Original Research

Relationship of Daily Milk Production with Incidence of Transitional Diseases in Punjab

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Rec. Date:	Dec 21, 2018 06:35
Accept Date:	Mar 09, 2019 19:59
DOI	10.5455/ijlr.20181221063554

Abstract

The present study was undertaken to study the effect of milk production per day on occurrence of various transitional diseases. A total of 250 dairy farmers were personally contacted through structured interview schedule. Study revealed that milk production varied significantly ($p<0.01$) with mastitis and with anoestrous ($p<0.05$). The large milk producing dairy farms were not much affected as compared to small and medium dairy farms as they were having high quality animals and also because of the fact that management practices by the large dairy farmers were good as compared to small and medium farmers. It was concluded that awareness of large dairy farmers regarding management during transitional period was comparatively better than small and medium farmers. Also, high yield cannot be always the reason for poor fertility.

Key words: Dairy, Diseases, Milk Production**,** Transitional Period

How to cite: Thakur, N., Chawla, P., Kasrija, R., & Singh, P. (2019). Relationship of Daily Milk Production with Incidence of Transitional Diseases in Punjab. International Journal of Livestock Research, 9(5), 70-74. doi: 10.5455/ijlr.20181221063554

Introduction

India is a developing country with majority of its rural population dependent on agriculture and dairying for their sustenance. Punjab is one of the leading states in milk production; by contributing 11.28 MT per annum compared to the total milk production of the country (165.4 MT) (Statistical Abstract Punjab, 2017). But, still the milk production per animal is too less when compared to the developed and dairy primed countries. The enhancement in productivity of dairy animals is directly related with good management, reproduction, production and hygiene practices during transitional period. (Smith and Risco, 2005). The transitional period in dairy animals is defined as the last three weeks before parturition to three weeks after

parturition (Grummer 1995). Among the transitional diseases incidence of anoestrous, mastitis, retained placenta, repeat breeding, metritis, milk fever, dystokia and ketosis were 59.6%, 52%, 38%, 30%, 22.4%, 18%, 14.8% and 10.4% respectively in various areas of Punjab (Thakur, 2018). These transitional diseases lead to decreased milk production if not properly managed. If transitional management is not up to mark cows can have greater health problems at calving and lead to lower milk production leading to economic and financial losses to the dairy farmers especially small and marginal farmers. In an earlier study (Kasrija, 2016), it was reported that there is a significant difference in Reproduction Acquaintance Level (RAL) of the farmers running small, medium and large dairy units. However, literature regarding relationship of milk production with transitional diseases incidence is scanty but there is a direct effect on milk production due to incidence of transitional diseases. So, present study was planned to study milch profile parameters such as percentage of animals in milk, milk production/day, wet average and marketing of milk and relationship of daily milk production with incidence of transitional diseases.

Materials and Methods

The present study was conducted on 250 randomly selected dairy farmers from different districts of Punjab through regional Kisan melas, awareness and treatment camps, field visits and trainings. Dairy farmers were personally interviewed with the help of pretested interview schedule on various aspects related to transitional period (major transitional diseases encountered, history of transitional disease, management practices followed at the farm during this period etc.) was collected personally by interviewing the dairy farmers with the help of a structured interview schedule. The milch profile parameters such as percentage of animals in milk, milk production/day, wet average and marketing of milk was noted. The relationship of daily milk production with incidence of transitional diseases was assessed. The data were tabulated and put to suitable statistical analysis with the help of SAS 9.3 system carry N C, USA.

Results and Discussion

Milch Profile

Percentage of animals in milk is an important economical tool to estimate the profitability of a dairy farm. Table 1 reveals that 48.4% dairy farmers had less than 50% animals in milk, whereas, 38.4% farmers reported 50-70% animals in milk during the course of study. Hardly, 13.2% of farmers had milking animals above 70%. It indicates that perhaps a majority of the farmers (small and medium) lacked management skills and did not follow appropriate feeding strategies, and as a result percentage of animals in milk was lower. The category wise distribution of dairy farmers according to their milk production has been presented in Table 1. 48% of small and medium dairy farmers were accorded with low milk production of <50 litres, 28% farmers had medium milk production (50-100 litres), whereas, 13.6% farmers had medium high milk production (100-200 litres).

 DOI 10.5455/ijlr.20181221063554

Table 1: Frequency distribution of milch animals

Parameter	Category	Frequency (n=250)	Percentage
Percentage of animals in milk	<50 (Low)	121	48.4
	50-70 (Medium)	96	38.4
	>70 (High)	33	13.2
Milk production/ Day (L)	<50 (Low)	120	48
	50-100 (Medium)	70	28
	100-200 (Medium High)	34	13.6
	>200 (High)	26	10.4
Wet average (L)	<12 (Low)	184	73.6
	12-18 (Medium)	53	21.2
	19-22 (Medium High)	6	2.4
	>22 (High)	7	2.8
Marketing of milk	Self	53	21.2
	Middleman	53	21.2
	Milk Plant	144	57.6

Only 10.4% farmers had high milk production (>200 litres). Similar findings were also reported by Laldinpuii (2013) in which majority of the farmers had low milk production followed by medium milk production. The low milk production in majority of the small and medium farms was due to low herd strength and non-exploitation of genetic potential through breeding and feeding due to ignorance. About 73.6% farmers had low wet average (<12 litres) while only 2% farmers had wet average >22 litres. 21.2% farmers belonged to category of farmers having medium wet average (12-18 litres) and 2.4% farmers were having high medium wet range (19-22 litres). It indicates that the management and nutritional requirement were not being met, that influenced the milk production and further the wet average. Naik *et al*. (2013) also reported the same pattern.

It was observed that 57.6% farmers were selling their milk to dairy plants, whereas, 21.2% farmers preferred to sell their milk by themselves or via middleman respectively. Kaur (2006) also reported highest selling of milk by the farmers to dairy plants. The share of milk plants in collection of milk is high because farmers were aware of co-operative system and secured payments.

Effect of Daily Milk Production on Incidence of Transitional Diseases

From the Table 2 it could be analysed that milk production varied significantly with mastitis ($p<0.01$) and anoestrous ($p<0.05$). Study revealed that incidences of transitional diseases like mastitis and anoestrous were found to be high among animals who were giving <50 litre of milk (i.e. 40% for mastitis, 55.70% for anoestrous). Also for 50-100 litre milk/day (32.31% for mastitis, 25.50% for anoestrous); than for the animals who were having a yield of 100-200 or >200 litre of milk/day.

 DOI 10.5455/ijlr.20181221063554

Table 2: Table depicting daily milk production and incidence of transitional diseases

Transitional Diseases	Occurrence	<50 (L)	50-100 (L)	100-200 (L)	Above 200 (L)	Overall (n=250)	χ^2 value
Dystokia	Yes	16 (43.24)	12 (32.43)	3 (8.11)	6 (16.22)	37 (14.80)	2.88
	No	104 (48.83)	58 (27.23)	31 (14.55)	20 (9.39)	213 (85.20)	
Retention of Placenta	Yes	48 (50.33)	23 (24.21)	11 (11.58)	13 (13.68)	95 (38.00)	3.03
	No	72 (46.45)	47 (30.32)	23 (14.84)	13 (8.39)	155 (62.00)	
Mastitis	Yes	52 (40.00)	42 (32.31)	16 (12.31)	20 (15.38)	130 (52.00)	12.20**
	No	68 (56.67)	28 (23.33)	18 (15.00)	6 (5.00)	120 (48.00)	
Anoestrous	Yes	83 (55.70)	38 (25.50)	16 (10.74)	12 (8.05)	149 (59.60)	9.55*
	No	37 (36.63)	32 (31.68)	18 (17.82)	14 (13.86)	101 (40.40)	
Milk Fever	Yes	17 (37.78)	15 (33.33)	7 (15.56)	6 (13.33)	45 (18.00)	2.36
	No	103 (50.24)	55 (26.83)	27 (13.17)	20 (9.76)	205 (82.00)	
Ketosis	Yes	14 (53.85)	8 (30.77)	4 (15.38)	0 (0.00)	26 (10.40)	3.37
	No	106 (47.32)	62 (27.68)	30 (13.39)	26 (11.61)	224 (89.60)	
Metritis	Yes	27 (48.21)	15 (26.79)	5 (8.93)	9 (16.07)	56 (22.40)	3.42
	No	93 (47.94)	55 (28.35)	29 (14.95)	17 (8.76)	194 (77.60)	
Repeat Breeding	Yes	41 (54.67)	21 (28.00)	8 (10.67)	5 (6.67)	75 (30.00)	3.1
	No	79 (45.14)	49 (28.00)	26 (14.86)	21 (12.00)	175 (70.00)	

Figures in parenthesis indicate percentage, (L) = Litres; (*) =Significant at 5%, (**) =Significant at 1%

The higher milk producing animals were not affected because of the fact that farmers were keeping high quality animals and their management practices were good. Kelly and Whitaker (2001) reported similar results that high yield cannot always be the excuse for poor fertility. As, the awareness of small and medium farmers in comparison to large dairy farmers regarding transitional period was less and subsequently incidence of various production diseases was very high. Kasrija *et al.* (2016) also reported that majority of the dairy farmers had medium Reproduction Acquaintance Level (RAL), which was found to be positively correlated with extension contacts, social participation as well as mass media exposure of the farmers. Along with this, the training and education can play an important role in enhancing awareness

DOI 10.5455/ijlr.20181221063554

level of dairy farmers to control various transitional diseases (Thakur *et al.*, 2018). Proper extension programmes are also necessary in this particular vital period of the animals. If not properly managed, cows can have greater health problems at calving and lower milk production leading to economic and financial losses to the dairy farmers.

Conclusion

Present study highlighted that most of the farmers had less than 70% animals in milk , milk production less than 100 litres and low wet average (<12 litres). Majority of the farmers were selling milk to milk plants. The incidences of transitional diseases like mastitis and anoestrous were found to be high among animals producing <50 litre of milk and 50-100 litre milk/day than for the animals producing 100-200 or >200 litre of milk/day in a farm. It is concluded that proper management of dairy animals during this crucial period (Transitional period) is needed. Special initiatives should be taken by proper extension machinery to aware the farmers regarding transitional diseases, management, feeding and hygiene practices to uplift the economic conditions of the farmers.

References

1. Grummer, R. R. (1995). Impact of changes in organic nutrient metabolism on feeding the transition dairy cow. *Journal of Animal Sciences* 73:2820-2833.
2. Kasrija, R. (2016). Effectiveness of instructional material designed on the basis of felt needs of the dairy farmers of Punjab regarding common reproductive conditions. Ph.D. Dissertation, Guru Angad Dev Veterinary and Animal Sciences University, Ludhiana, India.
3. Kasrija, R., Verma, H. K. and Sharma, R. K. (2016). Reproduction Acquaintance level (RAL) of dairy farmers in western region of Punjab *Indian Veterinary Journal* 93 (04): 11-13.
4. Kaur, R. (2006). Analysis of herd level risk factors associated with occurrence of common infectious diseases of bovines in Punjab. M.V.Sc Thesis, Guru Angad Dev Veterinary and Animal Sciences University, Ludhiana, India.
5. Kelly, J. M. and Whitaker, D. A. (2001). A multidisciplinary approach to dairy health and productive management. *British Society of Animal Science* 26(1): 209-22.
6. Laldinpuii, N. (2013). Studies on dairy farming practices followed and training needs of dairy farmers in Punjab. M.V.Sc. thesis, Guru Angad Dev Veterinary and Animal Sciences University, Ludhiana, India.
7. Naik, P. K., Dhuri, R. B., Swain, B. K., Karunakaran, M., Chakurkar, E. B. and Singh, N. P. (2013). Analysis of existing dairy farming in Goa. *Indian Journal of Animal Sciences* 83(3): 299-303.
8. Smith, B. I. and Risco C. A. (2005). Management of periparturient disorders in dairy cattle. *Veterinary Clinic of North America*: *Food Animal Practice* 21: 503-21.
9. Statistical Abstract Punjab. (2017). Economical Statistical Organisation, Government of Punjab (India): Publication No. 956: 207-38.
10. Thakur, N. (2018). Studies on feeding practices adopted during transitional period by dairy farmers of Punjab. M.V.Sc. thesis, Guru Angad Dev Veterinary and Animal Sciences University, Ludhiana, India.
11. Thakur, N., Singh, P., Deshmukh, B. and Kasrija, R. (2018). Relationship of demographic profile of dairy farmers with transitional diseases in Punjab, India. *International Journal of Current Microbiology and Applied Sciences* 7(08):3032-3037.

DOI 10.5455/ijlr.20181221063554