PASSIVE TRANSFER OF IMMUNITY IN MEAT LAMBS REARED IN THE TROPICS ON EXTENSIVE MANAGEMENT

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Aims: To study some aspects related to passive transfer of immunity (PT) in meat lambs reared on extensive management in tropical weather conditions.

Methods: Blood samples were taken between 24 and 36 hours of life, from 290 newborn lambs, crosses of Texel, kept with their mothers in a flock reared on district of Eldorado, state of Mato Grosso do Sul, Brazil. Serum gamma glutamyltransferase activity, total protein concentration, measured by refractometry and colorimetry, albumin, alfa, beta and gammaglobulins concentrations, measured by agarose gel electrophoresis, and IgG concentration estimated by the zinc sulphate turbidity test were determined. The lambs were grouped according to sex, ewe number of parturitions and body condition scoring, number of lambs born, birth weight and vitality. The risk factors for failure of passive transfer of immunity (FPT) were identified and the association with lamb mortality was tested. Correlations between variables were established.

Results: There was no effect of sex, number of parturitions of the ewes and ewe body condition scoring on PT of lambs. However there were differences between singles and twins and between lambs born with good or lightweight (< 3 kg). The FPT was infrequent (12.4%), more likely in twins (p=0.026) and in lightweight lambs (p< 0.001), and was strongly associated with lamb deaths up to 60 days of age (p< 0.001). The global mortality rate was 11.3%; and 30.5% of the lambs with FPT died, almost all in their first month of life. The total protein concentration, measured by refractometry, was correlated (p< 0.001) with gammaglobulins (r = 0.816) and IgG (r = 0.810); and values ≤ 5.0 g/dL can be accepted for the diagnosis of FPT.

Conclusions: Under tropical weather conditions FTP must be considered infrequent in crossbred meat lambs. However the surveillance and care must be intensified with twins and lambs with low birth weight.