

Prediction of pregnancy toxæmia in Greek sheep

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The aim of this study was to develop a predictive model for sub-clinical pregnancy toxæmia in pregnant ewes. Worldwide, pregnancy toxæmia is the most common metabolic disease of pregnant sheep. This was a prospective cohort study; the study population was 113 housed and intensively fed, Chios and Chios-crossbred ewes from one commercial flock in Thessaly, Greece. The study ran from August to October 2009. The pregnant ewes were clinically examined each week from day 100 and blood sampled on four occasions, three times pre-lambing and once post-lambing. Blood samples were analysed for OCT, GDH, AST, ALP, GGT enzyme activity, BOH butyrate (BOHB), glucose and triglyceride concentrations. Other recorded variables were lambing date, ewe BCS, number of lambs born and age of ewe. For the purpose of this analysis those ewes with a BOHB blood result ≥ 1.0 mmol/l that were free of clinical signs were said to have sub-clinical pregnancy toxæmia. Three separate multivariable logistic regression models were built to model whether data collected from one sampling could predict sub-clinical pregnancy toxæmia identified at the next sampling. All models were built using a combination of forwards and backwards stepwise elimination with variables retained in the model at $P < 0.05$. Eight ewes developed clinical pregnancy toxæmia of which 4 died, 45 ewes developed sub-clinical pregnancy toxæmia and 60 were unaffected over the study period. The results from the 3 predictive models showed that for sample 1 high glucose levels and carrying three or more lambs predicted sub-clinical disease at sample 2, for sample 2 low glucose and being already sub-clinical predicted disease at sample 3 and for sample 3 being sub-clinical and having raised triglyceride levels predicted sub-clinical pregnancy toxæmia at sample 4 (post-lambing). Monitoring glucose levels in ewes with regard to stage of pregnancy and number of lambs could help identify those ewes at risk of developing pregnancy toxæmia.