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Dietary narcoleptics and immunocastration improve growth in group-housed boarsI McCauley¹, GM Cronin¹, RH King¹, PH Hemsworth¹, JL Barnett¹, B Luxford², RJ Smits²,
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Background – The growth potential of boars may be only partially realised commercially because of aggressive and/or sexual activity. Dietary bromide and tryptophan and immunocastration may reduce these behaviours.

Objective – To determine effects of immunocastration and dietary narcoleptics on growth of group-housed boars.

Design – Three hundred boars were stratified on live weight into three 33.3 percentiles (heavy, medium and light) and within weight class allocated to five groups of 2 pens of 10 pigs per treatment. Control and immunocastrate (Improvac®, CSL at 13 and 17 wk, Imp) boars were fed a finisher ration while the other treatments were supplemented with bromide (140 mg bromide chloride/kg, Br), tryptophan (5 g tryptophan/kg, Trp) or both Br and Trp. Feed was offered *ad libitum* and intake and live weight per pen were determined weekly from 17 until 22 wk.

Outcomes – Imp boars grew more quickly than other treatments (808, 823, 826, 891 and 961 g/d for control, Br, Trp, Br+Trp and Imp boars, respectively, LSD=77 g/d). While there were no main effects of either Br or Trp treatments on daily gain, Br+Trp boars grew 10% faster (P<0.05) than controls. Importantly, there was an interaction between treatment and weight class such that, in the heavy weight class of pigs, all treatment groups grew faster than the control boars. Imp boars ate more feed than the other groups (2.35, 2.44, 2.42, 2.51 and 2.75 kg/d, LSD=0.24 kg/d), particularly over the last 3 wk. Over the first 4 wk the Br+Trp boars ate significantly more (+ 8.3%, P=0.05) feed than the control boars. There was no effect of any of the treatments on feed conversion ratio.

Conclusions – These data suggest that dietary narcoleptics can improve growth performance in group-housed boars, particularly in heavy animals, and confirm the performance enhancing effects of immunocastration.

Less efficient sheep are more responsive to an ACTH induced stress challengeSA Knott^{1,2}, BJ Leury², FD Brien¹, LJ Cummins¹, FR Dunshea^{2,3}¹Department of Primary Industries, Hamilton, VIC 3300²Institute of Land & Food Resources, The University of Melbourne, VIC 3010³Department of Primary Industries, Werribee, VIC 3030

Background – Animals which are susceptible to stress are generally considered to be less efficient in utilising feed, however this relationship has not been explored in sheep with known feed conversion efficiency.

Objective – To determine the influence of ACTH (adrenocorticotrophic hormone) on serum cortisol levels in animals of known feed conversion efficiency.

Design – Blood samples were taken from 44 cross-bred rams (12 mo, x kg) before and 45 min after intramuscular administration of ACTH (Virbac®, 2µg/kg LW). The individually-housed rams were fed *ad libitum* pellets (13 MJ/kg DM, 17% CP) with feed intakes and live weights recorded for 61 d. Feed conversion efficiency was calculated as feed eaten:liveweight gain (FCR). Total serum cortisol levels were determined in both pre- and post- ACTH samples. Rams were ranked from the most efficient to the least efficient in terms of FCR into 20 percentiles and the 9 most efficient animals (H) were then compared with the 9 least efficient animals (L).

Outcomes – There were no significant differences between H and L animals in either basal serum cortisol concentrations (28.4 vs 19.2 nM for H and L rams, respectively, P>0.05) or cortisol concentrations found in serum obtained 45 min after ACTH administration (143.0 vs 163.6 nM, P>0.05). However, the incremental serum cortisol response to ACTH injection was significantly greater in the least efficient rams (114.5 vs 144.4 nM, P<0.05).

Conclusions – Sheep with low feed conversion efficiency have a greater response serum cortisol to a known stressor such as ACTH than sheep that have a better feed efficiency. These differences in response to stress may partially explain some of the variability that exists between animals of differing efficiency and is likely to have a major impact on efficient production of lambs.