



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

Jean-Christophe Bambou, Claudia de La Chevrotiere, Rémy R. Arquet, Eliel González García, Maurice Mahieu, Harry Archimède, Gisèle Alexandre, Nathalie Mandonnet

► To cite this version:

Jean-Christophe Bambou, Claudia de La Chevrotiere, Rémy R. Arquet, Eliel González García, Maurice Mahieu, et al.. Genetic evaluation of resistance to strongyles in Creoles kids is affected by protein supplementation. 9. International Conference on Goats, Aug 2008, Querétaro, Mexico. 517 p. hal-02752099

HAL Id: hal-02752099

<https://hal.inrae.fr/hal-02752099>

Submitted on 3 Jun 2020

HAL is a multi-disciplinary open access archive for the deposit and dissemination of scientific research documents, whether they are published or not. The documents may come from teaching and research institutions in France or abroad, or from public or private research centers.

L'archive ouverte pluridisciplinaire **HAL**, est destinée au dépôt et à la diffusion de documents scientifiques de niveau recherche, publiés ou non, émanant des établissements d'enseignement et de recherche français ou étrangers, des laboratoires publics ou privés.

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

J.C. Bambou¹, C. de la Chevrotière¹, R. Arquet², E. González-García¹, M. Mahieu¹, H. Archimède¹, G. Alexandre¹, N. Mandonnet¹

¹Institut National de la Recherche Agronomique, Unité de Recherches Zootechniques, Domaine Duclos, 97170 Petit-Bourg (French West Indies).² Institut National de la Recherche Agronomique, Domaine expérimental de Gardel, 97160 Moule, Guadeloupe. Email : Nathalie.Mandonnet@antilles.inra.fr

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.