

Participatory identification of reproductive problems among dairy animals and constraints faced by farmers in Haryana

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ABSTRACT

The study investigates the prominent reproductive problems among dairy animals and associated constraints in its medication. Study was undertaken in 12 villages of Karnal district (Haryana) in participatory mode. Responses were obtained from 300 dairy farmers who had at least one milch cattle. Results revealed that repeat breeding followed by anoestrus was observed as prominent reproductive problems. Mostly farmers had faced medium level of reproductive problems (74.33%). The major identified constraints were lack of facility of doctors during night, high incidence of repeat breeding, and lack of good quality bulls at village level. Mostly respondents faced medium level of constraints (61.67%) in medication of these reproductive problems. There is need of an efficient extension setup, well equipped with know-how, and with solid infrastructural back up which can cater the needs of dairy farmers. Imparting quality practical training and periodical assessment of performance of lay inseminators will improve their skill and knowledge level. Extension machinery has to be an ideal bridge between research/development institutions and dairy farmers for their catalytic effect.

Key words: Constraints, Dairy animals, Reproductive problem

It is estimated that about 30% wrong or incorrect timed inseminations are performed by lay inseminators under field conditions (Sharma *et al.* 2008). Significant confusion exists regarding the method of estimating the efficiency and accuracy of estrus detection in dairy bovines due to short duration and uneven estrus behaviour (Heersche and Nebel 1994). In spite of the fact that we are facing lots of man-made infertility problem in dairy animals, a perfunctory look shows that very high incidence of wrong inseminations (13.6 to 18.2%) is being performed in India (Kaul and Prakash 1993) and even in developed countries (4 to 28% or even more) by highly skilled persons (Ruiz *et al.* 2000). Infertility and repeat breeding problems in crossbred cattle were also reported by Meena *et al.* (2008). Sharma *et al.* (2008) reported that there is immediate need of imparting quality practical training and periodical assessment of performance of lay inseminators to improve their skill and knowledge of estrus detection and insemination. Otherwise, they would add significantly more man-made infertility to already existing

problem under field conditions. Jeyakumari *et al.* (2003) estimated the economic impact of postpartum reproductive disorders as 21.01 and 34.25% in university and private farms, respectively. The loss was more in prolapse, followed by retained placenta and metritis. Losses due to metritis and retained placenta were higher in animals maintained in private farms than in the university. Keeping these facts in mind present study was undertaken which aimed to identify the reproductive problems among dairy animals and associated constraints in its medication.

MATERIALS AND METHODS

The study was undertaken in purposively selected Karnal district of Haryana, the blocks were Karnal, Gharaunda, Nissing, Nilokheri and Indri were incorporated for investigation. Simple random sampling technique was applied to select the villages and dairy farmers. Two villages from each block and 25 dairy farmers (5 from each category, i.e. landless, marginal, small, medium and large) from each village were selected randomly. Hence, 300 dairy farmers constituted the study sample. The selected farmers had at least one milch cattle or buffalo. Data were collected by personal interview method with the help of suitable schedule developed for the purpose. Constraints were measured and recorded on a 3-point continuum, viz. 'Very serious', and

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'Not serious' according to the severity of constraints. The data were subjected to frequency, percentage, standard deviation and coefficient of variance distribution for assessment of reproductive problems and associated constraints.

RESULTS AND DISCUSSION

Farmers' distribution based on reproductive problems faced: Majority of the farmers (74.33%) faced medium level of reproductive problems followed by high level (23.67%). A negligible number of them (2%) had faced the low level of reproductive problems (Table 1).

Table 1. Distribution of farmers based on reproductive problem (N=300)

Category		f	(%)
Low	(<1)	6	2.00
Medium	(1-3)	223	74.33
High	(>)	71	23.67

Farmers' distribution based on the constraints faced.

Most of respondents (61.67%) experienced medium level of constraints whereas almost an equal number of respondents faced low and high level of constraints for ameliorating the reproductive problems (Table 2).

Table 2. Distribution of farmers based on constraints faced (N=300)

Category		f	(%)
Low	(<8)	58	19.33
Medium	(8-11)	185	61.67
High	(>11)	71	19.00

Reproductive problems as perceived by the dairy farmers: On an average dairy herd's fertility is declining with increased culling due to repeat breeding, one of the major factors, which are adding significant costs to milk production (Beever 2006). In Indian subcontinent, extreme climates affect the reproductive efficiency (Nanda *et al.* 2003).

Table 3. Reproductive problems perceived by dairy farmers (N=300)

Reproductive problems	f	(%)
Repeat breeding	206	68.66
Anoestrus	86	28.66
Retained placenta	79	26.33
Metritis/endometritis	71	23.66
Dystocia	51	17.00
Prolapse of vagina/uterus	48	16.00
Torsion of uterus	45	15.00
Cystic ovaries	32	10.66

Our study revealed that repeat breeding was the major fertility problem as perceived by 68.66% farmers (Table 3). This high incidence was mainly because of poor conception through artificial insemination, which might be due to several reasons such as poor quality of semen, untrained inseminators and farmers' inability to present the animals at proper time of heat for artificial insemination. Venkatasubramanian and Rao (1993) and Venkatasubramanian (1994) also reported similar findings.

Anoestrus was found to be the second most serious problem that was due to imbalance feeding of dairy animals that resulted in mineral deficiencies. The animals were being maintained on dry fodder and a little bit of concentrate. Other reasons were silent heat, failure to detect heat period and management factors. The major possible cause of reproductive problem is imbalanced concentration of minerals (Ahmet *et al.* 2008). It is well recognized that proper feeding of animals is essential to maintain their reproductive status (Vankatasubramanian 1994, Singh *et al.* 1995 and Singh and Barar 2008). Kilic *et al.* (2007) recommended zinc as a trace element for normal reproductive function. Incidence of retained placenta was reported by 26.33% of the respondents. They reported the causes of the retained placenta as mineral deficiencies, pre-mature birth, abortion, lack of tonosity in uterus muscles, infection in uterus, etc. this also indicates the poor feeding of the dairy animals. Metritis/endometritis were perceived by 23.66% respondents as fourth important fertility problem. Farmers reported it after problem identified by veterinarian, because it is inside problem and is difficult to detect by them. About one-fifth (17%) farmers ranked dystocia cases as fifth important reproductive problem. The major reason behind this incidence was large size or abnormal foetus, which may lead to dystocia. The other causes were failure of proper parturition stage and abnormal anatomical condition of the dairy animals. Prolapse of vagina/uterus was reported by 16% respondents. The major reasons for that were infection in the vagina/uterus and lack of muscular tonicity because of mineral deficiency. Torsion of uterus as fertility problem was reported by 15% respondents and it was mainly due to abnormal physical condition of the dairy animals. Cystic ovaries were reported by about one-tenth of the respondents. Generally, farmers were unable to identify this complex reproductive problem. They reported it after consulting with the veterinary assistant surgeon. The situation was aggravated due to lack of veterinary hospitals at village level. In this situation, farmers were unable to approach veterinary surgeons in the city or other villages, and tried to find out the solution by indigenous technical knowledge. Sometimes farmers lead to great economics loss.

Rank order of constraints perceived by dairy farmers

An attempt has been made to rank the reproductive problems on the basis of their mean values and % coefficients

Table 4. Constraints faced by dairy farmers (N=300)

Constraints	Mean	SD	CV	Rank
Lack of facility of veterinary doctor during night	1.44	0.67	46.82	I
High incidence of repeat breeding	1.30	0.77	59.67	II
Lack of good quality bulls	1.30	0.80	61.29	III
Poor conception rate of AI	1.24	0.82	65.89	IV
Lack of semen at village level	1.22	0.76	62.43	V
Lack of veterinary hospital at village level	1.20	0.92	76.26	VI
Lack of knowledge regarding reproductive traits	0.62	0.69	111.41	VII
Lack of knowledge regarding balanced feed	0.56	0.73	129.76	VIII
Lack of knowledge regarding silent heat	0.33	0.61	182.59	IX
Missing the heat due pre-engagement in some other domestic work	0.27	0.53	197.62	X

of variation (Table 4). The data revealed that lack of facility of veterinary doctor during night, was ranked as first constraint with 1.44 mean value and 46.82% coefficient of variation. There was less variation or more agreement on particular constraint among the farmers. It is always seen that most of the veterinary surgeons avoid staying or settling in villages due to lack of infrastructure facilities for living in rural areas. Most of them were coming late in office and leaving office earlier than the scheduled office timings. High incidence of repeat breeding was ranked as second constraints with 1.30 mean value and 59.67% coefficient of variation. It is due to lack of awareness among farmers with respect to heat and appropriate time of insemination. Those staffs who were engaged in artificial insemination (AI) were not well trained so the quality of semen results in poor conception. Subsequently, incidence of repeat breeding was very high in the locale of the study. This finding is supported by Verma (1993) and Balakrishna (1997). Lack of good quality bulls ranked as third constraint with 1.30 mean value and 61.29% coefficient of variation. Respondents reported that there was no dearth of scrub bulls, but lacking good quality bulls. Persistently respondents preferred these scrub bulls due to non-availability of good quality bulls. It was also felt that there was lack of progeny tested bulls. This problem also identified by Sharma and Makhija (1991). Poor conception rate of AI was reported as fourth constraint. The calculated value of mean and coefficient of variation were 1.24 and 65.89%, respectively. One of the reasons was that insemination was done only once regardless of the recommendation for double insemination. Hence

insemination is preferred twice during the heat period to improve the conception rate. The poor quality of semen, improper timings of artificial insemination, untrained staff, and single insemination resulted in poor conception rate of AI. The findings of Kumar (1995) and Ghosh (1997) also support these results. Lack of semen at village level was reported as fifth constraint with 1.22 mean value and 62.43% coefficient of variation. Farmers were having no alternative than natural service in the case of unavailability of semen. The scrub bulls were also responsible for spreading contagious disease through natural service. This constraint was affecting the overall performance of production and lactation length. The finding receives support from the observations of Chugh (1995) and Kumar (1995).

Lack of veterinary hospital at village level was ranked as sixth constraint with 1.20 mean value and 76.26% coefficient of variation. In the absence of veterinary hospital, farmers were forced to adopt indigenous technical knowledge for solving reproductive problems or consulted with village quack. Several times farmers/quacks were unable to identify the reproductive problems, resulted in the death of animals and thus keeping the farmers under economic pressure. Due to farmers pre-engaged in some other domestic work, they avoid to approach in other village/towns for the treatment of reproductive problems and try to find out solutions on their own level. Lack of knowledge regarding reproductive traits was ranked as seventh constraint. It had the 0.62 value and 111.41% coefficient of variation. The farmers were deficient in knowledge regarding these traits, i.e. age at first heat, age at first calving, dry period, calving interval, AI per conception etc., due to improper knowledge of these aspects. Lack of knowledge regarding balanced feed was ranked as eighth constraint. The mean value and coefficient of variation were calculated as 0.56 and 129.76%, respectively. Roughages, concentrate, mineral mixture etc., are the essential components of balanced feed. Farmers had poor knowledge about these components. Rao (1987) also reported the lack of knowledge regarding balanced feed as constraint regarding fertility problem. Lack of knowledge regarding silent heat was ranked as ninth constraints with 0.33 mean value and 182.59% coefficient of variation. The low mean value and high coefficient of variation indicates that the constraint is not serious. It is the condition in which animals show some heat symptoms but farmers are unable to detect these symptoms and missed the heat cycle. Missing the heat due to farmers pre-engagement in some other works was ranked as tenth constraint with 0.27 mean value and 197.62% coefficient of variation. This constraint is more pernicious in days of more involvement of the farmers in agricultural activities, i.e. sowing, harvesting etc.

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