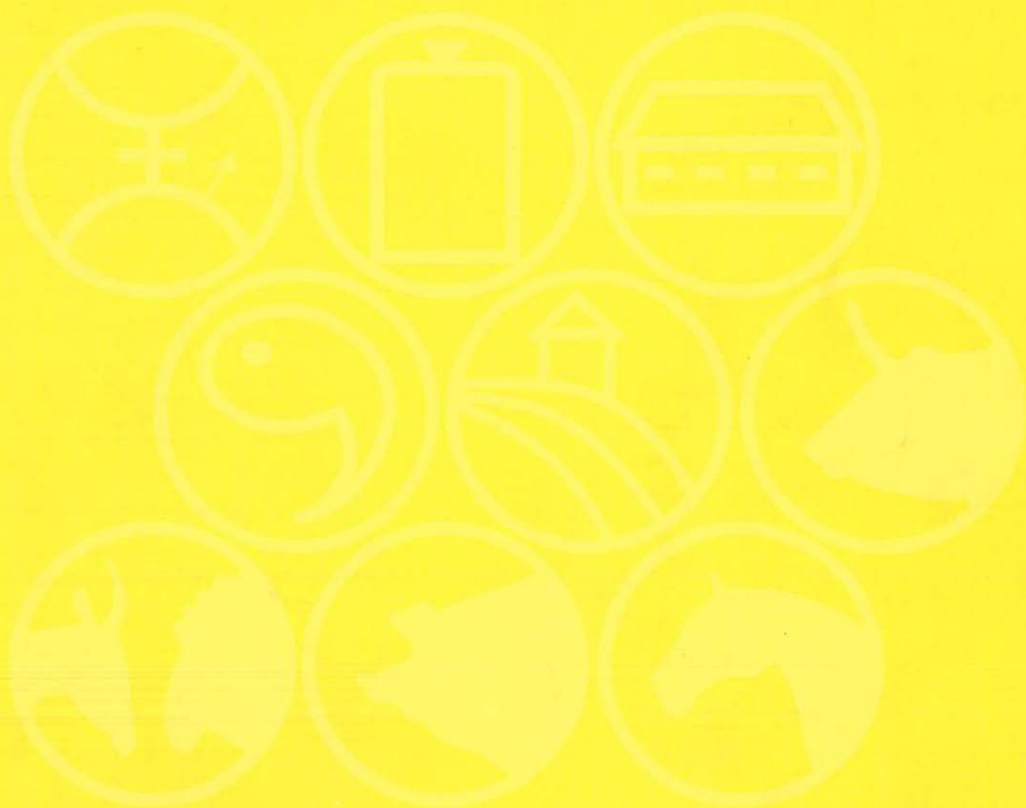


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**Dynamics of pastures and fodder crops for Mirandesa cattle breed**

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Mirandesa cattle are a local breed from the Northeast region of Portugal, playing an important role on the maintenance of the rural spaces, contributing to the fixation of the populations and to the environmental preservation. The aim of this study is to characterise the feed resources available along the year in this farming system.

The animals graze natural pastures in Spring and beginning of Summer, being after fed with hays (of natural pasture or oat) and straws (oat, barley or wheat) and complemented with local feeds like squash or potatoes.

Samples of feeds were taken from three different farms in two consecutive years and analysed for crude protein (CP), cell wall components, minerals and *in vitro* organic matter digestibility (OMD). Data were evaluated using the ANOVA statistical approach. Seasonal variations were observed in natural pastures with decreases of CP from Spring to Summer (16.0 to 9.4 % DM) and increases of NDF content from 32 to 41% DM. Consequently a reduction of OMD from 69 to 58 % was observed. Regarding hays composition, differences were observed for CP content which was lower for oat hay, compared with that from natural pasture (2.4 vs. 4.6 % DM). Straw quality varied between farms and type of straw.

**Reduction of nitrogen environmental impact by diet manipulation in swine**

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Diet manipulation became an alternative to reduce nitrogen excretion and the negative impact of wastes to the environment. The purpose of this experiment was to quantify the effects of reducing the protein content of pig diets on the excretion of nitrogenous compounds.

Two experimental diets with 18 (diet T) and 15 (diet N) % crude protein were studied in metabolic trials with growing/finishing pigs (35-100 kg). Digestibility and balance of dietary N, as well as the fractionation of N excretion were evaluated.

N digestibility was near 88% in the two diets. For diet N, nitrogen intake was 19 g/day less, but N retentions were 7% higher (P<0.05). Faecal N excretion was 12% of the intake with both diets. Differences were observed in urinary excretion (P<0.05). Regarding NH<sub>3</sub> excretion (g/animal/day) the observed values were 8.36 (3.05 kg/year) for diet T and 2.65 (0.97 kg/year) for diet N, meaning a reduction of 2.08 kg/animal/year with diet N. Transposing these value to the Portuguese indigenous swine population, a total reduction of NH<sub>3</sub> emission of 2 715 ton/year was estimated. It was concluded that a reduction of dietary N would be a valuable proposal to minimize the environmental impacts resulting from traditional production systems.