



Precision Conservation Management



CHECKOFF & MEMBERSHIP PROGRAMS

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# The Business Case for Conservation

*Cost-Benefit Analysis of Conservation Practices*



Precision Conservation Management

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**NOTE FOR THE READER:** To truly utilize the economic benefit of conservation practices, you must suspend the belief that higher corn and soybean yields equal increased profitability. As farm organizations, we believe this quest for higher yields has been “baked” into farmers’ psyche for generations. We’d like to challenge readers to consider that obtaining high yields, and the higher input costs that goal often requires, may not be the best economic or conservation model for Illinois farms and Illinois farm families.

# An Innovative Farm Program Puts Farmers First

Precision Conservation Management (PCM) is a conservation program initiated through funding by the USDA Natural Resources Conservation Service (NRCS) – Regional Conservation Partnership Program (RCPP). PCM combines precision technology and data management with farm business and financials to help farmers manage, adopt and adapt conservation practices long term and improve on-farm decision-making.

Our No.1 goal is to integrate conservation practices and financial data to help farmers understand how specific management changes can impact both their environmental impact and their bottom line.

The program began in 2016 with its first RCPP grant. In 2020, PCM worked with 280 farmers in 16 counties on 223,000 acres, representing a sevenfold increase since the program began. PCM excitedly looks forward to expansion in 2021, adding four new regions in Illinois thanks to a partnership with the Illinois Soybean Association and an additional region in Nebraska sponsored by PepsiCo.

*PCM has received three RCPP awards, totaling over \$12 million in funding going directly to farmers.*

Farmers in five key watersheds in Illinois and Kentucky voluntarily participate in the program. Through collaboration with the local Soil and Water Conservation Districts (SWCDs), participating farmers can utilize the one-on-one technical assistance to guide them through conservation decisions and to aid in the evaluation of their farm relative to others in the program. In total, PCM has more than 30 partners supporting our efforts as we work with farmers to help them understand and manage the risks associated with adopting new conservation practices.



*"I've been happy with how the advisors with PCM have helped me during this process of trying cover crops on my farm. I look forward to seeing more information from PCM as we continue to work together. The information that PCM gathers using my data and other farmers' data will help me change and adopt other practices, which will hopefully lead to better profits per acre on my farm."*

Elliott Uphoff, ISA District 10 Director  
Shelbyville, Illinois

# Expansion Made Possible Through Collaboration and Partnership



In 2020, PCM welcomed a new partner to the fold! The Illinois Soybean Association joined as an equal partner with the Illinois Corn Growers Association, doubling the size of the PCM program from 15 to 31 counties and building what will become a landmark conservation program influencing conservation decisions on farm and policy decisions in Springfield, Illinois, and Washington, D.C.

“The PCM project is a great collaboration between the Illinois corn and soybean checkoff programs that brings to the forefront regenerative agricultural practices that farmers are using on a large scale on their farms,” said David Wessel, Illinois Soybean Association at-large director and Utilization Committee chairman. “Showing the economic, environmental and social benefits of these practices will allow the sharing of knowledge needed for a sustainable future for all. PCM will show how farmers can be a viable part of the solution in addressing climate change and water quality issues.”

“The success of the PCM program has always been the added focus on farmer income combined with on-farm conservation practices,” said Randy DeSutter, Illinois Corn Growers Association president. “The program has been a success because farmers and farm families have always been a priority. We are excited to expand our focus to include even more Illinois farmers with the partnership of the Illinois Soybean Association. Together, we are going to build better farms, healthier soils and more sustainable farm families in Illinois.”

The objectives of PCM are to reduce the environmental impact of commercial agriculture on waterways and soils, reduce the farmer’s risk while maintaining farm business economic viability, and to demonstrate that environmental goals can be achieved without regulation.

# Nebraska Program Spotlight

In 2021, PCM looks forward to expanding our program into Nebraska in partnership with PepsiCo, the Nebraska Corn Board and the Nebraska Natural Resources Districts. This new PCM region will bring the same farm financial analysis of conservation practices that is the PCM hallmark.

Why is PepsiCo interested? PepsiCo understands that investing in farmers and advancing their understanding of the financial and environmental benefits of changing farm management practices is the best way to make positive water quality and climate impacts.

As a global food and beverage company, PepsiCo's climate strategy related to agriculture goes hand in hand with their sustainable sourcing goals, and their relationship with farmers is critical since agriculture makes up the largest portion of PepsiCo's greenhouse-gas footprint. Through PepsiCo's Sustainable Farming Program, they promote and support practices that lead to better yields, improved soil health, lower deforestation and higher productivity for farmers, which also leads to GHG emissions reductions.

PCM is proud to expand this partnership, and we're excited to work with farmers in Nebraska to better understand how conservation practices can positively impact their economic situation while demonstrating the positive environmental outcomes that are emerging from American farms.

"As a farmer-driven initiative, PCM understands adopting field-level conservation practices is only truly sustainable

if it's also economically viable. PCM provides tools that can help Nebraska farmers identify opportunities that both address natural resource concerns and make sense financially – all while enabling supply chain partnerships that support and amplify farmers' stewardship efforts," said Boone McAfee, director of research and stewardship for the Nebraska Corn Board.

*"PepsiCo is proud to continue our generations-long partnership with Nebraska corn farmers, working hand in hand with PCM to scale regenerative agriculture practices. We're excited to work with PCM, the Nebraska Corn Board farmers in the area like Andy Jobman – a multigeneration corn farmer with PepsiCo – to help decrease GHG emissions in Nebraska by scaling practices that improve soil health."*

**Margaret Henry**

Director of Sustainable Agriculture, PepsiCo



# PCM Data Matters and Here's Why ...

*Your farm data is valuable.* It can be a difficult decision to share your data. If you haven't already, you should really think about how you want your data to work for you and let that understanding lead your decision about how to share it. PCM has a rock-solid commitment to using your data to serve YOU, and we are 100% committed to being transparent with you about how your data is used, who sees it and what we do with it. We use your aggregated and anonymized data, compiled with that of over 300 other farmers in Illinois, to protect family farms and demonstrate your commitment to preserving and improving our natural resources. We treat your data just like what it is: a product of your farming operation that is valuable and influences the future of all farmers in this country.

The power of your data is clear when you see the stories that we tell with it. Along with a small group of ag economists at the University of Illinois, we have written about a dozen data-focused publications on topics that our PCM farmers care about, like strip tillage, nitrogen fertilizer management and cover crops. With our own internal technical experts, we also generate some compelling statistics to demonstrate ag's commitment to meeting water quality, soil health and climate goals.

Eighty-five percent of our PCM farmers are using reduced tillage on some part of their farmed acres. Sixty-three percent of farmers are applying the majority of their nitrogen in-season on some part of their acres and 35% of PCM farmers are growing an overwintering cover crop on some portion of their acres.

These are the numbers that have gained the attention of large consumer packaged goods companies like PepsiCo. Their investment fuels our growth to learn more and prove more positive changes on Illinois farms.

They also catch the attention of policymakers attempting to craft climate change legislation. Dr. Gary Schnitkey, Ph.D., and Dr. Jonathan Coppess, J.D., both from the University of Illinois, analyze and share the stories from this PCM data on farmdoc, a U of I website known by elected officials.

*“PCM has developed a unique set of field-level data from actual farms that allows economic analysis of different field and conservation practices. The linkage between IL Corn and the University of Illinois allows research opportunities that would not exist without this cooperation, including the use of PCM data to inform upcoming policy debates on conservation practices.”*

**Gary Schnitkey**

University of Illinois Ag Economist

A photograph of a field at sunset. The foreground is filled with young green plants growing in dark soil. In the background, a barn is visible against a bright orange and yellow sky. The overall scene is peaceful and agricultural.

## 2020 PCM IMPACTS:

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- *Over 615,000 pounds of nitrogen reduction*
- *Over 90,000 pounds of phosphorus reduction*
- *Over 127,000 tons of sediment loss reduction*
- *Over 141,000 acres of reduced tillage*
- *Almost 62,000 acres of in-season nitrogen application*
- *More than 35,000 acres of cover crops*

# Environmental Impact Assessment New to PCM Data in 2021

On the following pages, you'll review aggregated data from the 827,000 acres of farmland in the PCM program. The 2020 data tells a story, and that story might be different from what the data told us in previous years. As we accumulate more farmers, more acres and more data, PCM will be able to present recommendations that are more impactful to all farmers in Illinois.

This year, we've added a new component to our data tables – an environmental impact assessment. Please use this new information to help you better understand the environmental impact of specific practices, and use this additional insight to guide your decision when the economic impact of a couple of practices is similar.

PCM relies on our partners, Field to Market and the COOL Farm Alliance, to generate objective environmental impact estimates for our farmers'

agronomic decisions. In the pages that follow, you will see that we provide several kinds of environmental assessments and that they vary according to the management practice under consideration; this is because some management practices directly affect a given environmental metric and other management practices do not or they only indirectly affect the environmental metric. Tillage, for example, has a direct effect on soil loss through erosion but timing of nitrogen fertilizer application does not. Therefore, we display average soil loss estimates as part of our tillage assessments but we do not display soil loss estimates for nitrogen fertilizer timing.

Environmental assessments featured are soil erosion (tons soil loss/acre), water quality index (an NRCS metric that evaluates runoff water quality) and greenhouse gas emissions (CO<sub>2</sub>e/acre).

## FIELD TO MARKET

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*The Alliance for Sustainable Agriculture brings together a diverse group of grower organizations; agribusinesses; food, beverage, restaurant and retail companies; conservation groups; universities; and public sector partners. Their mission is to focus on defining, measuring and advancing the sustainability of food, fiber and fuel production.*

*As members of Field to Market, The Illinois Corn Growers Association and Illinois Soybean Association work with partners across the value chain to support farmers in understanding their operation's sustainability performance and identifying areas for continuous improvement. Precision Conservation Management (PCM) was recognized in 2020 as Field to Market's Collaboration of the Year for its innovative approach to providing farmers with financial and technical assistance to incentivize the uptake and reduce the risk of using new conservation practices.*

*Learn more at <https://fieldtomarket.org/>.*



**Field to Market®**

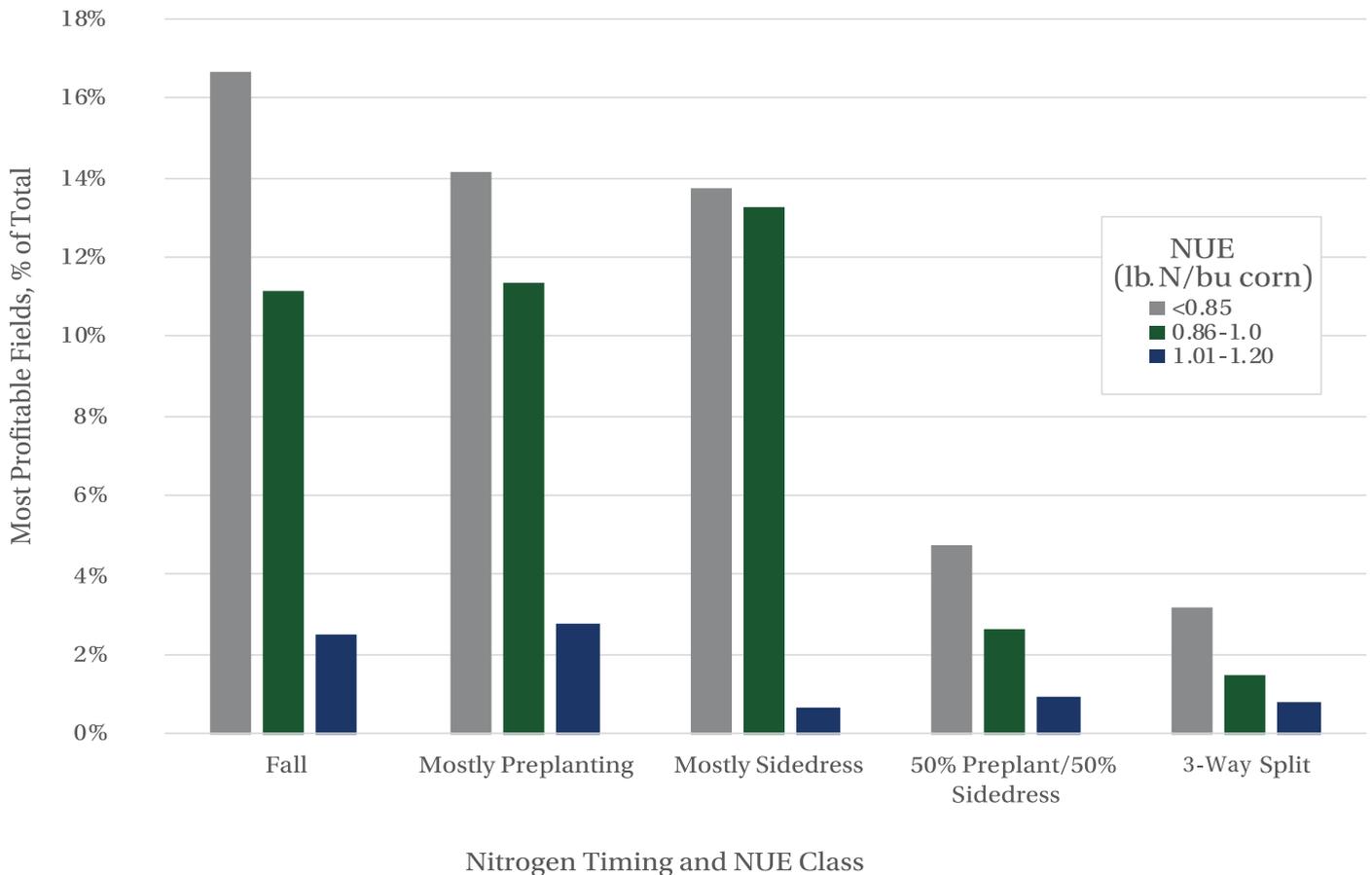
# Most Profitable Strategies – Corn

*What did the most profitable fields in our dataset have in common?*

A key factor of corn profitability was nitrogen fertilizer management. Seventy percent of the most profitable high SPR corn fields applied the majority of nitrogen fertilizer in-season (either preplant, sidedress or a combination) and 30% of the most profitable fields received most of the nitrogen fertilizer in the fall. Regardless of timing, nitrogen fertilizer rate was also an important piece of overall profitability.

Over half (52.5%) of the most profitable corn fields applied nitrogen fertilizer at a rate that equated to 0.85 lb. N/bushel corn or less. Only 8% of the most profitable fields applied total N at a rate that was in the 1.01-1.20 lb. N/bushel range and NONE of the most profitable fields were greater than 1.20 lb. N/bushel.

**Figure 1 – Most Profitable Corn, High SPR, Nitrogen Management and NUE, 2015-2020**



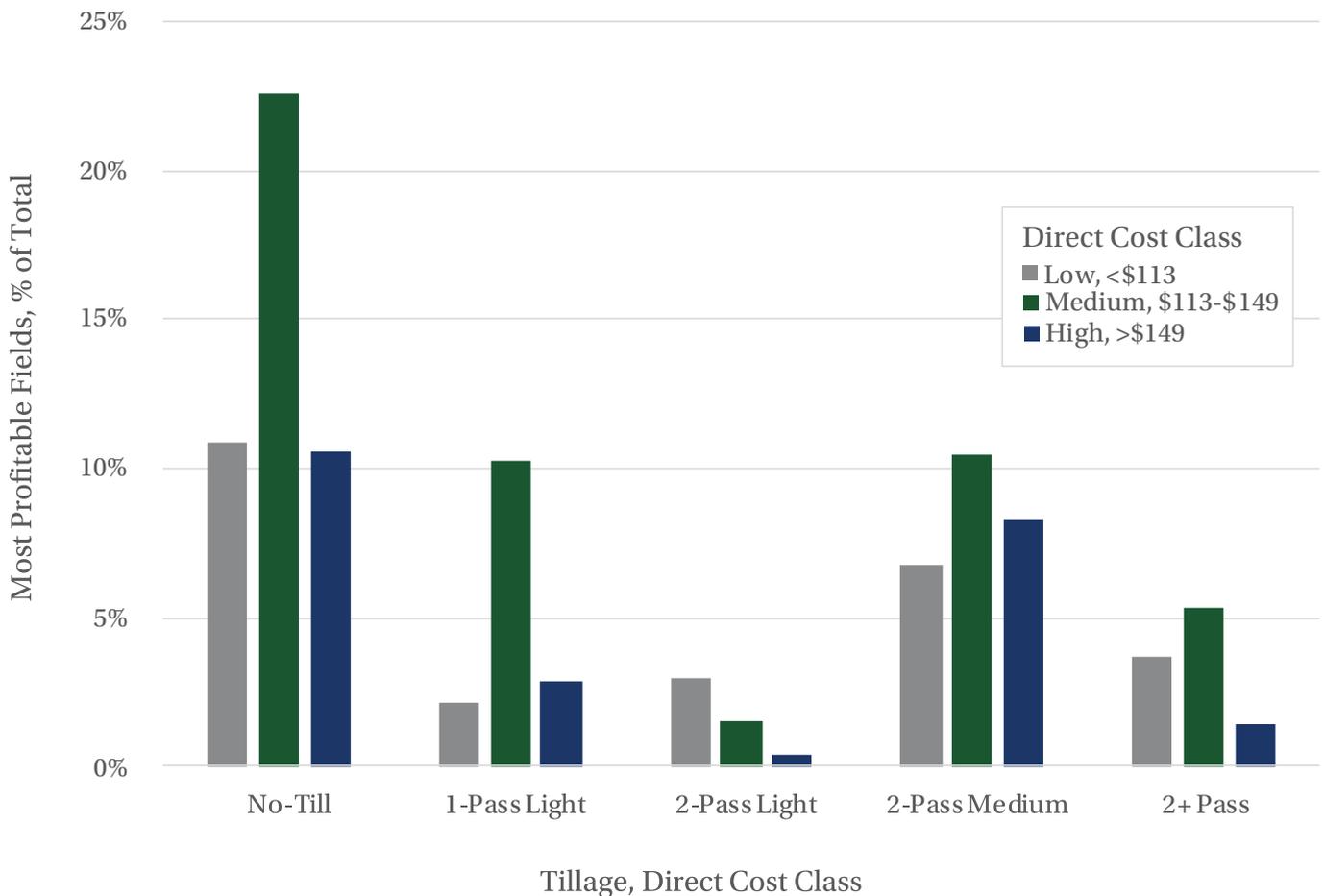
# Most Profitable Strategies – Soybeans

*What did the most profitable fields in our dataset have in common?*

The critical determinants of soybean profitability were tillage and managing direct costs. Forty-four percent of the most profitable, high SPR soybean fields in our analysis came from a single tillage class: no-till. Surprising? It turns out that the most profitable farmers in our program know which fields can grow great soybeans without tillage and, likewise, they realize that there are some fields that produce enough extra soybean bushels to cover the extra

costs of one or even two tillage passes. Also, half of the most profitable soybean fields maintained their direct costs in the range of \$113-\$149, which was the middle of the range of direct costs observed in the dataset. As a reminder, direct costs are comprised of the following cost elements: fertilizers, pesticides, seed, cover crop seed, drying, storage and crop insurance.

**Figure 2 – Most Profitable Soybeans, High SPR, Tillage and Direct Cost Classes, 2015-2020**



# Tillage Application Data and Recommendations

Net financial return values for corn tillage systems were similar to those reported last year. Again, we see that 2-Pass Light tillage is the most profitable tillage class for corn production on high-productivity soils. It was interesting to note a big increase in the number of 2-Pass Light tillage fields for corn production relative to our last report, which could be attributed to the nice spring we experienced in 2020. On the average, the additional four to five bushels of corn (relative to 1-Pass Light tillage) paid for the additional tillage pass with a light cultivator or vertical-tillage implement but it did not pay for an extra pass with a heavier piece of tillage equipment. It's also interesting to note that

the soil erosion estimates, which are approximately equal for 1-Pass Light and 2-Pass Light tillage, are substantially more than No-Till or Strip-Till. We also saw lower scores for water quality estimates among fields with more than one tillage pass. Finally, using the COOL Farm Tool, we found that greenhouse gas (GHG) estimates could be net negative with no-till corn production. Tillage classes considered "Reduced Till" (= Strip Till, 1- and 2-Pass Light, and 2-Pass Moderate) were slightly more than net carbon neutral, and 2+ Tillage Pass systems increased GHG emissions by four times relative to "reduced tillage" systems.

**Table 1 – Tillage Practices, Corn, High SPR, 2015-2020**

CORN, High SPR 2015-2020 Avg Values	NO-TILL	STRIP-TILL	1-PASS LIGHT	2-PASS LIGHT	2-PASS MODERATE	>2 TILLAGE PASSES
# fields	448	488	1067	371	529	63
Yield per acre	212	217	219	224	223	217
<b>GROSS REVENUE</b>	<b>\$773</b>	<b>\$791</b>	<b>\$799</b>	<b>\$815</b>	<b>\$813</b>	<b>\$789</b>
TOTAL DIRECT COSTS*	\$390	\$402	\$384	\$388	\$398	\$416
Field work	\$0	\$15	\$11	\$22	\$26	\$38
Other power costs**	\$99	\$93	\$95	\$94	\$93	\$97
<b>TOTAL POWER COSTS</b>	<b>\$99</b>	<b>\$108</b>	<b>\$106</b>	<b>\$116</b>	<b>\$119</b>	<b>\$135</b>
<b>OVERHEAD COSTS</b>	<b>\$37</b>	<b>\$37</b>	<b>\$37</b>	<b>\$37</b>	<b>\$37</b>	<b>\$37</b>
<b>TOTAL NON-LAND COSTS</b>	<b>\$526</b>	<b>\$547</b>	<b>\$527</b>	<b>\$541</b>	<b>\$554</b>	<b>\$588</b>
<b>OPERATOR &amp; LAND RETURN</b>	<b>\$247</b>	<b>\$244</b>	<b>\$272</b>	<b>\$274</b>	<b>\$259</b>	<b>\$201</b>
Estimated Soil Loss (Tons/a)	0.52	0.48	1.05	1.03	1.10	1.23
Water Quality Index (1 = worst, 10 = best)	5.60	5.86	5.67	5.38	5.20	4.78
GHG emissions (metric tons CO2e/a)	-0.37	0.28				1.15

\*Direct costs = fertilizers, pesticides, seed, cover crop seed, drying, storage and crop insurance | \*\*Other power costs = fall fertilizer application, spraying, planting, cover crop planting, spring/in-season fertilizer application, harvesting and grain hauling

No-Till = No tillage; 1-Pass Light = 1 pass w/ low-disturbance tillage; 2-Pass Light = 2 passes w/ low-disturbance tillage; 2-Pass Medium = 2 passes (1 low-disturbance tillage +1 high-disturbance tillage); 2+ Pass = more than 2 tillage passes, any intensity level

# Nitrogen Application Data and Recommendations

**Table 2 – Nitrogen Application Timing: Yields, Returns, and Environmental Assessments, Corn, High SPR, 2015-2020**

<b>CORN, High SPR</b> 2015-2020 Avg Values	<b>&gt;40% FALL</b>	<b>MOSTLY PRE- PLANT</b>	<b>MOSTLY SIDE- DRESS</b>	<b>50% PRE/ 50% SIDEDRESS</b>	<b>3-WAY SPLIT</b>
NUE (lb. N/bu grain)	0.99	0.93	0.92	0.96	0.93
<i># fields</i>	1,077	664	732	255	301
<i>Yield per acre</i>	219	218	220	218	220
<b>GROSS REVENUE</b>	<b>\$798</b>	<b>\$795</b>	<b>\$802</b>	<b>\$795</b>	<b>\$803</b>
N fertilizer	\$84	\$79	\$76	\$90	\$85
Other direct costs*	\$319	\$290	\$308	\$310	\$324
<b>TOTAL DIRECT COSTS*</b>	<b>\$403</b>	<b>\$369</b>	<b>\$384</b>	<b>\$400</b>	<b>\$409</b>
Field work	\$15	\$15	\$16	\$15	\$17
Other power costs**	\$98	\$90	\$96	\$95	\$97
<b>TOTAL POWER COSTS</b>	<b>\$113</b>	<b>\$105</b>	<b>\$112</b>	<b>\$110</b>	<b>\$114</b>
<b>OVERHEAD COSTS</b>	<b>\$37</b>	<b>\$37</b>	<b>\$37</b>	<b>\$37</b>	<b>\$37</b>
<b>TOTAL NON-LAND COSTS</b>	<b>\$553</b>	<b>\$511</b>	<b>\$533</b>	<b>\$547</b>	<b>\$560</b>
<b>OPERATOR &amp; LAND RETURN</b>	<b>\$245</b>	<b>\$284</b>	<b>\$269</b>	<b>\$248</b>	<b>\$243</b>
Water Quality Index (1 = worst, 10 = best)	5.44	5.52	5.55	5.86	5.96

\*Direct costs = fertilizers, pesticides, seed, cover crop seed, drying, storage and crop insurance | \*\*Other power costs = fall fertilizer application, spraying, planting, cover crop planting, spring/in-season fertilizer application, harvesting and grain hauling

No-Till = No tillage; 1-Pass Light = 1 pass w/ low-disturbance tillage; 2-Pass Light = 2 passes w/ low-disturbance tillage; 2-Pass Medium = 2 passes (1 low-disturbance tillage +1 high-disturbance tillage); 2+ Pass = more than 2 tillage passes, any intensity level

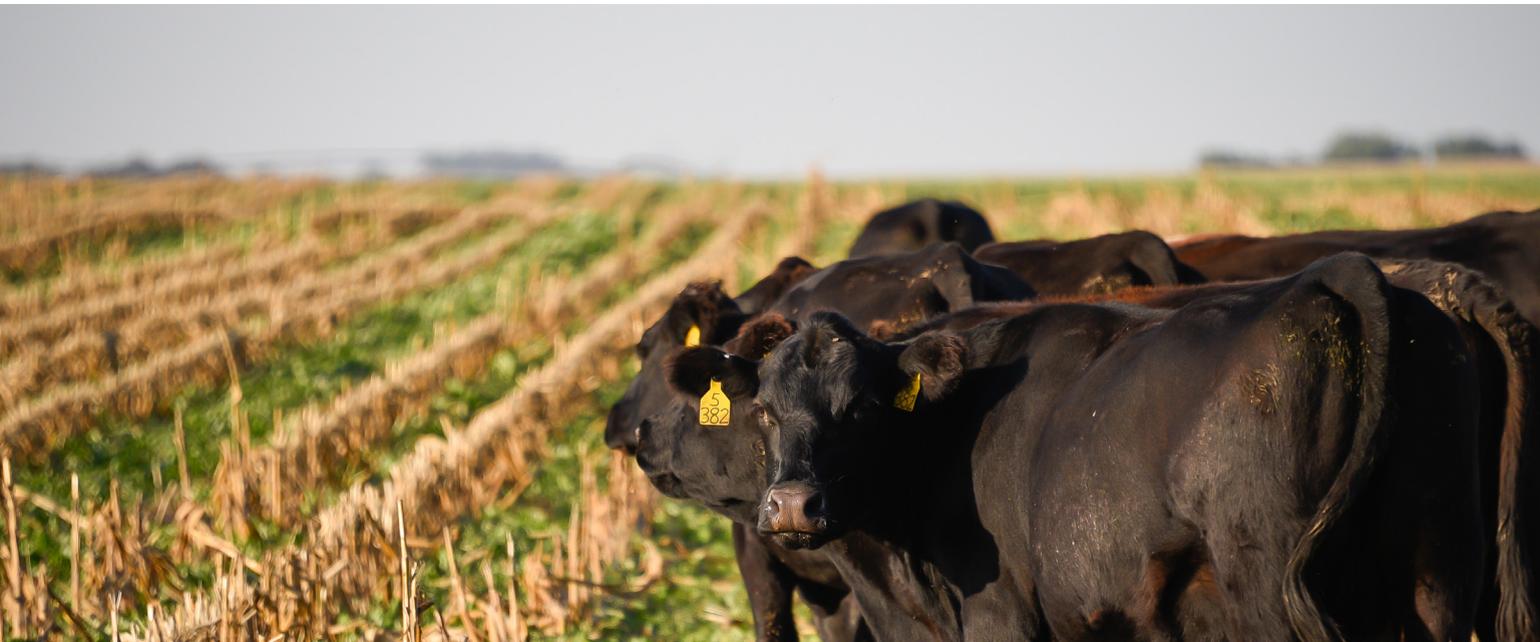


*“What Clay has taught me is the facts are there. It is right there in black and white, and you can’t really refute some of the data that he comes up with. He’s very objective and the data he collects speaks for itself. The economic data really motivates me to move in the right direction.”*

**Curt Elmore, Allerton, Illinois**

Overall, nitrogen fertilizer products represent about 15% of your total costs of operation, excluding land costs. Managing those expenses by applying the right rate at the right time is important for maximizing your farm income and minimizing your environmental footprint. Applying the majority of nitrogen fertilizer in the fall might feel like a clear win: you’re buying the product at a lower price and there’s peace of mind in the spring knowing it’s already applied. But six years and 260,000 acres of PCM data

demonstrates that applying the majority of nitrogen in the fall is NOT the most profitable N management strategy. Far from it, once you factor in the extra nitrogen you apply since you know you’re going to lose some of it and the extra cost of stabilizer. The mostly fall-applied N systems didn’t yield any better than in-season nitrogen application strategies either. The most profitable timing applications were mostly preplant and mostly sidedress applications.



# Nitrogen Application Data and Recommendations

We found again, for the third year in a row, that the university-recommended maximum return to nitrogen application rate is the most profitable rate application strategy. And yet, about 65% of the farmers in PCM are

applying at rates above the MRTN. In our analysis, corn production on high SPR fields were most profitable when the total nitrogen application rate was in the 150-200 lb. N/a range.

**Table 3 – Nitrogen Rates: Yields, Returns, and Environmental Assessments, Corn, High SPR, 2015-2020**

CORN, HIGH SPR, N RATE, LBS. PER ACRE	AVG YIELD 2015-2020 (bushels/acre)	OPERATOR & LAND RETURN, 2015-2020	WATER QUALITY INDEX (1 = worst, 10 = best)	GHG EMISSIONS (metric tons CO <sub>2</sub> e/a)
Less than 150	202	\$241	6.10	-0.08
151-175	214	\$272	6.15	0.17
176-200	217	\$270	5.74	0.14
201-225	218	\$255	5.51	0.17
Greater than 225	227	\$252	5.30	0.46





*“As a conservation consultant, I’m there to look over their financials and pair that with the environmental metrics to advance their conservation efforts on their operation. The strength of PCM comes from our boots-on-the-ground approach and our farmer involvement.”*

Clay Bess, PCM Operations Manager

*“Collaboration’s a big piece of the puzzle, and we need more people on the team to win.”*

Tim Mohr, Allerton, Illinois



# Corn and Soybean Cover Crop Data

Frankly, it's hard to make a convincing business case for cover crops based strictly on the financial returns averaged over our full dataset. There are several reasons we think you should consider trying cover crops anyway ... and none of them are because we want you to lose money. For one thing, many of the farmers in our database that are growing cover crops are receiving some kind of financial assistance through PCM ranging from \$5-\$35/acre, which is not reflected in the net returns shown here. Also, we're still building our cover crop dataset; only 10% of the total fields in our PCM dataset are cover cropped fields, and the two years with the greatest number of cover crop fields, 2019 and 2020, were years with notably poor weather for planting cover crops in

our regions. Finally, many of the cover cropped fields in our program are managed by farmers who are relatively new to cover crops and are still learning how and where to grow cover crops cost effectively. Several reliable case studies of Midwest cover crop producers demonstrates that experience is among the most consistent factors that contribute to growing cover crops profitably. As a strictly dollars-and-cents decision, growing cover crops may not pencil out for you without some cost-share assistance, especially if you rent your farmland. However, and we can't stress this enough, cover crops are a highly effective and visible solution to all of our most pressing environmental concerns - water quality, soil erosion and climate change.

**Table 4 - Financial and environmental outcomes resulting from incorporating cover crops into corn production systems in central Illinois from 2015-2020. High SPR only.**

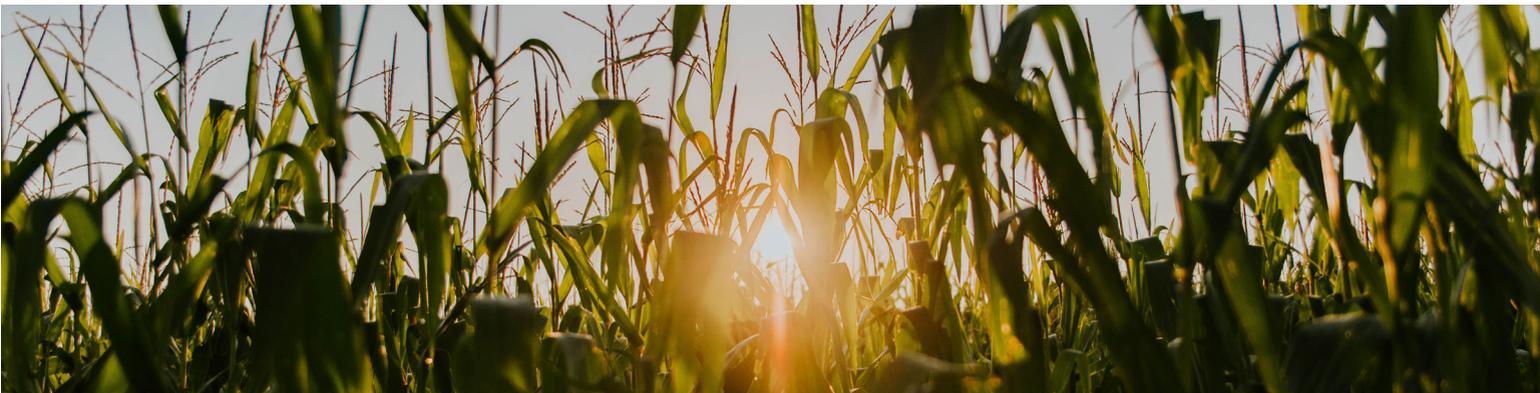
<b>CORN, High SPR</b> 2015-2020 Avg Values	<b>OVERWINTERING</b>	<b>WINTER TERMINAL</b>	<b>NO COVER CROP</b>
<i># fields</i>	150	65	2815
<i>Yield per acre</i>	214	218	220
<i>Soil Productivity Rating</i>	139	140	140
<b>GROSS REVENUE</b>	<b>\$779</b>	<b>\$795</b>	<b>\$801</b>
COVER CROP SEED	\$12	\$12	\$0
<b>TOTAL DIRECT COSTS*</b>	<b>\$394</b>	<b>\$371</b>	<b>\$393</b>
COVER CROP PLANTING	\$12	\$16	\$0
Other power costs**	\$114	\$108	\$110
<b>TOTAL POWER COSTS</b>	<b>\$126</b>	<b>\$124</b>	<b>\$110</b>
<b>OVERHEAD COSTS</b>	<b>\$37</b>	<b>\$37</b>	<b>\$37</b>
<b>TOTAL NON-LAND COSTS</b>	<b>\$557</b>	<b>\$532</b>	<b>\$540</b>
<b>OPERATOR &amp; LAND RETURN</b>	<b>\$190-\$240</b>	<b>\$236-\$286</b>	<b>\$261</b>
Estimated Soil Loss (Tons/a)	0.55	0.63	0.91
Water Quality Index (1 = worst, 10 = best)	5.83	5.38	5.54
GHG emissions (metric tons CO2e/a)		-0.68	0.28

**Table 5 – Financial and environmental outcomes resulting from incorporating cover crops into soybean production systems in central Illinois from 2015-2020. High SPR only.**

<b>SOYBEAN, High SPR</b> 2015-2020 Avg Values	<b>OVERWINTERING</b>	<b>WINTER TERMINAL</b>	<b>NO COVER CROP</b>
# fields	372	21	2546
Yield per acre	68	67	69
Soil Productivity Rating	139	139	140
<b>GROSS REVENUE</b>	<b>\$622</b>	<b>\$620</b>	<b>\$634</b>
COVER CROP SEED	\$12	\$12	\$0
<b>TOTAL DIRECT COSTS*</b>	<b>\$151</b>	<b>\$150</b>	<b>\$145</b>
COVER CROP PLANTING	\$10	\$17	\$0
Other power costs**	\$88	\$66	\$83
<b>TOTAL POWER COSTS</b>	<b>\$98</b>	<b>\$83</b>	<b>\$83</b>
<b>OVERHEAD COSTS</b>	<b>\$30</b>	<b>\$30</b>	<b>\$30</b>
<b>TOTAL NON-LAND COSTS</b>	<b>\$279</b>	<b>\$263</b>	<b>\$258</b>
<b>OPERATOR &amp; LAND RETURN</b>	<b>\$309-\$359</b>	<b>\$331-\$381</b>	<b>\$376</b>
Estimated Soil Loss (Tons/a)	0.85	0.77	1.25
Water Quality Index (1 = worst, 10 = best)	6.47	6.34	6.20
GHG emissions (metric tons CO <sub>2</sub> e/a)		-1.74	-0.30

\*Direct costs = fertilizers, pesticides, seed, cover crop seed, drying, storage and crop insurance | \*\*Other power costs = fall fertilizer application, spraying, planting, cover crop planting, spring/in-season fertilizer application, harvesting and grain hauling

No-Till = No tillage; 1-Pass Light = 1 pass w/ low-disturbance tillage; 2-Pass Light = 2 passes w/ low-disturbance tillage; 2-Pass Medium = 2 passes (1 low-disturbance tillage +1 high-disturbance tillage); 2+ Pass = more than 2 tillage passes, any intensity level



# PCM Professionals



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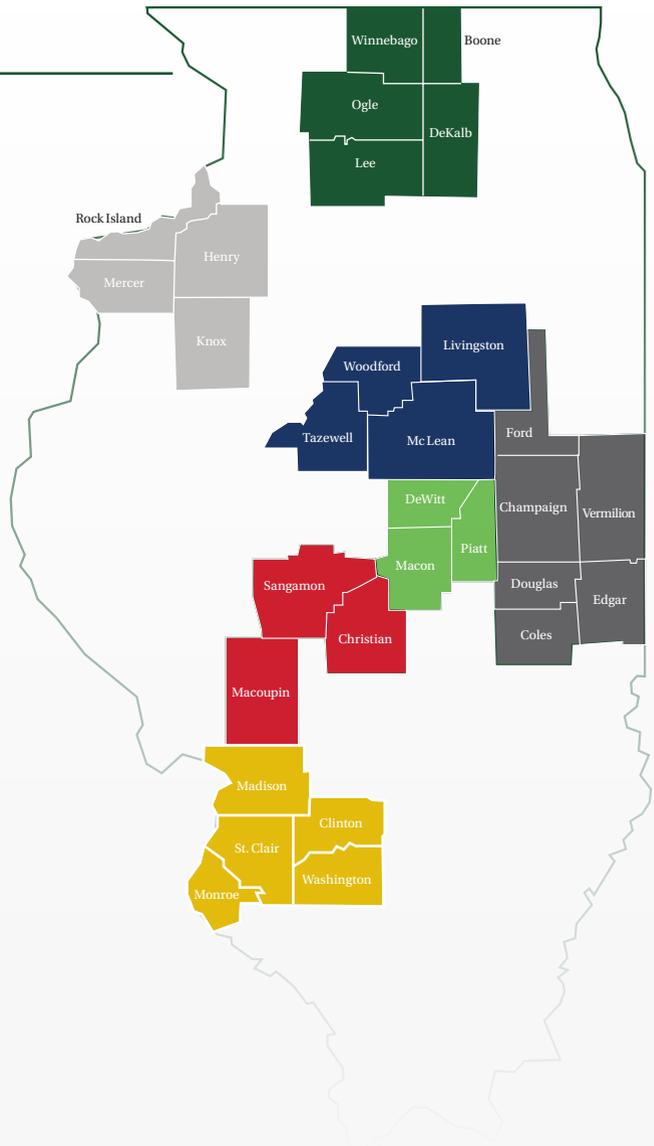
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