

The Value of Grazing Cropland

SD-FS-122



Overview

A major cost for livestock operations is feeding harvested forages from storage in the late fall and winter months. The cost of these stored forages can vary widely depending on the weather conditions during that year's production season. The variation in cost causes instability to the economics of livestock production.

To counteract this feed cost, many successful livestock operations utilize crop residues, cover crops, and annual forages for grazing.

Considerations

Prior to implementing the practice of grazing crop residues, the livestock owner needs to consider the additional management requirements and materials required. The best approach to consider all costs and benefits would be to create a partial budget analysis. A partial budget only includes the changes due to implementing the new practice and allows assessment without knowing all the costs and returns information. A sample analysis is found on the reverse page of this fact sheet.

Expenses to Consider

- Electric Fence Wire and Posts
- Fence Energizer
- Water Tank
- Nutrient Supplement
- Water Hauling
- Facilitated Grazing
- Cover Crop Seed
- Planting Expenses

Incomes to Consider

- Cash Crop Yield Increase
- Reduced Forage Cost

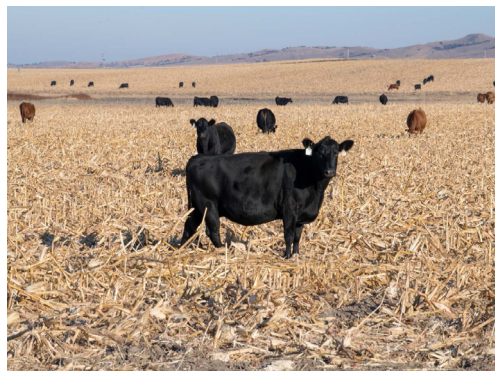
Additional Benefits

- Cattle will target remaining grain first, reducing volunteer crops next year.
- Grazing does not result in the removal of N, P, or K since cattle excrete 90% of the N, P, and K consumed.
- Grazing corn residue does not reduce corn or soybean yields; contrarily, some research has shown a possible increase in some instances.

Stocking Rates

The stocking rate will depend on the cash crop yield or the cover crop biomass along with class of livestock. The example table on the reverse of the fact sheet provides an example stocking rate for 1200lb/cows on corn residue.

These stocking rates only result in the consumption of 15% of the residue, leaving residue for protection of the soil.



References

Drewnoski, Mary E. and Jay Parsons. Rental Agreements for Grazing Corn Residue. University of Nebraska Lincoln Extension.

Improve Grassland with a Goal-Driven Lease Fact Sheet. South Dakota Natural Resources Conservation Service.

Rasby, Rick J., Mary Drewnoski, and Aaron Stalker. Grazing Crop Residues with Beef Cattle. University of Nebraska Lincoln Extension

Wang, Tony. Utilizing Cover Crops for Grazing: An Assessment of Economic Benefits. South Dakota State University Extension

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Cropland Grazing Leases

A large share of the cropland acres are owned by producers with no livestock. This provides the opportunity for rental agreements between livestock owners and cropland owners. Before entering into a cropland grazing lease it is important to discuss the following topics:

- What is the latest start date that residue will be available for grazing?
- What is the latest end date for removing cattle?
- How will the appropriate stocking rate be determined?
- How will the grazing be priced?
- Liabilities and responsibilities.

Planting a Cover Crop

The addition of a cover crop to the crop residue in the field could provide the opportunity for increased grazing availability. When livestock graze crop residues, they will select and eat the grain first, followed by the husk and leaf, then finally the cob and stalk. The selection process causes the diet to be very high in energy content at first, but declines as consumption continues. Planting a cover crop could be an effective method to mitigate this decline.

Forage analysis on cover crop species have found that:

10.9%-24% crude protein with Total Digestible Proteins ranging from 45.5%-68.6%. Certain cover crop species will stay green late into winter to provide these additional nutrients when crop residues are diminishing. Select cover crop species that align with the grazing period planned and the planting time window.

Compaction

Cropland grazing on wet soil conditions may result in soil compaction. Mitigate this risk by avoiding grazing during

spring thaw if conditions are wet. Rotational grazing, moving water locations, or designating sacrifice areas can also help mitigate compaction. Research has not shown any increase in soil compaction by livestock during dry or frozen conditions.

Budget Analysis T-Chart Example	
Name: Location: Date:	Benchmark Conditions: 160 acre cropland field producing 175 bushel corn has no grazing of crop residues or cover crop planted.
Change in Operation: Graze 160 head of 1200lb cows for 50 days. Plant of cover crop for additional nutrients and soil health benefits	
Positive Effects: <ul style="list-style-type: none"> • Reduce Forage Cost \$1.50/hd/day • Cash Crop Yield Increase: Unknown • Improved Nutrient Cycling • Improved Soil Organic Matter Total Dollar Benefit: \$12000	Negative Effects: <ul style="list-style-type: none"> • Fence wire and Post: \$2000 • Fence Energizer: \$300 • Water Tank Cost: \$1000 • Water Hauling Cost: \$1500 • Cover Crop Seeding: \$3200 • Planting Cover Crop: \$3200 Total Dollar Cost: \$11200
Net Benefit: \$800	

SUGGESTED STOCKING RATES		
Corn Yield	Animal Unit Month	# of Grazing Days
bu/ac	AU M/ac	1200lb cow/ac
100	1.1	28
125	1.4	36
150	1.7	43
175	2	50
200	2.3	57
225	2.6	64
250	2.8	71

