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Ruminal dry matter degradation of sodium hydroxide treated cottonseed hulls using *in situ* technique

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The objective of this study was to determine the effect of alkali treating on ruminal dry matter (DM) degradation of cottonseed hulls using *in situ* technique. Cottonseed hulls were treated with NaOH as 20 or 40 g/kg DM [a 20% or 40% solution of NaOH was sprayed on CSH and kept for 0.5 h (CSH2Na0.5 and CSH4Na0.5, respectively), or 48 h (CSH2Na48 and CSH4Na48, respectively) at room temperature. Then, samples were dried using air-forced oven (60 ºC). Four sheep (44±5 kg body weight) fitted with rumen fistulae were used. Bags (17×12 cm) were made of polyester cloth with pore size of 52 µm. About 5 g DM of each sample was placed in each bag, then incubated (n=4) for each time (2, 4, 6, 8, 12, 16, 24, 48, 72, 96 and 120 h). For zero time, bags were washed using cold tap water. The equation of P= a + b(1-e-ct) was applied to determine the degradation coefficients (a= quickly degradable fraction, b= slowly degradable fraction, c= constant rate of fractional degradation). Dry matter degradation parameters (a, b and c) of the samples were: CSH2Na0.5=0.03±0.01, 0.50±0.06, 0.018±0.005; CSH2Na48=0.08±0.014, 0.50±0.08, 0.013±0.004; CSH4Na0.5=0.057±0.015, 0.50±0.05, 0.018±0.004; CSH4Na48=0.09±0.011, 0.49±0.06, 0.013±0.004, respectively. It was concluded that the spray-treated of CSH with NaOH solution for 48 h caused to increase the (a) fraction. However, there was no significant effect of the spraying time on b and c fractions.

Protein digestibility of different varieties of white lupine

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The objective of this study was to determine the intestinal digestibility (DSI) of rumen undergraded protein in different varieties of white lupine (Amiga, Butan, Dieta). The digestibility profiles of protein and individual amino acids (AA) were evaluated using mobile bag technique in three rumen and T-piece duodenal cannulated cows. The daily diet per cow was based on 4 kg of alfalfa hay, 1 kg of barley meal with 100 g of vitamin and mineral supplement, and water was available ad libitum. Concentration of dry matter, crude protein, ether extract, crude fibre, neutral detergent fibre, acid detergent fibre, ash and individual essential AA (arginine, histidine, isoleucine, leucine, lysine, methionine, phenylalanine, threonine, valine) and non-essential AA (alanine, aspartate, cysteine, glutamate, glycine, proline, serine, tyrosine) in lupines was determined. DSI of rumen undergraded protein was 71, 84 and 76% for Amiga, Butan and Dieta, respectively. DSI of essential and nonessential AA was found to be 86% and 83% (Amiga), 87% and 85% (Butan), and 84% and 82% (Dieta), respectively. The significant differences among the estimated varieties of lupines ($P<0.05$) were declared for DSI of protein (Butan vs Dieta, Amiga vs Butan) and subsequently for glutamate (Butan vs Dieta) and proline (Amiga vs Butan). The study was supported by the Ministry of Agriculture of the Czech Republic (NAZV QG 60142).