

- APRIL 9, 2019 -

Grazing Cover Crops For Profit



- PRESENTED BY -
Meghan Filbert
Practical Farmers of Iowa

- HOSTED BY -

FACT
Food Animal Concerns Trust

Introductions



Food Animal Concerns Trust (FACT) is a national nonprofit organization that advocates for the safe and humane production of meat, milk, and eggs.



Larissa McKenna

Humane Farming Program Director

Email: lmckenna@foodanimalconcerns.org

Website: foodanimalconcernstrust.org/farmer

FACT's services for livestock and poultry farmers include:

- Fund-a-Farmer Grants
- Conference scholarships
- Free webinars
- Humane Farming Mentorship Program

GRAZING COVER CROPS FOR PROFIT



practicalfarmers.org



Food Animal Concerns Trust

Photo courtesy of Lynn Betts



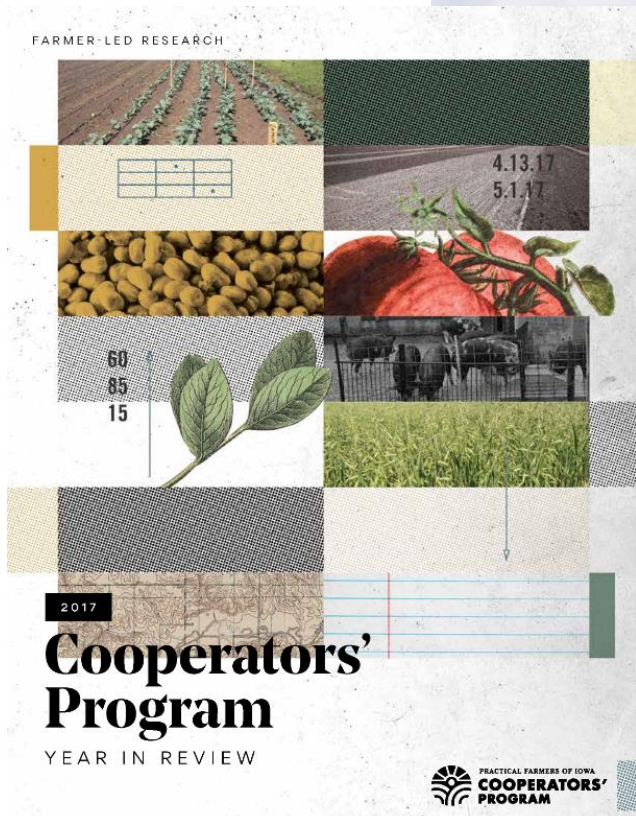
- **MISSION**

Equipping farmers to build resilient farms and communities.



PROGRAM AREAS





54 COOPERATORS **TOOK PART IN** **77** RESEARCH TRIALS

IN 2018



PRACTICAL FARMERS OF IOWA
**COOPERATORS'
PROGRAM**

FARMER-LED RESEARCH

Why Graze Cover Crops?

- **Extend grazing season in fall and spring**
- **Provide relief to spring pastures**
- **Provide a fresh, clean spring calving pasture**
- **Save \$\$ and reduce reliance on stored feed**
- **Deposit manure where needed**
- **Increased carrying capacity**



Grazing Cover Crops Adds Value



Economic Returns
&
Soil Health Benefits

But how much value?

Ben Albright

Lytton, IA

Rye and oats seeded on 9/6/16

Picture taken on 11/10/16





Livestock Research



Economic Impact of Grazing Cover Crops in Cow-Calf Operations

Staff Contact:

Meghan Filbert – (515) 232-5661
meghan@practicalfarmers.org

Cooperators:

- Wesley Degner - Lytton
- Bill Frederick - Jefferson
- Mark Schleisman - Lake City

Funding By:

Iowa Department of Agriculture and Land Stewardship's Water Quality Initiative

Web Link:

http://bit.ly/pfi_livestock

In a Nutshell

- Planting and grazing cover crops is a practical way to effectively reduce nutrient pollution, plus provide short-term economic returns.
- Three cow-calf producers in north-west Iowa have been grazing cover crops and keeping records to show the economics of this system.
- Utilizing cover crops as forage represents a win-win for livestock producers and water quality.

Key findings:

- Three farmers reported that over



IDALS-WQI
Project
2015-2021

7 cooperators



<https://www.practicalfarmers.org/farmer-knowledge/research-reports/>

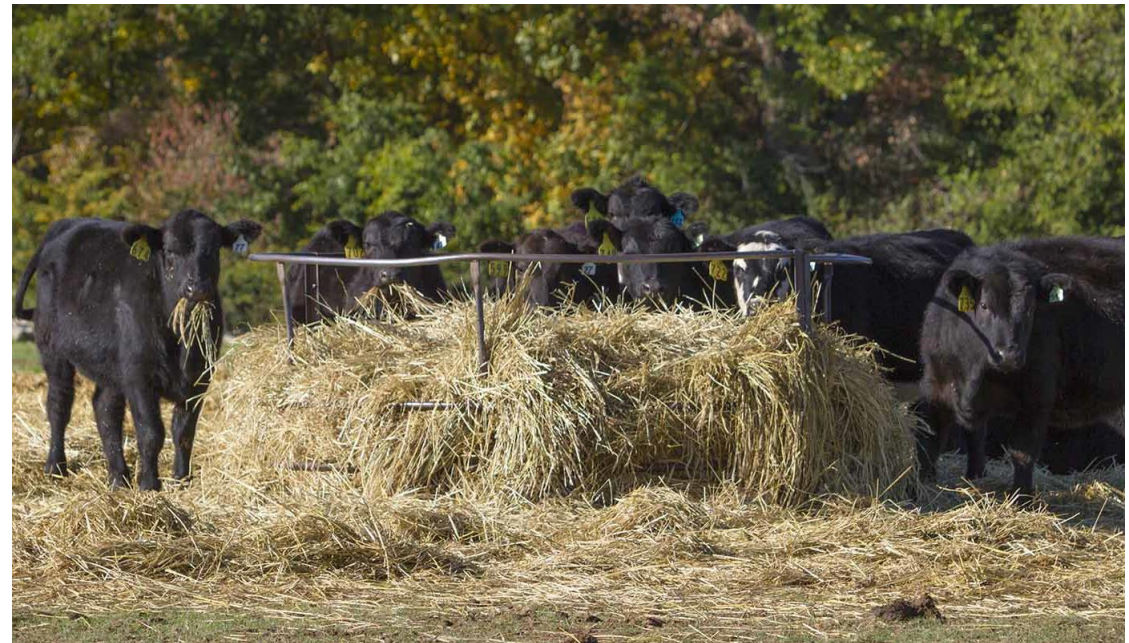


Objective

To demonstrate the economic benefits of utilizing cover crops as forage on integrated crop and cattle farms



VS.



Methods – Livestock Feed Requirements

- Dry matter (DM) requirements of cattle during cover crop grazing periods
- # of cows x weight x 4.0% x number of days grazed
 - (2.5-3% daily intake, 0.5 trampling loss, 0.5-1% buffer - NRCS)
- Animal weights not taken; assumed maintained weight

$$20 \text{ cows} \times 1200 \text{ lb} \times 4.0\% = 960 \text{ lb DM}$$

$$960 \text{ lb DM} \times 10 \text{ days} = 9,600 \text{ lb DM required}$$

Value of cover crop forage =
current market price for hay or other feed



The screenshot shows the USDA Agricultural Marketing Service website. The header includes the USDA logo, the text "United States Department of Agriculture Agricultural Marketing Service", and a search bar. Below the header is a navigation menu with categories: Market News, Rules & Regulations, Grades & Standards, Services, Resources, and Selling Food to USDA. The main content area is titled "Hay Reports" and features a list of regional reports, including Alabama Southeast Hay Report, Arthur Sale Barn Weekly Hay Report, California Weekly Hay Report, Colorado Weekly Hay Report, Hamilton's Madison Co, IL AG Hay Auction, High Plains Hay Exchange Internet Auction, Idaho Weekly Hay Report, Iowa Hay Report, KS Hay Report, Lancaster County Daily Hay Report, MO Weekly Hay Summary, and Monthly IL Hay Market Report. There is also a "News & Announcements" section with three items: "05/23 USDA Warns Vendors of Fake 'DocuSign' Email Scam", "05/16 USDA Announces Plant Variety Protection Board Appointments", and "05/04 AMS Announces Two Organizational Changes to Increase Program Efficiency".

- Assume hay costs \$80/ton @ 90% DM
- Supplemental feed accounted for

<https://www.ams.usda.gov/market-news/hay-reports>

Methods – Costs

- Cover crop seed, application and termination
- Labor
- Fence and water

*If same costs would have been spent grazing stalks with no cover crop, or herbicide would have been used regardless; costs not included

Table 6

Economic impact of grazing cover crops at each farm.

REVENUE	Wesley Degner		Bill Frederick		Mark Schleisman	
	2015-2016	2016-2017	2015-2016	2016-2017	2015-2016	2016-2017
Approximate tons of DM required (t)	35	30	76	57	525	656
Value of grazed forage + crop residue ^x	\$2,793	\$2,398	\$4,571	\$3,174	\$38,735	\$50,670
Value of cost share payment	\$3,462	\$3,462	\$1,000	\$1,000	\$21,616	\$17,034
Total added value	\$6,255	\$5,860	\$5,571	\$4,174	\$60,351	\$67,704
COSTS						
Costs for establishment & termination	\$4,727	\$3,275	\$2,970	\$3,310	\$20,159	\$27,705
Costs for grazing labor ^y	\$156	\$78	\$520	\$520	\$0	\$0
Costs for fences, waterers ^y	\$1,017	\$1,017	\$247	\$223	\$0	\$0
Total added costs	\$5,900	\$4,370	\$3,737	\$4,053	\$20,159	\$27,705
TOTALS						
Total net economic gain or loss	\$355	\$1,490	\$1,834	\$121	\$40,192	\$39,998
Net economic gain (loss) per acre	\$4.17	\$17.53	\$19.72	\$1.56	\$60.09	\$47.78
Net gain (loss) without cost share	\$(3,107)	\$(1,972)	\$834	\$(879)	\$18,576	\$22,965
Net gain (loss) without cost share per acre	\$(36.55)	\$(23.20)	\$8.96	\$(11.26)	\$27.77	\$27.43

^xSee Table 3 for Degner; Table 4 for Frederick; Table 5 for Schleisman.

^yMark Schleisman's labor, fence and waterer costs total \$0 because equal costs would have been spent grazing crop residue alone, therefore no additional costs were incurred when grazing cover crops + crop residue.

Bill Frederick

In 2107,

Spring forage value = \$457

Termination costs = \$1,360

"Spring calving young pairs and the health benefits of fresh pasture to calves is worth more than the value of the forage. Rye fields keeps calves clean and dry in the spring."





“The way you make money from cover crops is from decreased inputs, not increased yields,” - Bill Frederick

Mark Schleisman, 2017-2018

- Triticale, rye, rapeseed, radish, oats = \$23.00/acre
- Drilled or air seeded = \$9.50/acre



Net Economic Revenue, 2017-2018

	Per Acre	Per AU
With cost-share	\$107	\$89
Total revenue = \$117,133		
Without cost-share	\$87	\$71
Total revenue = \$93,643		
Costs saved/AU/day when grazing cover crops = \$1.84		

Mark Schleisman

"We started planting cereal rye because it was easy to calve in. Now, most all of our covers are grazed as a way to justify the costs."

"My dad ran 200 cow-calf pairs on the same acres that we now run 360 pairs on. Because we graze cover crops, we're producing more on the same amount of land."



Ag Decision Maker: An agricultural economics and business website



Crops

Decisions

For raising crops, conventional and organic, markets, outlook, prices, machinery and more!

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May 2018 Updates

AgDM New and Updated Files

Crops -- Cost & Return:

[Delayed and Prevented Planting Provisions -- A1-57](#)

[Delayed and Prevented Planting Provisions -- A1-57 \(Decision Tool\)](#)

Crops -- Machinery:

[Replacement Strategies for Farm Machinery -- A3-30](#)

AgDM Newsletter

[Cash rental rates slightly up in Iowa](#)

[New online tool can help farmers see value of cover crops and paths to profitability](#)

[Watershed improvement practices highlighted in publication series](#)



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Meet the author

William Edwards

retired economist

Questions?



Economics of Cover Crops

The decision tool, [Economics of Cover Crops](#), provides worksheets to analyze three different cover crop scenarios:

- Projected economic costs and benefits of crop crops without grazing or harvesting
- Projected economic costs and benefits of crop crops with grazing or harvesting
- Actual economic costs and benefits resulting from cover crops, including grazing or harvesting.

Other resources on cover crops include:

- [Practical Farmers of Iowa: Grazing Cover Crops fact sheet](#)
- [Practical Farmers of Iowa cover crop information](#)
- [CARD Cover Crop website](#)
- [Economic Evaluation of Cover Crops in Midwest Row Crop Farming](#)
- [Iowa Learning Farms](#)

William Edwards, retired ISU economist. Questions? Email agdm@iastate.edu

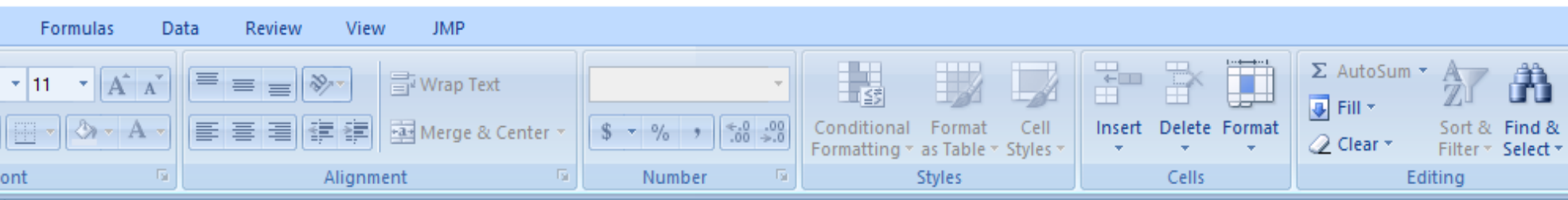
Alejandro Plastina, extension economist, 515-294-6160, plastina@iastate.edu

Meghan Filbert, livestock program manager, Practical Farmers of Iowa, 515-232-5661, meghan@practicalfarmers.org

File A1-91

Written March, 2018





A B C

Economics of Cover Crops

Iowa State University Extension and Outreach - Ag Decision Maker

See the Ag Decision Maker page, [Economics of Cover Crops](#), for more information.

This decision tool contains three different worksheets:

- [Cover Crops Budget](#) For analyzing the projected economic costs and benefits of cover crops, without grazing or harvesting.
- [Grazing Cover Crops Budget](#) For analyzing the projected economic costs and benefits of cover crops, with grazing or harvesting.
- [Grazing Cover Crops Results](#) For analyzing the actual economic costs and benefits resulting from cover crops, including grazing or harvesting.

More information on the economics of cover crops can be found at:

- [Practical Farmers of Iowa: Grazing Cover Crops fact sheet, www.practicalfarmers.org/app/uploads/2013/11/Grazing-Cover-Crops-Fact-Sheet-2013.pdf](#)
- [Practical Farmers of Iowa cover crop information, www.practicalfarmers.org/member-priorities/cover-crops/](#)
- [On-farm research quantifies value of grazing cattle on cover crops, www.practicalfarmers.org/news-events/newsroom/news-release-archive/28152/](#)
- [CARD Cover Crop website-forthcoming, www.card.iastate.edu/](#)

Version 1.3_32018

Authors: William Edwards, retired ISU economist, Alejandro Plastina, ISU Extension Economist, Meghan Filbert, livestock program manager, Practical Farmers of Iowa, and Ann Johanns, ISU Extension Program Specialist.

[Questions? Email aqdm@iastate.edu](mailto:aqdm@iastate.edu)

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Introduction Cover Crops Budget Grazing Cover Crops Budget Grazing Cover Crops Results



Summary of economic impact

Summary of direct economic impact of cover crops		Field 1	Field 2	Field 3	Field 4	Field 5	Whole Farm	Per Acre	Per Animal-Unit
Total acres of cover crop seeded	acres	50	40	66	18	48	222		
Value of yield impact on cash crops following cover crops	\$	(320)	(256)	(422)	162	432	(404)	(1.82)	(6.72)
Added income									
Value of cost share payment received	\$	625	400	480	1,008	-	2,513	11.32	41.78
Value of crop insurance premium discount	\$	-	-	-	-	220	220	0.99	3.66
Value of reduced costs and labor due to cover crops	\$	186	148	245	67	178	824	3.71	13.70
Value of feed replaced by grazing cover crops	\$	1,721	1,377	2,271	619	-	5,988	26.97	99.55
Value of forage harvested from cover crops	\$	-	-	-	-	1,875	1,875	8.45	31.17
Total added income	\$	2,531	1,925	2,996	1,694	2,273	11,420	51.44	189.86
Added costs									
Added costs for establishing cover crops	\$	1,286	1,020	948	384	768	4,406	19.85	73.25
Added costs for terminating cover crops	\$	-	-	498	-	-	498	2.24	8.28
Other added costs for cover crops (cash rent, irrigation, etc.)	\$	-	-	-	-	-	-	-	-
Added costs for labor for grazing cover crops	\$	81	65	107	29	78	360	1.62	5.99
Added costs for investment in fences, waterers	\$	660	167	665	112	648	2,252	10.14	37.44
Added costs for mechanically harvesting cover crops	\$	-	-	-	-	1,273	1,273	5.74	21.17
Total added costs	\$	2,027	1,251	2,218	525	2,768	8,789	39.59	146.12
Total net economic gain or loss per year	\$	184	418	356	1,331	(62)	2,226	10.03	37.01
Total net economic gain or loss per acre	\$	3.68	10.44	5.39	73.96	(1.30)	10.03		

Revenue – Costs = Net Profit (forage value)

Added value not accounted for

Note: this analysis does not take into account the long-term impacts of cover crops on soil health, soil erosion, nutrient retention, or other benefits.

Version 1.3_32018

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[Questions? Email aqdm@iastate.edu](mailto:aqdm@iastate.edu)

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- Nutritional value of forage
- manure deposition
- effect of grazing on plant and root growth
- cattle health
- resting perennial pastures





Soil Health Benefits = Future Profits



Soil Health Benefits



- The Pasture Project, Wallace-Winrock Center
- Federal Conservation Innovation Grant
- 4 years of soil data, 8 farms
- 2015-2018

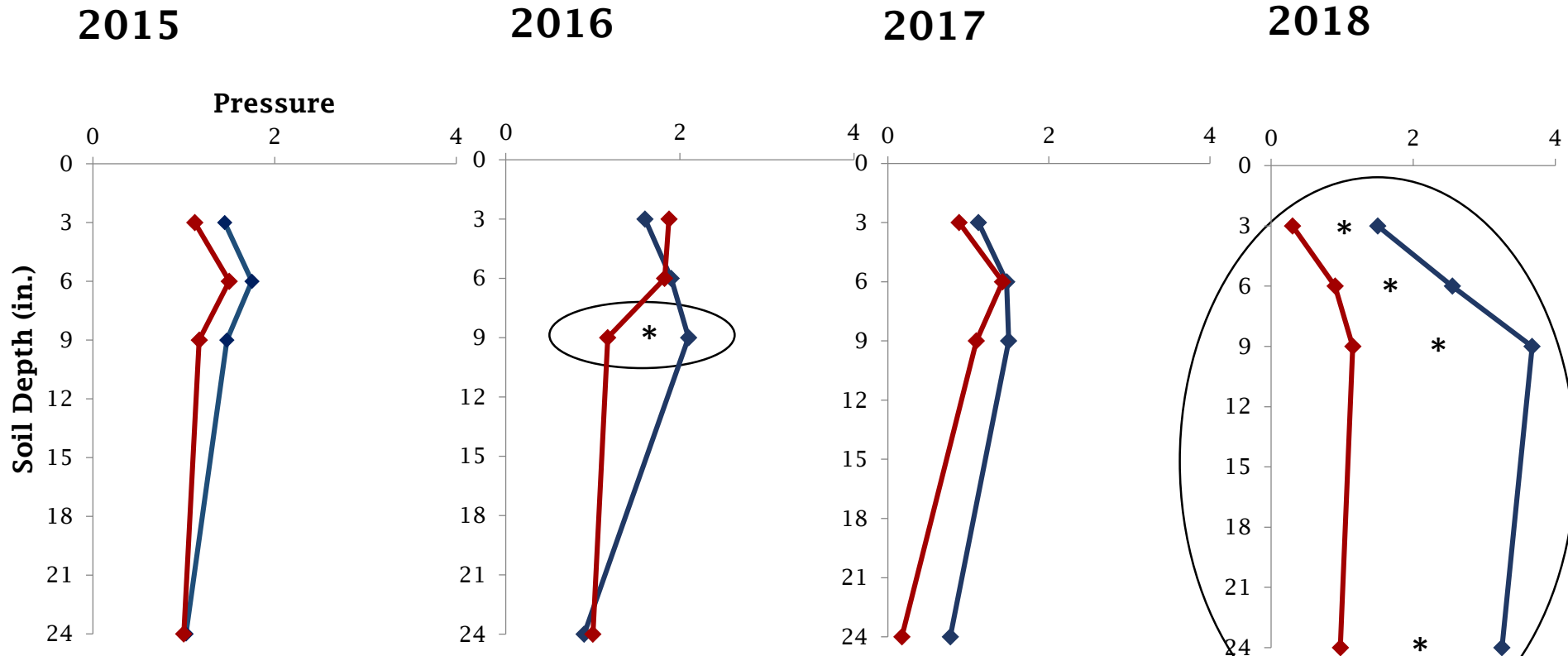
Control = corn/soybean with no cover

Treatment = corn/soybean +
6 species cc mix with grazing





Compaction Results, Maxwell, IA



◆ No cover crops, no grazing

◆ Grazed cover crops

*Significant at P<0.05

Pressure key:
 0 = 100 PSI
 1 = 200 PSI
 2 = 300 PSI
 3 = 400 PSI
 4 = >400 PSI

Data from 8 farms, 2015-2018

Plot	pH	OM	CEC	K/Mg	Ca/Mg
Con	6.51	3.86	22.13	0.15	5.30
Trt	6.54	3.97	24.76	0.16	4.77

Plot	TOC	IC	TC
Con	275	12.4	289
Trt	307	30.2	338

Plot	TLMB	GD	TBB	G+	Act	Rhiz	G-	TF	AMF	SF	Prot
Con	2537	1.39	1328	875	293	33	489	223	68	154	15
Trt	3071	1.41	1670	1064	352	36	606	296	98	198	26



OM = organic matter, TC = Total carbon (inorganic + organic), TLMB = total living microbial biomass



GRAZING COVER CROPS: A HOW-TO GUIDE

DEVELOPED IN PARTNERSHIP WITH:



<http://pastureproject.org/resources>

Lessons Learned

- **Fall + winter grazing > spring grazing**
- **Spring termination costs can exceed spring grazing value**
- **In some cases, cost-share can make or break it**
- **Early establishment + wait to graze**
- **Grazing covers has the potential to put money back in your pocket within the same year of planting**
- **Roots in the ground, active grazing, and manure = soil health**



Year-Round Grazing

- **Cover crops = annual forages**
- **Pair annual forages with perennial pasture**
- **Annual forages for shoulders of grazing season and summer slump**
- **Summer annuals:**
 - **Sorghum-Sudan, Millet, Sunflowers, Sunn Hemp, etc...**
- **Stockpile or bale**



cattlelink

The Perfect Pairing

Grazing cover crops gives an immediate payoff.

STORY AND PHOTOS BY LYNN BETTS

Most crop farmers expect cover crops to serve as a long-term payoff from a short-term cost. But, that's not the case with farmers who graze cover crops, says Meghan Filbert, livestock coordinator with the Practical Farmers of Iowa (PFI).

"They see an immediate return on a cover investment," she explains. "Winter feed for the largest cost in any cattle operation—grazing saves them from having to buy or grow hay. Feed for cattle was part of Wes and Dennis' thinking when they first tried cover crop their operation, near Lytton, in eastern Iowa. "We were hoping to save soil, nutrients on our cropland, but we also wanted to feed our cows," Wes says.

The Degners harvest high-moisture corn and drill cereal rye into cornstalks later in the fall. They tried seeding by plane and incorporated seed with fertilizer and incorporated. They've had success with each method. "They can graze cover crops quickly, they can graze cover crops mid-October up to late November," says Wes. "The cover cost is \$3,000 a year in feed cost on 65 acres."

The father and son operation has 285 acres of cropland.



Dennis and Wes Degner grazing their cover crops.



Rye covers build soils and add to profits, but they can be expensive to plant.



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Crops

Corn

Cover Crops

Forage

Sorghum

Soybean

Weeds

Wheat

Crop Protection

Crop Topics



Cover crops add value when grazed

How do you make a cash crop out of cover crop? Graze it!

LESS FEED COST: Grazing his cattle on cover crops, Mark Schleisman (with shovel) doesn't have to feed as

OF COVER CROPS

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Contract Grazing

- Win-win for graziers and row croppers
- Opportunity for beginning farmers

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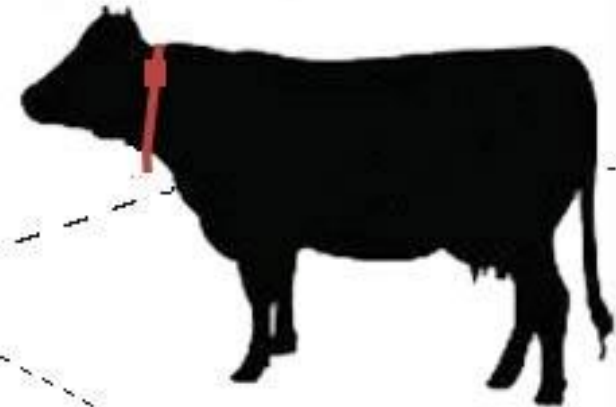
1 DRAW YOUR FENCE USING THE SMARTPHONE APP



2 BASE STATION RELAYS FENCE POSITION AND ANIMAL LOCATION USING GPS

3 COLLAR TRAINS ANIMAL TO AVOID VIRTUAL FENCE USING AUDIO CUE

GPS



Meghan Filbert

Livestock Program Manager

meghan@practicalfarmers.org

practicalfarmers.org

515-232-5661



Questions + Answers

Please type your Q's into the chat bar



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