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Milk yield and composition of local Balady and Boer goats in Egypt

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Balady Egyptian Goat

Boer Goat

INTRODUTION

Recently in Egypt a small Flock of Boer goats have imported from Australia to improved productive performance of Egyptian local breeds through cross-breeding.

In goat, pre-weaning weight gain of the kids is influenced by milk production of the dam. However, milk production in non-dairy goats is difficult and costly to measure. Therefore finding a trait that is recurrent and highly correlated with milk production will be an important tool for predicting milk production.

Body length, height at withers, chest girth, abdomen girth and udder measurements of the does were analyzed to determine their relationship with their milk production in the local Egyptian Balady and Boer goats under Middle Egypt environmental condition.

The objectives

The objectives of this study were to investigate: (1) milk yield, milk composition and shapes of lactation curves in Egyptian Balady and exotic Boer goats, and (2) relationships among some body conformation and milk productin in both breeds.

MATERIALS AND METHODS

The experimental work was carried out at the experimental and research center, Minia University, Minia, Egypt.

Minia Universityis located about 250 Km south of Cairo.

Forty-eight does from Egyptian local Balady , 25 and Exotic Boer,23 goats were used to study milk yield, milk composition, shape of lactation curve and the correlation between milk yield of the does and some body and udder measurements during the period from January, 2016 to May 2017.

The animals were housed under semi-open sheds and all does grazed alfalfa during winter and sudan grass during summer plus concentrate mixture, 14.3% crude protein at the rate of 0.5kg./head/day. However, the concentrate mixture was gradually increased to 0.750 kg./head/day during flushing, late pregnancy and lactation periods. Fresh water and mineralized salt block were freely available all times.

Daily milk yield was measured individually for each doe weekly, using the kid suckling technique as reported by Ruvuna et al., (1988).

Sample of milk, from each of the experimental does were taken from morning and afternoon milking once every two weeks of the lactation periods and analyzed.

Also, all body measurements: Chest girth, Wither height, Body length and abdominal girth were done once on a wooden platform and with a measuring tape in (cm).

However, volume of filled udder (ml) and volume of empty udder (ml) were measured by water displacement as reported by Gall(1990).

Collected Data was subjected to the statistical analysis by Least Square Method (SAS, 2008).

RESULTS AND DISCUSSION

Milk yield and composition:

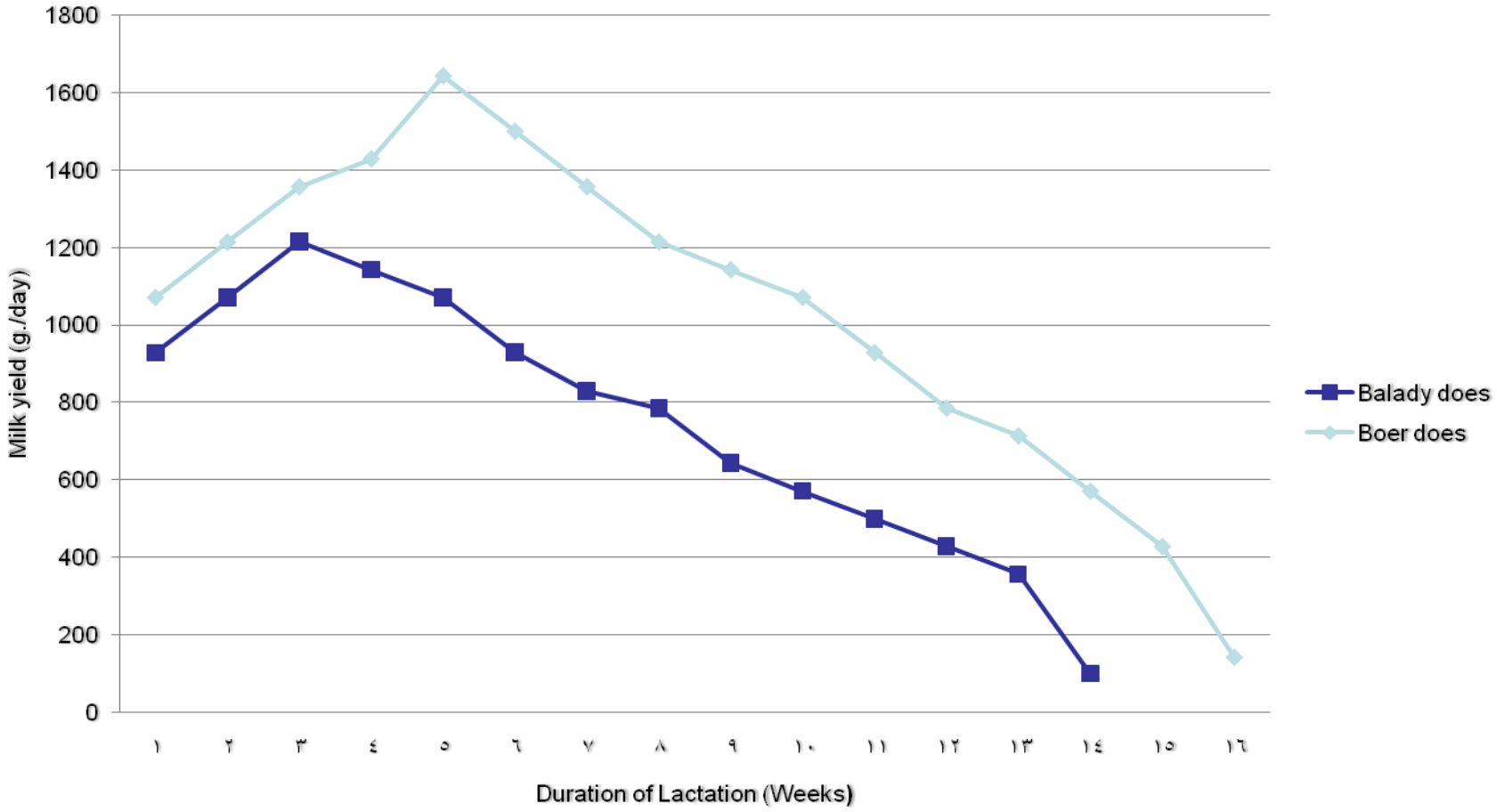
Results in tableT1.docx (1) indicate that breed of does and type of rearing had highly significant effect ($p<0.01$) on all milk yield and its composition traits except protein and ash percentages.

Boer does have the highest TMY and longest LL (116.0 kg. milk in 112 days) than local Balady does (74.0 kg milk in 98 days).

The number of kids suckled per doe significantly ($p<0.01$) influenced the total milk yield and lactation length. Does rearing two kids or more produced 31.7% more milk than does rearing one kid.

The superiority of does rearing twin or multiple kids in milk production than those rearing singles could be attributed to the ability of twins or multiple kids to evacuate the udder more completely.

Lactation curve



Figure(1): shows the estimated lactation curves of local Balady and Boer does. Lactation curves were of similar shape for local Balady and Boer does.

Milk production peaked at the 3rd and 5th weeks of lactation for the Egyptian local Balady and Boer does, respectively.

Relationship among some body measurements and total milk yields

The data in T2(2) revealed that Boer does produce more milk than local balady (116.0 kg. vs 74.0 kg.), also means of filled under volume (980.0 ml vs 930.0 ml) , and volume of differences (680.0 ml vs 400.0 ml) of Boer does were greater than that of local Balady does. Also, Boer does were greater than that of local Balady does in body length (67.0 vs 60.0 cm), chest girth (80.0 vs 75.0 cm), abdominal girth (107.0 vs 92 cm), height at witheres (70.0 vs 65.0 cm) and average body weight (44.0 kg. vs 36 kg).

The correlation coefficients between some body measurements and total milk yield of local Balady and Boer does are present in Table (3). All body and udder measurements studied were closely and significantly ($p<0.05$ and $p<0.01$) correlated with estimates of total milk yield in Boer and local Balady does, except volume of empty udder in Boer does and volume of udder difference in local Balady does which being insignificant effects ($p>0.05$). The small value of the udder volume differences (400.0 ml) in local balady does may be due to that the udder in local Balady was filled with muscle mass.

Conclusion

Based on positive and highly significant correlation coefficient ($p<0.01$) between volume of filled udder, body length, and height at withers and milk yield, it was suggested that use of these measurements to select indirectly for milk production in non dairy goats would be effective.

Thank You