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STUDIES ON RAM EFFECT IN LOHI SHEEP

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ABSTRACT

The feasibility of using the ram effect to stimulate oestrus/ovulation in Lohi sheep at Sheep Breeding Section of Livestock Production Research Institute, Bahadurnagar Distt. Okara was investigated. The experiment was conducted in two phases. In the first phase, a group of 43 ewes was stimulated for the initiation of oestrus through ram effect during the month of August (off breeding season). Eighty four percent ewes exhibited oestrus and were served. During September (normal breeding season) 100% ewes showed oestrus activity. In the second phase, all of the ewes exhibited oestrus activity during December (off breeding season) and March (normal breeding season). These results indicated that adjacent (four to six weeks before or after) to normal breeding season the "ram effect" is more effective to initiate the oestrus activity in Lohi sheep. Being the first report on Pakistani sheep, more studies on other sheep as well as goat breeds are suggested.

Key words: Ram effect, Lohi sheep, oestrous.

INTRODUCTION

Most temperate breeds of sheep have a breeding season in autumn months. Seasonal breeding in these animals is controlled by changes in day length and the ewes require the shortening days of autumn to stimulate hormonal activity leading to oestrus and ovulation. Pakistani sheep are also mostly short day breeders. There is an under lying seasonal pattern of reproductive activity controlled by day length but this is not clearly as distinct as in several temperate breeds of sheep. The normal breeding season in Pakistan extends from the middle of September to end of October (autumn) and the other in spring from mid February to end of March (Ishaq, 1982). The lower latitudes in Pakistan compared with those in which most of the highly seasonal breeds of sheep have been developed, lead to minor differences in the length of day from one season to the next and this can be the reason for the less pronounced (shallow) expression of seasonality in Pakistani breeds.

The Merino sheep in Australia has a normal breeding season in autumn but it has been shown that this genotype can be induced to breed at any time of the year by the use of 'ram effect' (Oldham and Martin, 1978). The 'ram effect' is simply the isolation of ewes for a few weeks from rams, followed by the sudden introduction of rams, which leads to ovulation within two days and the restoration of normal cyclic activity. It is effective in temperate breeds but only for four to six weeks before the expected breeding season (Ahmad, 1993). Such information on Pakistani breeds was not available. The present study was therefore, planned to explore the extent of 'ram effect' on the initiation of oestrus in Lohi sheep during off season.

MATERIALS AND METHODS

This experiment was carried out in two phases at Sheep Breeding Section of Animal Breeding and Genetics Division of Livestock Production Research Institute, Bahadurnagar Distt. Okara. In the first phase group A comprising of 43 ewes of Lohi breed was isolated for three weeks from rams and was suddenly exposed to them during the month of August (before the normal breeding season). The rams remained with the ewes for two hours in the morning and evening for three days. Same activity was repeated with group B (N = 40) during the month of September (normal breeding season). In second phase again ewes in group C (N = 13) were isolated from rams for three weeks and suddenly introduced to rams during the month of December (after breeding season). During March (normal breeding season), similar treatment was given to ewes of the group D (N = 23). The groups B and D were supposed to be considered as control as these animals were bred in their normal breeding season. The experimental animals were closely monitored for oestrous activity.

RESULTS AND DISCUSSION

The feasibility of using the ram effect to stimulate oestrus/ovulation in Lohi sheep during off season in an attempt to breed the Lohi ewes for cultivation of lamb

crop as and when desired was investigated. In the first phase of experiment, group A of 43 ewes was exposed to rams during the month of August (before the normal breeding season), out of which 36 ewes (84%) exhibited oestrus and mated within three days. Out of these, 23 ewes gave birth to lambs. These findings are substantiated by the results reported by Muir *et al.* (1989), who concluded that the introduction of rams before the normal breeding season can improve the ram effect in Romney sheep in New Zealand. All of the ewes (40) in group B (control) showed oestrus during September (normal breeding season) and gave birth to 29 (72.5%) lambs. It indicated that adjacent to normal breeding season, sufficient number of ewes showed oestrus activity in response to sudden introduction of rams. In the second phase of experiment, group C comprising of 13 ewes was exposed to rams during the month of December (after the normal breeding season). Among this group all of the ewes exhibited oestrus and were served. Seventy seven percent ewes gave birth to lambs in this group. Similarly, all of the ewes in group D (control) exposed to rams during March (normal breeding season) showed oestrus and were mated. Among this group lambing rate was observed to be 82.6%. Pearce *et al.* (1984) reported that ram effect was as effective as PMSG for the induction of oestrous and ovulation in Merino sheep in Australia. It was further remarked that ram effect also enhanced ovulation rate.

The effect of ram on the initiation of oestrus activity was more pronounced in the ewes exposed to the rams during the month of December. This indicated that the Lohi ewes can be bred in off season probably 4-6 weeks before or after normal breeding season. This is similar to the pattern reported in Merino sheep in Australia (Oldham and Martin, 1978).

This is the first report on ram effect in Lohi breed of Pakistan. It is suggested that more studies on similar lines in other breeds of sheep, as well as in goats, be carried out for precise results. Such studies during other months of the year (off-season) are also suggested.

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