

Author's note: This story depicts data and quotes from an actual Nebraska wheat farmer. However, due to the sensitive nature of crop insurance and payments, the farmer's name in this story has been changed to Joe Farmer.

To cut, or not to cut? Harvest through the eyes of a crop insurance farmer

Article by Caroline Brauer

The early evening sun glares in Joe Farmer's rearview mirror as he parks his pickup on the edge of a gravel road. He's stopped to check a wheat field near the edge of his farm in the southern Nebraska Panhandle. A slight breeze ripples through the yellow stalks of wheat, but does little to alleviate the oppressive summer heat. It does little to affect Farmer either as he walks to the edge of his field and stares into the distance at acres of slowly dying wheat. These aren't the amber waves of grain featured in stories and songs. The yellowing of this wheat isn't due to the impending harvest. This wheat field, like many others in the region, has been infected by a disease called Wheat Streak Mosaic Virus (WSMV). Its effects have been devastating.

"In a good year this field might yield 50 bushels an acre," Farmer says as he continues surveying the wheat. "This year I'll be lucky to get 15 or 20. And this is one of the better fields."

Nearby another wheat field sways lightly in the wind. If you look closely you can see some yellowing on the plants, but from a distance, the greenness of the wheat and height make it appear significantly healthier than the field Farmer stands before. The healthier looking wheat was planted much later than other fields in the area, Farmer explained. Typically later planted wheat wouldn't grow or yield as well, but this year, the later planting seemed to have helped those fields avoid the worst of the WSMV. Unfortunately, those fields in the region are an exception, not the rule.

Farmer turns from discussing the two neighboring fields and crosses the gravel road. He picks his way across a shallow ditch before stopping at the edge of another field. Green weeds and rye plants dot the field, easily standing out against the rest of the brown landscape.

"Somehow the weeds and rye always manage to survive," Farmer says half joking, half serious.

It's hard not to be serious when faced with the devastation stretching toward the horizon. Wheat plants brown and wilted from dead and dying stems and leaves cover the field. It's a struggle to find living wheat plants. And the few living plants are yellowed and streaked with disease. They won't survive long either. The result is obvious, but Farmer says it anyway.

"This field is a total loss."

Wheat Streak Mosaic Virus is a viral disease transmitted by a microscopic creature known as the wheat curl mite. This mite is the only known creature to carry WSMV. According to Dr. Stephen Wegulo, a plant pathologist from the University of Nebraska-Lincoln, some grasses and other cereal grains like corn, oats and barley can host the wheat curl mite. However, the preferred host plant is wheat.

"The mites, they're very tiny. They reside in hidden spaces or close protected spaces on the wheat plant," Wegulo said. "When the wheat heads, the heads are a perfect environment for them to be."

During that time from heading to harvest, they multiply in numbers tremendously so you have millions or billions of mites in a wheat field.”

But the mites require living plant tissue to survive. As the wheat ripens for harvest, the mites require a new host to survive. Volunteer wheat becomes a primary target.

“If the host plant starts drying down, then the mites must find another host that is green so they can continue feeding on it,” said Wegulo. “So if a hail storm occurs in a wheat field just before harvest and dislodges wheat from the head that is mature enough to germinate, it germinates into volunteer wheat in the field. The mites move onto the volunteer wheat. That volunteer wheat, if not controlled, serves as what we call a green bridge where the mites and virus survive until planting in the fall.”

The 2017 growing season marked Farmer’s 39th year farming full time. He’s well aware of the dangers volunteer wheat can cause. He takes great care to destroy volunteer wheat on his farm, particularly in years when there’s been a hail storm.

Unfortunately, controlling all the volunteer wheat and other potential hosts on his own farm was not enough to prevent the spread of WSMV into Farmer’s fields.

“The mites themselves cannot move on their own except on the plant itself, but they are carried around by the wind,” said Wegulo. “They are picked up from the wheat crop and are blown up to 2 or 3 miles. If there is volunteer wheat within that radius, fields in that radius can be at risk. That’s why we emphasize that controlling volunteer wheat should be a community effort.”

But the community wasn’t prepared for how far the mites and disease would travel last year, Farmer said when speaking again recently to follow up on the results of his 2017 wheat crop.

“Our growing area was seven to eight miles from any hail area,” he said. “The curl mites traveled so much further than in other years. Why, I don’t know. And once it got hold it seemed like it hopscotched through the area with the wind direction.”

In addition, the local agriculture community in 2017 was struggling. Prices on all commodities were down; it cost more to grow a bushel of wheat than it could be sold for; trade issues like NAFTA threatened to cost farmers’ market share; high property taxes and rail basis rates were shrinking already small margins.

According to Farmer, if a producer didn’t have a sprayer, it could cost \$6 to \$6.50 per acre to rent one and have Roundup, the most common herbicide used to control the volunteer wheat, applied to their fields. That’s not including the cost of Roundup itself.

“You kind of wondered if you could justify the cost,” Farmer said. “Looking back on it now you can say ‘yeah, definitely.’ But farmers were trying to cut back on input costs when we had \$2.70 and \$3.00 wheat.”

Unfortunately, beyond controlling volunteer wheat, there’s little farmers can do to limit the spread of wheat curl mites. According to Wegulo, insecticides and miticides are neither effective nor economical. Wheat varieties resistant to the curl mite are limited. Tilling volunteer wheat isn’t a guarantee and

brings with it other risks for soil erosion and environmental impacts. And the weather, something completely beyond farmers' control, also has an impact.

"It (WSMV) was actually widespread across the Great Plains," Wegulo said. "It was not just Nebraska. And because it was widespread from Texas to Nebraska, and even South Dakota, it makes me think the weather had a significant part to play."

Wegulo went on to explain that the severity of WSMV in 2017 resulted from a combination of factors, including: the existence of volunteer wheat that wasn't controlled, a mild fall with favorable weather for mite multiplication, and a late arrival of winter that extended the fall and allowed WSMV to spread.

"The thing is that these things happen every year," Wegulo said. "But if all those things happen at the same time, then you have an explosion like we had last year."

It was an explosion that could have cost Farmer dearly. As the third generation farmer, he hopes to leave something for his son, the fourth generation currently working the farm.

"Last year because of Mosaic, I had a 50 percent loss on the entire farm operation. It was the highest loss I've ever had," said Farmer.

He indicated crop insurance was one of the things that kept him in the game.

"That's what I've been paying those premiums for, is to protect against those big losses that could put you out of business," Farmer said. "It (crop insurance) kept me operational. It didn't pay all my expenses, but it allowed me to continue to operate another year."

Farmer provided a breakdown on what crop insurance has cost him, and what he's received in indemnities for losses since he started farming. He began farming in 1978, but started buying crop insurance in 1980. On wheat alone, he's paid anywhere from \$10,000 to \$13,000 annually. He's purchased crop insurance on his wheat every year. Since 1980, he's had indemnities for losses five times due to hail. Those payments ran from \$5,000 to \$6,000 each. His only other claim for crop insurance on wheat came after the losses from WSMV in 2017. His indemnity was \$67,000. In total, Farmer has paid more than \$400,000 into crop insurance for wheat since 1980. He's received just under \$100,000 in indemnities.

"It's kind of like your house insurance premium or your car insurance premium," said Farmer. "You pay it every year and hope you don't have to use it. You're going to insure your house for what it's worth because if you had a total loss on your house you couldn't afford to replace it. I would hate to have one year like that (2017) without insurance. You'd have a multigenerational farm go out of business."

The impacts of a poor production year and having to rely on crop insurance go beyond the financial however. It's something Farmer said he wishes people outside of agriculture would consider when talking about the issue. One of the hardest of those issues to deal with is depression.

"Farmers pride themselves in raising a good quality, high yielding crop. And when you fail at doing that, even though it's because of Mother Nature and some strange circumstances, you feel like a failure to yourself," he said.

But Farmer, who gave up teaching to return to the farm, said he doesn't regret making the change and can't think of a year when he would have considered quitting the farm.

"My wife has argued with me lots of years though," Farmer said laughing.

"You've got to have a tough skin and look for the positives," he said. "I've been very fortunate that this last year in 2017 was the worst crop that I've ever had since 1978. But my family and my heritage and my father and in-laws, they taught me you learn to save during the good years and conserve during the bad years to get you through."

Crop insurance, Farmer said, was the program that helped him bridge the gap during the rough years. It's protected his farm and in his opinion, helps protect American agriculture.

"My main concern is, do you want a country that's dependent upon foreign agriculture?" he said. "The costs and financial risk of farming is way, way too high without some type of support system in place. If you remove that, each farmer then would not have any support basis, and the first catastrophe that comes along, and it comes along in farming for sure, and one by one by thousands we would erode agriculture as we know it in the United States."

In Farmer's opinion, the crop insurance program is one of the best government programs available. He just wishes people would remember it's more than a government program.

"I think that's money well spent," he said. "It's probably, as far as government programs go, it's the most successful government program that's been around. Overall the federal government puts money into it. But farmers put money into it as well."

Jordan Dux, director of national affairs for the Nebraska Farm Bureau expressed similar appreciation for the role crop insurance has played in protecting Nebraska farmers.

"One doesn't need to travel far to hear Nebraska farmers talk about instances where crop insurance was the only thing that stood between them and total financial disaster," he said.

Dux went on to express concerns about changes to the program in current Farm Bill debates that could potentially hurt farmers.

"It is important to remember that every small cut, every small restriction, and every small tweak has the potential to throw this vital program off balance," he said. "Like any insurance product, crop insurance rates are complex and are balanced with farms of many shapes, sizes, and risk levels. Placing short-sighted restrictions on one of, if not the most successful farm programs in farm bill history to save minimal federal dollars is irresponsible, unacceptable, and totally inappropriate."

Regardless of where a future Farm Bill and crop insurance conversations go, Farmer said he will continue farming as long as he can.

"That's what my father did, my nearest relatives did," he said. "There's a sense of pride in actually growing something. That challenge in agriculture, it gets into your system and it's one of those things I always wanted to do."

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Two wheat fields in the southern Nebraska Panhandle. The field on the right belongs to Joe Farmer and has a greater level of WSMV damage than a later-planted field pictured on the left.



Joe Farmer points out symptoms of WSMV on a wheat plant in one of his fields in the southern Nebraska Panhandle in June 2017.



A wheat plant, infected with WSMV, struggles to survive in one of Joe Farmer's fields that has been mostly destroyed by the disease.