



Preliminary study on some productive and reproductive traits of Saanen goats under Sudan conditions

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Abstract

The research aimed to investigate the difference in performance of pure Saanen goats reared in Sudan and Swiss the origin of the animal considering birth weight, twining, puberty, mating age, gestation period, motility rate, milk production and quality. 200 does from Goat Research Centre (GRC) at Khartoum were used for the study for three consecutive years (2008-2010). The results show that hot climate (Sudan) delayed the reproductive parameters of the goat and increased the mortality rate. On the other hand milk production decreased but no change in the quality was observed. The research concluded that keeping pure Saanen in Sudan is not beneficial and it is recommended to cross the animal with local breeds. Moreover, improve the environment for better performance and welfare of the animals.

Key words: Sannen, Fertility, Puberty, Mortality, Tropical

Introduction

Goats are small ruminants and mammals, distributed all over the world (Sulma, 2010). The animal is characterized by small size and short tail, it is clever and active animal, survives the harsh and some times stand on its hind legs to feed on the leaves of the trees (Abu Alazayim, 1995). Goats usually considered as a poor man cow especially in the developing countries and rural area particularly in Africa, Eastern Asia, Latin America and some European Countries (Sulieman and Elshafie, 1984).

Several local goat breeds in Sudan are Nubian Desert, Dwarfed and Fused breed. Nubian is the best milk producing goat in Sudan; it gives $1\frac{1}{2}$ -2 kg/day which seems to be better than some local cows like Nilotc breeds so it is poor man cow. (Alnaiem, 2008). The temperate goats are the best dairy breeds in the world among them are Toggenburg, Anglonubian, French Alpine, Damascus Goat and Saanen which prevails high milk yield 6-8 kg/day (Devendra and McElroy, 1982).

Saanen recently imported from Netherlands and kept as a dairy goat to raise milk production in Sudan among poor people especially in rural area. Sudan as a tropical country suffers more from tropical diseases, low quality pasture, hot and dry temperature (Hassbo,

2008). So this research was designed to find reproductive traits and the milk yield of the goat in Sudan compared with the performance in the origin habitat (Swiss).

Materials and Methods

Records of 200 Saanen does kept in Goat Research Centre (GRC) at Khartoum were used for the study to find out:

- 1) The average kid birth weight, twining rate, puberty, and mating age, gestation length, parity and mortality rate.
- 2) Average daily milk production.
- 3) Milk analysis to determine its quality (fat%, lactose% and cp%).
- 4) Comparison between the results in Sudan and Swiss.

The collected data were subjected to statistical analysis program (SPSS).

Results and Discussion

The table (1) shows that birth weight was obviously less for kids born in Sudan. This might be due to environmental differences between the two countries. The puberty was earlier in Swiss. It seems

Table 1: Some average reproductive traits and mortality rate of Saanen goat in Sudan and Swiss

Country	Birth Weight (kg)	No of Kids born	Puberty (month)	Mating age (month)	Gestation length (month)	Mortality (%)
Swiss	4.00	2.5	6	9	5	15 ^b
Sudan	3.25	2.5	7	11	5	55 ^a

^{a,b}Superscripts in a column differ significantly (P<0.05).

Table 2: Average milk production and quality of the Saanen goats in Swiss and Sudan

Location	Daily milk yield (liter)	Monthly yield (Kg)	Seasonal yield (Kg)	Milking frequency	Fat %	Protein %	Lactose %
Swiss	7.00 ^a	210.00 ^b	1680.00 ^a	2.50	4.00	3.50	4.50
Sudan	3.50 ^b	105.00 ^a	842.00 ^b	2.00	4.00	3.50	4.50

^{a,b}Superscripts in a column differ significantly (P<0.05).

that climatic as well as nutrition condition was more suitable for kids growth in their home land. The number of kids born and gestation length were almost the same for the two habitats. The most striking factor of the study was the comparatively high mortality rate of Saanen kids born in Sudan (55%) compared with that on Swiss (15%). Undoubtedly this calls for raising breed in Sudan under careful precaution.

The table shows that the average milk yield of the Saanen in Sudan milked twice a days represents only 50% of that produced by the same breed milked 2-3 times a day in Swiss. The highly significant different in the milk production level of the pure breed may be due environment factors. The table reflects the quality of milk considering fat, protein and lactose% did not change in both habitat. So the hot climate of Sudan passively affects the milk yield rather than its quality. These results are in agreement with that reported by Hassabo and Sulma (2010).

Conclusion

- Kids' weight at the time of birth was lower in Sudan than Swiss.
- Kids in Sudan reached puberty and mating age later than Swiss conditions.
- Mortality rate particularly among kids was higher in Sudan (55%).
- Milk production per day of the goat comes down in Sudan.
- Milk was not affected by the change of location.

Recommendations

It can be concluded from this study that this exotic breed of goats is not well suited to the hot environment of Sudan. Therefore, cool environmental conditions are necessary for optimum performance of this breed. Moreover, cross between the breed and local breeds should be the focal point of the future research.

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