

**Performance and behaviour of free-range pigs in relation to feed protein level and forage crop***M. Jakobsen and A.G. Kongsted**Aarhus University, Agroecology, Blichers allé 20, 8830 Tjele, Denmark; malene.jakobsen@agrsci.dk*

The aim of 100% organic diets based on locally produced feed ingredients is a huge challenge in organic pig production due to a limited production of suitable protein feed sources. The pig is an omnivore and has a unique foraging capacity for seeking food on and below the soil surface. It is hypothesised that foraging in the range area can contribute considerably to the nutritional needs of growing-finishing pigs. Foraging activity, nutrient intake from the range area and pig performance was investigated in 36 pigs foraging on either lucerne or grass and fed either a standard organic mixture (HP: high protein) or a mixture of barley and wheat (LP: low protein) from approximately 60 to 90 kg live weight in three replicates. All pigs had access to 4 m² per pig per day and were fed according to 80% of energy recommendations. Behavioural observations were carried out 12 times over the entire experimental period of 40 days. For both crops, LP pigs rooted significantly more than HP pigs but the effect of feed protein level was larger in grass (44 vs 19% of all observations) compared to lucerne (28 vs 16% of all observations). Feed protein level had no significant effect on grazing behaviour but pigs on lucerne grazed significantly more than pigs on grass (10 vs 4% of all observations). A significant interaction between forage crop and feed protein level was found on daily weight gain and feed conversion ratio. Compared to the HP pigs, the pigs on LP treatment had 33% lower daily weight gain (589 vs 878 g) and 31% poorer feed efficiency (3.75 vs 2.59 kg feed per kg weight gain) in grass paddocks but only 18% lower daily weight gain (741 vs 900 g) and 14% poorer feed efficiency (2.95 vs 2.54 kg feed per kg weight gain) in lucerne paddocks. The LP pigs foraging on lucerne used 169 g less feed crude protein per kg weight gain than the HP pigs. The results indicate that direct foraging on lucerne can pose an important contribution to protein supply in organic growing pigs.