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Research Article- Studies on Adoption of Housing Management Practices in District Kanpur Dehat (U.P.)

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A B S T R A C T

The present study was carried out on adoption of housing management practices of dairy animals, reared by 200 farmers' viz: villages of the Maitha, Akbarpur and Derapur and Rasulabad blocks of Kanpur Dehat. This is presented in central plane zone of Uttar Pradesh state. Regarding housing management for cattle the dairy farmers followed the practices of housing, there were 52.5% of farmers establish their shed inside the dwelling house and 47.5% farmers cattle shed outside from home. 58% farmers adopted loose housing and 27.50% farmers kept their cattle below the tree. 14.50% farmers adopted of conventional type housing system. 64.00% farmers had pucca house, and kucha type 36.00%. 26.00% farmers adopted the pucca type roof and galvanized iron sheet for roofing 25.00%, thatched roofing 20.00% and asbestos roofing 17.50% and followed by without roofing only 11.50%. 45.00% of farmers having bricks floor space, which was followed by 27.50%, adopted concrete floor and 27.5% having mud floor. 84.5% farmers provided adequate availability of floor space which was followed by inadequate floor space provided 15.50%. 44.5% farmers used pucca type manger. 34.5% farmers having plastic drum or bamboo basket type manger used whereas 21.0% farmers adopted kuchha type manger. 51.5% farmers provided the satisfactory lightings to the dairy housing which was followed by good used 31.0% whereas poor quality type light used as only 17.5%. 47.0% of farmers were used hand pump which was followed by the 33.5% farmers also used electric pump, whereas 19.5% having both facility. 51.5% per cent of farmers shown the satisfactory drainage management, which was followed by good drainage 31.0% and 17.0% poor drainage. 65.0% farmers adopted adequate ventilation, which was followed by inadequate ventilation inside dairy houses were 35.0%. During the summer season 27.0% of farmers bathing their animals from water and 22.5% farmer was providing the exhaust fans and 20.0% of farmers applied thatched on roofing, 18.0% of farmers wallowing animals from pond and 12.0% farmers has no measures applied for summer management. During winter season 30.0% of farmers provided the grass and dung smolder for kept worm to the animals and 29.0% farmers to provide the bedding material and 28.5% of farmers provide gunny bags only 12.0% farmers were no applied any measures for cold weather conditions. In case of cleaning and sanitation 61.0% per cent farmers were kept the satisfactory and 20.00% good, and 19.00% poor cleaning and sanitation condition of their cattle shed.

Introduction

Present research investigation was carried out on 200 dairy farmers at four blocks in Kanpur Dehat district. The place is located in central part of U.P. state on eastern bank of Yamuna River and encompasses total geographical area 3021 sq. km., lying between latitude at $26^0$06'30'' - to $26^0$50'15'' N and longitude: $79^0$30'00'' – $81^0$15'15''E. the district is divided into ten blocks vis a vis Rasulabad, Maitha, Akbarpur, Sarwankheda, Jinjhak, Derapur, Sandalpur, Rajpur, Malasa and Amrodha. The average annual rainfall of the district is 782.8 mm. the maximum temperature varies in summer 45 ^{0}C and during winter minimum temperature 8.6 ^{0}C. the district occupies a part of Ganga-Yamuna doab in the Indo-Gangetic Plain. The climate of district is warm and temperate. Regarding the housing management for dairy animals most effective factor there are overall management practices adopted by the farmers viz. proper feeding, watering, and moving of animals there was easy to care and control of diseases in the cattle. There was the best opinion for prevention of dairy animals from theft and external damage like biting of dog, snake protection from hunting by the wild animals and also it prevented from the adverse climatic conditions. Dairy housing management is the art of keeping many animals in a small area which is also a challenge. It prevents theft and harming animals in housing and other external causes. If dairy management is expected to have good productivity, then the initial cost on the animal houses and maintenance costs should also be reduced and they should also manage the environmental conditions. So that the animal houses are well positioned, built, laid out and the grouped components of the animal house are well organized such as manger space, water facility, shade and sunlight management, ventilating etc. Special attention should be paid to the health and comfort of animals. So that the animal as more efficient as possible. Management of dairy housing is a most essential to rearing dairy animals because of avoidance of access temperature, humidity and ventilation. The proper housing is reduced the energy wastage of dairy animals and the maintaining of the thermo neutral zone as well as it reduces the chances spreading diseases (Sabapara *et al.*, 2010).

Materials and Methods

The adoption of housing management by the dairy farmers in district there was animal housing is the practice of providing comfort for proper conduction of different activities regarding housing management like that location of shed, proper space per cow and buffaloes, proper arrangement of feeding manger and resting of animals.

Method of sampling

The sample households were selected for collection of the data in the Kanpur Dehat district of U.P. state for the study. The four blocks were choose and randomly selected from out of ten blocks in the district. There are five villages selected from each block and from each village ten dairy farmers selected for the interview by me. The total number of two hundred dairy farmers was selected randomly in the district.

Adoption of housing management for dairy animals

To study about the methods of housing practices for animals adopted by dairy farmers in the district because the information is scheduled that included the origin of housing with various major parameters like, constructional material, type of housing (individual/group) housing system (intensive, semi-intensive, extensive), type of floor (Kachha/pucca), and roofing material (grass

theched, abestas sheet, tin shed) manger facility (kachha/pucca) etc.

Results and Discussion

Existing housing management practices

The housing management for dairy animals most effective factor there are overall management practices adopted by the farmers viz. proper feeding, watering, and handling of animals there was easy to care and control of diseases in dairy animals. There was the best option for prevention of dairy animals from the adverse climatic conditions.

Location of shed

There was observed the significant association among different blocks and location of animal shed ($\chi 2$= 12.411). The result showed from table the 52.50 per cent of farmer were kept their animals inside dwelling house which was followed by outside from home 47.50 per cent. The maximum number of farmers from Derapur 70.00 per cent kept their animals inside dwelling house and the minimum farmers from Rasulabad 38.00 per cent, while majority of farmers from Rasulabad 62.00 per cent, minimum from only 30.00 per cent of farmers were located cattle shed outside from home. The result indicated the dairy farmers adopted as their economic situation to facilitate to type of housing. These findings were supported by Reddy *et al.,* (2017) revealed that farmer build shed separately near to dwelling house, Sreedhar *et al.,* (2017a) most of the farmer adopted dwelling house system, Vishwakarma *et al.,* (2018d) maximum farmers kept their animal in shed while rest of peoples kept separate housing, Godara *et al.,* (2018b) less than half of farmers kept their animals inside house, Patel *et al.,* (2018a) most animal shed inside the dwelling house, Patel *et al.,* (2019) most of farmers build animal house near their own house, Kumar *et al.,* (2020) majority of farmers kept animals inside dwelling house.

Housing system

There was non significant association among from different blocks and housing system ($\chi 2$=5.366). The overall 58.00 per cent farmers adopted the loose housing system which was followed by conventional type 14.50 per cent and open type below tree 27.50 per cent. The farmer Rasulabad block adopted the 18.00 per cent and minimum from Maitha block only 10.00 per cent, maximum loose housing adopted from Rasulabad block 66.00 per cent, where as minimum observed in Akbarpur 54.00 per cent. Those farmers were kept their animals under shadow of tree the maximum from block Maitha block 34.00 per cent and minimum from Rasulabad only 16.00 per cent. These finding was supported by Hannure and Belsare (2018) revealed that only 16.0% farmers adopted loose housing, Godara *et al.,* (2018b) found that most of farmers adopted conventional housing, Patel *et al.,* (2018a) most of farmers adopted open or loose housing system and Narsimha *et al.,* (2019) majority of cattle owner kept in loose housing system.

Housing

The housing was made from different construction viz. kuchha or pucca type both were made by various constructive materials. There was a non significant association between the housing and different blocks ($\chi 2$=5.382). The overall highest 64.00 per cent farmers adopted pucca type housing which was followed by 36.00 per cent kuchha type. The highest pucca type housing adopted in Maitha block 76.00 per cent whereas least from Akbarpur block 56.00 per cent, and kuchha type highest used from Akbarpur 44.00 per cent and least from Maitha block 24.00 per cent. These findings were well

supported by Sabapara (2017) revealed that more than half of farmers adopted kuccha houses, Gaikwad *et al.,* (2019) all farmers were adopted kuchha house, Narsimha *et al.,* (2019) majority of cattle keepers adopted kuchha house.

Type of roof

There was observed that a non significant association among from different blocks and type of roof ($\chi 2$=14.250). The total highest 26.00 per cent farmers adopted the pucca roof which was followed by galvanized iron sheet roofing 25.00 per cent, thatched roofing 20.00 per cent, and asbestos roofing 17.50 per cent and without roofing only 11.50 per cent. The farmer from Akbarpur block adopted the 34.00 per cent and minimum from Derapur block only 14.00 per cent adopted pucca type roofing, where as the maximum galvanized iron sheet roofing Derapur and Rasulabad 28.00 percent and least from Akbarpur 18.00 percent. The farmers adopted the thatched roofing maximum from Akbarpur block 26.00 per cent and least from Maitha and Rasulabad block 16.00 per cent respected. The farmers adopted Asbestos roofing maximum from Akbarpur block 22.00 per cent and minimum from Derapur only 14.00 per cent.

The farmers that did not provided proper housing for their cattle maximum from Derapur and Rasulabad 16.00 per cent. These finding was supported by Kishore *et al.,* (2013) maximum farmers adopted thatched roofing while minimum were adopted asbestos roof shed, Tiwari *et al.,* (2016) majority of farmers adopted asbestos roof, Sreedhar *et al.,* (2017a) majority of farmers used galvanized iron sheet as roofing, Mulgu *et al.,* (2018) majority of farmers used asbestos sheet as roofing, Patel *et al.,* (2018) most of farmers adopted galvanized iron sheet as roofing, Narsimha *et al.,* (2019) revealed that galvanized iron sheet and asbestos sheet commonly used by farmers, Kumar et. al. (2020) most of farmers adopted thatched roofing.

Type of floor

There was a significant association between adopted type of floor and distributed different blocks ($\chi 2$= 17.964). The total 45.00 per cent of farmers having the bricks made floor space, which was followed by 27.50 per cent concrete floor and 27.5 per cent mud floor.

The maximum farmers 52.00 per cent in Akbarpur block have and least from Derapur 34.00 per cent have bricks floor.

In case of concrete floor the maximum farmers were adopted from Maitha block 32.00 per cent, and least from Derapur block only 16.00 per cent. And in case of adopting the mud floor the maximum farmers were from Derapur block 50.00 per cent, whereas least from Rasulabad 18.00 per cent. These finding was supported by Singh *et al.,* (2016) half of the farmers used kuchha floor, Kumar *et al.,* (2017a) most of farmer possessed animal house with kuchha floor, Sabapara (2017) half of farmers adopted kuchha houses, Swathi *et al.,* (2017) majority of farmers adopted pucca flooring in animal house, Sreedhar *et al.,* (2017a) 45.83% of farmers adopted mud floor and concrete floor 40.83% and brick floor only 13.30%, Pata *et al.,* (2018) revealed that 55.67% farmers adopted pucca floor followed by kuchha floor pattern 44.33%, Godara *et al.,* (2018b) found in his study half of farmers had kuchha floor Patel *et al.,* (2018a) majority of respondents had pucca floor, Gaikwad *et al.,* (2019) all farmers adopted kuchha floor, Singh *et al.,* (2019a) majority of farmers adopted kuchha floor, Kumar *et al.,* (2020) majority of farmers adopted kuchha floor,

Table.1 Adoption of housing management practices of district

SI.No	Particular	Unit	Blocks N= 200					
			Maitha	Akbarpur	Derapur	Rasulabad	Total	χ2 Value
1 Location of shed								
a.	Inside dwelling house	%	(58.00) 29	(44.00) 22	(70.00) 35	(38.00) 19	(52.50)105	12.41**
b.	Outside from home	%	(42.00) 21	(56.00) 28	(30.00) 15	(62.00) 31	(47.50)95	
2. Housing system								
a.	Conventional type	%	(10.00) 5	(16.00) 8	(14.00) 7	(18.00) 9	(14.50) 29	5.37 NS
b.	Loose housing	%	(56.00) 28	(54.00) 27	(56.00) 28	(66.00) 33	(58.00) 116	
c.	Below tree shade	%	(34.00) 17	(30.00) 15	(30.00) 15	(16.00) 8	(27.50) 55	
3. Housing type								
a.	Kuchha	%	(24.00)12	(44.00) 22	(34.00) 17	(42.00) 21	(36.00) 72	5.38 NS
b.	Pucca	%	(76.00) 38	(56.00) 28	(66.00) 33	(57.00) 29	(64.00) 128	
4. Type of roof								
a.	Asbestos roof	%	(16.00) 8	(22.00) 11	(14.00) 7	(18.00) 9	(17.50) 35	14.25 NS
b.	Pucca roof	%	(28.00) 14	(34.00) 17	(20.00) 10	(22.00) 11	(26.00) 52	
c.	Thatched roof	%	(16.00) 8	(26.00) 13	(22.00) 11	(16.00) 8	(20.00) 40	
d.	Galvanized Iron sheet	%	(26.00)13	(18.00) 9	(28.00) 14	(28.00) 14	(25.00) 50	
e.	Without roof	%	(14.00) 7	(0.00) 0	(16.00) 8	(16.00) 8	(11.50) 23	
5. Type of floor								
a.	Concrete floor	%	(32.00) 16	(28.00) 14	(16.00) 8	(34.00) 17	(22.50) 55	17.96*
b.	Brick floor	%	(46.00) 23	(52.00) 26	(34.00) 17	(48.00) 24	(45.00) 90	
c.	Kuchha floor	%	(22.00) 11	(20.00) 10	(50.00) 25	(18.00) 9	(27.50) 55	
6. Type of manger								
a.	Kuccha	%	(16.00) 8	(26.00) 13	(24.00) 12	(18.00) 9	(21.00) 42	17.11**
b.	Pucca	%	(34.00) 17	(54.00) 27	(32.00) 16	(58.00) 29	(44.50) 89	
c.	Plastic drum, bamboo basket	%	(50.00) 25	(20.00) 10	(44.00) 22	(24.00) 12	(34.50) 69	
7. Lightings								
a.	Good	%	(36.00) 18	(22.00) 11	(34.00) 17	(32.00) 16	(31.00) 62	6.64NS
b.	Satisfactory	%	(48.00) 24	(50.00) 25	(52.00) 26	(56.00) 28	(51.50) 103	
c.	poor	%	(16.00) 8	(28.00) 14	(14.00) 7	(12.00) 6	(17.50) 35	
8. Water faciality								
a.	By electric pump	%	(34.00) 17	(40.00) 20	(36.00) 18	(24.00) 12	(33.50) 67	8.77NS
b.	Hand pump	%	(52.00) 26	(48.00) 24	(44.00) 22	(44.00) 22	(47.00) 94	
c.	Boath	%	(14.00) 7	(12.00) 6	(20.00) 10	(32.00) 16	(19.50) 39	
9. Cleaning and sanitation								
a.	Good	%	(18.00) 9	(26.00)13	(14.00) 7	(22.00) 11	(20.00) 40	9.34 NS
b.	Satisfactory	%	(56.00) 28	(64.00) 32	(58.00) 29	(66.00) 33	(61.00) 122	
c.	Poor	%	(26.00) 13	(10.00) 5	(28.00) 14	(12.00) 6	(19.00) 38	

Figure in parenthesis indicate frequency and *significant (P<0.05),**significant (P<0.01)
NS Non Significant.

Type of manger

There was a significant association between types of manger distributed in different blocks ($\chi 2$=17.110). Overall highest pucca type manger used by the dairy farmers 44.50 per cent which was followed by plastic drum or bamboo basket type manger used 34.50 per cent whereas kuchha type manger used as only 21.00 per cent. These finding was supported by Singh *et al.,* (2016) found that 52.0% farmers used kuchha manger and 40.0% used pucca manger, Reddy *et al.,* (2017) found that most of dairy farmers used pucca type manger, Sabapara (2017) found that only 23.33% farmers used pucca manger, Patel *et al.,* (2018a) found that only 30.0% farmers had pucca type manger.

Light

There was a non significant association between faciality of light and ventilation distributed in different blocks ($\chi 2$=6.639). Overall highest satisfactory lightings provided by the dairy farmers 51.50 per cent which was followed by good used 31.00 per cent whereas poor quality type light used as only 17.50 per cent. These finding was supported by Hannure and Belsare (2018) found that farmers had sufficient light in dairy house, Pata *et al.,* (2018) found that majority of farmers provided proper light in the animal houses, Viswakarma *et al.,* (2018) found that all of the farmers had adequate light in the animal house.

Water facility

There was a non significant association between the water channels and different blocks ($\chi 2$= 8.773) overall maximum 47.00 per cent of respondents were used hand pump which was followed by the 33.50 per cent also used electric pump, whereas 19.50 per cent having both facility. These findings supported by Singh *et al.,* (2020) and Siobhan *et al.,* (2020) found that most of farmers did not provide ultimate access of water for dairy animals.

Cleaning and sanitation

The cleaning and sanitation helped preventing the contagious germs inside house. There was a non significant association cleaning and sanitation between the blocks ($\chi 2$=9.399) overall highest 61.00 per cent farmers were kept the satisfactory which was followed by 20.00 % good, and 19.00% poor cleaning and sanitation condition, the maximum from Rasulabad block 66.00% and least from Maitha 56.% farmers were kept the satisfactory condition of sanitation, whereas the maximum from Akbarpur block 26.00% and least from Derapur 14.00% farmers kept the good condition of their animal houses while the maximum from Derapur block 28.00% and least from Akbarpur 10.00% of farmers were have the poor condition of the dairy houses in case of cleaning and sanitation. The findings were supported by Singh *et al.,* (2016) found that majority of farmers had proper sanitation and cleaning of shed, Swathi *et al.,* (2017) found that half of farmers were cleaning the animal shed twice daily, Hannure and Belsare (2018) also observed that dairy farmers regular tried to cleaning of shed, Patel *et al.,* (2018a) also found that majority of farmers had proper cleaning of the shed.

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