

Reproductive Performance of Korean Native Goats under Natural and Intensive Conditions

H. B. Song, I. H. Jo and H. S. Sol

Department of Animal Science, Daegu University

This study was conducted to compare the reproductive performance in Korean native goat (*Capra hircus coreanae*; KNG) kept either under range or intensive conditions.

Records of 635 and 1,003 kiddings from 199 and 269 KNG (30~40 kg/head) kept under range (natural pasture) or stall environments (intensive feeding), respectively, between 1994 and 2003 were used for this study. The flocks were maintained in year-round free mating system. The kidding dates were recorded and the number of kidding intervals was 436 and 736 for the extensive and intensive environments, respectively. Records were also kept regarding the age at first kidding, kidding interval, litter sizes at birth and weaning. Data were analyzed using sigma plot 2001 or SAS (SAS, 1997). Differences were analyzed by t-test or Duncan's Multiple Range Test.

The mean age at first kidding in the KNG does under extensive and intensive environments was 412 ± 32.6 d and 382.0 ± 25.2 d, respectively. The difference was significantly ($p < 0.05$) earlier for the intensively housed group. Kim and Chung (1979) reported that age at first breeding to be 8.0 ± 2.7 months for young (< 6 months) and old (>12 months) does. Age at first kidding is highly variable and independent upon the growth rate and management system.

The mean kidding interval of KNG does was recorded as 207.8 ± 1.8 and 211.6 ± 2.7 d under extensive and intensive environments, respectively. These intervals for does were considerable short than the figures for KNG does (8.7 ± 2.5 to 10.7 ± 3.2 months) reported by Kim and Chung (1979). In the present study KNG does were maintained under free ranging conditions, thus, matings were at random throughout

the year as KNG does tend to show estrus year-round (Kim and Chung, 1979). The kidding intervals were longer ($p < 0.05$) for does born in the autumn and winter compared to those born in the spring and summer regardless of rearing system.

The percentage of single, twins, triplets and quadruplets born were 40.6, 50.4, 8.0 and 1.0% under an extensive environments, and 33.8, 54.4, 11.4 and 0.4% under an intensive environment, respectively. These differences were not significant and the litter size observed in the present study compare favorably with the 35.2, 46.3, 15.5 and 2.9% reported for single, twins, triplets and quadruplets, respectively in the same breed of goats (Kim and Chung, 1979).

The mean litter sizes at birth were 1.69 ± 0.03 and 1.78 ± 0.16 for goats maintained under natural pasture or stall conditions, respectively. These differences were not significant. The mean litter size at weaning was 1.3 ± 0.03 and 1.52 ± 0.17 for goats maintained under natural pasture or stall conditions, respectively. These difference were significant ($p < 0.05$) with the survival rate being higher in the intensive group.

In conclusion, the age at first kidding and the weaning rate which were higher under stall(intensive environments) than under the range environment.

Key words) *Reproductive performance, Reaving environment, Litter size, Kidding interval*