



2018 Year in Review

2018 has been such an eventful year it seems like it has flown by. A few things that have been in the agriculture world for 2018 are mainly political. Such as the Farm Program debates, and the trade war with China. The 25% tariffs on soybeans that China imposed in 2018 has caused the most concern. That stacked on top of a 60 day long miserable harvest made for an eventful year. On the agronomy side there were two new weeds added to the noxious weed list in ND (Palmer Amaranth and Houndstongue). On the plus side we had great yields this year in eastern ND. Looking forward to 2019, new seed traits got approved by China in January 2019, so there is a positive outlook.

Harvest Challenges

Edible Bean harvest started in early September. This year we planted Pinto and Black beans. Harvest lasted for 19 days, it got that drawn out because the timing of the fields was very different this year, we had one field mature early because of the dry weather and others that were a little later because they were no-till and had more moisture. The Soybean harvest started smoothly until the rain and snow showers hit in early October. We were lucky and had about half our acres of soybeans left when the snow came. We lost 3-5 bpa from that first 14 inches of heavy/wet snow, due to the snow lodging the beans or pulling branches down to the ground so we couldn't get under them with the header. We still had the best edible bean and soybean crops ever.

Corn harvest got off to a slow start, with the fields and corn being so wet and not drying down we could not start very early. Combines and headers were freezing up once it got below freezing. We had a tow rope and chains on the grain cart all year, so I could pull out the combine or trucks when they would



get stuck. To avoid getting stuck in the field we had to load the trucks on the road about 1/3rd of the time, between that and pulling things out it seemed to make the harvest last forever, 60 days of harvest does

seem like an eternity. To keep the combine going we bagged corn in the field. Which in the long run proved to be very beneficial. The corn did not dry down in the field, so the dryer ran continuously adding to our propane expense.

Yields

Edible Beans; were 10% better than our average from the last 3 years. I would contribute this to the better weed control and the lack of disease this year along with great growing conditions.

Soybeans; were 9% better than our average which made these our best yet. If we wouldn't have had that 14 inches of wet heavy snow that stalled us for 14 days. We would've gotten done in a timely manner and averaged about 5 bushels more.

Corn; besides taking 40 days to finish harvest the corn ran very well once again we were 9% better than our 3 yr. Avg. The weather this year was very conducive to any row crops, we are finding that a large amount of the growing degree day units came in the early summer which really helps the crop. That put together with side dressing makes for a good corn year. We have seen a big benefit to sidedressing over the last handful of years, our tests show a yield bump and a savings in nitrogen application.

Agronomic Challenges

We didn't get a fair number of acres tilled the fall of 2017. During the 2018 spring we treated those fields as minimum-till or no-till fields. This can be tough with high residue or wet springs, but we have a planter that is set up to handle high residue situations and we had a dry spring. In general, these fields might've been a little uneven, but they produced very well, they all seemed to handle the dry summer very well.

With the no-till fields we made a big emphasis on starting the year weed free and using residual products. Both corn and soybeans have a "switch point" which is the point where any stresses after that point you will lose a measurable amount of yield each day. This means we need to control the weeds in the field and the pre-emerge chemicals give us an extended window to do this. If the weeds get to be too much corn can lose 10-40 bpa and soybeans can lose 5-15 bpa. We achieved clean fields this year by spraying timely and using multiple different classes of chemicals to control and suppress the weeds.

In season we did not have an aphid issue in soybeans like in the past. We did have to spray 800 acres of our conventional corn (does not have the bt or roundup trait) for corn borer for the first time. Our next hurdle was trying to get the cover crop established in standing corn and after our edible beans that were combined. We flew on winter rye into standing corn and that took very well. The edible bean ground did not fare so well, it was too dry and cold to really take off this fall. We are expecting to get a good regrowth of the rye in the spring for us to direct seed into.



Business Challenges

The theme of our business challenges this year has been the bearish markets, below I will have charts showing you how the markets have been poor performers. With the markets in the tank we need to lower our costs to lower our break evens and minimize additional costs. The corn borer chemical and airplane application fee is \$10/ac, this is an additional cost. This cost is offset by the cost savings of the conventional seed being \$30/ac. cheaper. Cleaning up the no-till fields is offset by the saved cost of not having to dig those fields and preventing soil erosion by leaving residue in the fields. The cover crop seed cost is justified by how much we are building the Organic Matter and saving soil due to less soil erosion which has potential for exponential return. A few other challenges that we faced this year was higher drying cost with the corn being wetter on an average of 3.5% it took longer to dry down. Along with multiple other inputs the propane is up this year 27%. This all being said if we keep our costs down and stay on top of the markets we will remain profitable.

2018 Ag Markets

The charts below are pretty similar to what we had going on last year, 2013 was our high and it has been down-hill after that until turning flat in 2016 and remaining low. Soybeans (**Right**) have shown the most volatility this year with the trade war severely affecting the markets. The beans are down 13% from 2017 low to the 2018 low, now with positive trade talks the prices are slowly on the rise. Corn (**Left**) is a different story it is up 1.5% from 2017 low to the 2018 low and then it has somewhat steadily been climbing after that.



These charts show some possible positivity to come but it doesn't sound like they will be moving up too fast. China needs to take the tariff's off our beans and start buying beans before that markets will

really go up. January China shipments were about 1mmt behind last January shipments. The year-end stocks are still very high, and it looks like South America is on track to get another good crop.

Corn is looking optimistic with the yearend stocks shrinking but the acre estimate for next year is going to be up 4-9 million acres so that will not help the market, we can only wait and see. The recommendations for this next year are to sell in predetermined amounts for an ok price (more than likely on short rallies) to cover your costs. We cannot afford to hold onto inventory thinking the markets will go up; if we want a true rebound in the market we need to have a couple down years in the world's production

Implementing New Things

This year we all attended multiple classes they were about soil conservation, soil building, and nutrient placement. What we took away from those is that soil health is a huge factor in growing successful crops. To help build our soil health we are utilizing new tillage techniques like no-till and strip-till. We are also increasing our use of cover crops and adding different species to create diversity in the soil structure to help boost the microbe activity. We are always looking for ways to make our farm more sustainable while increasing profitability. We think maximizing cover crops and conservation tillage is the way to do that. Below is a picture of us loading the spreader to apply our cover crop of winter rye, turnip, and radish.



Cover Crops

We really jumped into cover crops this last year, we flew on 500 acres of winter rye into standing corn, as you can see below that it worked very well this year. We are finding that if you have something growing and making a root mass the ground is firmer and you do not compact the soil as much in wet falls like this. We also spread 700+ acres of a cover crop on our harvested edible bean ground with multiple different species in it try to make the microbes more active.

A typical 70-acre field conventional tilled loses 2.5 tons of topsoil a year due to erosion. Conventional till with a cover crop applied loses 1.1 tons of topsoil. A no-till + cover crop loses only .4 tons of topsoil. Cover crops also can increase infiltration by 30%; 50% of all nutrient loss happens in 3 days, usually due to excess water. so there is significant less erosion and nutrient loss which means more productive ground and more money in our and our land lords' pocket at end of the day.

We had good success with flying on winter rye into standing corn the 3rd week of August as the picture to the right demonstrates. This gave us a nice firm base to drive on while combining the crop this wet fall and hopefully the roots break up any compaction. We want to always have something growing out there to build that soil health and protect from soil erosion. We are going to keep expanding this practice in the future. Also, we are looking into ways of incorporating the cover crop better into the edible beans. Such as direct seeding them.



Land Improvement with Tile

We did our first tile project this year, we took a quarter that was on a public drain and tiled all the low-lying unproductive areas this spring (80 acres). We are hoping to see better water infiltration this next year. I hope we can start seeing better soil quality in 5 years in the form of less salts, better structure, and all around more productive ground. We have a few plans for our current fields if we get the opportunity we will tile also. We are planning on starting on that field in 2020, we eventually want to have all our acres tiled. So, we are currently structuring a contract to allow us to tile our rented land at no cost to the owner.



Strip-Till

This is the first fall we have strip-tilled and it worked phenomenally. We bought our blu-jet strip-till unit last summer and had to assemble it from the ground up. Once we finally got it in the field we spent an entire day with a consultant to get the machine working properly. We concluded that we needed

to salford in front of the strip-tiller to break up the top crust and make a ton of little changes to make it work perfectly.

A few of the changes we made were changing the opening disc and putting them in much deeper. We also put a slimmer knife on every shank, adjusted the closer to fit our row spacing better. We also took off the down pressure springs on the residue managers, so we wouldn't create too much of a furrow.

I am very excited how well strip-tilling worked this year; the berms were beautiful with no air pockets and the structure was still intact between the rows. So, moving forward we are going to get the strip-tiller out as early as possible to cover more acres. Our goal is to get cover crops growing in season and we can strip-till directly into the standing cover crop. Below are two pictures of how our strip-tiller worked this last fall.



Technology

Every business needs to be efficient with everything it does, that is no exception with farming. So, we implement technology such as mapping, section control, and variable rate. We believe that you cannot change anything unless you can measure it first, so we invested in Smart Firmer's from Precision Planting that goes in the furrow on our planter and tells us multiple readings such as furrow temp, moisture, OM, and how clean my furrow is. All of this then gets recorded in our field view app on the iPads, so Zane and I know the exact conditions everything was applied at and how much we applied, and I can use it while scouting our fields in the summer. We are always looking for technology to make us more efficient, which will ultimately lead to more profits. All of this is very helpful in making decisions for this next year.

I am also currently working with an agronomist to build maps, so we can utilize our dual hybrid planter, this will let us utilize different hybrids by placing defensive hybrids in the poor areas and racehorse hybrids in the high production areas of the field. We are shooting for a 5-10 bu. Increase in those variable fields.

Furthering Education

Zane and I both attended The Executive Program for Agricultural Producers or (TEPAP) down in Austin Texas. Zane attended his second year and I attended my first so we both got different view of the Ag world. Zane came out of Austin really seeing the big picture better, and the knowledge on how to implement things that we have learned the first year. The main take away from the class is that we need to focus on our core values of our farm and really fall back on them when there is an issue. We were taught if your core values are strong and ethical you will have a strong vision statement, mission statement and nobody will have questions on the direction of the business.

I am furthering my education as a Certified Crop Advisor by attending multiple different classes this summer and winter. A few classes are Wild World of Weeds Workshop, Eastern Pest Management School both put on by NDSU, the one I took the most away from was the National Strip-Till Conference in Iowa City this summer, it was extremely informative talking to all those farmers and other experts.

Our employees have also taken the initiative to further their own education. Trent went to the Precision Planting Winter Conference to help learn how to maximize our planter's efficiencies and how we should be measuring certain criteria. Trent and I will also be attending a series of meetings this year to really take our yield to the next level. Mike also is attending precision farming classes put on by Raven, both him and Zane will be doing online classes then attending classes in Sioux Falls SD this spring.

Family + Hobbies

No new members to the family this year. We just had Grayson (1) and Brayden (3) grow another year older. They both rode along with us quite a bit this fall, for how crazy it was they handled it like champs. Brayden doesn't know if he likes the red or the green combine the best. We will teach him which color is the best eventually.

Grandma Colleen is now 78 years old this January, and she ran the combine everyday this fall. Even with the harvest being drug out she didn't complain at all and was a huge asset for us this year. I'm sure we will see her out there this spring digging in front of the planter.



Trips

Mom and Dad are down in South Padre Island, TX again this January enjoying the warm sun. Grandma joined them the second week of January and is coming home with Zane and Cami and the kids the last week of January when they come back after visiting for a weekend.

Zane, Cami, and I took grandma to the Daytona 500 this February. This was on grandma's bucket list, so we plan on taking her down there in February to show her a great time and soak in some warm sun.



Thank You

Everything I have mentioned above is only possible because of the great help we have on our farm. As stated before we have amazing employees that are willing to work hard and to attend classes to better themselves. We have a great family that helps everywhere they are needed. We have wonderful landlords that make it possible for my brother and I to farm. They all play a huge part in the operation and I am thankful for every day I get to work with them all.

Sincerely

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