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Sustainable Goat Production: Challenges and Opportunities of Small and Large Enterprises



381. Genetic evaluation of resistance to strongyles in Creoles kids is affected by protein supplementation

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The aim of the present study was to test a standardised evaluation design of genetic resistance in Creole goats considering indoors experimental infection and protein supplementation. Three trials were involved with a total of 154 female kids chosen from 3 successive cohorts of the Creole flock of INRA-Gardel in 2007. After weaning, kids were allocated in 4 groups according to the amount of concentrate offered: G0 (without concentrate), G100 (22g crude protein d⁻¹), G200 (44g crude protein d⁻¹), G300 (66g crude protein d⁻¹). Kids from G0 to G300 were infected with a single dose of 10,000 *H. contortus* third stage larvae at Day 0 (D0). Each infected group was constituted by one half resistant and the other half by susceptible genetic indexed kids. The average breeding values on egg excretion at 11 months of age were distant from 0.70 to 0.61 genetic standard deviation depending on group. A control group (without concentrate and not infected) was made of medium indexed kids. Groups were balanced according to live weight. Faecal egg counts (FEC), packed cell volume (PCV), blood eosinophilia (EOSI) were weekly recorded until D42 after infection. Kinetics of each variable was modeled using mixed procedure of SAS software. The 10,000 L3 dose received by the kids induced a severe infection: 8000 eggs per gram at FEC peak, the PCV lower than 15% and mortality rate. However kids managed to cope with it when supplemented. The advantage of supplementation was already obvious at 22g crude protein d⁻¹. Interestingly, supplemented animals (G300, G200, and G100) tend to show a higher level of EOSI than the control groups (G0 and TEM). Resistant and susceptible kids had significantly different FEC variation within groups. Susceptible kids had 1.6 higher egg output than resistant kids in G0. This difference was not found in supplemented groups. These results suggest that, when proposing a genetic evaluation design for resistance to strongyles in Creole goats, animals should not be protein supplemented, otherwise actual level of individual resistance could be confused.

