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Theme 9 | Ruminant nutrition and production

Effect of feed restriction on the performance of lambs from seven genetic groups

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The objective was to evaluate the effect of feed restriction on feedlot performance of lambs from seven genetic groups: 32 White Dorper, 32 Ile-de-France, 26 Texel, 32 Santa Ines, 32 ½ White Dorper + ½ Santa Ines, 32 ½ Ile-de-France + ½ Santa Ines and 32 ½ Texel + ½ Santa Ines. The animals were weaned with 90 days of age and confined in individual pens with slatted floors during 42 days, after 15 days of adaptation. They received a pelleted diet with 90% concentrate and 10% alfalfa hay at the following levels: *ad libitum* (AL) (leftovers around 10%, adjusted daily), 0.75 (75)and 0.63 (63) g dry matter kg of metabolic weight^{-1}. Diets offered in restricted treatments were readjusted weekly after weighing of animals without fasting. At the beginning and at the end of the experimental period, animals were weighed following solid fasting for 14 hours. For the statistical analysis, the mixed model included fixed effects of lamb's genetic group, intake level and the interaction between both, besides the random effect (weaning group, three in 2015 and two in 2016). There was no significant interaction (P>0.05) between genetic group and feeding level for initial and final weights, total and daily weight gains and feed efficiency. There was effect (P<0.05) of genetic group only for the initial weight, with Texel (27.49 kg) heavier than Santa Ines (22.04 kg) and ½ Dorper + ½ Santa Ines (21.85 kg). The feed level influenced (P<0.05) final weight and daily gain, with higher averages for AL treatment (36.80 kg and 0.299 kg day^{-1}). Feed efficiency was similar among genetic groups (P>0.05), but altered (P<0.05) by feedlevel, with AL and 75 treatments more efficient than 63, respectively, 0.27, 0.28 and 0.24 kg liveweight gain kg DM intake^{-1}. There was interaction (P<0.05) between genetic group and feeding level for dry matter intake when measured as daily amount, and in relation to body and to metabolic weight. Santa Ines, Dorper, Texel and ½ Ile-de-France + ½ Santa Ines lambs ingested more (P<0.05) amount of food in AL than restricted treatments, but restricted levels were similar (P>0.05). For the Texel lambs, the difference (P<0.05) was only between AL and 63 treatments. In the AL treatment, the highest (P<0.05) intakes of dry matter were observed for the genetic groups ½ Ile-de- France + ½ Santa Ines (1.239 kg day-1) and ½ Texel + ½ Santa Ines (1.199 kg day^{-1}); and the lowest for the Texel lambs (0.962 kg day^{-1}). Ingestions of dry matter measured as percentage of body weight and amount in relation to metabolic weight were different (P<0.05) among ½ Ile-de-France + ½ Santa Ines and Texel, 3.98 and 3.26%, 93.31 and 75.43 g kg^{-1}, respectively; the other genetic groups were intermediate. Most of these ingestions reduced with lower food provided. Offer restricted amount of food to lambs in termination is not a good strategy because it reduces feed efficiency and final weight.

Keywords: efficiency, Ile-de-France, Santa Ines, Texel, weight gain, White Dorper

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