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Reproductive disorders in dairy animals and their management in district Bhadohi, Uttar Pradesh: A field study

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Abstract

During a diagnostic survey, 3810 dairy animals were examined in district Bhadohi of Uttar Pradesh. It was noticed that 75.5% animals have pre-pubertal / postpartum anoestrus, due to nutritional (Minerals and Protein) deficiencies and helminthes infestations. Therefore, to assess the effect of supplementation of mineral mixture/ green feeding followed by anthelmintic drugs were included in trial. The result was surprising. Out of each 50 cattle & buffalo heifers, 80 & 88% conceived within 3-4 months of supplementation mineral mixture and 86 and 94% by green feeding and deworming as against only 12% in farmers practice. In case of postpartum anoestrus, out of 60 cattle and buffaloes in each group, 83 and 90% conceived with mineral mixture and 92 and 98% with green feeding followed by deworming as against 13 and 18% at farmers practice within 3-4 months of trial. Based on study, it is concluded that supplementation of mineral mixture or green feeding along with ant helminthes drugs should be followed by the dairy farmers to obtain full reproductive potential of their animals.

Keywords: Infertility, dairy animal, mineral mixture

Introduction

Livestock development in India is a basic strategy for eradicating rural poverty and generating employment opportunity. India achieved record milk production of 155.5 million tones during 2015-16 with a growth rate of 6.27 %. In our country, farmers are following the integrated farming system of crop and dairy enterprises on sustainable basis. Besides milk production, livestock contribute agriculture by draft power and recycling of farm waste and biomass into valuable plant nutrients. Dairy animals are generally, fed different crop residues (wheat straw, paddy straw etc), mixed grasses and allowed to graze ^[1]. Farmers do not follow the feeding strategies, already developed to improve their reproductive performance, due to cost factor¹. As a result, animals obtain very late sexual maturity and higher degree of reproductive disorders and produce low milk yield, which make the dairy farming unremunerative. Keeping in view, a study was conducted to identify the technological gap and to develop a location specific module for improving the reproductive efficiency of dairy animals at farmer's field in District Bhadohi, Uttar Pradesh.

Materials and Methods

Investigation was conducted in 17 villages, covering each 06 blocks, using participatory rural appraisal (PRA) technique. Information's were also included, through organizing Veterinary Health Camp and farmer's visit to KVK for treatments of their animals. Based on observation, the following feeds/ feed supplements were offered in routine ration of problematic dairy animas, for a period of 04 months, involving 15 farmers in each group having 4-6 dairy adults and their followers to improve their reproductive performance. The heifers of cattle and buffaloes passed the specified age of puberty i.e. > 4.5 and >5.0 years respectively, but have not exhibited the heat symptoms were considered as Pre-Pubertal Anoestrus (PPA). Similarly, those cattle and buffaloes, after calving of 5 to 6 months, did not show the estrus were counted into Post-Calving Anoestrus (PCA). During the study, following three treatments were given. T-1: Farmers Practice (Control)-Animals fed wheat bhusa, paddy straw, other crop residues, weeded crops/grasses, concentrate as per domestic availability and little bit grazing. T-2: Farmer Practice+ Mineral Mixture (ISI Marked) @30-40 g/h/d or as per companies recommendation for a period of 04 months + Deworming. T-3: Farmer Practice + 15-20 kg Green Fodder (Berseem+Oat/ Cowpea+Jowar, 50:50) under NIFTD programme of IGFR, Jhansi for a period of 04 months + Deworming.

Results and Discussion

The data shows that the age of puberty, first calving, and conception after parturition and calving intervals were much higher than the specified period in both cattle and buffaloes (Table-1). Similar observations were also reported in cattle and buffaloes of Uttarakhand [2]. Among all health problematic animals, about 77.3% (1520) cattle and 75% (1355) were suffering from various kinds of reproductive failure, out of 2162 and 1807 animals examined, respectively. Similar reproductive problem (78.57%) was noticed in buffaloes in Haryana [3]. Among the reproductive problems, pre-pubertal and post calving anoestrus were prominent as 75.6% and 70.8% in cattle and 73% and 72.6% in buffaloes, respectively. The other associated problem were as repeat breeding (14.6%), followed by retained placenta (4.6%), metritis (4.5%), prolapsed uterus (2.8%). As compared to present findings, lower incidence (5.4%) of repeat breeding was reported in buffaloes [4].

The estrus and conception rate of dairy animals was very poor in rural areas, due to deficiency of certain macro and micro minerals along with helminthes infestation. Similar opinion of micro-nutrient deficiencies was also expressed in dairy animals [5, 6]. After passing a long age, only 12 and 14% cattle and buffalo heifers showed estrus and 12 and 12% conceived, respectively (Table-2) with farmer's practice. Nutritional deficiency and helminthes infection affects the reproductive efficacy of dairy animals, delayed sexual maturity and enhanced conception period. During supplementation of mineral mixture and helminthes drugs (T-2) for a period of 04 months, these animals showed very positive results. Out of 50 heifers, both in cattle and buffalo, 84 and 88% showed estrus and 80 and 88% has conceived, respectively. Similarly, in case of post calving anoestrus, 85 and 90% cattle and buffaloes came into heat and out which 83 and 90% conceived, respectively. Supplementation of mineral mixture and deworming, induced estrus, decreased service period and inter calving period was also reported [7].

Table 1: Reproductive traits and disorders in cattle and buffaloes.

Reproductive Traits	Cattle	Buffaloes
Age at puberty (Years)	3.5 (2.8-4.2)	3.8 (3.2-4.5)
Age at first calving (Years)	4.2 (3.8-4.5)	4.6 (3.5-4.9)
Conception after parturition (months)	5.1(4.2-5.5)	6.2 (4.8-7.1)
Calving Interval(months)	16.7 (15.3- 17.9)	16.2 (15.5-18.2)
Reproductive Problems	Cattle/ Heifers	Buffaloes/Heifers
Pre-pubertal anoestrus	427 (75.6%)	364 (73%)
Post calving anoestrus	1526 (70.8%)	1493 (72.6%)
Retained Placenta	102 (4.6%)	78 (3.8%)
Prolapsed Uterus	60 (2.8%)	66 (3.2%)
Repeat Breeding	314 (14.6%)	259 (12.6%)
Metritis	96 (4.5%)	101 (4.9%)
Abortion	57 (2.7%)	60 (2.9%)
Total Adult/ Heifers	1155/365	1057/298

Table 2: Impact of feed and feed supplement on reproductive performance of dairy animals.

Dairy Animals	Type of Anoestrus PPA/PCA	Treat-ments	T-1 (Farmers Practice)		T-2 (T1 +Min. Mixt. +Deworming)		T-3 (T1 +Green Feeding +Deworming)	
			No of Animals	Animals exhibited estrus (2-3 month) and conceived (3-4 month) under various treatments		Estrus	Conceived	Estrus
			Estrus	Conceived	Estrus	Conceived	Estrus	Conceived
Cattle	PPA	50	6(12)	6 (12)	42 (84)	40 (80)	49(92)	48(86)
	PCA	60	9(15)	8(13)	51(85)	50(83)	56(93)	55(92)
Buffalo	PPA	50	7(14)	6(12)	44(88)	44(88)	47(94)	47(94)
	PCA	60	11(18)	11(18)	54(90)	54(90)	59(98)	59(98)

The impact of green feeding and deworming (T-3) was more effective for both heat induction and conception in dairy animals. In case of pre-pubertal anoestrus 86% cattle and 94 % buffaloes have conceived. Similarly, 92% cattle and 98.8% buffaloes having post-calving anoestrus were conceived within a period of 3-4 months. Green feeding has given better results as compared to mineral mixture proved that animals have also deficient in protein. Nutrients deficiencies and helminthes infestation affects adversely the reproductive efficacy and sub optimal productivity were noticed [8, 9].

Conclusions

Studies revealed that nutritional deficiencies and helminthes infestations are the major cause of poor reproductive performance of our dairy animals, resultant huge economic losses. Therefore, supplementation mineral mixture or green feeding along with ant helminthes drugs should followed by the dairy farmers to control pre-partum and postpartum anoestrus and to obtain full reproductive efficiency of their

dairy animals. By intervention of these technologies in dairy animal that alleviate the infertility in dairy herd and uplift the farmers economics

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