall. In urban areas, 94.4 per cent wall of houses was pucca, and in semi-urban and rural areas 66.7 per cent and 58.9 per cent houses had pucca wall respectively.

Roof

Majority of the dairy animal sheds (72.2 per cent) asbestos was used as the roofing material compared with thatches (27.8 per cent) This observation is almost similar with the study on roofing pattern of dairy cattle houses Paramasivam *et al.*, (2012) [6] who found that thatched roof 28.87 per cent, asbestos roof 26.29 per cent and open type 11.22 per cent in Tamil Nadu. This observation is contradiction with most of the tribal dairy farmers in Gujarat had plates with thatched roof (94 per cent), followed by cemented sheet (4.5 per cent) and galvanized iron (1.5 per cent) for their animal sheds (Sabapara *et al.*, 2010) [11].

Ventilation

Cross ventilation facilities was observed in all animal sheds. This observation is not similar with the findings of Ahiwar *et al.*, (2009) who found that in rural areas 29.66 per cent animal

houses had adequate light and ventilation. The corresponding figure was significantly higher (86 per cent) in urban areas. In a field survey in rural, semi urban and urban areas of Baireilly tehsil of Uttar Pradesh, Sinha *et al.*, (2009) ^[15] found that in 84.4 per cent of urban houses ventilation was in fairly good condition and this was 34.4 and 53.3 per cent in rural and semi-urban houses respectively. Paramasivam *et al.*, (2012) ^[6] who found that ventilation is sufficient 75 per cent, not sufficient 25 per cent in Tamil Nadu.

Manger

It is noted that only 20.3 per cent of dairy farmers were provided manger. Among 79.7 per cent of the dairy farmers were using floor as the manger. Among the type of manger used, wooden type was common (71.4 per cent).

This observation is almost similar with Paramasivam *et al.*, (2012) ^[6] who found that manger materials made up of brick 15.51 per cent, stone 9.91 per cent, RCC 33.62 per cent, wood 12.5 per cent bucket 28.44 per cent in Tamil Nadu. This observation is contradiction with Modi *et al.*, (2010) ^[5] in a study on dairy housing pattern in Gujarat observed that twenty five per cent of farmers did not provide manger for their animals. Sabapara *et al.*, (2010) ^[11] observed that only 36 per cent farmers in Gujarat provided manger. Out of 36 per cent majority (86.11 per cent) of them were wooden manger of varying size and shape, while 13.89 per cent of them were pucca manger. Sabapara *et al.*, (2010) ^[11] found that only 36 per cent farmers in Gujarat provided manger. Out of 36 per cent majority (86.11 per cent) of them were wooden manger of varying size and shape, while 13.89 per cent of them were pucca manger.

Watering management

All the dairy farmers were providing clean drinking water from the bore well to their animals at limited intervals individually. Majority of the dairy farmers were using buckets (50 per cent) to watering their animals. Only 10 per cent of dairy farmers use cement tanks and about 40 per cent of dairy farmers uses both buckets and cement tanks

Drainage

The drainage facility was recorded only in 42.7 per cent of the shed. However in urban area more number of dairy farmers (40 per cent) provided drainage facility when compared with rural. This observation is similar with Paramasivam *et al.*, (2012) ^[6] who found that 53.87 per cent of dairy animal owners keeping drainage for animal houses in Tamil Nadu. In kalyani area of West Bengal, unhygienic drainage system was observed in 85 per cent of the dairy animal sheds (Roy *et al.* 2007) ^[10].

Manure pit

All the dairy farmers having their manure in temporary manure pit. This observation is almost similar with Paramasivam *et al.*, (2012) ^[6] observed That 85.77 per cent of Dairy animal owners keeping manure pit in Tamil Nadu.

Method of storage of manure

All the of dairy farmers stored manure in temporary manure pit for storage of manure pit and 100 per cent of dairy farmers using manure as farm yard manure. This observation is similar with Diskshit *et al.* (2005) who found that in India; almost all Manure was managed in open pits in solid form. Methane emission in such type of management was expected

to be very small as this method provided little opportunities like moisture, temperature etc. to micro-organisms responsible for methane production, They also stated that dung, which can be used manure. Sinha *et al.* (2009) ^[15] found that drainage for urine disposal were proper in 25.6 per cent of urban areas but in semi-urban and rural areas drainage was proper in 11.1 and 6.7 per cent houses only. Reddy *et al.*, (2013) ^[9] found that only 27.9% farmers were having manure disposal pits, 68.4% farmers were heaping the dung on the land surface without dumping into any pit and the remaining 3.7% were not following proper management in manure disposal.

Provision for cooling in summer

All the dairy farmers were practicing splashing water and providing shade during summer to reduce heat from the dairy cow. This observation is similar with Paramasivam *et al.*, (2012) ^[6] who found that splashing 48.12 per cent shower 0.43 per cent, false ceiling 2.15, shade 21.55 and bathing 53 per cent in Tamil Nadu.

Conclusion

The knowledge of dairy members on dairy farming was very low in both rural and urban categories which require suitable interventions. The capacity building for dairy farmers in dairy farming area is essential that may be done by providing knowledge kit on livestock for their livelihood. For maximization of productivity, a sustainability suitable intervention to improve knowledge levels and skills in dairy animal management is very essential.

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