

USING CONSERVATION PRACTICES TO IMPROVE CLIMATE RESILIENCY AND ECONOMIC RETURNS



**A NEW 5-YEAR \$25 MILLION PROJECT TO
CATALYZE CLIMATE-SMART FARM PRACTICES IN MISSOURI**



Center for Regenerative
Agriculture
University of Missouri

USDA Partnerships for Climate-Smart Commodities Goals

1. Provide technical and financial assistance to producers to implement climate-smart production practices on a voluntary basis on working lands;
2. Pilot innovative and cost-effective methods for quantification, monitoring, reporting and verification of GHG benefits; and
3. Develop markets and promote the resulting climate-smart commodities.



Climate-Smart Practice Incentives

	Payment/acre	Estimated allocation
Soy-rye initiative (cereal rye before soybeans)	\$30	\$3.6 million
High biomass cover crop mix	\$40	\$3.0 million
Late termination cover crop practice	\$15	\$1.0 million
Cover crop grazing	\$20	\$1.2 million
Regenerative grazing practice	\$50	\$5.0 million
Grow your Edges - agroforestry	\$200	\$1.0 million
4R nutrient management with precision fertilizer/manure application	\$20	\$1.2 million
Climate-smart fieldscapes	Flat rate	\$1.5 million
Total incentives		\$17.5 million

Soy-Rye Initiative - \$30 per acre



Photo credit: Edwin Remsburg

Diverse Cover Mixes - \$40 per acre



Late-Terminated Cover Crops (Planting Green) - \$15 per acre

can be additive to other cover crop payments



Photo credit – Dave Robinson

**Livestock component of the project:
cover crop grazing, regenerative grazing,
and silvopasture**



Jim Isermann farm, Illinois – Photo credit: Progressive Forage

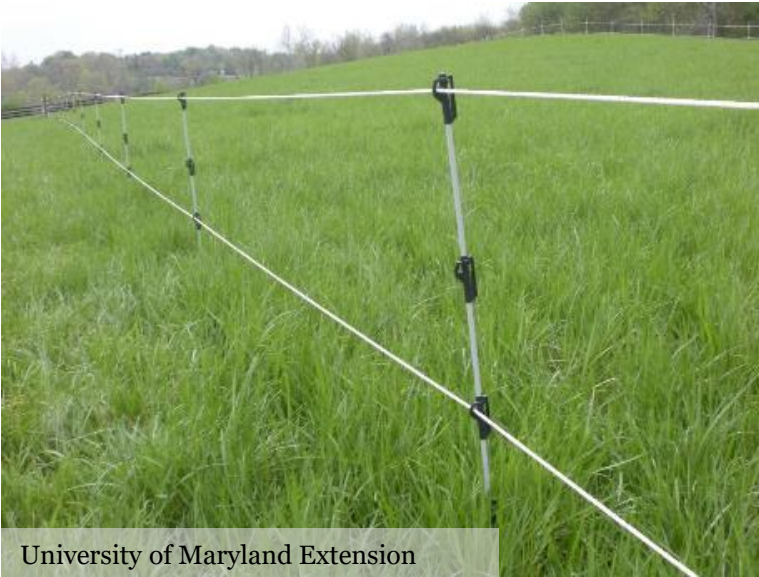
Grazing Cover Crops – \$20 per acre

can be additive to other cover crop payments



Regenerative Grazing on Pastures – \$50 per acre

Funds could go towards electric fencing



And/or towards watering systems



Regenerative grazing incentive can include development of warm-season pastures with diverse native species

Funds could go towards reseeding some pastures with native forages



This part of project complements the new **Missouri Native Forages Initiative** from NRCS and MDC

“Grow Your Edges” Silvopasture Approach – \$200 per acre



Photo credit: NRCS

Nutrient Management and 4R Approach – \$20 per acre

Photo credit: Corn and Soybean Digest



“Right source, right rate, right time, and right place”

Climate-Smart Fieldscapes – flat fee



- Opportunity for small and underserved farmers
- Climate-smart fieldscape: integrate 3 or more climate-smart practices in the same area to maximize soil carbon while maintaining productivity.
- Offer up-front payment to implement, with maintenance payments for duration of participation contract
- Demonstration sites for tours and education programs

New Reports on Conservation Impacts



Conservation & Crop Insurance Research Pilot

February 2023



How Conservation Practices Influence Agricultural Economic Returns

Implications For the Farm Finance Community

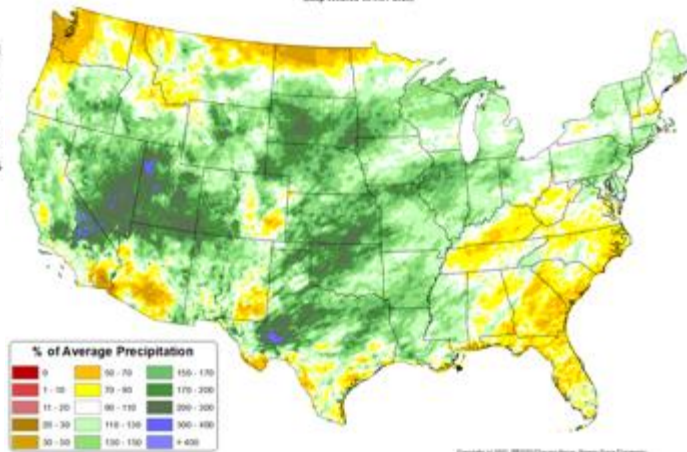
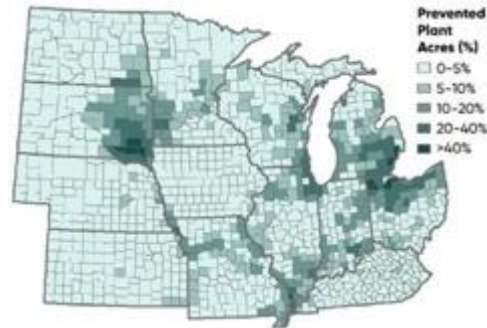
March 2023



Prevent Plant in 2019



Total Precipitation Anomaly: May 2019 - May 2019
 Period ending 7 AM EDT 11 May 2019
 Base period: 1991-2020
 (Map created 18 Nov 2020)



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2019 RMA Crops' Indemnities
 (As of 01/13/2020)



Did use of cover crops and no-till impact the likelihood of a prevent plant insurance claim on corn and soybeans in 2019?

- These effects depend on other physical features and thus vary field to field. At the average loss rate in 2019 across the 6-state region, use of no-till and cover crops **reduced the odds ratio of prevent plant insurance claims by 24%**.
- It's important to note that physical features alone, such as soil water capacity, topological variables, NCCPI, and precipitation account for much of the loss likelihood.

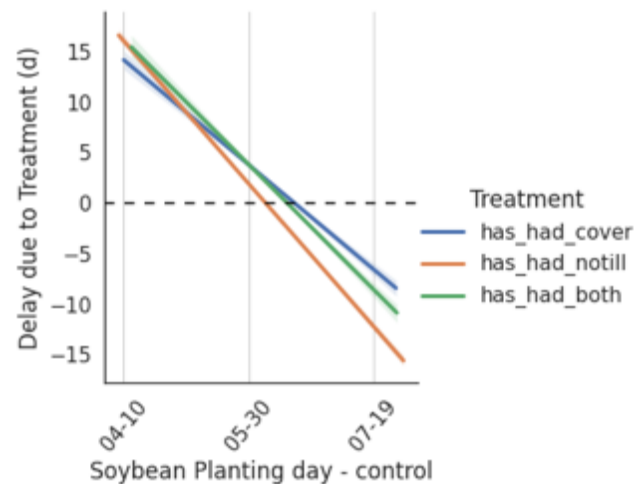
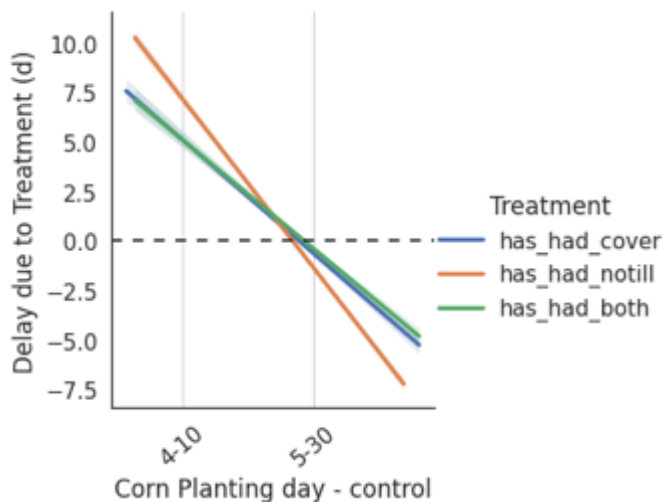




*Photo credit: Russ
Jackson*

How did use of cover crops and no-till impact planting date in 2019?

Reflecting the reduced occurrence of prevent plant claims, **data showed cover crops and reduced tillage contributed to earlier planting in the latter portion of the planting window.**



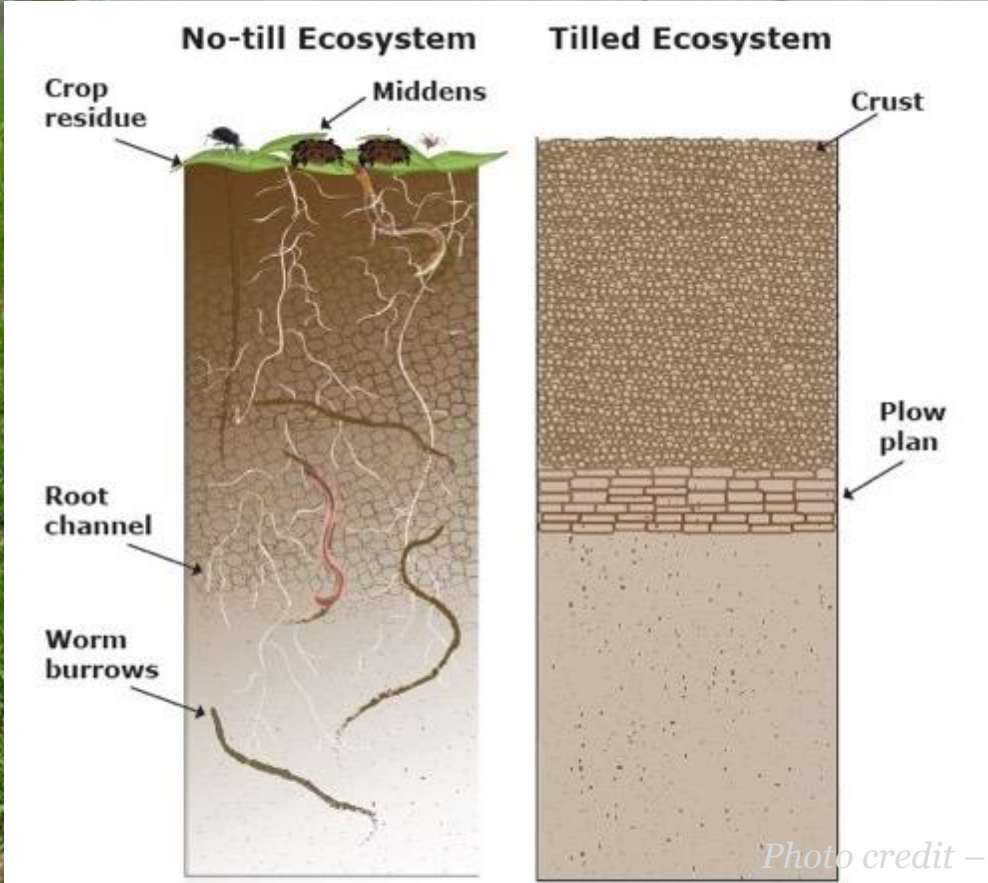


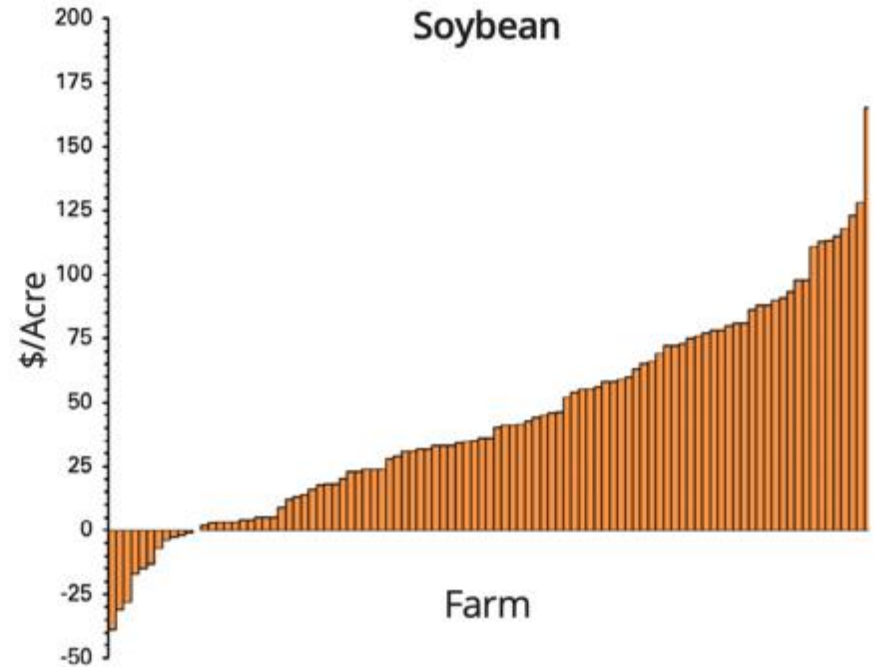
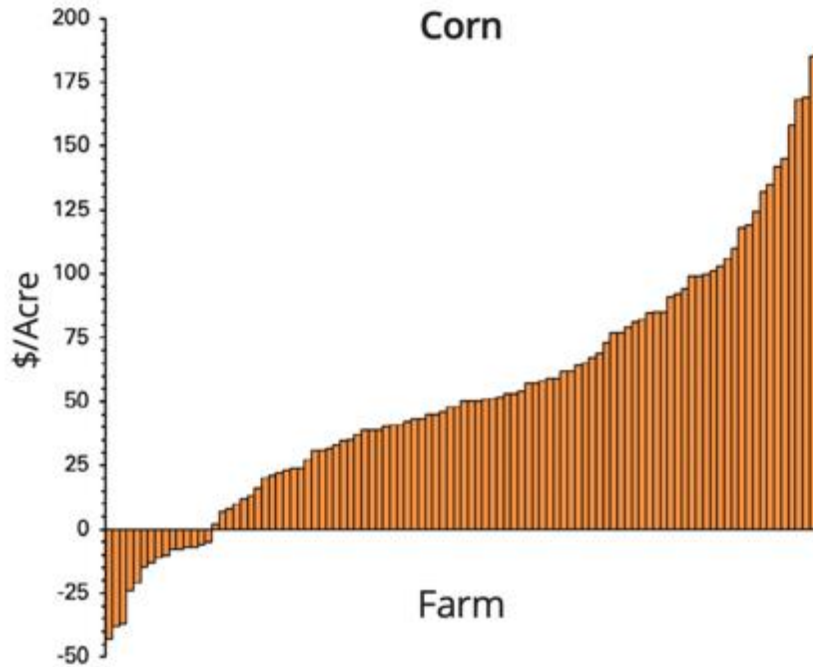
Photo credit – Edwin Remsburg



Conservation Impacts on Economic Returns



Soil Health Institute Case Studies – 100 Farms



National Survey* Indicated Yields Gradually Increase the Longer Cover Crops are Used



*SARE/CTIC National Cover Crop Survey

Baseline Returns on Cover Cropping

	One Year	Three Years	Five Years
Corn	-\$31.36	\$1.42	\$17.90
Soybeans	-\$23.44	\$0.42	\$10.18

Above figures assume average weather and average management conditions

Herbicide-Resistant Weeds



With extra herbicide savings of \$27/acre, cover crops pay off in year two for corn and year one for soybeans.

Grazing Cover Crops

Jim Isermann farm, Illinois – Photo credit: Progressive Forage



With extra return of \$49.23/acre from grazing, cover crops pay off in year one

Grain Trading Companies

Cargill joins regenerative agriculture movement, sets goal for 10 million acres

By Kristen Leigh Painter Minneapolis Star Tribune Sep 24, 2020 0



Cargill says it can help farmers reduce risk in crucial early stages of regenerative farming practices.

ADM Leads the Way On Regenerative Agriculture

By Alison Taylor, Chief Sustainability Officer, ADM



Food and Beverage Companies

KELLOGG ANNOUNCES REGENERATIVE AG PROGRAM FOR LOWER MISSISSIPPI BASIN RICE FARMERS

By Successful Farming Staff
2/15/2022

Listen to article 4 minutes

More than half of the world's population relies on rice as a primary source of nourishment. Yet, rice production is responsible for an estimated 12% of total global methane emissions, a greenhouse gas that is 20 times more potent than carbon dioxide.

In support of Kellogg's Better Days global purpose platform, Kellogg Company today announced Kellogg's InGrained, a \$2 million, five-year program that will partner with Lower Mississippi River Basin rice farmers to reduce their climate impact,



PepsiCo to invest \$216 million in regenerative ag

Jeff Gelski



Summary Comments

Cover crops and no-till are:

- Providing positive net returns, especially when viewed as a multi-year investment

- Reducing risk, as seen in 2019 data from thousands of fields

Particular farm situations can lead to faster returns, such as grazing cover crops, dealing with herbicide resistant weeds, soil compaction, or boosting soil fertility

Improved resiliency from better soil health is of interest to many major food and ag companies investing in cover crops and no-till as part of regenerative farming strategies

