It is the mission of Ag Horizons to provide a broad spectrum of farming practices and ideas to help “Grow Your Future.” A one-stop-shop if you will, to improving your farm production. In two short days we offered six keynote speakers and 25 different presentations on a buffet of topics.

Chip Flory, with Pro Farmer, brought the current market perspective to our attendees as he presented “Marketing Bootcamp: Pick the Right Tool for the Job” during his first presentation. On the second day he discussed what might be in store for the future with “2018: Rebalancing Supply with Demand.”

Cody Zilverberg with Dakota Lakes Research presented “Integrating Livestock into Cropping Systems” to set the stage for our conference by talking about farm diversity (summary on page 4). One of our breakout sessions included Lori Tonak, from Mitchell Technical Institute, as she presented “How to Survive Farm Record Keeping” where she reminded us all of the importance of having a solid understanding of the business and financial aspects of our farming operations (summary on page 3).

“Growing Pains of Family Transition” presented by Alan Hojer and sponsored by First Dakota Bank, provided insight to allowing parents to enhance the lives of all of their children during the transitioning of the legacy. Parents need children and the children need their parents. Understanding what the “need” is becomes the first step of the transition (summary page 4). Ag Horizons, for the first time, offered Industry Seminars where Jill Herold, with Arysta LifeScience, highlighted “Rethinking of Your Wheat Decisions” and utilizing a “seed to seed” approach. Paul Drache with Central Life Sciences promised “No Bugs on My Watch” with his long-and-short term storage needs, which should begin with implementation of a solid IPM plan (summary page 5).

Of course, many of SDSU professors, staff, specialist and agents were on hand to help with crop diseases, insect diagnosis, soil and crop management solutions as well as new crop varieties. Emmanuel Byamukama provided an overview of wheat diseases during the 2017 season and its implications for the 2018 season (summary page 6). And finally, but certainly not last, was the discussion of soil health! Five separate seminars with presenters from NRCS, Soil Health Coalition and independent producers covered subjects that included precision ag, soil infiltration, cover crop selection, soil management, water quality, and improving soil health (summary on page 7).

I have only touched on a few of our presentations to give you an inside look at what Ag Horizons provides for its attendees. I don’t have enough space in this issue to go into the information provided by exhibitors and social networking that also takes place.

We hope to see you in Pierre for our 2018 Ag Horizons held on November 27 and 28 at the Ramkota River Centre. Thank you to all our sponsors and attendees from our hosts, which include: South Dakota Crop Improvement Association, South Dakota Oilseeds Council, South Dakota Pulse Growers, South Dakota Seed Trade Association, South Dakota No Till, South Dakota Soil Health Coalition, and South Dakota Wheat, Inc.
In December the South Dakota Wheat Commission hosted a group of South Dakota State University wheat researchers on a trip to North Dakota to discuss wheat end use quality.

They first toured the Northern Crops Institute (NCI) on the campus of North Dakota State University in Fargo. NCI is a collaborative effort among North Dakota, Minnesota, Montana and South Dakota to support the promotion and market development of crops grown in this four-state region. NCI is an international meeting and learning center that brings together customers, commodity traders, technical experts, and processors for discussion, education, and technical services. Since 1983, more than 133 nations have sent participants to NCI who are government representatives, private industry agriculture workers, or from other commodity utilization industries.

While in Fargo they also had the opportunity to meet Mark Jirik, the new Director of NCI. Jirik holds a master’s degree in agricultural economics from the University of Illinois and a bachelor’s degree in agricultural economics from NDSU. He has more than 17 years of experience in commodity merchandising and commercial management at Cargill. The South Dakota delegation also hosted a dinner with Mark Weber in recognition of his retirement as the NCI Director for the past six years.

On day two of the tour the delegation visited the North Dakota Mill in Grand Forks. The North Dakota Mill and Elevator Association began operating October 22, 1922, as a value-added market for wheat produced in North Dakota. The North Dakota Mill facilities include eight milling units, a terminal elevator and a packing warehouse to prepare bagged products for shipment. With eight milling units, the Mill produces and ships 49,500 cwt. of milled products daily. In addition, the Mill ships over 14,000 cwt. of food grade bran and wheat midds daily. The Mill cleans, processes and mills over 100,000 bushels of top quality North Dakota wheat daily. On an annual basis, the Mill adds value to 34 million bushels of spring and durum wheat. Eighty percent of the Mill’s flour and semolina is shipped on bulk rail cars and trucks, twenty percent of finished products are packaged in 5, 10, 25, 50 and 100 pound bags for shipment via boxcars and trucks. Product is also packed in totes/super sacks for shipment. The Mill also sells a line of bread machine and pancake mixes for the retail trade.

The visits provided an outstanding opportunity to correlate the importance of end use milling and baking quality in the early steps of breeding future wheat varieties.
As an instructor with the SD Center of Farm/Ranch Management (SDCFRM) program, I am not sure I am proud of the title of this article. In the past few months, I have signed up a number of new clients and, after working with them the first day, this is what I hear: “This program is the best thing that I could have found for my operation!” Hearing these words again, just last week, has driven home the idea that the Farm/Ranch Management program, based out of Mitchell Technical Institute, is the best secret on the prairie! So, I want to break that trend. We want everyone to know what we do for the producers we work with.

I was under the assumption the articles that our instructors wrote for various publications were telling our story. Obviously we were wrong, so today I am doing a blatant advertising article.

The objective of the SDCFRM is to provide farmers a better understanding of the business and financial aspects of their farm operation. This is delivered one-on-one at your farm office, kitchen table, wherever you want to meet. The Center does individualized instruction on computerized accounting systems, goal setting, and keeping accurate production and financial records. Instructors meet with our students’s monthly at their operation and are always just a phone call away. Assistance with cash flows, cost of production, crop/livestock budgets and calculating breakeven prices are just a few of the things instructors can help the client with. At the end of the year, an analysis is run on the whole farm and individual enterprises to help determine the success of the goals set for the past year, and to help set goals for the coming year. SDCFRM also helps the operators explore strategies to reduce risk, along with helping for tax preparation and annual renewal meetings with the bank. In fact, bankers love us as it makes their job so much easier!

So, what is the outcome if a farmer/rancher enrolls with the Center? First, the producer is making a commitment of time to work with an instructor and do monthly accounting. However, from that commitment the benefits are many. The balance sheets, cash flows, and income statements required by the financial institutes are more accurate. Bankers tend to be more generous with producers who bring in accurate numbers. Preparing for pre-tax meetings or tax time, in general, takes less time, which can sometimes lead to less expense at the accountant’s office. Identifying strengths and weaknesses of the operation is another benefit. If an enterprise loses money every year, should it be continued? SDCFRM helps identify the profit/loss of those enterprises. Instructors also share information that has been acquired through their connections with industry, or any other knowledge that may help an individual operation. Sometimes, it is just helpful to use our staff as a sounding board!

If anything in this article has piqued your interest, give us a call. Not sure it is for you? I know a few “students” who would be willing to share why it may be an answer to your prayers. SD Wheat Commission has a $750 scholarship available through the MTI Foundation. For more information on the scholarship or the program, contact me at 605-299-6762 or email us at sdcfrm@mitchelltech.edu.

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2017 Wheat Yield Harvest Results

<table>
<thead>
<tr>
<th>District</th>
<th>Name</th>
<th>Location</th>
<th>Variety</th>
<th>Tm</th>
<th>Wt</th>
<th>BPA</th>
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<tr>
<td>District 2</td>
<td>Kevin Neuhauser</td>
<td>Midland</td>
<td>Winter Wheat/Memorial</td>
<td>TW 59</td>
<td>Mt 15.8</td>
<td>44.7 BPA</td>
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<tr>
<td>District 4</td>
<td>Dennis Simons</td>
<td>St. Lawrence</td>
<td>Spring Wheat/Forefront</td>
<td>TW 62</td>
<td>Mt 13.2</td>
<td>68.76 BPA</td>
</tr>
<tr>
<td>District 4</td>
<td>Doug Simons</td>
<td>St. Lawrence</td>
<td>Spring Wheat/Brick</td>
<td>TW 62.3</td>
<td>Mt 12</td>
<td>60.3 BPA</td>
</tr>
<tr>
<td>District 6</td>
<td>Abeln Farms</td>
<td>Groton</td>
<td>Spring wheat/Trigger</td>
<td>TW 59</td>
<td>Mt 14.4</td>
<td>72.94 BPA</td>
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<tr>
<td>District 6</td>
<td>Abeln Farms</td>
<td>Groton</td>
<td>Spring Wheat/Preval</td>
<td>TW 59</td>
<td>Mt 17.3</td>
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<td>District 7</td>
<td>Paul Leiseth</td>
<td>Hazel</td>
<td>Spring Wheat/SY Valda</td>
<td>TW 60.7</td>
<td>Mt 15.8</td>
<td>109.33 BPA</td>
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<td>District 7</td>
<td>Robert Holzworth</td>
<td>Hazel</td>
<td>Spring Wheat/Bolles</td>
<td>TW 63.8</td>
<td>Mt 13.30</td>
<td>103.12 BPA</td>
</tr>
</tbody>
</table>

Robert Holzworth, Hazel, SD, proved that careful management practices can produce high yielding quality wheat with his winning entry in the 2017 Wheat Yield Contest. Not only did he top the record for South Dakota he also won first in the National Wheat Yield Contest for dry land spring wheat! Thanks to all who participated and to our sponsors for their continued support!
Integrating Livestock Into Cropland

European settlement and agriculture are only about 130 years old in central South Dakota. Great changes in farming practices have taken place during this time. Mistakes have been made, many lessons have been learned, and agricultural practices continue to evolve. Although 130 years is a long time for a single farmer or rancher, it is a brief point in history for Mother Nature, who created rich topsoil by covering this land with prairie grasses and herds of grazing animals for thousands of years. Paying attention to Mother Nature’s way of doing things can give us clues as to what will help our agriculture be sustainable for many generations to come.

The prairies contained many species of cool-season grasses, warm-season grasses, and broadleaf plants. Most of these prairie plants were perennials. Their root architecture differed from species to species, but most roots extended deep into the soil, capturing moisture and nutrients from depths that annual plants fail to reach. Mother Nature kept something growing as long as there was moisture in the soil and warmth in the air. The soil was covered with dead plant litter. Plant growth was harvested by grazing animals. Few nutrients, such as nitrogen, phosphorus, and carbon, were exported to distant states or countries after harvest, but rather, they were returned to the soil in the form of dung and urine. Soil disturbance on the scale of tillage was a catastrophic event.

By integrating livestock into farms, we can mimic Mother Nature rather than fight against her. For instance, if you haul feed to a calf in a feedlot for 6 months, you will need to remove at least 56 pounds of nitrogen and 3200 pounds of organic matter from your field. In contrast, if you allow that calf to graze in the field, you’ll only remove about 9 pounds of nitrogen and 2200 pounds of organic matter. Keeping livestock on the farm also gives you additional marketing options for crops, and expands the number of crop species you can profitably plant. For instance, you can include cover crops and/or perennials in your rotations and “harvest” them with grazing animals. This leaves most of the nutrients in the field to benefit your soil but also provides income. Consequently, your rotations can become more diverse and you can take advantage of the benefits that perennials provide, such as amelioration of saline seeps, drawing down a high water table, and bringing deep nutrients to the soil surface.

At the SDSU Dakota Lakes Research Farm near Pierre, SD, we have recently added a cow-calf herd. The cows grazed on cool-season perennial pasture in the spring before shifting to switchgrass (a warm-season perennial grass) and sudangrass in summer. In the autumn, they began grazing cover crop mixtures primarily consisting of pea, wheat, lentil, oats, and barley. This winter, they are continuing to graze cover crops as well as harvested corn fields. We suspend fences from irrigators so that we can easily move fences on a daily basis to improve grazing efficiency and maintain a more constant diet quality over winter.

Growing Pains of Family Transition

“I have never met a set of parents yet that didn’t want to enhance the lives of all of their children. How we do that becomes the “challenge” or the “opportunity.”

This is a very powerful statement that outlines the responsibility that we as parents feel to all of our children, the children that we are in business with and the legacy that our business represents. How we approach this has been where I have found, working with farmers and ranchers across the Midwest, the difference between successful transitioning and painful transition. The one piece of common ground between the successful and painful transition is that transition will occur. It is not a “choice.” Whether we feel good or bad about our efforts to transition is a “choice.” With that said, transitioning your legacy and family business is a process over a period of time. Not a moment.

We all need each other! Understanding what the word “need” represents is the first step in finding a successful path. Some parents are extremely worried about “fear of loss.” I can’t lose it now! And rightly so, but in our conservative state of mind in our older generation years, we actually lose the most important asset that we have, “our children.” You see while we are “holding our cards” close to our chest in our later years, our children are trying to build their future and their fear is, “lack of gain” and building their future is actually what they should be doing. After all, when we (the older generation) were their age, building our future is exactly what we were doing.

For many farmers and ranchers, they feel this is the most important thing that they need to “get right” and they are finding farm family transition is one of the “most difficult” things that they have ever done. Adding everything from structure to discipline is necessary as you address growing pains as your operation transitions. At Keep Farmers Farming, we listen, provide support and help you find solutions to the difficult growing pains that you will experience as you transition your “life and legacy” to your future generation.

Remember, “we want to enhance the lives of all of our children.”
Rethinking Your Wheat

Many producers grow wheat, not always as their main crop but quite commonly as their rotational crop between corn and soybeans and for good reasons given the price of wheat over the recent years. Everyone’s heard they need to cut costs and some have cut out critical agronomic practices to try to save money.

What about rethinking your wheat decisions? Look for the products that will give the most “bang for your buck,”- look at the active ingredients you are using and the formulation of the products. Are you really getting all you can from them? At Arysta LifeScience we are constantly rethinking how actives work and how to make those formulations of products you know and trust work even better for you… a true “Seed to Seed” approach.

Did you know seed treatments were used over 4k years ago?! Things like mercury, salt and copper were used. Nowadays we have molecules like ipconazole and metalaxyl like in our Rancona® seed treatment products. Rancona® is formulated to ensure more activity and product placement onto the seed and into the surrounding soil. Rancona® delivers best in class coverage of many soil and seed diseases, putting more money back in your pocket and not left in your equipment.

Once the wheat is established, what’s next? How about a newly reformulated group two herbicide that is not just great on hard to kill grassy weeds like foxtails, wild oats, barnyard grass and even brome species but one that also has activity on several broadleaf weeds such as redroot pigweed and mustards. Everest® 3.0 provides best in class crop safety, low use rate and wide window of application (1 to 60 days prior to harvest). The soil is our friend meaning it is best to apply early because Everest® 3.0 has long lasting soil residual for “Flush after Flush” control. The new formulation allows for better storability, tank mixing and rinsing so more product gets in the tank and on the ground, not left in the equipment.

To reach the full performance of your wheat and protect against in season fungal diseases plus provide plant health benefits, it’s a good idea to re-evaluate your fungicide program. There are many definitions out there of how products are systemic, but do ask what kind of systemicity they are; truly, xylem, or locally. You want superior coverage with a product that is both truly and xylem systemic; one that is BOTH curative and preventative; a product that has soil activity, and Fortix® is the product to accomplish this. Fortix® provides dual mode of action, tank mix flexibility and soil activity giving the most bang for your buck.

Wheat may not always look to be the best rotational crop, however if done right can yield high performance with little inputs giving the most for your money with the least amount of stress. If you are interested in knowing more about the Arysta LifeScience line up of products talk to your local retailer or ask your local Arysta LifeScience Territory Sales Manager, Todd Landsman at 605-929-0018.
The presentation began by reviewing the 2017 wheat growing season. For winter wheat, the fall of 2016 was rather warm and weather remained mild going into winter. This led to Wheat streak mosaic virus (WSMV) of wheat to be widely spread in winter wheat in central and west South Dakota (Figure 1). During the presentation we discussed at length the risk factors for WSMV and how to avoid these risk factors.

The major risk factor for WSMV is presence of volunteer wheat (the so-called “green bridge”) in the field to be planted into winter wheat. Volunteer wheat acts as a supply for the wheat curl mite (WCM) which transmit WSMV (Figure 1 inset). To avoid this risk factor, all volunteer wheat and grass weeds should be destroyed by spraying a burn-down herbicide at least two weeks before planting winter wheat.

Another risk factor for WSMV is time of planting. Planting early in fall (late August/1st week of September) exposes winter wheat to possible infection with WSMV, especially if several wheat fields were observed with WSMV symptoms (yellowing and stunting, Figure 1) during summer. Warm weather in fall is another factor that increases the risk for WSMV. Since we cannot control the weather, we can avoid the two major risk factors above to manage WSMV. Several other questions on WSMV asked such as: Can WSMV be spread during winter, can insecticides control the WCMs or if WSMV can be spread through seed were posed and answered and are summarized in the article on this link: https://goo.gl/9oS6fG

Another disease that developed on winter wheat early in the season was stripe rust. This may be attributed to warm fall that led to the stripe rust pathogen surviving the winter in South Dakota. Usually this disease develops from spores blowing from southern states later in spring. Stripe rust is best managed using resistant tolerant cultivars or a timely fungicide.

The spring wheat growing season was characterized predominantly by moisture stress. Dry conditions towards the heading growth stage led to very low disease pressure in the central and western part of state.

Fungicide efficacy trials were conducted in 2017 to test different fungicide application timings on disease suppression and prevention of yield loss from fungal diseases. The timings included tillering, tillering + flowering, flag leaf, and flowering. None of these fungicide timings had significantly higher grain yield than the untreated control. This may be attributed to the drier conditions that limited disease progress. In previous years of fungicide timing testing, the flowering timing was sufficient to provide protection again yield loss caused by Fusarium head blight and leaf spot diseases. The tillering timing is recommended if early diseases such as stripe rust and leaf spot diseases develop especially under no till/no rotation.

Looking ahead at the 2018 wheat growing season, we could see a similar set of diseases repeat, since this fall was also mild. For virus infections, nothing can be done to “cure” the plants once infected. Virus diseases are best managed through prevention of infection. Practices such as crop rotation, destroying the volunteer wheat two weeks before planting, delaying planting and planting tolerant cultivars can help minimize yield loss from viral diseases. For fungal diseases, integration of crop rotation, cultivar selection, and a timely fungicide application is effective in preventing grain yield loss. Scout regularly to determine different diseases developing and to decide on the need for a fungicide. Use the available plant prediction tools as guides on the likelihood of these diseases to develop: https://climate.sdstate.edu/tools/smallgrains/ (leaf spot and head scab), http://www.wheatscab.psu.edu/ (head scab).

Figure 1. A winter wheat field with severe Wheat streak mosaic. Inset: Microscopic wheat curl mites that transmit WSMV (Picture taken 5/4/2017).
Managing To Improve The Health Of Our Soils

How we do it, what it looks like and why we should care.

The USDA Natural Resources Conservation Service (NRCS) is the agency of the USDA that is charged with protecting the natural resources found on the privately owned lands of our country. Over 75% of SD is privately owned and this totals more than 36 million acres. We work in a partnership with the owners and operators to care for the natural resources but to also have these natural resources sustain the families and their businesses. Many times we work to bring partners together to assist in solving a large variety of complex, natural resource concerns.

The NRCS offers a variety of products to the people we serve. I believe that our technical assistance is one of the most important things we provide. This assistance is grounded in our ability to assess the condition of natural resources and offer practical solutions to protect and enhance those same resources. We provide designs and practice implementation guidelines to help ensure when installed, they work as intended. Along with this technical assistance we have a variety of programs that help producers financially implement these practices by sharing the cost or reducing the risk of trying a new management system.

Agriculture is SD’s number one industry. Agriculture provides a $25.6 billion dollar impact to SD’s economy every year and accounts for over 115,000 of our jobs. I would argue that none of that is possible without healthy natural resources and the foundation of that is our soil.

The values of a healthy soil are many and lots of them correlate directly into economic value.

So if we desire to make our soils healthier — how to we do it. It really focuses on five key principles. They are as follows and not in any particular order:

- Keep the Soil covered! Protect the soil surface and all the life in the soil with plant residue and growing plants.
- Disturb the soil the least amount you can! Tillage of the soil is not natural and has many destructive impacts.
- Keep living plants and roots growing in the soil as much as possible! The soil is alive and a key source of the energy to keep it alive is photosynthesis. That source is gone when live plants are absent.
- Grow a diversity of plants! The life in the soil is diverse and needs diversity in the food that feeds it. This is accomplished with rotations and cover crops.
- Integrate livestock into the system! Livestock add another source of diversity and resources.

Varieties that lead the industry. And lead you to better yields.

With AgriPro® brand wheat varieties continuing to push for genetic diversity, it’s no wonder AgriPro makes up the largest portfolio in the wheat industry and consistently ranks in the top yield groups in every region. New releases show improved yield of 3 to 5% over current varieties. It’s time to plant top-performing wheat varieties in your field.

SY Valda — The Yield Warrior
SY Rustler — Yield + Protein for Maximum ROI
SY Ingmar — Top Choice for Economic Return

To learn more, contact your local AgriPro Associate or visit AgriProWheat.com.
Getting Paid For The Grain You Produce

Crop production is filled with challenges. Decisions about financing, inputs, capital purchases, application timing, harvesting and praying for good weather are part of a farmer’s life. In the end, you deserve to be paid for what you have produced.

State law provides certain protections for grain producers and designates the Public Utilities Commission to oversee those provisions of law. The PUC commissioners and staff take that work on behalf of producers seriously.

State law requires most grain buyers to be licensed by the PUC, obtain bond coverage for a portion of their purchases, and be subject to PUC inspections.

Grain buyer licenses are renewed annually and include a review of the financial condition of the buyer at that time. Proof that the buyer has obtained a bond in the amount designated in state law is required. PUC inspectors visit each grain buyer every six to nine months to conduct examinations of their on-site records and facilities.

By law, grain buyers must provide a seller with a numbered scale ticket or receipt for each load. The law provides grain sellers with the right to be paid immediately for cash grain sales and those sales are covered by the required grain buyer bond.

Grain sellers usually are presented with options from the buyer for alternatives to a cash sale. Those alternatives are commonly known as voluntary credit sales and include such products as delayed pricing and deferred payment. The key word here is “voluntary.” When a producer chooses one of these alternatives to a cash sale, the seller is no longer covered by the grain buyer bond and has chosen to become an unsecured creditor for the grain buyer. It is imperative that grain sellers understand the inherent risk in using these alternative methods of receiving payment for the grain they have sold.

There are two important pieces of advice I would offer to grain sellers to protect your grain payments. The first is knowing who you are doing business with. Often when a grain buyer becomes insolvent and fails to pay, the PUC learns later that “everyone” knew the buyer was having difficulties. Know who you are doing business with! Second, if you are not being paid in a timely manner call the PUC’s grain warehouse division immediately at 605-773-5280. You are the very best watchdog of the grain buyer business. This phone call will trigger an inspection to learn why payments are being delayed and allows the PUC to quickly take whatever action is necessary to further protect grain sellers.

In 2018, the PUC will be asking the legislature to require grain buyer quarterly financial statements be submitted to the PUC for review to quickly catch any deterioration in grain buyer financial condition. This is one important step the legislature can take to improve protections for grain producers.

If you have any questions about your rights as a grain seller or the oversight of grain buyers, always feel free to call the PUC grain warehouse division.