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PRODUCTIVE PERFORMANCE OF BUFFALOES AND COWS AS AFFECTED BY THE USE OF OXYTOCIN

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The influence of use of oxytocin on productive performance in buffaloes and cows in urban as well as rural areas, located within the radius of 15km from the city "Clock Tower" Faisalabad was determined. One hundred and sixty respondents, eighty each from urban and rural localities were interrogated. Among 1573 buffaloes and 527 cows observed, the milk production was decreased in 62.5% buffaloes and 52.9% cows. However, increased milk yield was also reported in 5.4% buffaloes and 5.9% cows. The respondents were of the view that in mastitic animals, the treatment of mastitis was rendered more effective because of the simultaneous use of oxytocin and mastitis drugs. Milk production in the animals with poor body condition was reported to be adversely affected as a result of prolonged oxytocin treatment.

INTRODUCTION

The process of milk letdown is associated with the release of oxytocin into the blood subsequent to the stimulation caused by various stimulants. Different methods of stimulation, result in varying levels of oxytocin released in the blood, affecting the quantity and quality of milk produced and milking time in the milking animals (Schams and Worstorff, 1981). 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 overcome such partial or complete inhibition of milk letdown the use of synthetic oxytocin has become very widespread with milk producers. The use of oxytocin in several milch animals can be safely avoided with a bit of animal conditioning. However, it has been commonly observed that milk producers start using oxytocin without any professional advice. The present study based on a survey through personal interviews with milk producers was planned to learn about harmful / beneficial effects on the productive performance of buffaloes and cows as a result of indiscriminate use of oxytocin by the milk producers.

MATERIALS AND METHODS

A survey was conducted in urban and rural areas within the radius of 15km from the " Clock Tower" of the city of Faisalabad, using a pretested questionnaire. One hundred and sixty respondents, 80 each from urban and rural area 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, 11 to 20 and more than 20 lactating animals so as to get the representative information about the use of oxytocin. The data thus collected were tabulated and expressed in percentages as regards to the following production aspects that were considered to have some relationship with the use of oxytocin in lactating animals:

1. Milk production
2. Fat percentage
3. Incidence of mastitis

RESULTS AND DISCUSSION

1. Milk production: The respondents were of the view that among the treated buffaloes and cows, milk yield of 32.1 and 41.2% , respectively, was not affected by the use of oxytocin (Table 1). From less than 5 to over 20 % decline in milk yield was reported in

more than 60 % buffaloes and over 50 % cows. The percentage of such animals was less than 6 in which milk yield was considered to have increased. Several earlier workers (Thind and Gangwar, 1975) reported increase of various magnitudes in milk yield of animals treated with varying levels of oxytocin. However, the increase was mainly affected in low producers and hard – to – milk animals. The findings of Graf *et al.* (1973) supported those of the present study where more than 50 % animals showed a fall in milk production subsequent to the use of oxytocin.

The decrease in milk yield could also be due to the frightening effect and the nervousness caused by the injection of oxytocin. The frightening effect could in turn lead to the release of adrenaline in blood which might reduce or negate the effect of oxytocin, natural and / or injected, resulting in lowered milk yields. A few respondents expressed the opinion that in properly fed animals that were given a weekly supplement of mustard oil feeding, no harmful effects of oxytocin on milk production were observed. Some respondents also suggested that the milk yield of animals having low heat resistance was adversely affected with the use of oxytocin.

No ready explanation was available as to the marked difference noticed in the response of urban and rural buffaloes in respect of the decrease or increase in milk production resulting from the use of oxytocin for milk ejection. It could presumably be said that because of the higher cost of maintenance of dairy animals in cities than that in villages, the urban milk producers were more conscious of any unfavourable change in milk yield of their animals, whereas rural milk producers, because of their home grown fodder and family labour, may not take notice of drop in milk yield unless it becomes drastic. The same seemed applicable to the urban or rural cows.

2. Fat percentage: The percentage of milk fat was not affected in 78.4% of buffaloes and 72.5 % cows with oxytocin treatment. This condition was rather evident in animals of urban area where supposedly, the owners/ producers did not bother much about separating butterfat from milk. In contrast, a small percentage (8.4 to 11.8) of buffaloes and cows exhibited some decrease in butterfat yield, whereas 13.2 to 15.7 % buffaloes and cows, from rural areas, were reported as yielding higher butterfat content in milk due to oxytocin treatment.

Graf *et al.* (1973) reported a decline in fat percentage during oxytocin treatment. Gangwar *et al.* (1976) observed a slight increase in butterfat by injecting oxytocin on alternate weeks. Oxytocin used for the ejection of normal milk may not increase the fat content as such. However, since it removes the residual milk which contains higher fat percentage, thus, it may lead to an increase in overall fat percentage of the total milk.

3. Incidence of mastitis: About 70% buffaloes and 78.4 % cows treated with oxytocin showed no tendency towards incidence of mastitis. It was reported that due to the expected useful effect of oxytocin on the incidence of mastitis the chances of mastitis were rather highly noticeable in rural buffaloes and cows. Some of the respondents were of the opinion that the use of oxytocin increased the incidence of mastitis by 10.5 and 5.9% in buffaloes and cows, respectively.

Bilek and Lis (1962) found that the treatment time was greatly reduced when regular treatment of mastitis was supplemented with oxytocin injections. Hanjra (1975) reported that the flushing effect of oxytocin hastened the curative action of the treatment of this disease. Overall results in this respect suggest that the use of oxytocin within reasonable limits may not be a source of causing mastitis in buffaloes and cows. However, Abdullah *et al.* (1988) observed

Table 1. Effect of oxytocin use on milk production in buffaloes and cows

Particulars		Species											
		Buffaloes						Cows					
		Urban		Rural		Total		Urban		Rural		Total	
		No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
No effect		38	25.2	57	39.3	95	32.1	7	28.0	14	53.9	21	41.2
Decrease in yield	Upto 5%	13	8.6	6	4.1	19	6.4	5	20.0	–	–	5	9.8
	5 – 10%	33	21.9	32	22.1	65	22.0	7	28.0	1	3.8	8	15.7
	10 – 20%	34	22.5	18	12.4	52	17.6	2	8.0	2	7.7	4	7.8
	More than 20%	29	19.2	20	13.8	49	16.5	4	16.0	6	23.1	10	19.6
	Total	109	72.2	76	52.4	185	62.5	18	72.0	9	34.6	27	52.9
Increase in yield	Upto 5%	4	2.6	2	1.4	6	2.0	–	–	–	–	–	–
	5 – 10%	–	–	9	6.2	9	3.0	–	–	3	11.5	3	5.9
	10 – 20%	–	–	–	–	–	–	–	–	–	–	–	–
	More than 20 %	–	–	1	0.7	1	0.4	–	–	–	–	–	–
	Total	4	2.6	12	8.3	16	5.4	–	–	3	11.5	3	5.9

that in general, the health of animals treated continuously with oxytocin tended to deteriorate, leading to lowered resistance and shortened life span.

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