

# TECHNICAL NOTES

U.S. DEPARTMENT OF AGRICULTURE

STATE OF COLORADO

NATURAL RESOURCES CONSERVATION SERVICE

## Economics Technical Note No. 4

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**To:** All Offices

**From:** Aaron Waller – State Economist

**Subject:** Supplemental Barley Forage

With the high price of cattle feed, malt barley growers may want to consider growing supplemental forage

instead of practicing early fall tillage. Where irrigation water is available after harvest, a barley/legume forage crop can provide up to 2 AUM per acre for cows that have come off summer grazing. Oilseed radish can be added to trap sugarbeet nematode and provide even more diversity, if beets are the next crop in rotation. The calendar for such system is as shown above:

July	Aug	Sept	Oct	Nov
Barley Harvest				
	Plant -Grow Forage			
			Graze	

## Cattle Nutrition from Forage Mixes

Nutritional composition from a barley/legume forage crop will depend on soil fertility, weather and management. Research has shown that Barley forage is higher in crude protein (CP) and total digestible nutrients (TDN) than oat forage. <sup>1</sup> During the first month of grazing, a barley/clover forage mix may exceed 13% CP and 55% TDN. <sup>2</sup> Fall grazing livestock benefit from feed that has only been growing for 6 weeks and is very digestible under the calendar above.

## Management Benefits of a Barley/Legume Forage Crop

- Forage for cattle coming off summer range.
- Saves winter hay supply.
- High quality feed just prior to winter season.
- Efficient use of water and late summer heat units to grow feed rapidly.
- Cost effective use of volunteer barley.
- Low input costs and easy management.



<sup>1</sup> Poland, W. et al. 2002. Grazing potential of barley or oat forage for yearling beef heifers in the Northern Great Plains. NDSU – Dickinson Research Center 2002 Annual Report.

<sup>2</sup> Ball, D.M., and G.D. Lacefield, 2000. Crimson Clover. Circular 00-1. Oregon Clover Commission, Salem, Oregon.

## Management Practice

The alternative practice is to delay tillage until spring and plant a forage crop as follows:

1. Leave barley stubble after harvest.
2. For example: Broadcast #15/ac crimson clover and bin-run barley seed from harvest with 25# N/ac starter fertilizer. Focus on parts of the field between the combine windrows.
  - Harrow all seed into grain stubble and incorporate barley left after combining.  
(A grain drill can also be used)
3. Irrigate to produce ~ 4000 DM lbs/ac forage.<sup>3,4</sup>
4. Graze cows beginning in October for 6 weeks.
  - Will support approximately 1 average cow for 6 weeks on each acre if 4000 DM lbs/ac is produced and a cow utilizes 50% of the available forage.
  - Equivalent to 2 AUM or 1.22 tons of baled feed @ 18% moisture.
5. After grazing, leave remaining stubble and manure to overwinter until spring tillage.
  - Reduces soil erosion and improves soil health!

This practice can provide supplemental forage, save winter feed resources, save labor and conserve pastures. The cost to establish a barley/legume forage crop is approximately \$77/ac (\$67/ton feed equivalent). If \$100/ton corn stalks is your alternative feed, you can grow better feed for about  $\frac{2}{3}$  the cost and improve soil health in the process. The higher the cost of feed, the greater the net return per acre:

Forage Barley Costs	
\$/ac	Operation
\$ (5.00)	Broadcast Seed & Fertilizer
\$ (30.00)	15# Crimson Clover
\$ (20.00)	30# Nitrogen
\$ (8.00)	Harrow
\$ (14.00)	Irrigate 60 Days
\$ 122.00	Forage Value <sup>5</sup> @ \$100/ton
<b>\$ 45.00</b>	<b>Net Return</b>

Using Forage Crop as a Fall Feed Source - Net Return \$/ac				
Feed Price (\$/ton)	\$80 ↓	\$100 ↓	\$120 ↓	\$140 ↓
<b>Forage Crop Net Return (\$/ac)</b>	<b>\$21</b>	<b>\$45</b>	<b>\$69</b>	<b>\$94</b>

<sup>3</sup> Lyon, Drew J.; Baltensperger, David D.; and Siles, Melicio, Wheat Grain and Forage Yields are Affected by Planting and Harvest Dates in the Central Great Plains (2001). Panhandle Research and Extension Center. Paper 13.

<sup>4</sup> SARE. Managing Cover Crops Profitably, 3<sup>rd</sup> Ed.

<sup>5</sup> \* 4000# DM/ac - 50% utilization - 18% moisture hay equivalent