

## EVALUATION OF PASSIVE TRANSFER WITH BRIX REFRACTOMETER AND COMPARISON WITH OTHER SEMIQUANTITATIVE TESTS IN GOAT KIDS

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The aim of this study was to evaluate a Brix refractometer in determining the level of passive transfer (PT) in newborn goat kids and to determine the PT status by semiquantitative tests (total protein — TP, glutaraldehyde coagulation test — GCT and gammaglutamyl transferase — GGT).

The study consisted of 75 newborn Saanen goat kids. On the 1<sup>st</sup>, 2<sup>nd</sup> and 3<sup>rd</sup> days after birth, blood samples were collected from the kids. IgG (Goat IgG-ELISA), Brix%, TP, GCT and GGT levels were measured in serum samples.

On the 1<sup>st</sup> and 2<sup>nd</sup> days, serum Brix% in the kids was measured as  $9.33 \pm 0.17$  % and  $9.17 \pm 0.14$  %, respectively. In the first- and second-day serum samples of the kids, IgG was  $817.76 \pm 37.34$  mg/dl and  $1173.29 \pm 47.81$  mg/dl, respectively, GCT was  $15.24 \pm 2.84$  min and  $11.98 \pm 2.41$  min, respectively, GGT was  $1298.07 \pm 133.29$  U/L and  $692.26 \pm 79.86$  U/L, respectively. Brix% and IgG were positively correlated on day 1 ( $r=0.43$ ,  $P<0.001$ ) and day 2 ( $r=0.25$ ,  $P<0.05$ ). IgG was similarly correlated with TP and, GCT on 1<sup>st</sup> and 2<sup>nd</sup> days, and with GGT on the 1<sup>st</sup> day after birth. The highest sensitivity and negative predictive ratio of Brix% were detected on day 2; specificity, positive predictive value and accuracy were found to be highest on the 1<sup>st</sup> day after birth.

Brix refractometer was found to be more sensitive for detection of PT status in kids on the 1<sup>st</sup> and 2<sup>nd</sup> days after birth such as TP and GCT, whereas GGT as an early indicator of PT, was useful only on the first after birth. As a result, we conclude that Brix refractometer could be used to determine the passive transfer status in goat kids.

**Keywords:** GOAT KID, COLOSTRUM, PASSIVE TRANSFER, BRIX REFRACTOMETER, SEMIQUANTITATIVE TESTS