Grain Corn Silage and Forage Corn Silage Evaluation on the Nelore and Canchim Cattle Performance in Feedlot

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An experiment was carried out to evaluate corn grain and corn forage variety productivity and nutritive value of silage based on the performance of cattle in a feedlot. A completely randomised design was used with a 2 x 2 factorial arrangement based on two breeds (Nelore and Canchim) and two corn varieties (grain and forage). The maize was harvested 120 days after sowing, when plants showed more than 2/3 of dry leaves and grains were in the dough stage. The silage was stored in 400 t silos. The experimental diet consisted of grain or forage corn silage, 7.2 liters of liquid yeast (1.5 kg of dry yeast/head/day) and 1.1 kg of ground corn (1.0 kg of dry matter/head/day). The experiment duration was 110 days, with a 20 days adaptation period and 90 days for data collection. Animals were weighed every 28 days. It was concluded that corn grain was more appropriate for silage than corn forage, because at the same stage

of growth it produced a better quality silage with a higher dry matter content and a 41.3% higher grain yield, promoting higher weight gain and better feed/gain ratio in the feedlot beef cattle.

Table 1: Forage corn variety: Yield characteristics and composition.

Parameters	Forage Corn Variety	
	Forage Corn	**Grain Corn**
As fed yield [1] (ton/ha)	45.00	27.20
Dry matter (%)	32.00	44.00
Yield DM [2] (ton/ha)	14.40	12.00
Grain yield (ton/ha)	5.40	6.40
Remainder [3] (ton/ha)	9.00	5.60
Grains in DM (%)	37.50	53.00

1. As fed matter
2. Dry matter
3. Remainder of the plant

Table 2: Corn silage: Chemical characteristics and pH.

Parameters	Corn variety	
	Forage Corn	**Grain Corn**
Dry matter (%)	34.80*	45.60*
Crude protein (%)	7.37	8.32
Acid detergent fiber (%)	26.10*	23.80*
Lignin (%)	4.10*	2.80*
Ammoniacal nitrogen [1] (mg)	8.73*	6.52*
Acid detergent insoluble nitrogen (mg)	8.02*	6.12*
PH	3.96	3.20
Cellulose (%)	19.53	18.62

1. Ammoniacal nitrogen as a percent of total nitrogen.
* Significant at the level of 5% of probability.

Table 3: Animal performance during 90 days in feedlot.

Breed	Corn variety						Mean		
	Forage Corn			Grain Corn					
	DG[1]	DFI[2]	FG[3]	DG	DFI	FG	DG	DFI	FG
Nelore	0.79	10.09	12.77	1.17	10.23	8.74	0.98	10.16	10.76
Canchim	1.29	9.39	7.28	1.38	9.63	6.98	1.33	9.51	7.13
Mean	1.04	9.74	10.03	1.28	9.93	7.86			

DG: Daily weight gain (kg/day)
DFI: Dry matter intake (kg/day)
FG: Feed/gain ratio (kg DM/kg DG)
1. CV = 16.0%
2. CV = 6.9%
3. CV = 7.3

Table 4: Dry matter intake.

Intake (kg/day)	Corn variety	
	Grain Corn	Forage Corn
Dry matter	9.93	9.74
Concentrate	2.50	2.50
Ground corn	1.00	1.00
Yeast	1.50	1.50
Silage	7.43	7.24
Grains corn from the silage	3.94	2.71
Remainder of the plant	3.49	4.53
Total intake of corn (Concentrate + silage)	4.94	3.71
Total of concentrate (Concentrate + grains from the silage)	6.64	5.21
Total forage	3.49	4.53
Forage: concentrate ratio	35:65	46:54
Daily gain	1.28	1.04