

**Short Communication****Comparison of milk yield and composition of Qomi local goats and their cross with Saanen**

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<b>Article history</b> Received: 20 Feb, 2015 Revised: 29 May, 2015 Accepted: 1 Jun, 2015	<b>Abstract</b> A study was conducted to compare the milk yield and chemical compositions from 50 Qomi local goats and Qomi local × Saanen cross (F1). Two hundred and fifty milk samples were aseptically collected and analyzed for milk yield and milk composition (fat, protein, dry matter, lactose). The result indicated that milk production increased significantly in crossbred goats, however, milk quality decreases significantly except lactose. Results shows that crossbreeding has significant effects on most milk parameters when Qomi local goats are crossed with Saanen goats. <b>Keywords:</b> Saanen; Qomi local goat; milk composition
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**To cite this article:** Hosseini SM, AG khanishad and H Rasouli, 2015. Comparison of milk yield and composition of Qomi local goats and their cross with Saanen. *Res. Opin. Anim. Vet. Sci.*, 5(5): 229-230.

**Introduction**

In the recent decades, goat production has been paid more attention by farmers and government agencies as a means to improve milk production. Some achievements have been obtained in the field of breeding, nutrition, processing and preventing diseases. Goat milk is of great importance for milk technology and nutrition. Goat milk is more digestible because of its small-size globules, uniform protein and fat distribution. Modified goat milk can also be used in baby feeding. Goat milk provides a healthy and a balanced diet for the children who are allergic to cow milk, as the symptoms may disappear with goat milk consumption (Güzeler et al., 2010). Qomi local goat is small in size body weight at adult 30-35 kg and is usually black in colour and a dual-purpose breed (Chegini A 2003). These goats are known with low milk yield but good adaptation in mountain and warm areas like Qom province. Crossbreeding may be a more rapid way of improving their milk yield. The choice of the most efficient breed/genotype requires estimates of the relative performance of the genotypes. Saanen goat,

originated in Switzerland, is one of the preferred dairy goats primarily because of their consistency in producing large quantities of milk in conjunction with their sturdiness; easy keep ability and capacity to tolerate environmental changes. They produce 750 kg milk in their lactation period of 280 days (Heidari and Khashui, 2008). For improving of goat population, Saanen breed was used as the improver breed and crossed with local goats in Qom providence of Iran. There is a little study on the changes of goat milk during lactation of local goat × Saanen. In this respect, this research project was aimed at measuring the effects of crossbreeding on milk production traits.

**Materials and Methods**

One hundred and fifty local goats and Qomi local × Saanen cross were selected at local farm. All goats were fed hay, wheat straw and concentrate with 12% protein. In this research, raw goat milk samples (n=250) were obtained hygienically during five moths lactation period and stored at 5°C before analysis. Samples were analysed by Milk Scope Julli C<sub>2</sub> (Scope

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**Table 1: Mean milk yield and composition of Qomi local and Crossed Saanen (F<sub>1</sub>)**

	Local goat	Crossed (F <sub>1</sub> )
Milk production (l)	0.48±0.03 <sup>b</sup>	1.10±0.09 <sup>a</sup>
Fat (%)	5.84±0.23 <sup>a</sup>	3.88±0.09 <sup>b</sup>
Protein (%)	4.1±0.13 <sup>a</sup>	3.6±0.09 <sup>b</sup>
DM (%)	13.6±0.14 <sup>a</sup>	12.7±0.14 <sup>b</sup>
Lactose (%)	4.2±0.03 <sup>b</sup>	5.1±0.05 <sup>a</sup>

<sup>a,b</sup>Different superscripts within the same column are statistically different at P<0.05; DM: dry matter

Electric Ltd). Data was analyzed statistically using student t-test. P values less than 0.05 was statistically significant.

## Results and Discussion

In the current study, the milk production increased significantly in cross bred goat. However, milk composition in term of milk fat, protein and dry matter decreased except lactose (Table 1). In line with our result, Momani et al. (2012) reported that crossbreeding between Sahelian goats with Anglo-Nubian goats improved their growth rate and milk production. In our study, the reduced milk quality may be due to higher volume of the milk produced by crossbred goats. When the results of this study were compared with those of previous reports, it was found that they were similar with the findings of other researchers. Güzeler et al. (2010) reported significant reduction in milk composition Torkish local goat (Kilis) were crossed with Saanen. Similarly results were reported by Donkin (1997) in South African goat crossed with Saanen and

Wuschko et al. (1992) in Saanen × Red Sokoto. In conclusion, cross breeding improved the milk quantity, however, milk quality declined.

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