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Advancements in Conservation: Cover Crop Strategies

You may have noticed an article in this publication last week reported from the Associated Press titled, *Cover crops help the climate and the environment, but most farmers say no. Many fear losing money*.

To briefly summarize, the article first introduces the concept of cover cropping and describes the practice's potential benefits to both farmers and natural resources conservation efforts. It also includes anecdotal testimony of farmers' experiences with cover crops and cites a recently published paper analyzing the extent to which cover crops affect crop yields.

A few readers have asked my opinion given my perceived adoration of cover crops. Although I would love to write a scathing rebuttal of all purported negative claims of cover crops only to further denounce the AP, its authors, as well as the researchers of the study, I simply cannot. By and large the main theme of the article is fairly accurate; cover crops are challenging, even foreboding to those unfamiliar with their management and can have production consequences. However, the article does not capture the important nuances of cover crops that make them a successful practice when integrated effectively.

Firstly, to those unfamiliar, cover crops are simply a non-harvested plant intended for purposes outside of generating a cash sale directly from its production. They gained traction through natural resource conservation efforts primarily directed to reduce erosion and its effects on water quality– an especially important consideration for our region–and have continued in popularity as "carbon-sequestration", "soil health" and "regenerative agriculture" become household terms.

The article takes the case of cereal rye, the most commonly used cover crop species in agronomic production systems (corn, soybeans, wheat). Rye is commonly planted in the fall after the cash crop harvest, left to grow in the fall, go dormant in winter, and regrow in the spring only to be terminated before planting the next cash crop. This is where the management nuances not captured in the article emerge.

Importantly, there is an outstandingly large canon of scientific literature citing both the benefits and disadvantages of integrating cereal rye into a crop system whereby one could craft a fairly robust argument on either side of that coin. In essence, the fundamental difference between the successful and unsuccessful implementation of cover crops is the goal (and its evaluation metrics) that one is trying to achieve. These goals may be guided by the agronomic outcomes a grower would like to achieve (pest control, soil fertility, erosion control, etc.) as well as the long-term goal of improving soil quality.

That said, let me be blunt: planting a cereal rye cover crop before next year's corn crop and expecting record corn yields is unrealistic at best. There are numerous reasons why this is the case,

but for simplicity this is like trying to fit a square peg in a round hole–the cover crop species does not best match the intended agronomic goal.

The research paper the AP article cites notes that the vast majority of satellite-surveyed fields used in its evaluation of cover crops were in a cereal rye cover crop. It is therefore no wonder that the paper reports a significant reduction in estimated corn yield the following year. It is also worth noting that though the cited paper is astonishingly robust in methodology and statistical evaluation, it only analyzed one production year (2019-2020) in one region of the country. Recalling back, that region in 2019 experienced record rainfall, delaying and even preventing farmers from planting a spring crop and hence significantly affected the timing of planting a fall cover crop–a factor that is widely recognized as vital to the success of the cover crop next year.

Regionally, the Mid-Atlantic (not covered in the article) and Maryland in particular, has found tremendous success in integrating cover crops. Farmers in Maryland planted 488,214 acres of cover crops in 2020–34% of cropland and 25% of all farmland compared to a measly 7% in the region analyzed in the research paper.

The adoption is driven by hallmark state cost share programs and novel research, incentivizing and furthering our understanding of effective cover crop management. Not only are Maryland farmers leaders in conservation efforts, we remain on the forefront of agricultural innovation, cover crops being a mainstay.

Again, though the article does miss some important points of cover crops, it does one thing very well: dissemination. Frankly, I am tickled that a publication as noteworthy as Associated Press would publish an article about cover crops as it further broadens the public's knowledge of agriculture–which is ultimately the goal to establish a more understanding nation.

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