

## AWARENESS AMONG DAIRY FARMERS OF PUNJAB ABOUT COMMON TOXICITIES IN RUMINANTS

JASWINDER SINGH, J.S. HUNDAL\*, H.K. VERMA and S.K. KANSAL

Department of Veterinary and Animal Husbandry Extension Education

College of Veterinary Sciences

Guru Angad Dev Veterinary and Animal Sciences University, Ludhiana-141 004, India

Received: 26.06.2014; Accepted: 21.10.2014

### ABSTRACT

A study was undertaken to assess the awareness level of farmers about the common toxicities in livestock at the field level. Data were collected through pre-tested interview schedule from 120 farmers. The study revealed that 30.8% of dairy farmers had high knowledge level where as 27.5% and 41.7% had low and medium knowledge levels, respectively. Majority of the respondents (90%) were aware about the fact that feed and fodder can cause toxicity in animals but only 30 to 64.2% farmers knew the optimum stage of harvesting of different fodders. Sixty per cent of the farmers had knowledge that silage making can reduce the toxic content. 47.5% of farmers used cotton seeds as such for feeding to animals. Only 27.5% farmers were aware about mycotoxins in feeds and 0.8% of the farmers opted for mycotoxins testing in feed. Only 29.2, 30.8, 15 and 5% farmers got their soil, water, feed and fodder samples, respectively tested for the mineral contents and urea. The study revealed that the knowledge level of farmers regarding common toxicities in animals was not high and there is a need to enlighten dairy farmers about the common toxicities and their preventive measures through awareness campaigns and educational programmes.

**Key words:** Common toxicities, knowledge level, farmers, animals

Punjab is primarily an agricultural state where the main stay of rural masses is agriculture and allied enterprises. Animal husbandry alone contributes 17% to the economy of the state and is an important source of subsidiary income to small/marginal farmers and agricultural labourers (Birthal and Ali, 2005). Sometimes farmers face huge economic losses due to various toxicities in their animals. Most of the cases are due to ignorance, lack of knowledge, mis-management and toxins present in feed/fodder. Therefore, a study was undertaken to assess the extent of awareness level of farmers about the common toxicities in livestock at field level.

### MATERIALS AND METHODS

The present study was conducted on the farmers who visited Information Center of the University at Ludhiana to enquire about various aspects of livestock farming. These farmers belonged to different districts of Punjab. A pre-tested interview schedule was used and 120 dairy farmers (respondents) were interviewed at random. A set of 27 knowledgeable items containing information on different aspects of common livestock toxicities was presented to the respondents. Each

correct response was given a score of one. The respondents were categorized into three groups (Chandrashekhar *et al.*, 1998) based on the mean (19.14) and standard deviation (S.D; 3.89) as a measure of check (Table 1).

Additional information was also collected about the adoption of various practices, which can be helpful to counter toxicities in livestock. The data so collected were analyzed using standard statistical tools to draw the conclusion (Snedecor and Cochran, 1994)

### RESULTS AND DISCUSSION

The results revealed that the majority of respondents (90%) were aware about the fact that feeds and fodder can cause toxicity in animals (Table 2). About 77.5% of the farmers were aware that immature plants contains more toxic components, whereas, only 54.2, 64.2, 35.8, 58.3 and 30% farmers knew the optimum

**Table 1**  
**Categories of respondents**

Total score on knowledge	Knowledge category
Less than (Mean – $\frac{1}{2}$ S.D.)	Low
Between (Mean $\pm \frac{1}{2}$ S.D.)	Medium
More than (Mean + $\frac{1}{2}$ S.D.)	High

\*Corresponding author: drjshundal@yahoo.com

**Table 2**  
**Extent of awareness of respondents on different aspects of common toxicities**

S. No.	Item	Frequency (%) of extent of awareness of respondents
1	Various feeds and fodder can cause toxicities in animals	108 (90.0)
2	Immature plants contains more toxic components	93 (77.5)
3	Knowledge about optimum stage of harvesting of maize	65 (54.2)
4	Knowledge about optimum stage of harvesting of bajra	77 (64.2)
5	Knowledge about optimum stage of harvesting of sorghum	43 (35.8)
6	Knowledge about optimum stage of harvesting of barseem	70 (58.3)
7	Knowledge about optimum stage of harvesting of Lucerne	36 (30.0)
8	Silage making can reduces chances of toxicity	72 (60.0)
9	Excess use of urea fertilizers on fodder can lead to toxicity	113 (94.2)
10	Drought/frost conditions can aggravate the chances of toxicity	108 (90.0)
11	Sorghum grown in drought conditions is toxic to animals	76 (63.3)
12	Hoof problem or gangrene of extremities in animals results from Se toxicity	110 (91.7)
13	Excessive feeding of paddy straw as such can cause toxicity in animals	101 (84.2)
14	Insecticidal sprays can be used as ectoparasiticidal in animals without any harm	15 (12.5)
15	Ectoparasiticides in more concentration can quickly relieve the animals from external parasites without any harm	36 (30.0)
16	Is external application of mineral/common oil on animal skin recommended in case of ectoparasiticidal toxicity	26 (21.7)
17	Do you know about the mycotoxins in feedstuffs	33 (27.5)
18	Testing of feed samples for mycotoxins	1 (0.83)
19	Fungal infected concentrate can be given to animals without any harm	14 (11.7)
20	Fungal infected chapatis can be given to animals without any harm	21 (17.5)
21	Feeding of cottonseed as such do not cause any harm to animal	57 (47.5)
22	Presence of anti-nutritional factors in cotton seeds	53 (44.2)
23	Feeding of toryia/ taramira in excess can cause toxicity	80 (66.7)
24	Testing of samples	
	Soil sample	35 (29.2)
	Water sample	37 (30.8)
	Feed sample	18 (15.0)
	Fodder sample	6 (5.0)

stage of harvesting of maize, bajra, sorghum, barseem and lucerne, respectively. Silage making has been reported to reduce various toxins in green fodder (Spoelstra, 1985) and about 60% of the respondents were aware about this fact. Further, 90 and 94.2% dairy farmers were aware that drought conditions and application of urea fertilizers, respectively may result in increased chances of toxicity.

Approx. 84.2% farmers were aware that feeding of parali (paddy straw) can cause selenium (Se) toxicity. Gossypol is another anti-nutritional factor present in cottonseed cake which can be countered off by heating or soaking it in water. About 47.5% of farmers used cotton seeds as such for feeding and only 44.2% were aware about the presence of anti-nutritional factors in cotton seeds (Table 2). Cyanide toxicity can be due to feeding of sorghum grown in drought conditions or due

to feeding of damaged fodder and only 63.3% farmers were aware about the same.

Mycotoxicosis results when animals consume mycotoxin-contaminated feed and leads to a wide range of adverse effects in animals (Sultana and Hanif, 2009). Mycotoxins may be present in readymade feed due to molasses, high moisture content, long storage of feed etc. This study revealed that only 27.5% farmers were aware about mycotoxins. About 11.7 and 17.5% farmers were of the opinion that fungal infested feed and chapattis can be given to animals without any harm (Table 2). Only 0.8% respondents got their feed sample tested to rule out mycotoxins.

To avoid the occurrence of any toxicity, soil, water and feed should be tested for the presence of any excess mineral, urea and mycotoxins etc. but only 29.2, 30.8,

**Table 3**  
**Knowledge level of dairy farmers regarding common toxicities**

Knowledge level	Frequency (%) of dairy farmers regarding knowledge level
Low (upto 17.25 score)	33 (27.5)
Medium (17.26 to 21.15 score)	50 (41.7)
High (=21.16 score)	37 (30.8)
Total	120
Mean = 19.14	Standard deviation = 3.89

15 and 5% farmers got their soil, water, fodder and feed samples, respectively tested for mineral/fodder/urea.

Ectoparasites can cause various diseases in animals, and can result in economic as well as health losses. A variety of drugs can be used to control ectoparasites in ruminants. Even farmers were not fully aware about recommended drugs and their dose to get rid of ectoparasites. About 12.5% farmers were of the opinion that insecticides can also be used as ectoparasiticides without causing any harm to animals. Thirty percent farmers echoed that ectoparasiticides can be used in higher concentration for effective tick control. In case of ectoparasiticidal toxicity, 21.7% farmers recommended an external application of mineral/common oil on animal skin which was a misconception.

The study revealed that the knowledge level of farmers regarding common livestock toxicities was poor. Only 30.8% of dairy farmers had high knowledge level whereas, 27.5% and 41.7% had low and medium knowledge levels, respectively (Table 3). Earlier, Singh *et al.* (2005) also reported that maximum farmers were having medium knowledge level about various

management practices viz. deworming, housing, feeding and bathing of animals. Aulakh *et al.* (2011) also reported that majority of the dairy farmers (66.67%) had medium knowledge level regarding recommended management practices in four major areas i.e. breeding, feeding, general management and health care.

Therefore, it can be concluded from the present study that the knowledge level of farmers regarding common livestock toxicities was not high. Therefore, there is a dire need to educate dairy farmers about the presence of toxins in feed and fodder and their preventive measures through awareness campaigns and training programmes.

## REFERENCES

- Aulakh, G.S., Yadav, J.S. and Singh, R. (2011). Knowledge level of dairy farmers regarding recommended buffalo management practices. *J. Dairying Home Sci.* **30**: 147-149.
- Birthal, P.S. and Ali, J. (2005). Potential of Livestock Sector in Rural Transformation. In: *Rural Transformation in India: The Role of Non Farm Sector*. R. Nayar and A.N. Sharma (eds.). Manohar Publishers and Distributors, New Delhi.
- Chandrashekhar, B.R., Lakshminnarayan M.T., Krishnamurthy, B. and Shivaramu, K. (1998). Rabies: factors influencing the knowledge of veterinarians. *Mysore J. Agri. Sci.* **32**: 225-228.
- Singh, J., Verma, H.K., Singh, K.B. and Singh, N. (2005). Knowledge level of dairy farmers about selected management practices in Punjab. *J. Res. P.A.U.* **42**:347-354.
- Snedecor, G.W. and Cochran, W.G. (1994). *Statistical Methods*. (7<sup>th</sup> edn.), Oxford and IBH Publications, New Delhi.
- Spoelstra, S.F. (1985). Nitrate in silage. A review. *Grass For. Sci.* **40**: 1-11.
- Sultana, N. and Hanif, N.Q. (2009). Mycotoxin contamination in cattle feed and feed ingredients. *Pakistan Vet. J.* **29**: 211-213.