

Milo vs Corn at Two Moisture Levels

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Story in Brief

Corn and milo in the high moisture harvested or dry form were fed to finishing steers for 133 days. Compared with dry milo, dry corn produced 29 percent faster and 23 percent more efficient gains. Net energy for gain of the dry milo ration was only 80 percent that of the dry corn ration. Gain and efficiency of feed use were lower the first half of the trial for steers fed high moisture milo than those fed high moisture corn, but for the total trial, performance of steers fed high moisture harvested milo was almost identical to that of steers fed high moisture corn. Results suggest that benefit of high moisture harvest, like steam flaking, is much greater for milo than for corn grain.

Introduction

The feed grain of choice for cattle feeding in the Great Plains for the past 10 years has been corn. Consistent chemical composition and nutritional value plus less costly processing are probably the major reasons. But with increasing costs for fuel to pump water for irrigation, declining water tables and governmental price supports, many acres previously producing corn are now producing milo. This trial was designed to further examine the relative feeding value of dry rolled corn, dry ground milo, high moisture harvested corn and high moisture harvested milo.

Materials and Methods

Chemical compositions of the grains are shown in Table 1. Three pens of eight steers each were fed for 133 days the four grains (DC, DM, HMC, HMM) with a urea supplement to provide 11.5 percent protein. Experimental procedures are reported in the "protein level and source" article elsewhere in this publication. The variety of milo harvested and ground into the horizontal plastic bag silo and that ground for dry feeding were identical.

Results and Discussion

Despite high dry matter intake, performance of steers fed the dry ground milo was very poor (Table 2). Energy availability for gain from dry milo was only 80 percent that of dry corn. In contrast, high moisture milo had 98 percent the energy value of HMC and 99 percent the value of dry rolled corn. Gains were slower at the start of the trial with HMM than with HMC and DC. Feed efficiencies generally paralleled performance. Fecal starch was higher for milo than corn rations and particularly high with

Table 1. Grain and ration composition.

Grain	Dry		High moisture	
	Corn	Milo	Corn	Milo
pH	----	----	4.72	4.17
Dry matter, %	86.4	89.6	74.6	72.5
Crude protein, %	9.07	10.15	8.82	10.55
Ration protein, %	11.02	11.55	11.45	11.91

Table 2. Animal performance and carcass characteristics.

Form Grain	Dry		High moisture	
	Corn	Milo	Corn	Milo
Steers, no.	24	24	24	24
Pens, no.	3	3	3	3
Weight, initial	693	706	701	710
Daily gain, lb				
0-66	3.87 ^c	2.95 ^a	3.91 ^c	3.57 ^b
66-133	2.87 ^{bc}	2.31 ^a	2.73 ^b	3.03 ^c
0-133	3.37 ^b	2.62 ^a	3.30 ^b	3.29 ^b
Daily feed, lb				
0-66	20.86 ^b	20.34 ^{ab}	19.43 ^a	20.14 ^{ab}
66-133	19.07	20.09	19.46	19.97
0-133	19.96	20.21	19.44	20.05
Feed/gain				
0-66	5.41 ^{ab}	6.91 ^c	4.98 ^a	5.66 ^b
66-133	6.67 ^a	8.76 ^b	7.15 ^a	6.60 ^a
0-133	5.95 ^a	7.70 ^b	5.90 ^a	6.10 ^a
Carcass weight, lb	710 ^a	655 ^b	708 ^a	712 ^a
Grade	12.6 ^b	11.9 ^a	13.2 ^c	12.9 ^{bc}
Marbling	13.8 ^b	12.5 ^a	14.3 ^b	14.4 ^b
Fecal pH	5.90	5.85	6.07	5.89
Fecal starch, %	14.9 ^a	28.3 ^b	16.3 ^a	21.9 ^{ab}
Estimated digestibility, %	67.9 ^b	58.0 ^a	71.1 ^b	68.3 ^b
NE _g mcals/kg	1.41 ^a	1.13 ^b	1.43 ^a	1.40 ^a

^{abc}Means within a trial with different superscripts differ statistically ($P < .05$).

dry milo. Dry matter digestibility for the dry milo ration was only 84 percent that of other rations, matching well with performance data. Marbling and federal grade tended to be higher for steers fed high moisture feeds.

Results suggest that high moisture harvest and storage of milo is one means of markedly enhancing its feeding value. However, the rapid rate of drying in the field of high moisture milo reduces the time available for harvest as compared with high moisture corn. Whether reconstitution of milo can completely restore this energy availability is unknown.