

SPRING/SUMMER 2010

Spring/Summer Update

There is no such thing as a normal growing season anymore! A farmer always refers to "IN A NORMAL YEAR...." Well, that can be officially thrown out the window, because it does not exist anymore. Each year is filled with unique weather patterns and farming challenges.

Our spring started out about as ideal as one could imagine. About March 15th, the 40+ inches of snow that was on the ground disappeared and the ground was fit for spring tillage by early April. No one ever suspected that we'd be in the fields so soon with all the snow this past winter.

Corn planting for us started on April 12th with above normal soil temps and ideal soil conditions. Planting corn did not take long, as the weather cooperated and we were able to finish within 8 days of straight planting. The corn got planted and we then received about a week and a half of gentle rains. With the warmer weather and moist topsoil, most of the corn was up within 10-14 days. Soybean planting was delayed until May 3rd due to the rain and our waiting until the soil temperature was a little warmer. This year we were close to 100% Strip Tilled Soybeans.

Sunday, May 9th was a day of mixed emotions. We were excited to celebrate Mothers Day with our mom's; however mother nature thought we needed a early morning FROST of 28 degrees. Beings that most of our corn was well emerged and in the 1-2 leaf stage, it sustained some damage. The next 2 weeks remained cool and wet which did not let our corn recover as good as it could have. A couple thousand plants per acre were lost, but nothing even close to considering replanting. It took until week #3 for the heat to return and our corn to grow out of the damage.

The growing season was off to a pretty good start, then JUNE came. Our normal June rainfall is 4-5" of rain. June of 2010 will go in the history books showing 18-20 inches of rain in Webster County. Our drowned out spots were replanted but kept getting flooded out with the next rains. Basements in town were flooded multiple times and the local car dealership lost 20 cars to the flooding that happened in Fort Dodge.

It's now the beginning of August and we are on the downhill slide of the summer. We are way ahead of HEAT UNITS and the crops are looking pretty good. Our continuous rain pattern has not gone away. However, the yields will still be

early to mid September and run through October. Dave will start strip-tilling in early October and will run up to November. Please call us any time to come and ride. We enjoy the company!!!

good, but the drowned out spots will definitely bring the field averages down. As fall approaches, we would invite anyone to come out and ride with us this fall during harvest. Combining will start





O U

FROST-SUNDAY MAY 9TH

Waking up to Mothers Day on Sunday May 9th brought with it a gut wrenching landscape. At 4 AM our outside temperature was around 28 degrees. The below freezing temperature remained until about 6 AM when the sun came up.

Remember how we said that corn planting started early this year due to warm weather and good soil conditions? Planting corn early like we did also meant that the corn was up and fast growing by the 9th of May.

The corn plant being at the V1-V2 growth stage and having 2-4 leaves meant that the above plant mass above the ground would be killed off. Losing the leaves was possible because the growing point of a corn plant remains underground until around V6 or 6 leaf stage.

The next 1-2 weeks remained cool and wet as multiple rainstorms passed through. It was not until week #3 that the corn could finally regain some health and start growing again. Loosing these 1-2 weeks of growth will have some effect on potential yield.

The damage was minor as compared to what it could have been. Our average planting rate was 33,000 seeds per acre. The results of the frost put our final stand to around 29-30,000. There were a couple of fields replanted in the area, but most of the corn varieties recovered very well with the warm weather that finally came.



/3 Corn Seedlin

IOWA SECRETARY OF AG BILL NORTHEY VISITS BROKAW SUPPLY

In June, Iowa Secretary Of Agriculture Bill Northey visited us here at Brokaw Supply. We were very honored to host Secretary Northey on a tour of our facility and talk with him for a couple hours about the excitement in Iowa's Agriculture. Secretary Northey encouraged us in our business and farming operation to never stop changing and always look to the future. He suggested the things that we are doing in our farming operation such as Strip Tillage are examples of what the very near future of Agriculture will look like in Iowa. The leadership and innovative actions that we are taking on our farm with Strip Tillage and Nitrogen Management are things that Secretary Northey said makes our farming operation stand out and will help us excel and continue to grow.





"GOING GREEN" WITH COVER CROPS

This past spring we were challenged with the idea of experimenting with cover crops on the lowa Learning Farm. A cover crop is quite simple, a crop that is planted to create cover to the soil in-between the normal cropping season. For us, this time frame is during the winter. As you can see in the pictures below, we seeded Winter Rye grass in October after the corn was harvested. The ryegrass germinated and started to grow prior to the killing frost. Then as soil conditions warmed up this spring, it started to grow once again. Just prior to spring planting we sprayed it with a low rate of Roundup to kill off the rye grass. The purpose of cover crops are as follows:

- 1. <u>Soil quality improvements</u>--Soil tilth is improved whenever a plant establishes roots and grows into compacted areas. Water infiltration is improved as well. When a field lays fallow for a period of time, the surface tends to seal and water will run off. Cover crops protect the soil surface and reduce sealing. Also, beneficial organisms in the soil, such as earthworms, thrive when fresh plant material is decomposing. Organic matter levels tend to improve with the addition of cover crops.
- 2. <u>Erosion control</u>--Cover crops reduce wind and water erosion on all types of soils. By having the soil held in place by cover crops during the fall, winter, and early spring, loss of soil from erosion is greatly reduced.
- 3. <u>Fertility improvements</u>—Cover crops can be used to take up excess nitrogen from previous crops and recycle the nitrogen as well as available phosphorus and potassium to the following crop. This is very important after manure application, because cover crops can reduce leaching of nutrients.
- 4. <u>Suppress weeds</u>--A dense stand of winter rye or other cover crop can suppress early spring weeds by soil shading. Allelochemicals from cover crops suppress the growth of these weeds.

As you can see, a cover crop could bring many benefits to our farming operation if used correctly. This is another great example of what the lowa Learning Farm has brought to our farming operation, additional ways to build soil quality and recycle (preserve) our fertility.

This fall we plan on cover crop seeding 100 acres of our farm to further evaluate the benefits to cover crops in NC lowa. The seeding will be done aerially with a plane in early to mid September. The ryegrass will be dropped down into the crop canopy and begin to germinate even before the soybeans and corn are harvested.



Bottom Left:: This shows the ryegrass growing before the corn has been harvested.

Top Left/Top Right:: In our trials this fall we planted the Winter Ryegrass with a drill. It was planted in 30' sections so that we can come back and evaluate harvest results. This will show if there are any yield benefits from the cover crops systems.







Right:: The cover crop was sprayed a couple days before planting and then we planted into the strip till just as if the cover crop was not there.



NEW EQUIPMENT ON THE FARM

This spring we purchased a new APACHE self propelled sprayer. This is also the brand of sprayer that we sell and service at Brokaw Supply. The addition of this sprayer will be a great asset to our farming operation. With the multiple spraying applications in corn and soybeans, this sprayer will allow us to be timely and

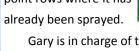


more accurate in our trips across the field. Soybeans for example take 3-4 trips across the field for herbicide, fungicide, and insecticide treatments. The application speed allows us to get over 500-800 acres per day as compared to 300-400 acres a day with a pull type sprayer.

It is equipped with 80' booms, 1000 gallon tank, 20" spray nozzle spacing, top road speed of 34 MPH, and average field speeds of 8-14MPH. This sprayer is also equipped with the latest Precision Ag Technology for sprayers from Raven Industries. Reducing sprayer overlap is one of the many ways this technology is helping us reduce costs and be more accurate in our spraying applications. Automatic Boom Section Shutoff is another feature of our sprayer. The booms turn on and off automatically as the sprayer comes into

point rows where it has

Gary is in charge of the spraying applications on our farm. He has enjoyed the new sprayer and has also gotten Karma in the driver's seat a few times.

















Studies have shown that <u>AUTOMATIC BOOM</u> <u>SECTION CONTROL</u> can lower input costs by:

BROKAW SUPPLY CONTINUES TO GROW

As many of you know we purchased Brokaw Supply Company back in January of 2008. This was a way for us to further diversify our farming operation. Many times you see a farming operation diversify into livestock or starting a trucking company. Brokaw Supply has been the way we've diversified our operation.

Almost 3 years later we can say it has been a great addition to our operation. Brokaw Supply is a Fertilizer and Sprayer Equipment Implement dealership that was started back in 1958 by the Bill Brokaw family.

Over the past 3 years we have experienced a very successful beginning to our owning Brokaw. Sales have tripled and so has our number of employee's. A few comparisons:

2008 at Purchase

6 Fulltime Employees
2 Salesmen
lowa as focus territory
Original Facility downtown

Currently Today

21 Full Time Employees
5 Salesmen
Iowa and Minnesota as focus territory
New Facility in 2009. (5 times larger)

To allow for more of Dave's focus on the farming, in April of 2009, we hired a full time Business Manager. Craig Harthoorn has come to us and taken over the day to day management of the company. He has been a great asset to our operation. He brings with him most recently over 15 years of management experience at Kinze Mfg of Williamsburg, Ia. Dave still oversees the company's direction and financial standings; however he can now focus more on the growth and direction of our farm. Gary being the Vice President of Brokaw, is responsible for assisting Dave in the financial direction of the company. He has also taken an active role in the Apache Sprayer dealership.



Brokaw Supply has brought many assets to our farming operation that are unique. We have a direct source for quality equipment. Take strip tillage for example. As we continue to grow and champion strip tillage on our farm, Brokaw provides for us a pool of equipment and manufacturer resources. Precision Ag Equipment, a complete service department with field service trucks, are just a few of the many things that Brokaw adds to our farming operation.

DAVE RECEIVES: NATIONAL NO TILL INNOVATOR AWARD

In March, Dave was awarded the 2009 National No Till Farmer Innovator of the Year Award. This award is presented by the National No Till Farmer Association to recipients that demonstrate unique and innovative practices in the adaption of no till or strip tillage.



Dave's work with Operation Strip Tillage where by local farmers can experience strip tillage on their own farm was identified as one of Dave's many accomplishments in Strip Tillage adaption. Dave's experience in Strip Tillage comes from the extensive research and ON-FARM trials that we conduct on our farm each year.

This is a very prestigious award that is presented to 1 individual on a annual basis at the National No Till Conference.

This year the conference was held in downtown Des Moines at the Marriot Hotel.



NITROGEN, HOW MUCH IS NEEDED?

Just like humans require different forms for various vitamins and minerals such as: Vitamin A/B/C, Calcium, and Protein, the corn plant also requires particular nutrients as well. Nitrogen (N), Phosphorus (P) and Potassium (K) are the 3 most important nutrients required in a corn plant. These nutrients are referred to as MACRO nutrients due to the large amounts that the corn plant requires. MICRO nutrients are also important in the corn plant, but are needed in much less volume commercially due the natural availability of them in the soil. Examples of micronutrients would be Zinc, Sulfur, and Boron.

Of the 3 MACRO nutrients, the one that corn responds to the most and makes the most difference in our yields is NITROGEN. Nitrogen is to corn as multivitamins are to humans. Without it, we are not as productive, more susceptible to sickness, and health problems can begin to affect our bodies. For every 1 bushel of corn produced per acre the plant requires approximately .9 - 1.2pounds of nitrogen. So thinking of our 200+ bushel corn yields that we are pulling off each acre, we need to make available to the corn plant 180-240 pounds of nitrogen.

Using the Nitrogen Calculator put together by ISU Extension we calculate our nitrogen credits and requirements to estimate our total applied nitrogen needs.

Previous Crop Credits: We first must figure out the N credits that come from the previous soybean crop. Due to the soybean plant and its left over plant mass (residue), this gives us about 1 # of nitrogen credit per bushel harvested. So a 50 bushel soybean yield gives us 50#'s of nitrogen credit towards a 220# total nitrogen requirement.

Dry Fertilizer Credit: Applied to each acre is dry fertilizer for the Phosphorus (P) and Potassium (K) nutrient requirements. When we apply Phosphorus fertilizer (MAP -Mono Ammonium Phosphate) there is approximately 10-20#'s of Nitrogen in this product.

Applied Nitrogen Required: Once you calculate the nitrogen coming from the previous crop and what is available in the dry fertilizer that is applied, you can then come up with how much more nitrogen that must be applied.

On average we are applying approximately 150 # of nitrogen on each acre. The actual rate of nitrogen also varies according to the amount of organic matter in the soil. If you remember from previous newsletters, I explained how higher organic matter soils (usually the lower areas in the field) require lower rates of nitrogen. This is due to the fact that the higher organic matter levels in those areas are "great storage pools" for nitrogen. Organic matter and crop residue produces and stores excess nitrogen.

1.64 POUNDS

of nitrogen were used to raise a bushel of corn in 1980. ..

25 years later that figure has dropped to an average of

.97 POUNDS!

Another great thing about implementing strip tillage on our farm is the fact that we are building the organic matter levels in our soil. By leaving the crop residue on the soil surface, the natural decomposition and breakdown

of the crop residue is putting the stored nitrogen from that plants residue back into the soil.







NITROGEN, WHEN TO PUT IT ON?

So once we have figured out exactly how much nitrogen our corn crop needs, we must now decide HOW to apply it. In our operation we have a huge interest in how we can help the corn plant better utilize the nitrogen that we are feeding it. Let's think about nitrogen in this way:

- As humans, we eat 3 meals a day. What if we tried to eat supper ONLY and then last all that night, and all the next day until supper again <u>WITHOUT</u> eating. Would we have enough energy, vitamins, and proteins to be healthy and productive all day long until the next supper?
- This is the same way of feeding the corn crop with nitrogen. The most common practice in lowa corn production is to put 100% of the nitrogen on in the fall with Anhydrous Ammonia. The benefit to this is that it will lighten the work load in the spring as well as reduce trips across the field.

For the past 2 years we have conducted multiple ON FARM trials on our farm. What we wanted to learn was how the corn plant would respond to MULTIPLE feedings of nitrogen. So, instead of just feeding it supper, what if we fed it a breakfast and lunch as well.

The results were quite amazing as to what we found! We found in some cases that the split feeding of nitrogen yielded 10-20 bu. better than one single feeding in the fall. Our new nitrogen program this year consists of 2-3 feedings of the corn crop by split applying our nitrogen. This year we applied nitrogen 3 different times due to the yield results of our on farm trials:

70 % of the total required nitrogen in the fall (October) with StripTill. N-Serve stabilizer was used.

10% of the total required nitrogen Pre-Plant (April) with our Residual Herbicide

20% of the total required nitrogen Side dress (June) when the corn was 1-2' tall.

Farming is about NET INCOME, both to us as the tenant and farmer, but also to you as the landowner. By our operation utilizing the newest and most advanced technology, conducting our own on-farm research, and continuing to perfect our farming practices, we will be raising the NET INCOME for both of us.

Another benefit that comes from split applying our nitrogen is what it does for our environment and our water quality. Nitrogen is very MOBILE in the soil. It can volatilize or leach away very easy. This leached nitrogen that gets into our streams and rivers then ends up in the Gulf of Mexico; creating and worsening the HYPOXIA ("DEAD ZONE").

With all the rain that we have had this summer, much of the agronomic concerns from area agronomist is the nitrogen DEFI-CIENCY in our current corn crop. While you can still find very early signs of corn deficiency in OUR corn, it is just barely starting to show up. Most fields have been showing nitrogen deficiency for over 4-5 weeks. The lowa Corn crop will be yield limited due to all the leached and lost nitrogen due to high rainfall.

If you would like to learn more about our Nitrogen application program, please feel free to ask. Just like our implementation of strip tillage, the split application of nitrogen is another way we are continually trying to perfect our farming practices. Perfecting our practices for both NET INCOME results as well as SOIL and WATER QUALITY results.



THEN: ROBERTS COOP ELEVATOR NOW: NEW COOP — OTHO

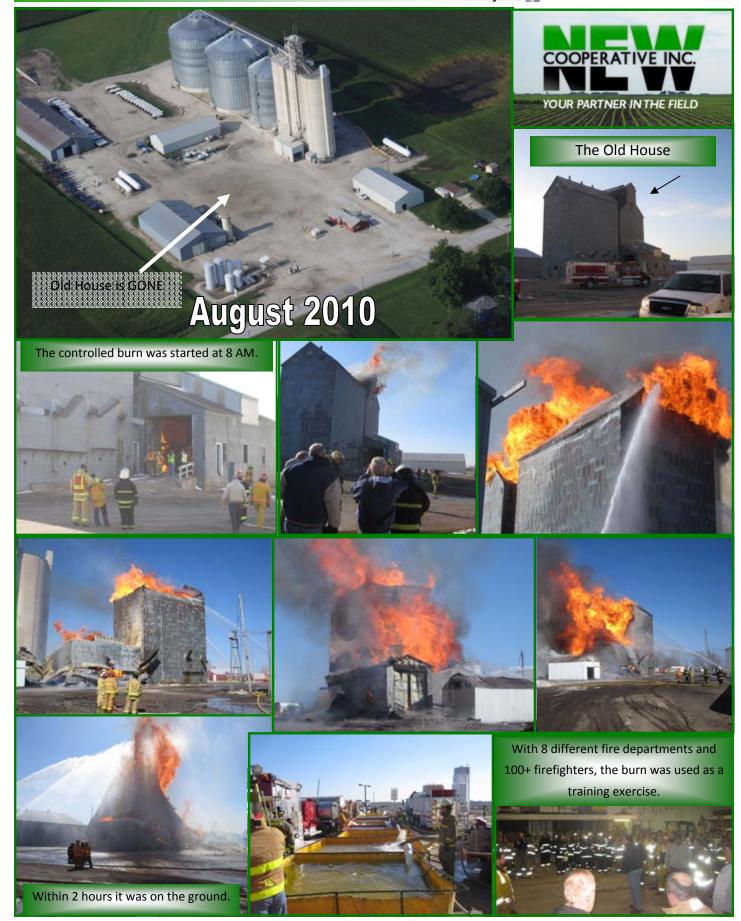


Organized in 1910, the Roberts Cooperative Elevator was started by a group of local Otho & Roberts farmers. Originally built and funded by the Fort Dodge, Des Moines and Southern Railroad, the Roberts elevator started out as a 4300 bushel capacity elevator which was leased to the local farmers for \$5/year. In 1915 the elevator hired a manager by the name of Irv Nelson. The main merchandise items were coal, feed, tile and fencing materials. During World War I, corn brought \$2 per bushel, and hogs were selling for \$30 per hundred weight.

In 1938, the elevator became known as Roberts Cooperative Elevator and had 79 members. Steel bins were erected in 1938 to store sealed corn. In December of 1949 the board of directors voted to build a new facility. Building certificates were sold to members at 4% interest and provided \$23,750 in funds for the new elevator. The remaining \$33,200 was borrowed for the total project cost of \$57,000. An open house was held in September of 1950 for the Grand Opening of the new 35,000 bushel elevator and 60,000 bushel annex. (This is the wooden elevator that was burned down this past March 21st See Pictures on Right Page). Expansion continued into the 1950's with a scale house in 1954, and a 45,000 bushel quonset building built in 1955. In 1958 two acres were purchased from Lloyd Kauffman for the building of 2 more quonsets. The south one holds 219,000 bushels and the north one holds 130,000 bushels. They are still used today. On July 14, 1975 the coops first fertilizer spreader, a Wilmar six ton fertilizer spreader was bought from BROKAW SUPPLY COMPANY for \$4800.

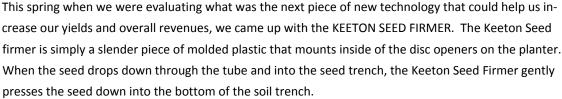
In the late summer of 1978, Roberts Coop Elevator merged with NEW Cooperative Inc and is known today as Otho – NEW Coop.

Being only ½ mile across the field from our home farm, Otho elevator holds many memories for our family. Many hours are spent each year hauling grain to the elevator, picking up chemicals, or just a place to stop and have a pop while visiting with neighbor farmers. Making room for future expansion, the burning down of the "OLD HOUSE" will hold another entry in the history books of Roberts Cooperative Elevator.



MAKING EVERY SEED COUNT...





Just like when you are planting your garden in the spring. You cultivate with your finger a "V" slot or trench in the soil. You place the seeds in the trench, then gently press it into the soil with your finger. That is exactly what the Keeton Seed Firmer does.

Providing 2 things is the purpose of the Keeton Seed Firmer. It gently presses the seed into the soil for proper "seed to soil contact". For a quick and even germination all the seeds need to be placed at precisely the same depth and have 100% seed to soil contact. Purpose #2 is the trapping of the seed as

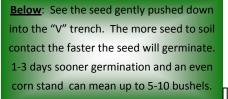
they drop out of the seed tube and firming them into the bottom of the "V" trench. Each seed is dropped at a precise spacing from the planter row unit. By trapping the seed and placing it in the trench at a consistent depth, this provides for precise placement and spacing of the seed in the trench.

When we were reviewing independent research data, the Keeton Seed Firmers have shown a 5% yield increase. In 200 bushel corn this could result in an additional 10 bushels. At \$3.50/bushel that is \$30.50 additional revenue on each acre. We felt this was a great investment on our John Deere 24 row planter.

Planter Cut-Away View



Below: After the seed is placed into the "V" trench, the Keeton Seed Firmer firms the seed into place and then closes the trench with 2 rubber press wheels. It is important to not apply too much down pressure with the press wheels because you will create compaction.





Luthi Precision Planting

Below: See the Keeton Firmer in the trench. The

seed is under the firmer.









Above: We even put Jim Paton with ISU Extension to work when he stopped to see us on the Haire south farm. Tyson makes sure he puts the planter lids back on correctly. If you are ever in the area, we would invite anyone to stop and ride with us.



Above: Dave and Gary check planting depth and seed placement often to assure planting accuracy.

Left: Dave and Gary fill the planter on the Hansen Farm south of Otho.



Above Right and Below: Tyson is our little farmer in training. The older he gets the more time he spends out in the field with Mom and Dad and Grandpa and Grandma. The Asgrow soybean bag was a good place to put him so he would STAY PUT. He has been strongly "INFLUENCED" to knowing that JOHN DEERE's are the only kind of tractors to drive.



Right: Gary fills the 1000 gallon Apache Sprayer every 100 acres





ond or \$9.00 of seed per minute. An accurately set planter is very critical.

Cousin Kent Luthi helps Dave calibrate

each of our 24 corn row units. Our

planter is dropping 38.4 seeds per sec-

Left:



Gary applying liquid 28% nitrogen on the Haire North Farm. Dave was on his way with the planter.

Right: A view looking out the back window of the planter tractor. 40 acres per hour can easily be planted with our 24 row planter.



This spring we added front duals to our 8420 JD. The front duals add traction and stability as our equipment gets larger.







Another new sprayer sold at Brokaw Supply.



Craig Harthoorn, our Business Manager for Brokaw Supply gives us the flexibility to continue the growth of our farming operation.

Left: See the back of the planter unit and now it pinches the soil shut after the seed is placed in the "V" trench.





Gary loading chemicals from our semi nurse trailer. (Haire North Farm)



With the help of RTK Auto Steer and the sub-inch accuracy, see how the planter follows the strips made last fall.



Right: By split feeding our corn the nitrogen that it needs, we are reducing our risk of nitrogen getting into our local streams and rivers. (Smeltzer #4 farm tile.)

<u>Left:</u> The corn was planted this spring by April 17th and was up in 7-10 days. Strip tilled corn and the split applications of nitrogen has been a great program for our farming operation.



drainage, compaction and profile.

PHOTO JOURNAL





Left: See the soybeans coming up inbetween the old corn stalk rows. The corn stalks were strip tilled last fall.

Right: See the Corn coming up in the nice black strip tilled strip. Strips were made last fall.





Above: 2010 has been a great year to see where field tile is needed. Our Yield maps from the combine will show these areas of drowned out.









Right: At 6:30 AM on July 22, the road was flooded under the railroad bridge at the intersection of 169 and Business #20.



Below: Gary and Karma built a 2 story playhouse for their 8 grandkids this spring.





Strip Tilled Corn



Above: Gary explaining the controlled drainage and bioreactor to the Smeltzer Trust Board. This bio-reactor is helping reduce nitrogen levels in our tile water.

<u>Left</u>: Beans are growing well this summer. Due to the heat and moisture this summer, we have not had to spray for Aphids.



Right: See the silks that are exposed on each ear of corn. Also notice the pollen on leaves. This picture was taken 1 week after tasselling.



Below: We take great pride in mowing our field ditches. They are mowed 2-3 times each summer. Some ditches are too deep and too wet to mow, but otherwise all other ditches are maintained throughout the summer.



Left: Tile this summer has been a huge asset. These are the tile outlets on the Hansen Farm south of Otho. It would be interesting to know where this water eventually ends up.???



<u>Above:</u> See the different varieties in the Haire North Farm. Multiple varieties are planted to diversify our acres. The yield monitor in the combine will show the results of how each variety performs on each acre.



OUR FAMILY DOING BUSINESS WITH YOUR FAMILY!

With your involvement, our Family Farming Operation continues to grow! As the fall of 2010 quickly approaches, we would like to thank all of our farming & business partners. Without your help and assistance we could not be where we are today!

If you or anyone you know is looking for a long term tenant, we would be excited to share more details about our Family Operation. We pride ourselves in the relationship and open communication with everyone that we do business with. If you have any questions, comments, or suggestions, please feel free to contact us! - Nelson Family Farms



Our Century Farm Since 1889



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Leadership is the Challenge to be Something More than Average...

Jim Rohn

Nelson Family Farms Newsletter



Spring/Summer 2010



OUR FAMILY DOING BUSINESS WITH YOUR FAMILY...