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Effects of the treatment of straw with NaOH and urea solutions on ingestibility and digestibility in sheep

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In order to compare 2 different treatments under farm conditions, straw (MM: 7.8%; CP: 6.5%; CF: 43% DM) was sprayed in a silo, using a 4% NaOH solution or a urea solution (200 g/l) with 300 ml/kg of straw. These concentrations are those most often recommended in the literature.

Sixty days after treatment, the 2 treated straws were compared with a control straw, on a group of 6 castrated adult rams fed, during 3 successive periods, the following 3 isoenergetic, isonitrogenous diets. I: control straw + 150 g of grain corn and 135 g of soya cake per kg of straw; II: NaOH-treated straw + 155 g of soya cake per kg of straw; III: urea-treated straw + 70 g of soya cake per kg of straw; with 20 g of 9/15 CM daily and water *ad libitum*. After a 20 d adaptation period during which the

animals could eat as much as they wanted, ingestibility was measured over a 10 d period. There, was then a 10 d adaptation period to limited quantities (25 g of DOMI/kg W^{0.75}), followed by a 2nd 10 d period of digestibility measures.

The main results appear in table I.

Straw intake and digestibility were increased by the treatments. This was particularly true for NaOH treatments with the exception of nitrogen digestibility. These results are in keeping with the observations made in our laboratory by Philibert (1981) and Meschy (1984).

Meschy F (1984) Thèse, Université de Dijon
Philibert MS (1981) Mémoire de fin d'études
ENSBANA, Dijon

Table I. Straw ingestibility and digestibility depending on the treatment.

	Control straw		NaOH straw		Urea straw	
<i>Ad libitum</i> DM ingestibility (g/kg W ^{0.75})	36.8		45.0		40.7	
at maintenance level ^a	1	2	1	2	1	2
OMD (%)	55.3	44.1	63.3	57.8	59.6	56.5
CFD (%)	52.6	52.1	73.8	73.7	68.2	68.1
CPD (%)	60.3	-14.8	62.0	-16.3	67.6	58.7

^a 1: diet; 2: straw alone calculated without interaction.