



Hey everyone,

I've been wanting to do one like this for a while and since we've got some time before the soybean harvest update, it seemed like a good time. There's a ton of potential changes coming to agriculture, probably most within the next ten years. Obviously if our plan is to farm for 40+ years, we have to anticipate and plan for any challenges that may arise in that time. It's alarming how many operations seem to plan for one year at a time. So, I thought I would put this out to explain why we do, what we do.

Future Challenges

There are many factors that will potentially reshape agriculture within the next 10-15 years. Which will happen, when, and to what degree? It's impossible to say, but I'd rather adapt to a predicted threat in advance than react to it as it happens. In no particular order, here's what I see coming down the line:

- Pest Changes
- Weather Variability and Land Degradation
 - Regulation
- Market Sustainability Demand

Pest Changes

Pests are defined as any living thing that can negatively impact the crop: weeds, insects, diseases, and nematodes (microscopic worms). I've talked about this a little in other updates, but increasingly as time goes on, the go-to pest response, is chemical. This is leading to some serious issues; weeds that are resistant to 5+ herbicides, insects resistant to Bt corn, nematodes resistant to nematode resistant soybean varieties, and diseases unaffected by fungicides.

Somehow, the response to these issues is strangely the same response that has gotten us to this point. To manage herbicide resistant weeds, there is an outcry for different herbicides and crops that can have different herbicides used on them. Nematode killing seed treatments are coming out. Fungicides are sprayed more often for profit, than for actual need.



Invasive insects, like the Spotted Lanternfly, also pose an unknown threat. Imported pests often have no natural enemies or diseases to stop their rapid spread. It eats basically everything and is quickly moving west from the coast, where it entered the country from Asia.

I think the most alarming response is the movement from chemical pest control to genetic control. RNAi technology probably the next “big thing” in commercial pest control. RNAi products affect the target’s genes and have the ability to suppress certain traits. Maybe seed production could be targeted in weeds or digestion chemicals suppressed in an insect. While the technology and possibilities fascinating, I think it is a scary road to go down. More in-depth research needs done, but some basic computer modeling has found that off target species, such as bees, can be affected. What effect it would have is currently still unknown. With the complexity of genetic information, coupled with the sheer overlap of genetic information between even very different species, I think it is opening the door to serious risk.

Our approach is to spend more time promoting life and health from competition through diversity... and less time killing things. Responses to pests need to draw from several strategies. We need to recognize that pests are usually due to a fault somewhere in the system. Next year slow experimentation will begin on insecticide free seed, with the ultimate dream of being insecticide/fungicide seed treatment free in about 5-6 years, if all goes well. As we move towards making each field an ecosystem, dependence on insecticides and fungicides will naturally reduce over time.



A nematode. The vast majority are good guys. They are some of the most important and numerous animals in the entire world. It is estimated that about 80% of all living animals are nematodes.

Weather Variability and Soil Degradation

We need to be able to adapt to whatever changes come in a growing season. This is typically a function of water, either too much or too little. Despite being on some of the best soils in the world, a heavy rain event of 1”+ (or even less) leads to runoff in many local fields. Think how impactful it would be if the last rain before a drought was a 3” rain, but 1.5” was not absorbed. In addition to the sheer unavailability of that water in this situation, the water that runs off during this time is brown and carrying valuable nutrients. How long can this pattern go on?

Furthermore, this pattern is clearly leading to significant issues from an environmental standpoint. Lake Vermillion, and other local lakes for that matter, tracks herbicide levels in the water throughout the year. Also, lakes and rivers are having severe nutrient level issues, causing wildlife die offs. These issues tie in with the third “threat?” to agriculture today:



cue horror movie sound effects

I’m joking. This doesn’t scare us at all because no regulation would have an impact on us and our current practices. However, the notion of any government intervention is met with a crazy response from the agriculture community in general.

“Why are they picking on farmers?! It’s clearly the fault of waste water treatment plants, golf courses, and city people fertilizing their lawns too much!”

That’s seriously a claim that comes up in almost every online conversation I’ve read about the topic. While those things certainly contribute to nutrients ending up in water supplies, it’s foolish to not see the writing on the wall. This is especially true since most of those things have already been regulated in some way. Agriculture is clearly next on the chopping block and it’s not like the ag community is somehow blameless in some serious environmental issues, quite the contrary.

In an example close to home, the waste water treatment plant in Gifford is the first in Illinois to install a bioreactor plant designed to remove nitrates from waste water before entering streams. In other areas, Ohio has placed restrictions on when/how fertilizer can be applied and in Iowa there has been at least one lawsuit covering 10 drainage districts in 3 counties over nitrogen loss into water supplies.

So, there are regulations coming, one way or another. I understand the frustration but think it’s entirely necessary since self-driven conservation efforts have been weak. However, one thing that will substantially help the issue is market incentive.

Market Incentive

To preface this section, I’ll explain a conservation effort we’re a part of: the S.T.A.R program. The “Saving Tomorrow’s Agriculture Resources (STAR)” program was started in 2017 in Champaign in the Natural Resources and Conservation Service (NRCS) and the Champaign County Soil and Water Conservation Department (CCSWD). This program gathers information on a field’s practices, things such as fertilizer practices, tillage, rotation, and cover crops, and assigns a point value (+/-) depending on the practice. Points for a field are tallied and ranked on a scale of 1-5 stars, 5 being the highest sustainability score. The idea is to quantify individual field conservation practices for grain buyers. This will be our second year in the program and we are very proud that, as of 2019, all of our fields will have 5 stars.



That being said, here’s some changes we’ve heard of in the last 6 months:

- Coca-Cola and General Mills have been enacting mandates that certain percentages of their grains meet sustainability standards
- Frito-Lay has started paying cover crop costs for their local growers

The most exciting announcement recently came from ADM's Decatur facility. ADM is one of the largest global buyers of grain and carries some serious weight. They have recently released a sustainability quota timeline using the STAR program ratings:

- By 2023, they want 25% of their grain to come from farms with at least a 3 star rating.
- By 2028, they want 50% of grain to be 3 star rated and 25% 5 star rated.

This marks a huge change coming to the market, and obviously this will be financially beneficial to us. Also, there are operations that will need to make immense changes to almost every facet of their operation. At the same time, we are already 100% ready to be offering the highest tier of sustainably produced grain. We will already have the soil health to support that system, coupled with the necessary equipment, and more importantly, the invaluable experience that this requires. To put it in perspective: As of last year, Champaign County had 3,000 acres of cover crops planted, of which we were ~600 acres. Meaning even though we farm 0.11% of farmland in Champaign County, we plant 20% of the cover crops. We love being on the front end of sustainability in the county/state and know that it will pay serious dividends in the coming years.

While we can't be sure what the future holds for agriculture, signs point to several changes coming in the near future. If we have a long-term plan to farm, it's crucial to make more than plans one year at a time. Whatever happens, it will be an exciting time and we've at least made plans for several possibilities.