

As featured in



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A photograph of an older man with grey hair and a younger woman wearing a red and grey baseball cap. They are both looking down at a clump of dark soil held in their hands. The man is wearing a blue t-shirt with 'FOX FAMILY FARM' printed on it. They are standing in a field of tall green grass under bright sunlight.

Soil: The Secret to Success

5th Generation Indiana Farm Family Makes Soil their Priority

By: Karolyn Kruse

The Indiana-based grandfather/grandson team of Charlie Fox and Zach Flinn take a close look at a fresh cutting of hay to inspect for quality and uniformity.



Charlie Fox, a fifth generation farmer, farms alongside his grandson. Flinn's interest in becoming an Ag Spectrum Associate was sparked by his grandfather's use of the Maximum Farming System.

Strolling across Charlie Fox's farm in Seymour, Indiana, you see a farming operation inspired by innovation and a responsibility for sustainable farming. The 5th generation farm has advanced agriculture by pioneering innovative conservation practices. The Fox family has used the Maximum Farming System for six years and recognizes that success starts with understanding the soil.

The farm was originally established by Fox's great grandfather after he returned from the Civil War more than 150 years ago. Throughout the years, the farm has seen success and strife, however the Fox family has always been at the cutting edge when it comes to fresh ideas and innovation. Now home to Charlie and his wife Nancy, the next generation has made soil conservation, plant health, and efficiency it's driving motivation.

With the goal of farming the ground for what it's best suited for, Fox sought solutions to enrich the light sandy soils that did not hold moisture and the heavier clay soils that seemed to always be saturated.

Fox pursued opportunities that would address the soil variations on his farm. "Several years ago, I started doing research on calcium magnesium ratios because I had heard that could improve soil health. I asked my local fertilizer dealers if they knew anything about it and they told me not to worry about it. A short time later, while I was at the Louisville Farm Show, I came across an Ag Spectrum sign promoting the importance of Ca/Mg levels. I couldn't believe it!"



Carrying on the legacy of their heritage farm, Mitchell and Zach Flinn, Charlie Fox and Craig Flinn are working together to improve their soil's tilth and ultimately raise premium crops.

Fast forward a year later, Fox was once again at the Louisville Farm Show when he came across a custom planter set-up at the Ag Spectrum booth. Coincidentally, he had just purchased the same Martin attachments for his planter. This was just the beginning.

“Ag Spectrum’s Maximum Farming System was aligned with where I wanted my farm to go. I’d always believed that working with soil chemistry was important, so when I learned that Ag Spectrum tests by soil types, I knew I had found a great system,” said Fox.

The Fox farm has benefitted, and even improved their soil structure by conserving residue and using no-till on much of their farm. This improved soil structure allows the biological life to thrive, while also making nutrients more available for crop uptake.

“Charlie followed the recommendations of the Maximum Farming System from the time we started working together. We started by soil testing all of his acres,” said Dave Myers, Ag Spectrum Area Manager.

A true advocate for soil conservation, Fox began no-tilling in the 1980’s because he did not want to disturb the structure of the soil. The sand hills he farms were easy to convert to no-till, while the heavier clay proved to be more of a challenge. Gypsum was added to the heavier clay-like soil as it serves as a conditioner to improve soil tilth. Gypsum is used in many farming operations for a variety of reasons, but primarily to break-up compacted soil, stop water runoff and erosion, and help plants absorb nutrients.

Continuing the family legacy, Zach Flinn has worked alongside his grandfather for years. “I have really noticed a difference in the soil composition and crop quality, especially in the heavy clay areas. Gypsum has made the ground much more conducive to no-till. Neighbors are noticing differences in the way our crops look and are starting to ask questions,” said Flinn. In 2013, Zach

Waste Not, Want Not

Charlie Fox and Zach Flinn are on a mission to create their own organic matter in an environmentally friendly way. With sandy and clay-like soils covering most of their Indiana farm, the team is limited to raising crops that grow most effectively in that soil environment. However, they are testing the potential to mass produce compost that can be spread as a top layer on their farm ground. This rich compost will provide a productive microbial environment for new seedlings to thrive.

Over the years, Fox has developed a strong relationship with trainers at Churchill Downs, selling them high-quality straw. Fox was delivering a load of fresh straw to a customer at Churchill Downs, when one of the guys asked him if he was interested in taking the used straw back to his farm. “They were hauling 7-8 loads a day of used straw and were looking for a place to go with it. I said ‘let me try it.’”

The conservationist in Fox formulated a new idea, one that could change the entirety of his farming operation for generations to come. Trucks deliver the used straw to Fox’s farm where it is then mixed with leaves, debris, and wood chippings they haul away from the city of Seymour.

Fox and Flinn have been conducting experimental tests under the close supervision of the Indiana State Department of Environmental Management to better understand the breakdowns of the compost. At one point they recognized that there was too much carbon, and lacked a source of nitrogen. To solve this problem, they made contact with the city of Columbus and are now experimenting with the addition of bio-waste from the city to add nitrogen to their compost piles.

The future is looking bright for these conservationists as the monitoring process in the final stages of completion. The next step? Producing this earthworm-rich compost in long windrows that will eventually be used across their entire farm.





chose to share their success beyond their farm and became an Ag Spectrum Associate who now serves other farmers in central Indiana.

To further reduce erosion, Fox has also done extensive tiling work on his farm and experimented with a variety of cover crops. While cover crops are not a prescribed part of the Maximum Farming System, some farmers have found that they speed up the decomposition of residue and prevent excessive buildup of surface residue. Besides sheltering the soil from sun and wind, cover crops also protect the soil surface by shading the ground and reducing the evaporation of rainfall, a requirement for the dry, sandy soils that Fox farms.

The Maximum Farming System's holistic approach has led Fox to develop and maintain a healthy soil structure, while increasing the production of premium quality grains.

Quality Results

For years now, Fox has delivered his harvested wheat to a food-grade milling company in Indianapolis. Based on the quality-control tests the milling company performs on every load, "[They] told me that we've brought in the best local wheat he's had this crop season. I attribute that to the Maximum Farming System," said Fox.

The corn that is produced on their farm is also delivered to a food-grade facility in Indianapolis where it is turned into starch and food-grade products. When the corn is delivered, it undergoes tests that evaluate quality.

"Throughout the years I've delivered corn there and it has

always tested at a high weight, had a great yield, and dries down well. We're always happy with the quality of corn that is produced using the Maximum Farming System," said Fox.

When selling food-grade grains, the quality regulations are different and are critical for growers to meet. Growing a premium crop that repeatedly performs outstanding is a feat Fox can be proud of.

A visionary who was once ahead of his time has since found the right system that has not only strengthened his approach to farming, but has also strengthened his conservation efforts. Fox has set a positive example for other farmers with his own conservation practices, and leads by example as he serves as the president of the County Soil and Water Conservation District. Flinn is following in his grandfather's conservation footsteps as he serves as an Associate Supervisor on the board.

"Ag Spectrum is unique in its approach, and I like the way they do business. It is my hope that other farmers will start thinking about the future and the soil's future conservation needs," said Fox. ▲

