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REPRODUCTIVE PERFORMANCE OF BUFFALOES AND COWS AS AFFECTED BY OXYTOCIN TREATMENT

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The effect of the use of oxytocin on some reproductive traits of buffaloes and cows in urban aad rural areas of Faisalabad was determined. One hundred and sixty respondents, eighty each from urban and rural localities, were interviewed using a pretesd questionnare. Oxytocin had no effect on the calving interval in 63.9% of the buffaloes and 58.8% of the cows, whereas in rest of the animals the calving interval was reported to increase. Similar trend was observed for conception rate. More than 50% of the dairy animals receiving oxytocin tended to abort, mostly in earlier stages of pregnancy. The incidence of prolapse of uterus was found to be 22.0% in buffaloes and 17.6% in cows. The overall health of the buffaloes and cows having poor body condition was reported to be adversely affected as a result of prolonged oxytocin treatment.

INTRODUCTION

The milk letdown process is generally stimulated by calf suckling or massaging the udder and tests by the milker and in some cases by audio-visual stimuli such as noises associated with milking/feeding or the presence of milker as such. The latent period of milk ejection reflex is longer in buffaloes than in cows and. this duration varies even among individuals of the same species (Aliev, 1969) Some animals do not respond to normal stimulation. Fright, anger, noise, pain, irritation, varying conditions of housing and different methods of milking may also cause total or incomplete inhibition of milk ejection.

To temporarily overcome such partial or complete inhibition of milk letdown the use of synthetic has become very widespread with milk producers, who are mostly illiterate people. They seem employ it mainly for their own convenience

in preparing the animal for quick letdown of milk. It appears that milk producers have become more addicted to its use rather than their milch animals. Thus oxytocin is being used indiscriminately. The present study, based on a survey through personal interviews with milk producers was planned to investigate the harmful/beneficial effects on the reproductive performance of buffaloes and cows as a result of extensive and indiscrimininate use of oxytocin.

MATERIAL AND METHODS

A survey was conducted in urban and rural areas within the radius of 15 km from the Clock Tower of the city of Faisalabad, using a pretested questionnaire. One hundred and sixty respondents, eighty each from urban and rural areas were interviewed. The respondents were further divided into four categories in each area in accordance with herd-size i. e., each having less than 5, 6 to 10, 20 and more than 20 lactating animals. Each area was further divided in five zones and an equal number of respondents of each of the four categories were interviewed from these zones. The data thus collected were tabulated and expressed in percentages in respect of the following reproductive aspects :

i. Calving interval
ii. Conception rate
iii. Abortion
iv. Prolapse of uterus
v. Animal health

RESULTS AND DISCUSSION

Calving interval : The information gathered concerning the effect of oxytocin on reproductive efficiency of the lactating animals revealed that oxytocin had no effect on the calving interval of 63.9% buffaloes and 58.8% cows (Table 1). However, in 36.1% of the buffaloes and 41.2% of the cows, the calving interval was reported to have increased. The increase was 120 days in 23.6% buffaloes as well as cows, whereas an increase upto 180 days was indicated in 1-2% buffaloes and cows. No decrease in calving interval was reported as a result of the oxytocin treatment. The increase in calving interval was reported to be in animals with low heat tolerance. This may have resulted in the suppression of normal reproductive activity of the animals.

Table 1. *Effect of oxytocin treatment on reproductive performance of buffaloes and cows*

Particulars*		Species											
		Buffaloes						Cows					
		Urban		Rural		Total		Urban		Rural		Total	
		No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Calving interval	No effect	113	74.8	76	52.4	189	63.9	19	76.0	11	42.3	30	58.8
	Increased	38	25.2	69	47.6	107	36.1	6	24.0	15	57.7	21	41.2
Conception rate	No effect	106	70.2	73	50.3	179	60.5	16	64.0	14	53.9	30	58.8
	Decreased	43	28.5	66	45.6	109	36.8	8	32.0	11	42.3	19	37.2
	Increased	2	1.3	6	4.1	8	2.7	1	4.0	1	3.8	2	4.0

*No decrease in calving interval was observed.

Conception rate : The conception rate of 60.5% of the treated buffaloes and 58.8% treated cows was not affected by the use of oxytocin (Table 1). In contrast, in almost 37.0% of both the buffaloes and cows from rural area, conception rate decreased,whereas,believed in general, the milch animals did not get individual attention of their owners as they usually did get in urban area. The lack of individual attention to several managemental aspects of milch animals could be partly responsible for decreased conception rate.

Armstrong and Hansel (1959) reported that the secretion of gonadotrophins by the anterior pituitary was regulated by oxytocin, which in treated animals could alter their oestrous cycles. Cameron and Fosgate (1964) observed that conception rates in the bovines were not affected by the oxytocin treatment. Selunskaya *et al.* (1980) found an interval of 94 days between calving and conception, in cows treated with oxytocin compared with 103 days for control group. The respondents pointed out that in some animals no signs of oestrus were noticed during the treatment period. Similarly, some respondents were of the opinion that some treated animals showed the usual oestrus signs, however, no conception took place. Some improvement in conception rate was also reported by a few but as data in Table 1 indicated, it was just negligible in terms of number/ percentage of animals involved.

Abortion : It was found that in 39.9 and 49.0% of treated buffaloes and cows, respectively, no incidence of abrotion was reported resultant to the use of oxytocin, whereas in 60.1 and 51.0% of the animals, a tendency towards increased occurrence of abortion subsequent to the use of oxytocin was noticed (Table 2). It was reported that in buffaloes the frequency of the incidnce of abortion was comparatively about twice as much in first trimester as in the last two trimesters of pregnancy, whereas in cows the reverse seemed true. In this species the incidence was higher towards the later part of the gestation period. However, the overall occurrrence of abortion cases was markedly higher in buffaloes than in cows. The animals having poor body condition and those with low heat tolerance, were reportedly more prone to abortion when they were exposed to prolonged oxytocin treatment. However, Schipper *et al.* (1954) observed that none of the cows treated with oxytocin aborted

Prolapse of uterus : The frequency of occurrence of this disorder was found nearly one-third of abortion both in buffaloes and cows. Prolapse of

Table 2. *Effect of oxytocin on reproductive disorders in buffaloes and cows*

Particulars*		Species											
		Buffaloes						Cows					
		Urban		Rural		Total		Urban		Rural		Total	
		No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
No effect		56	37.1	62	42.8	118	39.9	12	48.0	13	50.0	25	49.0
Increased abortion		95	62.9	83	57.2	178	60.1	13	52.0	13	50.0	26	51.0
Abortion in early preg.**		40	42.1	46	55.4	86	48.3	1	7.7	5	38.5	6	23.1
Abortion in mid preg.		13	13.7	29	35.0	42	23.6	1	7.7	8	61.5	9	34.6
Abortion in late preg.		42	44.2	8	9.6	50	28.1	11	84.6	—	—	11	42.3
Prolapse of uterus	No effect	142	94.0	89	61.4	231	78.0	25	100	17	65.4	42	82.4
	Increased	9	6.0	56	38.6	65	22.0	—	—	9	34.6	9	17.6

*No decrease in abortion and prolapse of uterus was reported.

**Pregnancy.

uterus was reported to occur much more frequently in rural animals than in urban dairy stock. Among the buffaloes and cows given oxytocin treatment, 78.0 and 82.4%, respectively, did not show prolapse of uterus (Table 2). This problem was thus only met with in 22.0% buffaloes and 17.6% cows.

The respondents pointed out that the incidence of abortion and prolapse was, of course, also observed even in animals not treated with oxytocin. Thus, the frequency of incidence of the disorders reported herein was in addition to that observed, in general, even before the use of oxytocin.

Animal Health : A good majority of the repondents was of the view that, in general, the health of animals treated with oxytocin tended to deteriorate, leading to lowered resistance and shortened life span. These observations seemingly do not appear to have scientific basis. However, detailed studies on some of the problems/after effects of the use of oxytocin in dairy animals need to be undertaken to bring the facts to the surface.

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