



Genetic parameters of growth and faecal egg counts obtained by using pedigree or SNP information

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Impact of changing amount and frequency of concentrate feeding on growth and carcass of weaned lambsA.S. Chaudhry¹ and M.I. Mustafa^{1,2}¹Newcastle University, Agriculture, Food & Rural Development, Agriculture Building, NE1 7RU, United Kingdom, ²University of Agriculture, Department of Livestock Management, Faisalabad, Pakistan; abdul.chaudhry@ncl.ac.uk

We examined the impact of two amounts and frequencies of concentrate (CON) feeding on daily dry matter intake (DDMI), live-weight gain (DLWG) and carcass of lambs consuming ryegrass hay *ad libitum* from weaning to slaughter. This factorial study involved 24 Texel × lambs by using 2 CON amounts each at 2 feeding frequencies for 2 genders each involving three lambs as replicates. The lambs received *ad libitum* grass hay but fixed daily amounts of either 500 or 250 g CON (11 MJ ME and 214 g CP/kg DM) as either single morning feeds or two equal feeds for 35 days. The lambs were slaughtered at 40 kg LW to assess their carcass and killing out (KO %). The data were statistically analysed for the effects of gender (G), CON amount (A) and frequency (F) of CON and their two way interactions on growth and carcass of these lambs for their significance at $P < 0.05$. While the CON amount significantly affected DDMI ($P < 0.05$), the feeding frequency and gender effects on DDMI were not significant ($P > 0.05$). The A × G interactions were significant ($P < 0.05$) for DDMI and KO% suggesting that the wether lambs had greater DDMI than the ewe lambs for higher CON amount but the ewe lambs had more DDMI on lower CON amount. The wether lambs had higher KO% for lower CON amount but the ewe lambs had higher KO% for higher CON amount ($P < 0.05$). The amount and frequency of CON feeding had no appreciable effect on growth or carcass of weaned lambs. The absence of response may be partly due the relatively lower DDMI of low quality hay. However, the tendency of greater DDMI and KO % of wether than the ewe lambs suggest that the wether lambs tended to respond more to changes in the frequency and amount of CNN feeding in this study.

Genetic parameters of growth and faecal egg counts obtained by using pedigree or SNP informationF. Assenza¹, J.M. Elsen¹, A. Legarra¹, C. Carré¹, G. Sallé², C. Robert-Granié¹ and C. Moreno¹¹INRA, 24 Chemin de Borde Rouge, Auzeville, 31326 Castanet Tolosan, France, ²Université François Rabelais, 10 boulevard Tonnellé, 37000 Tours, France; fabrizio.assenza@toulouse.inra.fr


Haemonchosis is a parasitosis causing severe losses in sheep production. Recently, the parasite's resistance to anthelmintics raised the need for alternative control strategies. Genetic selection is a promising candidate but its efficacy depends on the availability of genetic variation and on the occurrence of favourable genetic correlations between the traits under selection. The aim of this study was twofold: to estimate both the heritability of and the genetic correlations between growth traits and parasite resistance traits in two subsequent experimental infestations; to compare the precision of the estimates when using two different relationship matrices: including pedigree information only or including both pedigree and SNP information. The heritabilities of the growth traits and of the parasite resistance traits were weak and moderate, respectively. The estimates of the genetic correlation between the average daily gain before the infestation and faecal egg counts were different from the estimates of the genetic correlations between the average daily gain during infestation and faecal egg counts. The standard errors of the estimates obtained by including SNP information were smaller than those obtained without it. The use of molecular information results in more precise estimates than using pedigree only. The estimates of the genetic parameters suggest that it is possible to select for resistance to *H. contortus* while keeping the growth performance in contaminated environments. Whereas, selection for growth in parasite free environment could result in more susceptible animals.

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