

Inclusion of silage in pig diets – effect on production and health

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Grass silage has potential as a locally produced protein and energy source for fattening pigs and could have positive effects on their gastric health. Feeding technique and pre-treatment of the silage will affect the consumption level and the pigs' potential to utilise the nutrients in the silage. The aim of this study was to study the effect of grass/clover silage, with different pre-treatments, included in total mixed ration (TMR) diets, on pig growth performance, carcass traits and occurrence of stomach ulcers. In total 128 fattening pigs were randomly allocated to one of four diets. The pigs were fed either commercial feed + intensively processed fresh silage, mixed and fed together (SE); commercial feed + chopped fresh silage, mixed and fed together (SC); commercial feed + ground silage, mixed and pelleted (SP); or commercial pelleted feed alone (C). In the SE diet, the silage was processed (1-3 mm) in a bio-extruder whereas in the SC diet, the silage was kept intact (chopped at harvest, 4-15 mm). The silage in SE, SC and SP diets were included to replace 20% of the dietary crude protein (g/kg DM). Pigs in SC and SE were fed more kg feed ($P=0.001$), but there was no difference in energy consumption between the SE and control diets ($P=0.197$). Feed conversion ratio (FCR) (MJ kg^{-1} growth) did not differ between diets ($P=0.145$), however protein conversion ratio (PCR) (g CP kg^{-1} growth) differed significantly with lowest PCR for pigs in the C diet (398.7) and highest (446) for pigs in the SC diet ($P=0.001$). Diet had a significant effect on growth performance of the pigs ($P=0.001$) and the occurrence of stomach ulcers ($P=0.001$). The average daily weight gain (kg) was higher for pigs in SP, C and SE compared with SC (1.084, 1.023, 0.996 vs. 0.951 ($P=0.001$)). Pigs in SC had the lowest carcass weight followed by pigs in SE, C and SP (81, 82, 84 and 85 kg, respectively). Lean meat content (%) did not differ among diets, however pigs in C had higher dressing percentage (74%) compared with the SE and SC (73%) ($P=0.016$). Thus, the results show that silage can replace parts of the diet, but that the pre-treatment of the silage might affect the nutrient utilization. Pigs in SE and SC had lower occurrence of stomach ulcers than SP and C ($P=0.001$), indicating that inclusion of fresh silage has a positive effect on pig gastric health.