



Integrating Livestock

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MN



Why would we integrate
livestock?

“Livestock are the
missing link in soil
health.””

Fara Brummer, NDSU Extension Specialist

What is Soil Health?

- Soil health = soil function
- Soil function =
 - ability to capture and store water.
 - and the ability to cycle nutrients.



**85 - 90% of soil
function is
mediated by soil
microbial activity**



SOIL HEALTH PRINCIPLES

1. Keep the soil covered
2. Minimize soil disturbance
3. Increase crop diversity
4. Keep living roots in the soil
5. Integrate livestock

Learn more at www.sfa-mn.org

Livestock create opportunity!

- Harvest options
 - Hay, chop, graze or combine vs. combine or crop insurance
- Risk reduction
 - Hailed out grain becomes grazing opportunity
- Opportunity to diversify crop rotation
 - 150 potential cover crop species
- Quickest R.O.I. on cover crops
- Diversify income
- Opportunity for next generation/farm succession

How can we integrate livestock?



Adaptive or Flex Grazing



Adaptive or Flex Grazing

- Allows Practitioner to address multiple goals and objectives.
- Not a routine or rigid system
- Adapt to changing conditions

What Does It Look Like?



Simulate Nature



NETWORK

Trampling provides soil armor and feeds the microbes



Gleaning crop residue



* Never turn livestock into corn with empty rumens.

Opportunity for next generation?



Value of Manure

Corn Owned-Manure, MN

Owned Acre's

15 Fields

386 Fields

266 Fields

	Manure	Manure & Commercial	No Manure
2015 Yield/Ac	201	204	203
2015 Net Return/Ac	\$97	\$52	\$7
5 Year Yield/Ac	177	177	175
5 Year Net Return/Ac	\$249	\$223	\$184

Finbin.umn.edu

Modern fence technology





ETWORK

Inter-seed Cover Crop Into Cash Crop



Image: Ian Cunningham

“Three crops in two years.”

- Corn for silage
- Spread manure
- Fall plant cereal rye
- Spring harvest rye as silage, or spring grazing or calving pasture, or green plant
- Soybeans

Grazing cover crops seeded after small grain



Full season cover crop



Double Cropping



Complex cover crop for late fall grazing.



RFQ = 179, TDN = 65, CP = 17%, NE/L = 0.68

Hay or pasture renovation



Outwintering



What is the greatest obstacle?



Excuses

- No one has livestock around here.
- No one would haul livestock to graze.
- My pastures are too small.
- I don't want to put up fences.
- I don't have the time (lifestyle) or ability (health).

Cropland Grazing Exchange

- <http://www.mda.state.mn.us/cge>

The screenshot displays the Minnesota Department of Agriculture (MDA) website interface for the Cropland Grazing Exchange (CGE). The page features a navigation menu on the left with options like 'Account Information', 'Add/edit Livestock', and 'Search'. The main content area shows a map of Minnesota with several location markers: a green pin near Fargo, a blue pin near St. Cloud, a blue pin near Minneapolis, and a green pin near Mankato. The map also shows major roads and geographical features like Lake Superior National Forest and Chequamegon National Forest. The top right corner contains contact information for the MDA, including phone numbers and a 'PARKING' link. The bottom left corner shows a 'Google' logo.

Minnesota Department of Agriculture

Account Information Logout

First Name: Kelly
Last Name: A
Email: kelly.anderson.mda@gmail.com
Phone Number: 123
Password: *****
[Edit](#)

Add/edit Livestock
Add/edit Fields
Search
Legend

- Residue Crop
- Cover Crop
- Pasture/Hay
- Livestock

About-Help
Technical Contacts
Sample agreements/contracts
Useful links

Map Satellite

Map showing Minnesota and Wisconsin with various locations marked. Key locations include Fargo, St. Cloud, Minneapolis, Mankato, Duluth, and Grand Rapids. Major roads like I-94, I-35, and I-55 are visible.

ABOUT MDA
MDA A-Z
STAFF LISTING
HOME

651-201-6000
800-967-2474
800-627-3529 TDD
PARKING

Facebook, Twitter, YouTube icons

Google

What's the benefit to me, the crop farmer?

Management	N (lbs/ac)	P (lbs/ac)	K (lbs/ac)	WEOC (PPM)
Organic, CT	7	156	95	233
NT, LD	27	244	136	239
NT, MD, HS	37	217	199	262
NT, HD, NS, Lvst	281	1006	1749	1095

CT = Conventional Tillage, NT – No-Till, LD = Low Diversity, MD = Moderate Diversity, HS = High Synthetics, NS = No Synthetics, Lvst = Livestock.

Courtesy: Soil Health Consultants, L.L.C.

Excuses

- I don't have a livestock waterer.



More excuses...

- I'm not taking care of sick or hurt animals.
- I don't want a bull around.
- I'm not building or fixing fence.
- What if they get out?
- Who carries the liability insurance?

Green Lands Blue Waters



Midwest Perennial Forage Working Group Sample Contracts & Leases

**The Working Group
Site**

[Forage Home](#)

[About Us](#)

[Beginning Graziers](#)

Sample Contracts & Leases

Pasture Rental Arrangements for Your Farm. 2011. North Central Farm Management Extension Committee. Publication ID: NCFMEC-03.

[PDF, 736 kb](#)

19-page document that discusses details of formulating a fair rental rate; especially when

**Examples of actual
grazing contracts**

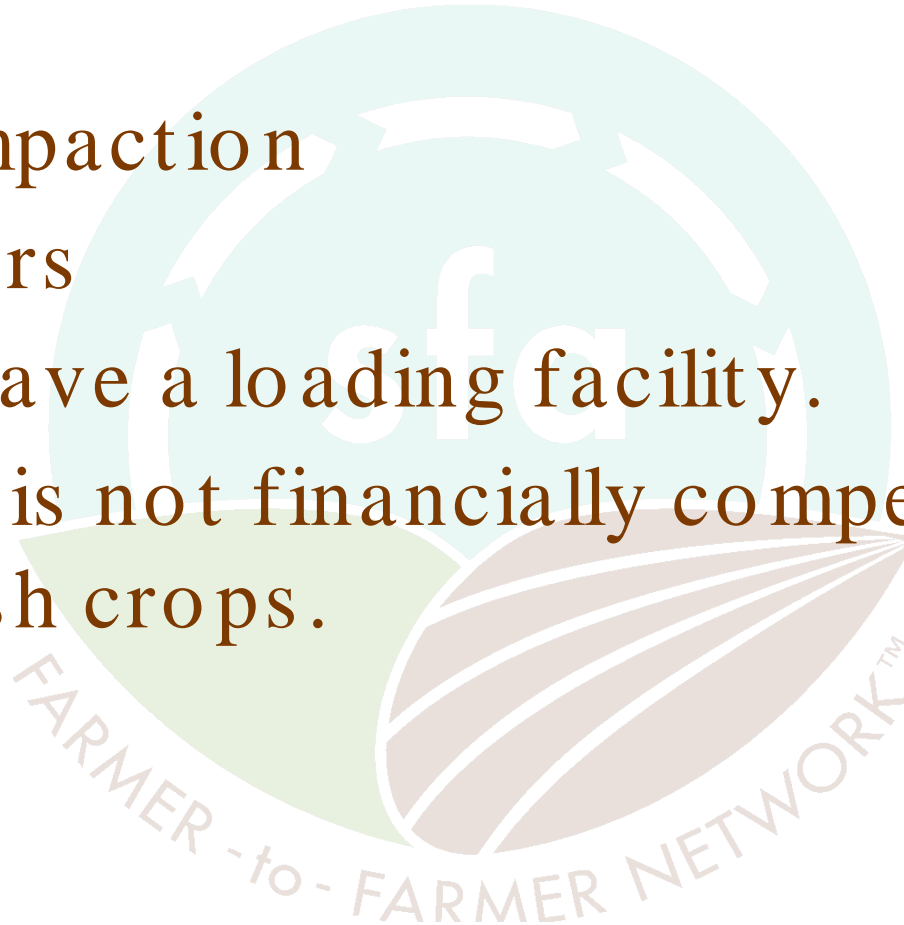
(Names changed)

Contract for grazing on 320 acres, livestock managed by livestock owner

[Word document, 35 kb.](#)

Other excuses...

- Soil compaction
- Predators
- I don't have a loading facility.
- Grazing is not financially competitive with cash crops.

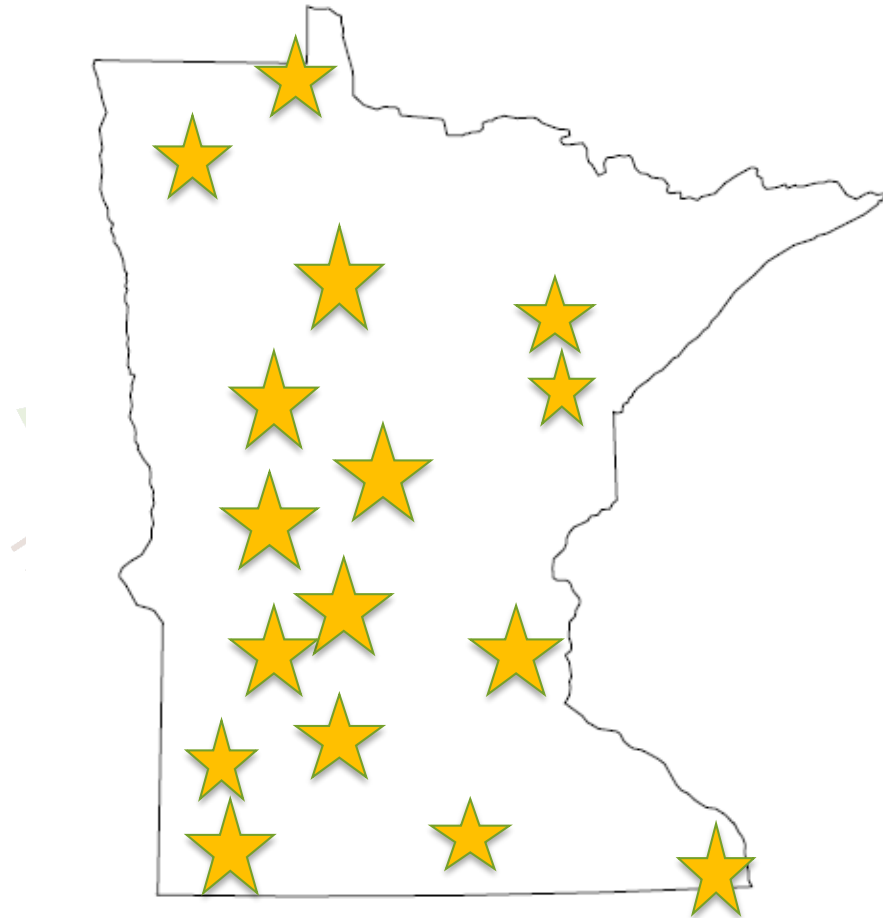


Weaning on Complex Cover Crops

- November 2015
- 23 acres
- 14 species complex cover crop blend no-tilled after oats/barley/peas
- 29 days grazing
- Weaned calves = 2.4 #’s/day
- 800 # bred heifers = 3.3 #’s/day
- Net/acre >\$500 on gain

No one does this around here.

Minnesota



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Herbicide Rotation Restrictions_in forage and cover cropping systems.pdf - Adobe Reader

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Herbicide Rotation Restrictions in Forage and Cover Cropping Systems

UW Extension
University of Wisconsin-Extension

WCWS
Wisconsin Crop Weed Science

NPM

Designing effective herbicide programs while following pesticide label restrictions can be challenging in any cropping system. With rotations that include forage and cover crops, the challenge can be increased—especially when a planned cover crop might be needed as supplemental or emergency forage. In this case, the best approach is to be aware of crop rotation restrictions ahead of time and plan the most effective solution for all possible scenarios.

Herbicide label rotational restrictions

Once a herbicide is used in a cropping system, the restrictions on that label must be followed for the original crop it is used on AND the succeeding crops until all restrictions on that label have been surpassed. These rotational restrictions exist for two reasons:

1. To protect humans and animals from herbicide residues that a succeeding crop may accumulate at elevated levels prior to entering the feed or food chain.
2. To ensure good establishment for the following crops by avoiding herbicide carryover injury.

An EPA registered pesticide label is a legal document and the instructions must be followed to avoid violating Federal law. Always check the herbicide label for crop rotational restrictions (<http://www.cdms.net/LabelsMsds/LMDdefault.aspx>). Each crop will have a rotational planting interval stated in days or months. If a rotational restriction is not listed for a specific crop, follow the maximum interval. Pay careful attention to any listed exceptions.

What is the difference between a forage crop and a cover crop?

Simply put, a forage crop is planted for animal feed, which can be either grazed by animals or harvested from the field. A cover crop is planted for a variety of reasons—improving soil health, adding nutrients, suppressing weeds—and is not harvested. Typically, the cover crops biomass stays in the field and may be incorporated into the soil.

In the legal sense, once the biomass of a cover crop is removed from the field for feed (grazed or harvested), it is considered a forage crop or more precisely a crop, according to the EPA registered pesticide label. It is important to note that even in situations where cover crops are allowed to be grazed or harvested within a crop insurance or cost-share program, the label restrictions must still be followed.

Thank you!

