

Do dietary carob pulp and vitamin E affect performance and welfare in fattening pigs?

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The use of alternative feedstuffs, as Carob pulp (Cp), may prevent oxidative stress and improve animal health. The Cp is a by-product with a high level of fibre, condensed tannins, and hence good antioxidant capacity. Nevertheless, high levels of dietary tannins and fibres might affect performance or even social and eating behaviours in pigs. To assess the effect of dietary inclusion of carob pulp and vitamin E (vit E) level on the growth performance and skin lesion scores in fattening pigs, a study was performed in an experimental farm of Bonàrea Group. A total of 220 crossbred pigs [Duroc × (Landrace × Large-White)] of 130±4.5 days (d.) of age and 78.4±8.93 kg body-weight were used. Animals were randomly distributed in 44 pens (4-6 pigs/pen) and fed *ad libitum* one of four iso-energetic (2,300 kcal net energy/kg feed) and iso-protein diets (14.63% crude protein, 0.86% Lys) (5-6 pens/diet/sex) with different inclusion levels of Cp and/or vit E; 20% Cp+300 IU/kg vit E, 20% Cp+40 IU/kg vit E, 0% Cp+300 IU/kg vit E and 0% Cp+40 IU/kg vit E. At day 130, 151 and 169 of age, the animals were individually weighed, and the Welfare Quality protocol's skin lesion score (SLS) was performed in every pig. At 39 d. of the study, no effects of Cp or vit E (nor interactions) were found on final body weight (BWf, 124.7±2.16 kg), average daily gain (ADG, 1.18±0.02 kg/d), daily feed intake (ADFI, 3.08±0.05 kg/d) and Feed to gain (F:G, 2.65±0.03). Sex differences were found between entire males vs females (BWf; P<0.01, 129.7 vs 119.4±2.16 kg, ADG; P<0.001, 1.28 vs 1.09±0.02 kg BW/d, ADFI; P<0.001, 3.17 vs 2.99±0.05 kg/d, F:G; P<0.001, 2.49 vs 2.71±0.03, respectively). The day control affected the SLS (P<0.01); the lowest levels of SLS 1 and 2 (being SLS 2 the worst score) were found on day 169, while the highest level of SLS were showed on day 151. Besides, sex effect was found only in severe SLS (5% of females vs 1% of males, P<0.01). Both the inclusion of Cp and vit E seem to have no negative effect on the animal welfare parameters assessed or the pig's productive performance.

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