Sugar Cane Silage (*Saccharum officinarum* L.) Hydrolyzed with Calcium Hydroxide

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Sugar cane silage (*Saccharum officinarum* L .) hydrolyzed with calcium hydroxide

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Introduction Sugar cane ensiling is a strategy which can eliminating the daily cut , this procedure being concentrated in a short period of time ; and further , it increases the efficiency of tillage such as fertilizer and herbicide applying onto the harvested area , making it possible uniformity at regrowth . Sugar cane ensiling also avoids risks of loss by fire or other random factors . But , it is important to stand out that , for presenting , a wide amount of soluble carbohydrates , it is susceptible to yeast activities , and those , in a anaerobic environment cause significant losses of alcoholic fermentation (Evangelista et al . , 2003) .

Material and methods The following treatments were evaluated : T_1—sugar cane silage+0 .25% of calcium hydroxide ; T_2—sugar cane silage+0 .50% of calcium hydroxide ; T_3—sugar cane silage+0 .75% of calcium hydroxide and T_4- sugar cane silage +1 .0% of calcium hydroxide . All the treatments were supplemented with 1% of urea at the moment of the feeding of the silages to the animals . For determination of voluntary intake and digestibility , 20 sheep housed in individual cages according to the classic method of total feces collection were used , the randomized block design being utilized . Voluntary intakes of dry matter , crude protein , neutral detergent fiber and acid detergent fiber and the coefficients of digestibility of dry matter , crude protein , neutral detergent fiber and acid detergent fiber were determined .

Results The regression equations relative to the studied variables are presented in table 1 . The animals which were given the sugar cane silages additived with 0 .25% of calcium hydroxide presented estimated average intake of 1 .99% out of live weight , while for the silages additived with 1% , intake was of 2 .27% out of live weight . There was a growing linear effect (P=0 .07) of the levels of calcium hydroxide on the apparent digestibility of dry matte , the increases in the digestibility of dry matter of roughages treated with alkaline chemicals , normally are related to the increase in dry matter intake , decrease in the intake of neutral detergent fiber and acid neutral detergent and increase in the digestibility of these constituents of cell wall .

Table 1 *Regression equation and coefficients of determination relative to the variables intake and digestibility of dry matter , crude protein , neutral detergent fiber and acid detergent fiber .*

Variables	Equation	Coefficient of determination
Dry matter intake (g/animal/day)	Y=1 .89+0 .38x	0 .83
Apparent digestibility of dry matter (%)	Y=56 .28+4 .46x	0 .98
Crude protein intake (g/animal/day)	Y=102 .26+11 .71x	0 .48
Apparent digestibility of crude protein (%)	Y=75 .15+4 .65x	0 .89
Intake of neutral detergent fiber (NDF) (g/animal/day)	Y=346 .24-86 .55x	0 .88
Digestibility of neutral detergent fiber (NDF) (%)	Y=37 .36+13 .91x	0 .46
Intake of acid detergent fiber (FDA) (g/animal/day)	Y=210 .17-34 .93x	0 .98
Digestibility of acid detergent fiber (ADF) (%)	Y=40 .09+8 .45x	0 .34

Conclusions The addition of up to 1% of calcium hydroxide to sugar cane at the moment of ensiling is characterized as a possible management strategy for presenting reduction in the cell wall constituents ; rise in intake and in the coefficients of digestibility , which translate into desirable characteristics to the ensiling of this grass .

References

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