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BREEDING MANAGEMENT PRACTICES AND REPRODUCTIVE DISORDERS IN INDIGENOUS CATTLE AND BUFFALOES

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ABSTRACT

A field study was conducted to find out the breeding management practices and reproductive disorders in cattle and buffaloes. About 160 famers were selected through multistage sampling design from 16 villages in 4 mandals. The data was collected from the respondents through personal interview. Majority of the farmers have not adopted recommended scientific breeding management practices due to lack of awareness. The study revealed that reproductive performance of the dairy animals in the study area was poor. Further there was high prevalence of reproductive disorders such as repeat breeding, anoestrus, retention of placenta, endometritis etc in dairy cattle and buffaloes. Certain preventive measures like efficient detection of estrus, routine pregnancy diagnosis at three months, regular deworming and synchronization of estrus could be advantageous in preventing the occurrence of reproductive disorders. It is also further required to create awareness among farmers on adoption of improved breeding managemental practices for increasing reproductive performance by implementing suitable extension techniques and strategies.

KEY WORDS: Breeding management, reproductive disorders, cattle and buffaloes.

INTRODUCTION

India is predominantly an agrarian society where animal husbandry forms the backbone of agricultural economy. Animal Husbandry plays an important role in the socio economic development of India. Distribution of livestock is more equitable when compared to that of agricultural land. Livestock farming requires less capital, and the management and production expenses are low as compared to agriculture. Hence animal husbandry is carried out by all farmers regardless of their economic status and development of livestock sector would be more inclusive. Dairying has become an important source of income for millions of rural families and has assumed an important role in providing employment and income generating opportunities. Despite of the vital importance of livestock and dependency of farmers, the productivity is far below than the actual potential. Several factors are responsible for this low production. Reproduction is one of the most important considerations determining the profitability of dairy animal production. Efficient reproductive performance of animal is an important prerequisite for efficient livestock production. Further, adoption of recommended breeding management practices ensure better health of animals that leads to increased productivity of animals. Understanding the livestock management practices followed by farmers is necessary to identify the strengths and weaknesses of the rearing systems and to formulate suitable intervention policies. Hence the present investigation was undertaken to study the breeding management practices and reproductive disorders in cattle and buffaloes.

MATERIALS & METHODS

The study was conducted in Kadapa district of Andhra Pradesh. The mandals selected for this study were Proddatur, Mydukur, Pulivendula and Jammalamadugu. A multistage sampling design was applied to select the villages and dairy farmers in the study area. Four villages from each mandal and ten farmers from each village were selected randomly constituting 160 dairy farmers. The selected farmers had at least two milch cattle or buffaloes. Information on breeding management and reproductive disorders was collected by personal interview method with the help of a well structured and pretested interview schedule. The data thus collected, was analyzed as per the procedures laid down by Snedecor and Cochran (1994).

RESULTS & DISCUSSION

The breeding managemental practices adopted by dairy farmers were presented in Table 1. The results indicated that majority of the farmers (90.63%) are rearing non descriptive animals which might be due to lack of awareness about the advantage of raising crossbreed animals. The reason for not showing interest on cross bred animals rearing could be the non adaptability of cross bred animals to the local prevailing environmental conditions. The present findings were in close agreement with those reported by Dhaka *et al.* (2017) and Bidwe *et al. (*2009). It was found that 50.63% of the farmers considered bellowing as sign of estrus followed by mucus discharge (37.5%) and mounting on other animals (6.25%). Only a few farmers observed the swelling of vulval lips (1.87%) as heat symptom. Similarly findings were reported by Dhaka *et al.* (2017), Kumar *et al.* (2014), Patel *et al.* (2014), Tanwar *et al. (* 2012) and Brar and Nanda (2004).

TABLE 1: Breeding managemental practices adopted by dairy farmers

S.No	Breeding practices	Frequency (N=160)	Percentage
1.	Breed		
	a) Cross breed	15	9.37
	b) Non descriptive	145	90.63
2.	Signs of heat detection		
	a) Mucus discharge	60	37.50
	b) Bellowing	81	50.63
	c) Swelling of vulval lips	03	1.87
	d) Frequent urination	06	3.75
	e) Mounting on the other animals	10	6.25
3.	Breeding methods		
	a) Natural service	129	80.63
	b) Artificial insemination	31	19.37
4.	Time of insemination		
	a) Between 12-18 hours after estrus	102	63.75
	b) After 18 hours after estrus	58	36.25
5.	Pregnancy diagnosis		
	a) Veterinarian	13	8.12
	b) Own judgment	35	21.88
	c) Not done	112	70.00
6.	Drying off milch animals		
	a) Yes	32	20.00
	b) No	128	80.00
7.	Maintenance of breeding bull		
	a) Yes	08	5.00
	b) No	152	95.00
8.	Record keeping		
	a) Yes	02	1.25
	b) No	158	98.75
9.	Breeding after calving		
	a) 2-3 months	10	6.25
	b) 3-6 months	60	37.50
	c) After 6 months	90	56.25
10.	Calving interval		
	Cattle		
	a) Below 15 months	32	20.00
	b) More than 15 months	128	80.00
	Buffalo		
	a) Below 18 months	42	26.25
	b) More than 18 months	118	73.75

With regard to breeding of dairy animals, 80.63% of respondents resorted to natural service for conceiving their animals where as 19.37% preferred artificial insemination which might be due to the fact that the farmers have not proper knowledge about artificial insemination. In addition to it, the farmers had bred their animals with the locally available bull in their village due to scarce availability of artificial insemination facilities for upgrading their local animals in terms of productivity and resistant to diseases. In the study area, there was poor conception rate due to lack of good quality semen, and hence the farmers again go to natural service by bulls. The results are in consonance with those reported by Dhaka *et al.* (2017), Patel *et al.* (2014), Tanwar *et al.* (2012), Rathore *et al.* (2010), Sinha *et al.* (2010), Yadav *et al.* (2009), Gadariya *et al.* (2007) and Kumar *et al.* (2006). On the contrary to this Prajapathi *et al.* (2015) reported that 88% of the rural and 70% of the urban farmers used scientific method of artificial insemination for conception of their dairy animals.

About 67.75% of farmers were inseminated their animals between 12-18 hours after manifestation of heat symptoms, where as 36.25% of the farmers inseminated after 18 hours of heat. This shows the awareness of farmers regarding time of insemination as breeding of dairy animals between 12-18 hours after the onset of estrus results in better conception. These findings are in line with those reported by Dhaka *et al.* (2017), Prajapathi *et al.* (2015), Patel *et al.* (2014), Tanwar *et al.* (2012) and Sabapara *et al.* (2010). After insemination of dairy animal, pregnancy diagnosis is essential step for reducing calving interval at door step of the farmers. However, a few farmers (8.12%) followed pregnancy diagnosis where as 21.88% farmers ascertained pregnancy based on their own judgment (non return to estrus). About 70% of the respondents have not used the services of Livestock Assistants or Gopala Mitra workers or qualified veterinarians for pregnancy diagnosis at about three months after breeding the female. Similar findings were

reported by Dhaka *et al.* (2017), Patel *et al.* (2014), Kishore *et al.* (2013) and Tanwar *et al.* (2012).

Since drying off the milch animal is essential step for improving the reproductive performance of dairy animal, only 20% of the farmers are drying their milch animals. The probable reason might be due to the fact that most of the farmers are interested to get supplementary income through sale of milk. The results are in corroboration with those reported by Dhaka *et al.* (2017). Only 5% of the dairy farmers were maintaining the breeding bulls which might be due to the fact that majority of the farmers in the study area are having 2-3 animals and hence not felt the need of breeding bull. Farmers having more than 5-6 animals, are maintaining breeding bulls. It was interesting to know that only 2% of farmers are keeping the records, however the records were not complete. The probable reason was that the farmers are not interested to write the records of breeding management. Similar findings

reported by Dhaka *et al.* (2017) and Patel *et al.* (2014). The present study indicated that 56.25% of the respondents rebred their dairy animals after six months of calving, while 37.5% of farmers between 3-6 months. Only 6.25% farmers rebred the females before three months of calving. The reason might be due to lack of awareness about breeding management practices. These results were not conformity with those reported by Prajapathi *et al.* (2015) and Gupta *et al.* (2008) who reported that higher proportion of dairy farmers rebred their animals between 2-3 months. The calving interval below 15 months and more than 15 months was observed as 20% and 80% of dairy cattle respectively, where as 26.25% of buffaloes had below 18 months and 73.75% more than 18 months calving interval. The present findings are similar to those of Sabapara *et al.* (2009) but not in line with those reported by Prajapathi *et al.* (2015).

TABLE 2: Mean reproductive performance of cattle and buffaloes

S.No	Parameters	Mean reproductive performance	
		Cattle (N=250)	Buffalo (N=300)
1.	Age at first service (months)	40.0	43.0
2.	Age at first calving (months)	49.0	53.0
3.	Service period (days)	220	230
4.	Services per conception (No.)	2.8	2.5
5.	Calving interval (days)	425	470
6.	Lactation length (days)	310	295
7.	Dry period (days)	270	280

The mean reproductive performance of cattle and buffaloes was presented in Table 2. The results of the study indicated that mean age at first service of cattle and buffaloes was 40 and 43 months respectively. The mean age at first calving was observed as 49 and 53 months in cattle and buffaloes respectively. The first calving was too late as compared to acceptable level. The age at first calving in good herds was 36.40 months (Viswanath, 2002). The large difference might be due to the low level of management and poor feeding of calves and heifers at the earlier stages, which consequently had reduced their growth rate and delayed puberty. The service period was widely varied and recorded as 220 and 230 days in cattle and buffaloes respectively in the study area. The results revealed that two or more services were required for conception of majority of cattle and buffaloes. The number of services per conception recorded in cattle and buffaloes were 2.8 and 2.5 respectively. The present findings are in conformity with those reported by Dhaka *et al.* (2017). The calving interval observed in the study was 425 and 470 days in cattle and buffaloes respectively, which clearly reflects the evidence of poor reproduction performance of cattle and buffaloes. However, similar finding (429.58±6.10 days)) were reported by Sreedhar *et al.* (2013) in JerseyxSahiwal crossbred animals.The longer duration of calving interval might be due to improper feeding managemental practices. The mean lactation length was observed as 310 and 295 days and dry period was 270 and 280 days in cattle and buffaloes.

The reproductive problems perceived by dairy farmers were presented in Table 3. The study revealed that repeat breeding was the major fertility problem as perceived by

71.87% of farmers. 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 farmer's inability to present the animals at proper time of heat for artificial insemination. Meena and Malik (2009), Venkatisub ramanian (1994) and Venkatisubramanian and Rao (1993) also reported similar findings. Anoestrus was found to be the second most serious problem as perceived by 29.38% of dairy farmers which was due to imbalanced 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 (Venkatisubramanian 1994, Singh *et al.,* 1995 and Singh and Brar, 2008). Kilic *et al*. (2007) recommended zinc as a trace element for normal reproductive function.

Incidence of retained placenta was reported by 26.25% of dairy farmers in the study area. The probable reasons for retained placenta are mineral deficiencies, pre-mature birth, abortion, lack of tonosity in uterus muscles, infection in uterus, *etc*. which indicates the poor feeding of dairy animals. About 22.5% of farmers expressed endometritis in the study area. Farmers reported it after problem identified by veterinarian, because it is gynecological problem and is difficult to detect by them. Prolapse of uterus was perceived by 16.25% of farmers as fifth important reproductive problem. The major reason

for that were infection in the vagina/uterus and lack of muscular tonicity because of mineral deficiency. About 15.62% of the farmers expressed that abortion was another reproductive disorder in dairy animals which were in line with Hunduma Dinka (2013). Torsion of uterus was reported by 15% respondents and it was mainly due to abnormal physical condition of the dairy animals. Another reproductive problem expressed by the farmers (12.5%) was dystocia which might be due to the large size or abnormal fetus. The other causes were failure of proper parturition stage and abnormal anatomical condition of the

dairy animals. These findings were similar to the reports of Meena and Malik (2009). Cystic ovaries were reported by about 1/10th of the respondents which were in consonance with those reported by Meena and Malik (2009). The incidence of abortion was found to be 15.62% which is higher than 1.14% reported by Khan (1994). Only 2.5% of dairy farmers expressed pyometra as one of the reproductive problems studied in the area. Generally, farmers were unable to identify these complex reproductive problems.

TABLE 3: Reproductive problems perceived by dairy farmers

S.No	Problem identified	Frequency (N=160)	Percentage
1.	Repeat breeding	115	71.87
2.	Anoestrus	47	29.37
3.	Retention of placenta	42	26.25
4.	Endometritis	36	22.50
5.	Prolapse of uterus	26	16.25
6.	Abortion	25	15.62
7.	Uterine torsion	24	15.00
8.	Dystocia	20	12.50
9.	Cystic ovary	17	10.62
10.	Pyometra	04	2.50

CONCLUSION

From the study it can be concluded that majority of the farmers are rearing non descriptive animals and breeding through natural service rather than artificial insemination. A few farmers followed pregnancy diagnosis, drying off the milch animal and rebred the animal before three months. The reproductive performance of dairy animals was relatively poor. The adoption of breeding management practices followed by dairy farmers was not satisfactory which might definitely influence adversely the productivity of dairy animal. Further there was relatively higher prevalence of reproductive disorders like repeat breeding, anoestrus, retained placenta etc of dairy cattle and buffaloes in the study area. Certain preventive measures such as efficient detection of estrus either visually or by bull parading and other techniques, routine pregnancy diagnosis (40–60 days of post breeding), prevention of occurrence of post-partum uterine infections and periparturient diseases (ketosis and mastitis), regular deworming and synchronization of estrus especially in buffaloes where heat detection is more difficult, could be advantageous in preventing the occurrence of anestrus. Hence there is a need to create awareness among dairy farmers on recommended breeding practices and reproductive management by conducting training programme to the farmers and extension functionaries.

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