PROCEEDINGS

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5-8 Blood Biochemistry and Milk Yield in Dairy Goats

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Hematological and plasma metabolites have been primarily used to evaluate the physiological status, fulfilment and alimentary plans and to check the health status for prevention of metabolic disorders induced in small ruminants by undernourishment. The objective of this research is to detect relationships between some metabolites and milk production in dairy goats. 455 blood samples were collected from a herd of Alpine goats. Hb, PCV were determined on blood; the analytical determinations performed with a centrifuge analyzer I.L. were: glucose, NEFA, β-hydroxybutyrate (β-OHB), triglycerides, cholesterol, HDL cholesterol, total protein, albumins, globulins, urea, creatinine, AST (37°C), GGT (37°C), calcium, inorganic phosphorus and magnesium. Data were analyzed according to four production groups: high production (132 obs, 4.558 ± SD 0.05 l/die); medium production (133 obs, 3.44 ± SD 0.02 l/die); low production (133 obs, 2.30 ± SD 0.04 l/die) and dried (57 obs).

Some significatant blood constituent levels (average values and error mean square) are reported in Table 1. The results show the influence of parameters related to energy metabolism on milk yield. Milk production and blood constituents were best expressed with the following multiple standardized coefficients:

$Y = 5.43 + 0.115$ (β-OH) + 0.214 (Chol.) + 0.094 (GGT) -0.541 (days in lactation) -0.222 (Glu.) - 0.119 (Inorg. P). R^2 adjusted 0.48.

Table 1: Concentration of blood parameters by milk production level group.

Metabolites		Dried	Low	Medium Prod.	High Prod.	EMS Prod.
β-OHB	umol/L	159 a	290 b	299 b	353 c	10550
NEFA	umol/L	215 a	203 a	232 a	336 b	29312
Glucose	mmol/L	2.96 a	3.18 b	3.14 b	3.01 a	0.128
Cholest.	mmol/L	2.02 a	4.21 b	4.98 b	5.20 c	1.86
Triglyc.	mmol/L	0.42 a	0.27 b	0.25 b	0.22 b	0.022
AST	U/L	89 a	114 b	123 b	145 c	123
GGT	U/L	38 a	55 b	56 b	61 c	231
Inorg. P	mmol/L	1.74 a	1.83 a	1.71 a	1.64 b	0.2

a,b,c: means within a row with no common letter differ ($p<0.05$)

Notes: