

## Grazing Standing Corn Field Day – Fred Abels farm, Holland, Iowa



### Overview

Fred has been purchasing late calving cows to build a fall calving cow herd. He has established a managed summer grazing system and became interested in grazing standing corn for winter feed after attending several meetings and talking to other producers who have done the same.

48 cow calf pairs calving in mid to late summer have been strip grazing approximately .08 acres of standing corn and .04 acres of harvested stalks daily since Dec. 5. In late November the cows had condition scores ranging from 5-7. The only other feed received from Dec until March 1 has been corn gluten pellets at 3 lb per head per day or 6 lb per head per day when temperature was below 0 degrees. Free choice mineral is available. Majority of calves were weaned in mid February.

Fred combined strips across rows (one combine width) to make 140 feet long strips and also combined 5 rows between strips leaving 10 unharvested rows. The harvested corn yielded 211 bushels per acre. See attached layout for more description.

### Fence

Fred put in the post for the cross fence going across rows before the soil froze last fall. He has two lengths of approx 150 ft. fence to divide the strips for daily grazing. He opens a strip each day by reeling up the fence and pulling the 5-6 posts and then moves that fence to the back side of the next days strip. To get the posts in the frozen ground he uses a sharpened rerod to make holes. The cost of the fence was \$638. 100 posts at \$2.80 each, 4 extra large reels at \$71 each and 2 regular size reels at \$37 each.

### Corn grain available

**Estimated Cows consume 17 -18.5 pounds corn per head day as fed or 15 pounds corn as dry matter**

211 bu/acre harvested yield

Estimated corn left in field by counting kernels in square foot. 2 kernals/sq ft = 1 bu/acre.  
In grazed strips-3.75 bu/acre In harvested strips-.5 bu/acre =2.67 bu/acre for entire field

$211 - 2.67 \text{ bu} = 208.33 \text{ bu/acre} \times .08 \text{ acres} = 16.66 \text{ bu.} \times 56 \text{ pounds} = 933 \text{ pounds}$   
 $933 \text{ pounds} / 48 \text{ pairs} = 19.5 \text{ pounds per pair per day}$

Estimated calves are eating 1-2.5 pounds of corn per day leaving 17-18.5 pounds per cow per day.

## Cornstalk forage available

### Estimated 308 lbs. forage DM consumed daily /48 head =6.4 lbs forage DM/head

Estimate that 54 % of the total dry matter from corn plants is grain and 46 % is forage

211 bu/acre x 56 lb/bu = 11816 pounds corn/acre x .85 % DM =10043 pounds dry matter from grain  
 10043 /.54 = 18600 total pounds dry matter/acre

18600 lbs. total DM-10043 lbs.corn grain DM = 8556 lbs. forage DM /acre x .12 acre =1026 lbs. forage DM available daily

1026 lbs. forage DM available x 30% utilization (estimate) = 308 lbs forage DM consumed

## Meeting nutrient requirements

Late lactation British bred mature cow 1350 pounds December and Jan. Maintain condition score

Current ration - Estimated DM intake-32 pounds 24 lbs. DM consumed

Amount of feed	Dry matter pounds	% of energy required	% of protein required
17.8 lbs corn grain	15	90 %	64%
8.55 lbs. stalks 5.9% CP	6.4	107 %	80%
3 lbs gluten feed	2.7	122%	102%

At existing forage utilization rate of 30%, approximately and additional .2 acres of harvested stalks (25 rows) would be needed to meet estimated dry matter intake w/o gluten.. With 10 more pounds dry matter intake of corn stalks the energy available is 131% of requirement and metabolizable protein is 102% of requirement.

## Costs

Gross income lost from not harvesting corn –100 strips of .08 acres =8 acres or 100 days of grazing  
 211 bushels/acre x \$2.00/ bu x 8 acres =\$3376

### Cost per head per day

\$3376 /48 head /100 days = \$.70 per day                      3 lbs of gluten adds \$.14/head/day

### Compare harvesting corn and buying hay with corn income

\$3376/ \$65/ton hay =51 ton of hay = 1.08 ton per pair or 21 lbs. per head per day for 100 days.

Example rations with hay

All hay ration Cost \$1.07 per head per day Estimated DMI 28 lbs.

Amount of feed	Dry matter consumed	% of energy required	% of protein required
33 lbs hay 15 % CP	28 pounds	85 %	110%

Hay corn ration cost \$1.04 per day Estimated DMI 31 lbs 23.5 lbs. DM consumed

Amount of feed	Dry matter consumed	% of energy required	% of protein required
21 lbs hay 15 % CP	15 pounds	55 %	70%
10 lbs. corn grain	8.5 pounds	106 %	141%

Hay corn cornstalk ration \$.86 per day Estimated DMI 29 lbs. 29 lbs. DM consumed

Amount of feed	Dry matter consumed	% of energy required	% of protein required
6.25 lbs hay 15 % CP	5.3 pounds	13%	21%
8 lbs. corn grain	6.8 pounds	56 %	64%
22.5 lbs. corn stalks \$25/ton	16.9 pounds	102%	104%

## Could this work for spring calving cows?

Mid-late gestation British bred mature cows 1350 pounds Dec. Jan.

Grazing standing corn Estimated DM intake-27.5 pounds 27.5 lbs. DM consumed

Amount of feed	Dry matter pounds	% of energy required	% of protein required
8.5 lbs corn grain	7.22	42%	35%
25 lbs. stalks 5.9% CP	20.25 **	111%	93%

\*\* Dry matter intake of stalks is limited to 1.5% of body weight

Approximate acres needed per day for 48 head with 211 bu corn and 30% stalk utilization  
.035 acres (3 30" rows 200 feet long) standing corn and .38 acres of harvested corn (33 rows)

Approximate acres needed per day for 48 head with 150 bu. corn and 30% stalk utilization  
.05 acres (5 rows 175 feet long) standing corn and .54 acres of harvested corn (54 rows)

### Feed Costs \$2.00 per bushel corn

.035 acres x 211 bu x \$2.00 per bu. = \$14.77 / 48 cow= \$.31 /hd / day.

### Compare harvesting and selling corn and buying hay for 100 days

100 days x .035 acres = 3.5 acres x 211 bu = \$1477 income from harvesting corn  
\$1477/\$65 ton hay = 22.75 ton of hay x 2000lbs./ 100 days/ 48 head = 9.5 pounds per head per day

### Example hay rations

All hay ration Cost \$1.01 per head per day Estimate DMI 26.4 lb.

Amount of feed	Dry matter pounds	% of energy required	% of protein required
31 lbs hay 15 % CP	26.4 pounds	91 %	118%

Hay, cornstalk, corn ration \$.83/head/day Estimated DM intake-26.7 lbs. 26.7 lbs. DM consumed

Amount of feed	Dry matter pounds	% of energy required	% of protein required
20 lbs cornstalks \$20/ton	15	44%	44%
9.5 lbs hay	8.1	75%	85%
4.25 lbs corn	3.6	100%	119%

### Other additional factors

Don't have to start tractor, no hay feeders, no manure handling, cows are clean, combining costs?

Do have to run a fence and have a good fence system. Ice did short out fence one time. Mud may limit grazing foraging. Rough surface conditions in field for planting. Compaction?

### Other management ideas-things to consider

Double plant rows perpendicular to existing rows where end of strips will be easier to see where to go with combine when going cross rows.

Leave wider harvested strips between unharvested strips to spread out snow and make fenceing easier. Will also provide more forage for cows.

Should standing corn area be longer with less rows? More access and maybe less trampling of stalks but more fence to move. Effect on corn stand ability?

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