GAU Res. J. 1993. 19 (1) : 174-176

A Note on Age and Body Weight at Maturity in Crossbred Sheep Reared Under Confinement

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Variation in reporductive performance traits of crossbred sheep arises due to several genetic and non-genetic factors viz. genetic groups, level of exotic inheritance, year and season of birth. Attempt has been made to investigate the effect different levels of exotic inheritance [i.e. 50% (F_1 and F_2's), 62.5% and 75%] on age and body weight at maturity and lambing in 93 ewe lambs born out of the crossing of Rambouillet and Russian Merino rams with Patanwadi ewes, during 1985-86. Relevant records for analysis were obtained from all India Co-ordinated Research Project on sheep breeding for fine wool, Dantiwada unit.

The average age at first oestrous, first conception and first lambing were (749.28 ± 15.80 (93), 778.30 ± 17.20 (60) and 924.27 ± 16.87 (60) days respectively. Genetic groupwise, mean ages of these traits has been furnished in table-1. Analysis of variance revealed that the genetic group differences were non-significant for all these traits. However DMRT revealed that Rambouillet x Patanwadi F_1's had significanlty lowest age at expression of these traits.

The average body weight of ewe lambs at first oestrous, first conception and at first lambing were 25.64 ± 0.29 (93), 26.68 ± 0.44 (60) and 26.76 ± 0.44 (60) kg respectively. Genetic groupwise body weights have been furnished in table-1. The analysis of variance revealed that the genetic group differences were non-significant for these traits. However DMRT revealed that Rambouillet x Patanwadi F_1's had significantly lowest body weight at first oestrous and first lambig, while rest of the genetic groups were having above average body weights. Body weights at first conception did not differ from each other in all the genetic groups.

Non-significant effect of genetic groups on age and body weights at first oestrous, conception and lambing, in general observed during present study were in confirmation with the findings reported by Sinha *et al.* (1979) in Muzaffarnagari and its crosses with Dorset and Suffolk and by Singh *et al.* (1985) in Chokala and its crosses with Rambouillet and Russian Merino. The age at first mating and lambing observed in the present study were in corroboration with the findings for these traits in Malpura, Chokala and their 3/4 breds as reported by Kishore *et al.* (1982). They also studied these traits in Avikalin and Avivastra strains developed at Central Sheep and Wool Research Institute, Avikanagar. The present findings were very close to their findings. Slightly lower age and body weight at first lambing in Nali, Russian Merino and their

TABLE 1

Mean and S.E. of age and weight at first oestrus, first conception and first lambing in crosses of Rambouillet and Russian Merino with Patanwadi.

Breed group	First Oestrus		First Conception		First Lambing	
	Age (days)	Weight (kg)	Age (days)	Weight (kg)	Age (days)	Weight (kg)
Overall	749.28 ± 15.80 (93,20.34)	25.64 ± 0.29 (93,11.00)	778.30 ± 17.20 (60, 17.12)	26.68 ± 0.44 (60, 12.67)	924.27 ± 16.87 (60, 14.10)	26.76 ± 0.44 (60, 12.64)
Ramb. × Pat.						
F_1's	603.67 + 22.01^{a} (6,8.93)	22.30 + 1.03^{a} (6,11.33)	677.00 + 55.54^{a} (5,18.34)	23.72 + 2.06 (5,19.41)	825.00 + 55.37^{a} (5,15.01)	24.84 + 2.02^{ab} (5,18.19)
F_2's	761.58 + 33.36^{b} (12,15.18)	25.28 + 0.49^{b} (12,6.74)	764.00 + 38.16^{b} (9,14.98)	25.58 + 0.58 (9,6.77)	913.00 + 38.48^{b} (9,13.20)	25.38 + 1.13^{ab} (9,12.08)
5/8th	790.07 + 41.75^{b} (15,20.47)	25.99 + 0.81^{b} (15,12.04)	847.89 + 47.69^{b} (9,16.87)	27.40 + 1.48 (9,16.19)	984.44 + 45.17^{b} (9,15.36)	26.51 + 1.17^{ab} (11,14.32)
3/4th	771.00 + 40.76^{b} (7,13.99)	25.78 + 1.05^{b} (7,10.80)	765.67 + 39.40^{b} (3,8.91)	26.40 + 1.73 (3,11.36)	921.34 + 41.51^{b} (3,7.88)	26.94 + 1.62^{ab} (3,10.41)
Merino × Pat.						
F_1's	784.00 + 44.20^{b} (10,17.83)	26 24 + 1.01^{b} (10,12,18)	760.43 + 49.18^{b} (7,17.11)	26.09 + 1.12 (7,11.31)	909.57 + 48.59^{b} (7,14.13)	28.26 + 1.59^{a} (7,14.80)
F_2's	773.08 + 37.26^{b} (12,16.70)	25.13 + 0.87^{b} (12,12.03)	846.00 + 35.61^{b} (16,8.90)	26.57 + 0.88 (6,8.28)	993.34 + 28.80^{b} (6,7.10)	26.03 + 0.54^{ab} (6,5.08)
5/8th	747.94 + 41.83^{b} (15,21.66)	26.21 + 0.69^{b} (15,10.14)	809.75 + 44.01^{b} (18,15.37)	27.30 + 1.32 (8,13.67)	955.00 + 44.31^{b} (8,14.54)	26.95 + 1.48^{ab} (8,15.14)
3/4th	708.62 + 46.77^{b} (16,26.41)	26.25 + 0.66^{b} (16,10.12)	740.92 + 45.17^{b} (13,21.98)	28.14 + 0.91 (13,11.68)	888.46 + 44.61^{b} (13,18.10)	28.02 + 0.68^{a} (13,8.72)

Similar superscript indicates no significant difference in that column. Number of observations and coefficient of variation is given in the bracket.

crossbreds than those observed in present study has been reported by Srivastava *et al.* (1983).

The correlation coefficients between age and body weights at first oestrous, first conception and first lambing were 0.2980, 0.3446, 0.0583 respectively. The positive association was indicative of increased weights with increased age. Thus to reduce age at maturity one will have to sacrifice for weight to some extent but not below the optimum weight of 22.0 kg. Otherwise with normal management practices, in general the ewe lamb will mature at age of two years for breeding and will deliver the lamb thereafter.

(Received on 17th Au.,. 1992)

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