

# **THREE YEARS OF GRAZING CORN**

by  
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Below are the results of Grazing Corn Demonstrations conducted at the Eastern Ohio Resource and Development Center in Belle Valley. The principal investigator was Jim Barrett, who was killed in a farm accident in 1999. During the past three years Jim and I had worked on many projects together, including this Grazing Corn. Below please find a summary of Jim's findings in 1997 - 1998 and what I completed in 1999.



## Grazing Corn Demonstration (EORDC) 1997

Livestock producers are always looking for a cheap source of feed to make their enterprise more efficient. A grazing corn project was implemented at the Eastern Ohio Research and Development Center at Belle Valley during 1997 and repeated again in 1998 at the cost of gain and the returns per acre of grazing corn as a feed for beef cattle.

\*The 1997 results were as follows\*

The 6.5 acre field selected was used as a calving area during March and April. The cows were taken out and the grass was allowed to grow. In mid May, 150 Merino wethers were turned in and allowed to graze until June 1. "Baldrige Grazing Maze" was planted in the field June 12 with a two-row no-till corn planter at approximately 30,000 plants per acre. The field was sprayed June 13 with one quart Gramoxone and 180 pounds actual nitrogen in liquid 28 form.

Thirty-nine Angus heifers were turned into *the* first strip of corn September 15. The cattle were weighed September 15 & 16. The average weight was considered the starting weight. Weights were taken weekly. The last weight was November 10.

The corn was fenced in strips. The fence was moved every other day. Three rows were mowed down with a four-wheeler so the fence could be placed in the middle of the mowed corn. The fence used was a two-strand poly tape electric with step-in posts placed about 30 feet apart.

There was no problem with the cattle reaching through the fence.

<b>Summary</b>		<b>Costs</b>	
Starting weight	791 lbs.	Land Use	530.00/A
Finish weight	912 lbs.	Fertilizer	43.00- 180#N28%
Gain	121 lbs.	Gramoxone	9.00 - Herbicide
Days on corn	56	Spraying	7.00
Gain per day	2.16 lbs.	Planter Rental	8.00
		Tractor Use	4.00
		Seed Cost	28.00
		Total Cost	129.00/A
		(labor & fencing not included)	
<b>Implications from this project:</b>		Returns	706.15 lbs. beef/1A
1. Grazing Maze was an economical method of producing beef			.50 - value of gain
2. Producers need not own any expensive equipment.		Gross	353.08
3. Steers could possibly gain more weight.		Cost	129.00
4. Steers would return more profit per acre.		Net Return/1 acre	224.08
5. Could be used in stocker operation for topping our feeders.		Cost per lb. beef	183 - slightly over .18/lb.
6. A crop of hay could be harvested before planting grazing maze.		Estimated DM consumption	5318 lb.
7. Nitrate level should be checked in extremely dry weather.			
8. Pasture could be stockpiling while cattle are utilizing the grazing corn.			

## GRAZING CORN 1998

The project was repeated in 1998. The corn was planted June 21, 1998. Three days after planting, 14 inches of rain fell in 3 days time. Population suffered because of this, some wet spots, corn did not emerge. July and August were extremely dry, therefore the yield was not as good as in 1997.

**\*The results in 1998 were as follows\***

### Grazing Corn Demonstration 1998

September 28 - Grazing started  
31 Angus heifers  
Starting weight 783 lbs.  
Finish weight 886 lbs.  
Days on corn - 47  
Gain - 103 lbs.  
Gain/day - 2.19

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#### Costs

Land	\$30.00/A
Fertilizer	37.00 - 180 lbs. N - 28%
Gramoxone	7.00
Spraying	7.00
Planting	12.00
Seed Cost	28.00
Total cost	120.00/A

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#### Returns - 491 lbs. Beef

Value of gain	50 cents/lb.
Gross	245.50
Costs	120.00

Net Returns/A 125.50

Costs/lb. beef 25.5 cents

Estimated Total DM consumption:

4676 lb. DM/A

The results were not as good as in 1997, but compared to corn yield in Noble and Washington counties in 1998, the crop yielded an excellent return per acre and was an economical feed for beef cattle.

#### Conclusions:

Grazing corn is an annual that can extend the grazing season. Corn is an excellent source of energy, but may be lacking in protein for younger cattle or dairy cows.

#### Future projects:

In 1999 we are going to look at winter grazing for beef cattle. Our plans are to graze beef heifers during January and February and possibly into March without any stored feed.

## GRAZING CORN 1999

This project was again repeated in June 1999. The corn was planted June 25'. The months following planting were among the driest on record. Consequently, our estimated *dry* matter yield was very low. Twenty-nine mature Simmental cows were turned into the "Baldrige Grazing Maze" for twenty-nine days. As in the two previous years three rows of corn were mashed down with a four-wheeler so a poly tape electric fence could be utilized to provide three days of grazing. Seven acres of grazing corn was utilized for this project. Planting rate was 30,000/A seed no-tilled with fertilizer and burndown as previous years.

### \*Results 1999\*

9/29/00          Grazing Started  
Average weight of animals for grazing period 1400 lbs.  
29 days on corn

#### Costs

Land	\$3 0.00/A
Fertilizer	39.00 - 180 lb. N - 28% liquid
Gramoxone	8.00
Spraying	7.00
Planting	12.00
Seed cost	28.00
Total cost	<hr/> 124.00/A

#### Summary of Implications:

1. Is an economical forage which can be utilized to offset the stockpiling period of cool season grass.
2. Good quality forage for beef cattle.

#### NIR Feed Analysis at the Start of Grazing 1997:

Dry Matter	28.1
Crude Protein	12.0
NDF	56.6
NEL MCAL/lb DM	.79 estimated
NEM MCAL/lb DM	.79 estimated
NEG MCAL/lb DM	.51 estimated
Phosphorus (P)	.30
Potassium (K)	1.43
Calcium (CA)	.25
Magnesium (MG)	.13
(Parts per million)	
Sodium (NA)	4.
Manganese (M )	32.

Iron (FE)	58.
Copper (CU)	7.
Zinc (ZN)	31.

#### NIR Fecal Analysis Grazing Land Animal Lab 1999

% CP	13.36
% Digestible Organic	68.44
N	2.05
P	0.47

3. Can be utilized as a renovation tool. Killing off undesirable pasture stands, planting grazing corn, followed by a winter annual.
4. In 1999 forage analysis revealed high nitrate levels for grazing. Grazing corn should be analyzed for nitrates prior to grazing.

#### **Conclusion:**

Grazing corn is a relatively inexpensive summer/fall forage with great potential for high DM yields. Planting areas which need renovation and following with winter annual grasses will maximize DM production per acre and make efficient use of residual nitrogen. Caution should be utilized when grazing corn during periods of stress due to the potential for nitrate poisoning. To maximize yields, I would consider planting grazing corn earlier than we have done in these studies. This also widens the opportunity for the use of annual forages. I would also consider reducing nitrogen fertilizer to one half or two thirds of that recommended for silage or corn grain production.