

# Economics of Cover Crop Alternatives, SARE Producer Grant

Josh Roe

# Background

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- ž Many benefits of cover crops are well established.
- ž Little data on economic return.
- ž Received a SARE producer grant to study the economics of grazing, haying and “leaving” cover crops.

# Background

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- ž Chose a location on the farm with good access to water and pens for grazing.
- ž Field has been in continuous no-till for approximately 15 years, alfalfa, corn, soybeans, and wheat.
- ž Slight variation in the field, more sandy soil to the east.

# Design

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z 61 acres planted in three plots: A plot each:  
for:

- Grazing
- Haying
- Leaving



# Design Continued

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ž In the plots for leaving alone and grazing the mix is (pounds/acre):

- Oats (30 pounds)
- Spring Field Peas (20 pounds)
- Radish, (3 pounds)
- Turnips, (2 pounds)
- Sorghum, (1 pound)



# Design Continued

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- ž Same mix minus the radish and turnips in hayed plot.
- ž Planted into wheat stubble on August 6.
- ž Received 8 inches of rain within two weeks.
- ž Samples taken on October 14<sup>th</sup> estimated 18.15 tons of forage/acre "wet weight".

# Leaving Alone

Cover Crop Establishment Costs		
	Per Acre	Total
Additional Chemical Application (glyphosate)	\$15.59	\$951.00
Drilling	\$17.48	\$1,066.00
Seed	\$33.79	\$2,061.00
<b>Total</b>	<b>\$66.85</b>	<b>\$4,078.00</b>



# Hayed Portion

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- ž Swathed October 14<sup>th</sup>
- ž 38 bales averaging 1,750 pounds
- ž Crude protein: 16%  
RFV: 150
- ž Medium grade alfalfa





# Hayed Treatment Summary

Yield (Tons/Acre)	1.59
"Income" Per Ton	\$90.00
Cost Per Ton	\$73.40
Net Income/Ton	\$16.66



# Net Income/Acre Given Price

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Price/Ton	Net Income/Acre
\$100	\$42.79
\$90	<b>\$26.89</b>
\$80	\$10.99
<b>\$73.09</b>	<b>\$0.00</b>
\$70	-\$4.91
\$60	-\$20.81
\$50	-\$36.71

*19% Decrease in Price*

# Net Income/ Acre Given Yield

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Tons/Acre	Net Income/Acre
1.70	\$36.79
1.59	<b>\$26.89</b>
1.50	\$18.79
1.40	\$9.79
1.30	\$0.79
1.29	<b>\$0.00</b>
1.20	-\$8.21
1.10	-\$17.21
1.00	-\$26.21

*19% Decrease in Yield*

# Grazing Portion

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- ž Start grazing on October 19<sup>th</sup>
- ž Package one: 58 head of 858 pound steers for 26 days
- ž Package two: 58 head of 780 pound steers for 60 days
- ž Grazing terminated January 17<sup>th</sup>
- ž Supplemented with 7 pounds corn gluten pellets per day, forage (during wet conditions), and mineral

# Grazing Summary

Head	58
Days of Grazing	86
Average Daily Gain	2.13
Pounds of Gain Per Head	183.18



# Gain Results

Total Cost	\$7,190.56
Cost Per Head	\$123.98
Cost Per Pound of Gain	\$0.68



# Caution!

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- ž “Optimal” rainfall (for NC Kansas).
- ž High cattle prices.



# Lessons Learned

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- ž Received 9” rain on May 5, 2015, significant gully erosion, but what would have happened without cover crops?
- ž Surprisingly little regrowth after haying.
- ž No corn yield impact, but again, adequate rainfall in 2015.
- ž Lots of “activity” compared to farm across the road!
- ž No additional (or fewer) pig weeds.