Sainfoin as a replacement of alfalfa: nutritive value and performances in the rabbit

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Since the sainfoin (*Onobrychis viciifolia*) contains high ADF and ADL levels associated with a high level of protein, it could be a good alternative to alfalfa for rabbit feeding. Nowadays dehydrated pelleted sainfoin 'DpS' (PERLY variety) is available on the market (Multifolia company). However no informations are available about the nutritive value of DpS when incorporated in a complete balance pelleted diet for the growing rabbit. Thus we studied the effect of substituting 40% of the alfalfa in a control diet (C) with sainfoin (diet S), on digestion and performances of two groups of 16 rabbits housed in metabolic cages (8 cages of 2 per group), and fed freely C or S diets from weaning (28 d) to slaughter (70 d). DpS chemical composition was: crude protein 'CP'=17.3%, ADF=30.4%, ADL=12.0%. Chemical composition C and S pelleted diets were: CP=15.9 & 16.7% resp., ADF=19.9 & 23.4%. The S diet also differed from C diet by its tannin (1.8% vs 1.0% tannic acid equivalent) and its ADL concentration (8.4 vs 4.3%). A five days fecal collection period (60-64 d old) was performed to calculate the digestibility. Growth rate (28-70 d) was 5% lower in S than in C group (38.2 vs 40.2 g/d; $P<0.05$), while feed intake was 3% higher for S than for C group (121.5 vs 116.5 g/d, $P<0.05$), as was the feed conversion ratio (3.18 vs 2.90; $P<0.01$), probably in relation to the higher ADL level for S diet. Protein digestibility was 5 units lower in S compared to C groups (69.6 vs 75.3%; $P<0.01$), probably associated with the high tannin concentration. Energy digestibility did not differ between S and C diets (mean = 65.4%). Using the substitution method, the digestible energy 'DE' content of dehydrated sainfoin pellets, as a raw material, was calculated at 11.21 MJ/kg (40% higher than alfalfa), and digestible proteins content at 110 g/kg (similar to alfalfa). In conclusion, dehydrated pelleted sainfoin constitutes a good alternative to alfalfa, since it supplies energy and protein as well fibres, and particularly lignins essential for the growing rabbit.