

Working Group 3. Innovative, Sustainable Control Methods

Poster Communication

Differences in the Immune Response between Adult Sheep Belonging to Churra Breed

Castilla Gómez de Agüero V.^{1,2}, González J. F.³, Hernández J. N.³, Arranz J. J.⁴,
Gutiérrez Gil B.⁴, Martínez Valladares M.^{1,2}

¹Instituto de Ganadería de Montaña. Centro mixto CSIC-Universidad de León. 24346. Grulleros, Spain

²Departamento de Sanidad Animal. Universidad de León. Campus de Vegazana. 24071. León, Spain

³IUSA, Universidad de Las Palmas de Gran Canaria, Spain

⁴Departamento de Producción Animal. Universidad de León. Campus de Vegazana. 24071. León, Spain

The infection by the gastrointestinal nematode (GIN) *Teladorsagia circumcincta* is one of the most common diseases in grazing sheep. Within the Spanish Churra breed, sheep can show different level of GIN infection according to their faecal egg count (FEC). In the present study, the mechanisms by which Churra breed sheep can present the susceptible or resistant phenotype to the *T. circumcincta* infection were studied. A total of 12 adult sheep were selected from a 119 commercial sheep flock, 6 resistant and 6 susceptible according to their FEC, and then were infected with third stage larvae (L3) of *T. circumcincta*. During the experimental infection the title of IgA was always higher in the resistant group than in the susceptible group although without significant differences. At day 21 days post-infection, a slight negative correlation was found between IgA and their cumulative FEC ($r = -0.516$; $p = 0.08$). Afterward, sheep were dewormed, experimentally infected again with L3 of *T. circumcincta* and slaughtered at 7 days post infection. At slaughtered, IgA title in serum and gastric mucus was higher in the resistant group although slight significant differences were only shown in serum samples ($p = 0.1$). Histological and immunohistochemistry analysis of abomasum tissue also showed that the number of CD4+ lymphocytes, $\gamma\delta$ T+/WC1 lymphocytes, eosinophils and globule leukocytes was higher in the resistant group; however these differences with the susceptible group were slight significant only in the eosinophils ($p = 0.1$). Slight positive correlation were shown between $\gamma\delta$ T+/WC1 lymphocytes and eosinophils ($r = 0.41$; $p = 0.1$) but also between globule leukocytes and CD4+ T cells ($r = 0.49$; $p = 0.09$). In conclusion, although the immune response was higher in the resistant group, the differences between them were not significant or were slight in some of the immune parameters analysed.