



Beyond the Adoption Decision: Lessons on the Cover Crop Learning Curve, Part 2

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Every January 1st, a wave of New Year’s Resolutions are made, and with them, millions of Americans resolve to adopt new financial habits, gym routines, and diets (Davis and Hall, [2023](#)). Research shows that gym attendance falls by 88% within a year of opening a membership, for example (Rand et al., [2020](#)). This all-too common experience is a reminder that the decision to adopt a new resolution is only the first step; the actual commitment requires a change to the individual’s schedule, planning, etc., or their system, in the weeks and months that lie ahead of the resolution. In total, sticking to the resolution requires a series of additional decisions and challenges with a person’s routine, work schedules, family demands, and more. These later decisions are just as, if not more, important in determining whether someone reaches their long-term goals within the year. With New Year’s resolutions as metaphor, this article provides the second in a series on cover cropping and the necessity of looking beyond the adoption decision for successful implementation and maintenance of the practice.

Background

The previous article in this series discussed how the adoption decision for cover cropping is only the first step in what cover cropping farmers often refer to as a systems change (*farmdoc daily*, [April 24, 2025](#)). Adoption is only a small part of the picture for sustained and successful implementation and management of cover crops. Adoption on its own, in fact, may be the least complex component and can become a one-year or one-time decision if the farmer elects not to adopt in subsequent years. This reality presents a challenge to both research and policy. To the extent that “much of th[e] research considers adoption as a binary decision at a single point in time,” it risks missing the point (Doran et al., [2022](#)). It also contrasts in important ways with a systems change. Adoption, for example, may be a limited decision based on expectations that “various factors including expected benefits and costs of adopting a practice versus not adopting” favor adoption (Lee and McCann, [2019](#)). Focusing on adoption emphasizes the decision possibly at the expense of the more complex systems changes necessary for effective and successful management. The discussion that follows builds on the previous article by looking beyond the adoption decision.

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Discussion

Farmers' experiences in the first few years **after** adoption are equally, if not more, critical than the decision to adopt the practice. Interviews with technical support advisors present wide agreement that farmers who began cover cropping without sufficient knowledge faced the highest risk of discontinuing the practice. Problems arise when farmers "jump into" the practice "without doing their homework first." For example, if the farmer simply throws "cereal rye out on everything," they can "end up with trainwrecks in their corn." Such an experience often leads the farmer to conclude "well look at that – I'm never doing that again." Any assistance provided to adopt the practice is lost when the practice fails or is discontinued.

Poor management decisions, in fact, often lead to disappointing results, creating a perception that cover crops do not work. One technical advisor described it this way:

"Typically, when a grower quits it is a function of their management. It's not because the cover crop screwed something up. It's because they made enough mistakes in the management of the cover crop, or the cover crop-cash crop relationship, that they have enough of a negative experience or negative impact on their yield. That's when they decide it wasn't worth it: 'It's costing me more money to do this than it's profiting me.'"

These insights underscore the importance of effective management during the initial years, as the benefits of cover cropping often take time to materialize. Interviewees generally agreed with research that suggests that significant soil health improvement and cost efficiencies typically emerge after approximately five years of consistent cover crop use. A technical advisor explained:

"If a farmer is able to use cover crop successfully – or at least successfully enough to convince themselves that it was worth doing – if they can do that for five years, they are very likely to continue the practice and continue to seek out ways to improve it. Very few farmers I've encountered have said, 'We used cover crop for five years or more, but now we're done.' Usually, if a farmer is going to give up on it, it happens in the first couple of years in my experience."

Farmers' reasons for taking on cover crops also provide important perspective that it is more than an adoption decision. The most common reason for implementing cover crops is to improve soil health. For many farmers, especially those with farms in highly erodible areas with hilly landscapes and soils lacking organic matter, addressing erosion and rebuilding soil health were the primary motivators. Several participants noted that they have noticed how much worse erosion has been the last 10 to 20 years. Even in regions with flat, fertile soils, conservation practices were pursued to mitigate erosion. As one farmer explained:

"Lots of people think with flat black ground that there is no erosion, but that isn't true. I remember as a kid I wondered why the fencerows kept getting taller – this was when we were still doing intensive tillage everywhere – but it wasn't the fencerows getting taller, it was the field getting shorter. We were losing all that topsoil from erosion, and it still happens today."

Farmers also sought to address issues related to soil crusting and water infiltration through cover cropping practices, particularly in response to increasingly erratic weather patterns. Farmers worry about periods of heavy rainfall resulting in several inches of rain, followed by mini droughts lasting three to four weeks. They are seeking to build confidence that their soils will perform in these variable conditions.

In addition to improving soil health, cover crops were also seen as a strategy to reduce farm input costs, particularly through decreased reliance on herbicides and synthetic fertilizers, and to serve as a feed source for livestock. In fact, the rising cost of herbicides was a recurring concern and a significant driver for adoption. Between 2013 and 2022, herbicide costs roughly doubled, increasing from \$66 per acre to \$128 per acre (*farmdoc daily*, [April 4, 2023](#)). Farmers were also motivated by growing concerns about weed resistance, compounded by the lack of new herbicide modes of action (MOAs) for over 30 years prior to October 2024 ([EPA](#) and [Farm Progress](#)). One farmer reflected: "With the limited herbicide choices we have, we have to find other means than the same chemistries every year."

Similarly, rising fertilizer costs played a role in encouraging cover crop adoption. In 2022, fertilizer prices reached historic nominal highs, with anhydrous ammonia exceeding \$1,600 per ton and urea and liquid nitrogen surpassing \$1,000 per ton (*farmdoc daily*, [September 12, 2023](#)). These financial pressures

highlighted the importance of implementing alternative practices, such as cover cropping, to enhance farm sustainability and reduce input dependency.

While less prominent, some producers were motivated to use cover crops out of a desire to “get out before regulation.” Many of these farmers were actively involved in their county Farm Bureau or Soil and Water Conservation District and had heard anecdotes of regulations being enforced in other states after voluntary measures to address nutrient loss issues had been insufficient. Although these motivations may align with broader environmental benefits, the prominent driver behind a farmers’ decision with respect to cover crops lies in addressing specific gaps or challenges on their farms. One grower highlighted this problem-solving motivation saying:

“I’m all about conservation, growing up, our farm has always been no-till and strip-till. But if no-till, strip-till, cover crops, and all that only hindered our crops and caused huge yield losses, I wouldn’t continue just for the feel-good aspect. I’m a conservation-minded person, but most importantly, I want to make money. So, if it wasn’t working, I wouldn’t pursue it. We’re all in this to make money, so the fact that I can blend it all together [conservation and profitability] is what makes me happy.”

Moreover, there was a strong consensus among participants regarding the broader goal of leaving their land in better condition for the next generation. This aspiration was particularly meaningful when the ‘next generation’ referred to their own children, reflecting a deeply personal and forward-thinking commitment to sustainability. In the absence of a strong, compelling reason to persist through the challenges and learning curve of cover cropping, abandoning these practices became much easier. For many growers, this compelling reason was solving practical problems or ensuring the long-term health of their land. These deeper motivations provide a crucial foundation to sustain farmers through the challenges of cover cropping.

Concluding Thoughts

If successful cover cropping requires a systems change, then it is vital for farmers, as well as researchers and policymakers, to look beyond the adoption decision. Systems changes require longer time horizons and more complex adaptive management. Research into the cover crop learning curve discussed in this article helps further highlight the more-complete perspective on the practice. The next article in this series will focus on management lessons from farmers that made it through the first five years of cover crops.

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