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Study of disease prevalence and health care procedures followed by dairy farms of peri-urban areas of Punjab

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Abstract

Self-treatment is when a person manages a real or perceived medical issue without consulting a doctor or pharmacist. It includes self-diagnosis, self-expertise, and self-prescription. The purpose of the current study was to learn more about general health care practices, frequent ailments seen in peri-urban farms, and the effects of farmers' use of self-medication. The data collection from the peri-urban dairy farmers (n=360) used a well-organized and pre-tested interview schedule. The survey found that nearly all of the respondents had given their animal an FMD and HS vaccine. Most of the respondents (93.89%) reported to deworm their animals and rest (6.11%) were not aware of this deworming practices. Majority of respondents (68.05%) of present study did not follow the practice of isolation of sick animal whereas, 31.95% reported to follow this practice. Parasitic disease was found to be the major disease affecting the dairy farms of most (93.34%) of the respondents. Almost all the respondents (97.22%) reported that they occasionally seek the Government animal health care services. Only 2.78 percent reported to use it on a regular basis. Majority of respondents (45.28%) preferred self-medication over professional help. Most of the respondents (71.11%) reported that they self-diagnose the animal for various diseases.

Keywords: Peri-urban areas, self-diagnosis, self-medication, veterinary service, quacks

Introduction

Dairying and agriculture are closely related and critically dependent on one another. Given its long history in rural areas of our nation, dairying is the most primitive of all livestock enterprises. Livestock is a major component of India's economy. An average of 35 million people are employed in the livestock sector annually, giving year-round employment to people living in rural areas (Sathiyabarathi *et al.*, 2015) [7]. India currently has 109.85 million buffaloes and 193.46 million cattle (20th Livestock census, 2019).

Punjab produces 13.34 million tonnes of milk per year from 40.16 lakh buffaloes and 25.31 lakh cows, making it one of the top milk-producing states in the nation and an example for other states. However, the bulk of dairy farmers continue to practise traditional farming methods (Statistical Abstract of Punjab, 2020) [9].

Self-treatment is a serious issue and a growing problem for veterinarians, as it interferes with proper treatment protocols and can contribute to the development of antibiotic resistance in disease causing microorganisms (Chauhan *et al.*, 2018) [2]. Self-medication, in whatever form and ways has an adverse impact on animal health, welfare issues of animal husbandry practices thus it must be stopped immediately (Verma *et al.*, 2022) [10].

Materials and Methods

The present study was conducted with the dairy farmers of Punjab and it was based on random sampling. Punjab has been divided into 03 major regions *viz*; Majha, Malwa and Doaba. The rivers Satluj and Beas, which flow across Punjab, are responsible for its division. The current study was carried out in peri-urban dairy farms of these areas of Punjab. Two districts were selected from each region that was chosen. These are the regions that lie within the city's 5-kilometer perimeter. A total of 360 respondents, 60 peri-urban farmers were selected from each district. The study's respondents were dairy farmers with more than 10 animals who were older than 20. A well-structured interview schedule in English was created after extensive research of the relevant literature and discussion with university faculty members. The completed version is then translated into Punjabi and presented to a Punjabi language expert. Experts were once again presented the final interview schedule to check for any errors. The final completed schedule is then pretested on 25 dairy farmers chosen from the Ludhiana district's peri-urban area.

Pretesting was performed to determine where adjustments needed to be made before being used for data collection. The data was collected utilising the above-mentioned finalised interview schedule. The data obtained were carefully examined for accuracy and completeness before tabulation. The data were entered into an excel spreadsheet. Appropriate statistical tools such as frequency, percentage were employed for the analysis.

Result and Discussion

General health care practices followed by respondents

The following headings were used to categorize this section

Vaccination of animal against FMD and HS

The distribution of respondents according to vaccination of animal against FMD and HS has been given in table 1. The study indicated that almost 100 percent of respondents from all the 3 regions *viz.* Majha, Malwa and Doaba reported that they get their animals vaccinated against FMD & HS on regular basis.

This is expected as Department of Animal Husbandry Punjab offer these services twice a year.

Sabapara *et al.* (2015) ^[6] found that the majority of dairy farmers (96.33%) vaccinated their animals against FMD and HS on a regular basis, which is similar to the findings of the current study.

Deworming practice

The categorization of respondents according to deworming practice has been given in table 1. Most of the respondents (93.89%) reported to deworm their animals and rest (6.11%) were not aware of this deworming practice. Majority of the respondents (95.83%) who were doing regular deworming of the animals were from Doaba region, followed by Malwa (94.17%) and Majha (91.67%) regions, respectively. Whereas, 8.33, 5.83 and 4.17 percent respondents from Majha, Malwa and Doaba regions, respectively were not doing regular vaccination of their animals

Singh (2013) ^[8] reported comparable findings in Punjab, stating that all dairy farmers dewormed their cows.

Isolation of sick animals

To curb the spread of infectious diseases it is necessary to follow the isolation of sick animals, however majority of respondents (68.05%) of present study did not follow this practice while rest 31.95% reported to follow this practice. Majority of the respondents (73.33%) who were not isolating their diseased animal were from Majha region and minimum (64.17%) were from Malwa region. Whereas, 26.67, 35.83, 33.33 percent respondents from Malwa, Doaba and Majha region, respectively were regularly isolating their diseased animal from healthy ones.

Kumar (2015) ^[4] reported in his study that 20 percent of the dairy farmers were doing isolation of sick animals at their farm and this result is in line with the present study.

Sabapara *et al.* (2015) ^[6] reported that 88.67 percent of the farmers kept diseased animals together with healthy ones,

while 11.33 percent of the farmers kept these two categories separately and these findings are in line with the present study.

Disinfection of animal shed

For cleanliness purpose, only 26.11 percent respondents practiced regular disinfection of animal shed, rest (73.89%) were not aware of this practice. Maximum number of respondents (29.17%) from both Malwa and Doaba region were regularly disinfecting their animal shed. Whereas, 80.00 percent respondents from Majha region were not regularly disinfecting their animal sheds.

Dev (2014) ^[3] found that the majority of respondents (63.3%) did not disinfect their animals' sheds on a regular basis, while only 27.2 percent disinfecting their animal's sheds on a regular basis. These findings are consistent with the current findings, indicating that farmers need to be educated about the importance of regular shed disinfection.

Ectoparasitic control measures

The distribution of respondents on the basis of ectoparasitic control measures has been given in table 1. The present study revealed that only 13.06 percent respondents follow regular ectoparasitic control measures at their farm rest (86.94%) were not having idea about ectoparasitic measures. Maximum number of respondents (21.67%) who were following ectoparasitic measures at their farm were from Doaba region and minimum (5.83%) were from Majha region. Whereas, majority of respondents (94.17%) those who were not following ectoparasitic measures belonged to Majha region and minimum (78.33%) belonged to Doaba region. This must be the reason behind the high incidence of parasitic diseases in the study area.

Kumar (2015) ^[4] found that 31.25 percent of dairy farmers practise ectoparasitic management on their farms, which is consistent with the findings of current study.

Performing of vaccination and deworming practices at farm

For vaccination and deworming practice, 42.22 percent respondents preferred veterinary doctor. On the other hand, 39.45 percent respondents reported para-veterinarian to perform these activities and rest (18.33%) revealed that they themselves perform these activities. Majority (44.17% and 45.83%) of the Malwa and Doaba region respondents, respectively reported that vaccination and deworming programs were performed by Veterinary professional, whereas respondents (46.67%) from Majha region reported that these activities were primarily performed by para-veterinarian at their farm.

This was found that during vaccination program, sometimes veterinary professionals handover the vaccine to pharmacists or to farmers to perform these activities.

In spite of regular vaccine, 21.1 percent respondents reported the incidence of FMD. This might be due to improper vaccination & non-maintenance of cold chain.

Table 1: Distribution of respondents on the basis of general health care practices followed at the farm

Parameter	Response	Majha (n=120)	Malwa (n=120)	Doaba (n=120)	Overall (N=360)
Vaccination of animal against FMD and HS	Irregular	0 (0.00)	0 (0.00)	1 (0.83)	1 (0.28)
	Regular	120 (100.00)	120 (100.00)	119 (99.17)	359 (99.72)
Deworming on farms	Yes	110 (91.67)	113 (94.17)	115 (95.83)	338 (93.89)
	No	10 (8.33)	7 (5.83)	5 (4.17)	22 (6.11)
Isolation of sick animals	Yes	32 (26.67)	43 (35.83)	40 (33.33)	115 (31.95)
	No	88 (73.33)	77 (64.17)	80 (66.67)	245 (68.05)
Disinfection of animal sheds	Yes	24 (20.00)	35 (29.17)	35 (29.17)	94 (26.11)
	No	96 (80.00)	85 (70.83)	85 (70.83)	266 (73.89)
Ectoparasitic control measures	Yes	7 (5.83)	14 (11.67)	26 (21.67)	47 (13.06)
	No	113 (94.17)	106 (88.33)	94 (78.33)	313 (86.94)
Performing of vaccination and deworming practices at farm	Veterinary doctor	44 (36.67)	53 (44.17)	55 (45.83)	152 (42.22)
	Para-veterinarian	56 (46.67)	45 (37.50)	41 (34.17)	142 (39.45)
	Self	20 (16.66)	22 (18.33)	24 (20.00)	66 (18.33)

Figures in parenthesis indicate percentage of the respondents; n/N= No. of respondents

2. Common diseases/conditions at the farm in last one year

The given headings were addressed in this section.

Frequency of disease occurrence at farm in last one year

On asking 'how frequently the disease occur at your farm in last one year', around 65 percent respondents reported the frequent occurrence of disease at their farm in last one year. Majority of the respondents (70.00%) who were having frequent occurrence of disease at their farm belonged to Majha region and minimum (59.17%) belonged to Doaba region. Whereas, maximum proportion of respondents (40.83%) who were having occasional occurrence of diseases at their farm were from Doaba region and minimum (30.00%) were from Majha region (table 2).

Type of diseases/conditions occurred at peri-urban dairy farm in last one year

However on asking about the individual disease/condition the results of occurrence of main disease varied between 0.28 percent (HS) to 93.34 percent (Parasitic disease). The occurrence of FMD disease was reported by 76 respondents. However only 1 respondent reported the occurrence of HS at his farm (table 2).

Parasitic disease was found to be the major disease affecting their dairy farm as 93.34 percent respondents reported the occurrence of this disease on their farm. Diarrhea was reported by 325 respondents (90.30%) followed by mastitis (42.50%), dystocia (29.44%). Milk fever, repeat breeding and ROP were reported by 2.22, 1.67 and 1.12 percent respondents, respectively.

In spite of regular vaccination, about 21.12 percent respondents reported the incidence of FMD. This might be due to improper vaccination and non-maintenance of cold chain.

Utilization of Government Animal Health Care Services

The categorization of respondents on the basis of utilization

of Government Animal Health Care Services in table 2. Almost all the respondents (97.22%) reported that they occasionally seek the Government Animal Health Care Services. Only 2.78 percent reported to use it on a regular basis. Majority of respondents (97.50%) from both Majha and Doaba regions, occasionally seek the Govt. animal health care services followed by the respondents (96.67%) of the Malwa region. On the other hand, only 3.33% respondents of Malwa region regularly utilize the Govt animal health care services followed by 2.50 percent respondents from both Majha and Doaba region, respectively.

Yadav *et al.* (2016) [11] revealed in their study that the maximum number of respondents (83.75%) profited from animal health care services.

Categorization of respondents based on their preference for treatment of sick animal

The distribution of respondents according to preference for treatment of sick animals has been given in table 2. It is evident from the data that most of the respondents (54.72%) preferred self-medication over veterinarian (32.22%) and para-veterinarian help (5.28%). Around 8 percent respondents preferred quacks (locally available non-qualified persons). Majority of the respondents in Majha region (60.83%), Malwa region (58.33%) and Doaba region (45.00%) preferred self-medication. Most of the respondents (43.33%) preferring veterinarian help were from Doaba region and minimum (22.50%) were from Majha region. Maximum number of respondents (7.50%) preferring para-veterinarian help belonged to Majha region and minimum (1.67%) belonged to Doaba region.

People who help a veterinary physician in their work or execute animal health operations independently as part of a veterinary care system are referred to as para-veterinarians. Respondents were self-medicating due to a shortage of government veterinary personnel and their inability to be available throughout day and night (Rao *et al.*, 2015) [5].

Table 2: Distribution of respondents on the basis of common diseases/ conditions occurred at farm in last one year

Parameter	Response	Majha (n=120)	Malwa (n=120)	Doaba (n=120)	Overall (N=360)
Frequency of disease occurrence	Frequently	84 (70.00)	76 (63.33)	71 (59.17)	231 (64.17)
	Occasionally	36 (30.00)	44 (36.67)	49 (40.83)	129 (35.83)
Type of diseases/ condition					
FMD	Occur	41 (34.17)	15 (12.50)	20 (16.67)	76 (21.12)
	Not occur	79 (65.83)	105 (87.50)	100 (83.33)	284 (78.88)
HS	Occur	0 (0.00)	1 (0.83)	0 (0.00)	1 (0.28)
	Not occur	120 (100.00)	119 (99.17)	120 (100.00)	359 (99.72)
Milk Fever	Occur	3 (2.50)	4 (3.33)	1 (0.83)	8 (2.22)
	Not occur	117 (97.50)	116 (96.67)	119 (99.17)	352 (97.78)
Diarrhea	Occur	110 (91.67)	101 (84.17)	114 (95)	325 (90.3)
	Not occur	10 (8.33)	19 (15.83)	6 (5.00)	35 (9.70)
Parasitic disease	Occur	112 (93.33)	112 (93.33)	112 (93.33)	336 (93.34)
	Not occur	8 (6.67)	8 (6.67)	8 (6.66)	24 (6.66)
Dystocia	Occur	43 (35.83)	39 (32.50)	24 (20.00)	106 (29.44)
	Not occur	77 (64.17)	81 (67.50)	96 (80.00)	254 (70.56)
Mastitis	Occur	48 (40.00)	49 (40.83)	56 (46.67)	153 (42.5)
	Not occur	72 (60.00)	71 (59.17)	64 (53.33)	207 (57.5)
ROP	Occur	0 (0.00)	1 (0.83)	3 (2.50)	4 (1.12)
	Not occur	120 (100.00)	119 (99.17)	117 (97.50)	356 (98.88)
Repeat breeding	Occur	0 (0.00)	2 (1.67)	4 (3.33)	6 (1.67)
	Not occur	120 (100.00)	118 (98.33)	116 (96.67)	354 (98.33)
Utilization of Govt. animal health care services	Regular	3 (2.50)	4 (3.33)	3 (2.50)	10 (2.78)
	Sometimes	117 (97.50)	116 (96.67)	117 (97.50)	350 (97.22)
Preference for sick animal treatment	Veterinarian	27 (22.50)	37 (30.83)	52 (43.33)	116 (32.22)
	Self	73 (60.83)	70 (58.33)	54 (45.00)	197 (54.72)
	Para-veterinarian	9 (7.50)	8 (6.67)	2 (1.66)	19 (5.28)
	Quack	11 (9.17)	5 (4.17)	12 (10.00)	28 (7.78)

Figures in parenthesis indicate percentage of the respondents; n/N= No. of respondents

Consequences of self-medication

Self-medication directly or indirectly affect the health of animal. The following are some of the cases in which respondents attempted to correct the conditions using their own methods before consulting a veterinarian.

1. Mastitis- In the case of mastitis, six respondents attempted to treat it with teatasule (homeopathy medicine) & powder of spices but found no improvement, leading them to seek the advice of a veterinarian.
2. Maggot wound- 4 respondents applied petrol on maggot wound (around the neck) and noticed that it caused pain & irritation in infected area and finally they consulted the veterinarian.
3. Obstruction in teat- 5 dairy farmers observed an obstruction in the teat because milk let-down was difficult, so they inserted a broom stick in the teat, which caused irritation, prompting them to seek advice from a veterinarian and have the teat surgically corrected.
4. Infection of digestive track - 4 responders noticed an infection in the digestive tract because the animal had difficulty passing faeces and urine, therefore they gave the animal 2-3 doses of alcohol. This approach worsens the animal's condition, prompting them to seek the guidance of a veterinarian.
5. Mastitis – In case of mastitis, 15 respondents gave turmeric solution to animal using drenching tube but no improvement was seen and finally they consulted the doctor.
6. Dystocia- 3 respondents tried to relieve the dystocia without making any postural correction which resulted in uterine rupture and laceration, prompting them to seek advice from a veterinarian.

Conclusion

Self-medication, in whatever form and ways has an adverse impact on animal health, welfare issues thus it must be stopped immediately. It also promotes unprofessional person (quack) to practice in field. To stop this practice, more farmer's knowledge, training programmes, tighter regulation of unqualified people, and legislation governing the use and sale of veterinary medications are some of the crucial steps that must be followed.

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Conflict of Interest / Competing interests

The author declare no conflicts of interest

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