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RESEARCH PAPER

Factors affecting the age at first kidding in local, angora and their crossbred goats

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ABSTRACT

Data on age at first kidding (AFK) of local (25) ½ Angora (381), $^{3}/_{4}$ Angora (380), $^{7}/_{8}$ Angora (201), $^{7}/_{8}$ Angora interse (37) and pure Angora (26) goats maintained at All India Coordinated Research project on goats, Mahatma Phule Krishi Vidyapeeth, Rahuri over the period of 16 years were analyzed by Least Square Technique to test influence of non-genetic factors like season, period of birth and weight at birth group. The overall least- squares of means of age at first kidding of local, ½ Angora, 3/4 Angora, 7/8 Angora, 7/8 Angora inters and pure Angora goats were 615.68 ± 54.92, 664.59 ± 27.42, 843.88 ± 75.09, 868.25 ± 120.21, 755.75 ± 82.50 and 843.31 ± 178.87 days, respectively. Season of birth had non significant influences on all genetic groups. Period of birth and weight at birth groups showed significant results in ½ Angora only.

Key words : Goat, Age at first kidding, Angora crossbred.

Goat is a multipurpose animal and mostly reared by poor, landless farmers under the most primitive managemental systems. Goats play an important role in the socio-economic condition of people who maintain them. It is also the fact that very large population of goat is maintained by weaker section of the society, such as landless labourers, village artisan and marginal farmers. The cross breeding programme to evolve Indian mohair goat breeds conducted at Mahatma Phule Krishi Vidyapeeth, Rahuri, involves Angora as one of the parents and local (Sangamneri) the other, the progeny of this crossing assumes to have a greater importance for reproductive efficiency.

The early age at first kidding not only produces more kids in the life time, but it also reduces the cost of feeding and management. Age at first kidding is an important trait because if affects the profitability in goat production. Keeping this view in mind the present study was planned under scarcity zone of Maharashtra in semi-intensive management system.

MATERIALS AND METHODS

Data were collected pertaining to age of first kidding (AFK) of local (25), ½ Angora (381), ¾ Angora (380), $^{7}/_{8}$ Angora (201), $^{7}/_{8}$ Angora interse (37) and Pure Angora (26) goats maintained at All India Co-ordinator Research Project on Goat at Mahatma Phule Krishi Vidyapeeth, Rahuri, Distt. Ahmednagar. Each year was divided into three seasons *i.e.* Rainy (S_1) : June to September : Winter (S_2) : October to January and Summer (S_3) : Feb. to May. On the basis of climatological conditions. Different periods of various genetic groups were formed as below:

- Local P_1 upto 1973 and P_2 1974 onwards.
- ½ Angora (50 % Local + 50 % Angora) P_1 upto 1976 and P_2 1977 to 1980.
- ¾ Angora (25% Local + 75% Angora) P_1 upto 1979, P_2-1980 to 1984 and P_3-1985 onwards.
- 7/8 Angora interse (12.5 % Local + 87.5 % Angora and their interse) P_1 upto 1983 and P_2-1984 to 1988.
- Pure Angora P_1 upto 1977, P_2-1978 to 1980 and P_3-1981 onwards.

Birth weight groups were also formed as- B_1 - Below 2.0 kg, B_2 - 2.1 to 2.5 kg, B_3- 2.6 to 3.0 kg and B_4- 3.1 and above. To avoid non-orthognality and to find out influence of non-genetic factors following least-squares model (Harvey, 1975) was used.

$$Y_{ijki} = U + S_i + P_j + W_k + eijkl$$

where Y_{ijki} is observation of i^{th} individual of 1^{th} season of birth j^{th} period of birth and k^{th} birth weight groups. The pairwise comparison of least-squares means was made using Dunkan's Multiple Range Test (DMRT) as modified by (Kramer, 1975).

RESULTS AND DISCUSSION

Least-squares means and analysis of variance of age at first kidding of local, Angora and their crossbred goats are depicted in Table 1 and 2. Age at first kidding ranged from 615.68 to 868.25 days. AFK was least in local (615.68 ± 54.32) whereas it was more in 7/8 Angora