



Ag Biz Briefs

Growing
Relationships
to Maximize
Success!

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Spring Update

Rick Vaughan, CEO

Greetings Everyone,

This past winter season has drug on and drug on and drug on. I trust when this Ag Bus arrives, we are in the fields. We are excited to implement our winter efforts of repairs, upgrades, process improvement and planning to get started on another crop. I really enjoy the anticipation and optimism of the spring season and how all of our business units are involved in the efforts and benefits of a new and upcoming crop.

This fiscal year is progressing along quickly and we are into the second half of our fiscal year. Our financial progress at the IAS local income level is up near \$3 mil from a year ago. It is spread across most of our business units which provides important economic diversity for our organization. We are pleased with that progress but remain committed to our Core Value journey of Continuous Improvement. The ethanol business profitability is down versus last year and our regional income is down versus last year. The combined IAS results are down slightly year over year through the first six months. We anticipate a strong finish for the last six months which will lead to improved fiscal year 2018 results versus fiscal 2017.

Our capital project list this fiscal year is lighter relative to the last few years. Our rolling stock capital budgets across all business units are somewhat consistent every year keeping trucks, machines and application equipment up to date. The facility related capital expenditures can ebb and flow more on an annual basis with various factors, primarily profitability and longer term expected returns. The feed division has worked diligently over the last several years making needed improvements to all of our mills. That capital spending pace will slow looking forward. The agronomy division has also made many new and needed improvements to fertilizer buildings, NH₃ plants, UAN tanks and warehouses over the last several years. This winter, we added the ability to make our

own starter products in Farley. This starter plant is finished, operating this spring season and profiled in this publication by Brian Kramer. Our grain capital investment spending is slower this fiscal year relative to the past few years. We will upgrade the Monticello grain receiving system this summer. This will include rebuilding conveyors and upgrading the grain distribution system to include new equipment and automation for our operators. This capital upgrade is intended to improve inbound grain delivery cycle times for our customers and for IAS. We are building a pit, legging system and two new corn storage bins at Pine Lake Ethanol. This project will provide a second receiving leg for legging redundancy and add enough storage to provide two thirds of a month's corn grind demand. These additions will improve inbound corn delivery cycle times for our customers and for IAS.

The IAS board has been working to implement an associate board program. The board appointed three associate directors to begin serving after this spring planting season is completed. Ryan Collins has been appointed from the Waukon/Monona/Elkader area. Jeff Lindsay has been appointed from the Independence/Winthrop/Manchester area. Allen Jaspers has been appointed from the Faulkner/Ackley/Austinville area. Allen also serves on the Pine Lake Ethanol, LLC board. I would like to thank these gentlemen for their willingness to commit their time to serve as associate directors on the IAS Board. I look forward to working with them and building on our strong board of directors' foundation for the future governance needs of IAS. These three associate directors will join our nine person board of directors for a total of twelve member directors representing our members.

We have spent considerable time this winter working on the important topic of digital technology.

We understand that our mobile offerings are inadequate for today's world. Our objectives are a mobile enhanced environment, a more marketing oriented product offering and much more mobile business capability. We are looking to build out things like ordering apps across our business units, notifications apps across our business units, an ability to provide you with more billing information and ultimately download capability to your bookkeeping systems and your analysis systems. There are many opportunities to connect the various precision ag platforms to enable efficiencies for all parties. We expect these improvements in capability to reach across the spectrum of mobile devices, tablets and desktops. One of the largest challenges in this area is the appropriate and accurate connectivity. There are many single dimensional

solutions out there that stop short from an all-encompassing and efficient solution. Our vision is the connectivity to and from our systems across our divisions and to and from various third party solutions. This multidimensional complexity is definitely taking longer, but we believe ultimately provides our customers with the solutions to provide the transparency and efficiency they want and need. We will be staffing up human and technological capital to design, build and connect these processes and platforms. It can't happen soon enough.

I would like to extend a special Thanks to all of the IAS employees for their hard work this past fall, winter and into spring. Thank you for your business. Have a safe spring season!!

Agronomy Update

Tim Krausman, VP of Agronomy

As we just received a decent snowfall over most of our trade area it appears our ability to get fertilizer applied ahead of the planting season is dwindling. With that said it is very early and I look forward to moving into the spring season for planting to start, fertilizer to be applied, and chemicals to be sprayed. I always look forward to watching the crops get started and grow throughout the season.

I expect this spring season will be like all of them with challenges and opportunities. We have spent the off-season working on efficiencies throughout our business to enhance our ability to offer the best possible experience for our growers. We have focused heavily on communication throughout our company with a 2 up 2 down, and 2 sideways process. We expect this process to benefit you the grower as we service your needs.

Innovative Advanced Solutions is still our path to maximizing each individual acre. We are utilizing technology, and new product trials to make better agronomical decisions with our data to back our recom-

mendations. I would encourage everyone to get involved with your IAS Agronomy Sales Advisor to optimize each decision.

Like the last growing season the hot topic continues to be Dicamba application on soybeans. This technology is a good tool in the quest to control the challenging weeds in our weed spectrum. Please take the time to read Donna's article in managing this tool as even if utilized perfectly can have risks. I believe it is better to be proactive in terms of managing the risks as opposed to hoping everything is ok.

The fertilizer markets are slightly higher currently compared to where they were last fall due to supply and demand. Fortunately the grain markets have increased as well. Utilizing the correct rate of fertilizer on each acre is still our main goal in managing yield to profitability. It is also a very important piece to our Sustain strategy.

Have a safe and prosperous spring.

Finalizing Seed Placement and Nitrogen

Zach Fagan, East Region Seed Sales Specialist

With planting very near or underway we still have the time and opportunities to get your seed placement in its intended place. Our experienced agronomy advisors can help you in placing seed corn or beans on every different type of field from Wisconsin to Central Iowa.

Winfield United's R7 Tool is just one of the many tools our advisors have as a resource to help you, our customer. These resources can help in placing the seed brands we offer as well as some major competitors to show exactly which hybrids respond to different soil types, rotations, nitrogen rates, and populations to make it perfect for your different farms and fields.

When planting is complete the major topic of nitrogen will be addressed. We always get asked "Do I need to be side dressing and how much?" Fortunately the toolboxes our agronomy advisors use are always expanding!

I always start with looking at each individual hybrid on a field by field basis, and use the R7 tool to determine what kind of response the hybrid has to extra nitrogen and if it does respond well to more

nitrogen, the next question is how much more?

Another tool we have includes the 360 Yield Center's Soil Scan Technology. The Soil Scan is a mobile nitrate tester that can be brought to your fields and pull samples to get instant results to help determine how much nitrogen if any to apply.

We also have Y-drop applicators. If it is later in the season the Y-drops we have equipped on our custom application equipment can apply nitrogen where it is most useful, right next to the row, through tassel time.

Please get with your local agronomy advisor and start asking questions now, to get the most out of your crop and to maximize your profits.



Field Forecasting Tool Will Allow Farmers to Know What Nutrients They Need

Samantha Stegman, Precision Ag Specialist

WinField United's Field Forecasting Tool is a web-based crop modeling program, and part of the R7 platform. This tool aids in agronomic decision making, using data driven insight we can utilize to tackle various plant stresses throughout the growing season. Answer Plot Program data, tissue samples and other variables within the plant itself are all taken into account. "The Field Forecasting Tool will allow farmers to know what nutrients their crops need and when, and to specifically target those applications," says Joel Wipperfurth, WinField United Ag Technology Applications Lead.

The soybean model, for example, simulates growth stages, leaf growth, and biomass production as well as water, nitrogen, and potassium uptake. Soil and weather models allow the tool to predict the potassium, nitrogen and water levels available in the root zone.

"The Field Forecasting Tool is the first modeling tool to combine the effects of nitrogen, potassium, and water stresses on soybean and corn growth and development," says Wipperfurth. "Plant growth is simulated daily under various conditions. Then, yield loss that cannot be recovered and yield potential that can still be realized if plant stresses are addressed are calculated to allow you to adjust in-season input practices."

Tissue samples provide measured nitrogen and potassium levels of the plant leaf, allowing the model to adjust appropriately throughout the growing season. Along with individual field information, the tool can

also recognize your individual crop-management tactics, such as tillage practices, to create an overview of what is essential to succeed.

The Field Forecasting Tool may also be coupled with information about corn hybrids. For example, if the tool shows added nitrogen is needed and you have planted a hybrid with a high response to nitrogen score, a positive return on investment from that application is much more probable.

We will be widely utilizing the many other components R7 has to offer. In-season imagery and the field monitoring tool are two fast and easy resources we will be exhausting for guided scouting. The imagery provides us NDVI (normalized difference vegetation index) photos that measure the amount of biomass to show us what parts are trending up and trending down within the field itself. The field monitoring tool will essentially take those NDVI images, and use it to determine whether the entire field is trending up or trending down in comparison to another field, or even many other fields in the area.

IAS is in the final stages of implementing the R7 platform with our sales staff. We intend for these new tools to permit more interactive, current conversations between our growers and agronomists.



Back to Basics

Marcus Norman, Agronomy Sales Advisor

As this information hits the press spring 2018 may already be in full swing or anxiously awaiting the drop of the green flag. After three above trend crop production seasons in a row and the extremely tight operating margins at the farm gate, diligence in management of all resources are paramount. Innovative Ag Services continues to be driven by our purpose statement “Growing Relationships to Maximize Success.” Throughout this publication you can find reference to many of the products and program offerings we strive to efficiently deliver to our patrons to meet that goal. Many producers I consult with express a desire to “get back to the basics” and ignore some of the strategies and inputs that have helped to push those record breaking yields we have achieved over the last several seasons in Northeast Iowa. Arguments of whether pulling in the reins and minimizing input expenses vs. implementing a new product or technology are abundant. So, let’s get back to the basics.... the basic things we evaluated and adopted the last time we were facing these commodity pricing levels. The things that afforded a return on investment and allowed us to better manage crop production budgets.

The first pillar (for great reason) of the Innovative Advance Solutions platform is Grid Sampling on a 2.5 acres basis. This is akin to baseline vitals when we go to a doctor appointment; it gives us the baseline information to assess fertility, pH and O.M. of the field in question. These need to be re-evaluated at a minimum every 4 years. We offer this service to our customers or have the ability to import the data from outside vendors. Please reach out to your Innovative Ag Services Agronomy Advisor and inquire to the unique offerings from either of these options. This also opens the door to reinforcing or adding value to offerings such as the Innovative Advance Solutions Silver Program, R7 in-season management tools and customized recommendations for variable rate planting and nutrient recommendations for Nitrogen, Phosphorus and Potassium.

Other “basics” we have proven to add value include the use of seed traits, quality seed treatments on soybeans and targeted applications of fungicides for disease and plant health management. All of these were considered emerging technologies not all that long ago and have undergone evolu-

tions of continuous improvement over the last several years. Innovation Advance Solutions Seed and Crop Care recommendations were born from this research and analysis of product performance and return on investment. Admittedly there are instances and cases where these products or technologies have failed to give us the desired result, however when evaluating these things within our sales territories, regions and company footprint it can be found to be outside influences (weather, base fertility, hybrid placement, etc.) that contributed to the failure. In general these practices have been proven to increase the probability of maximum production.

Emerging Technologies is where this gets a bit less clear, a little muddy if you will. As previously stated, some of the aforementioned management tools were considered emerging technologies less than a decade ago. What is the next basic product or program offering that is on the horizon? Innovative Ag Services remains diligent in helping our customers in discovering, evaluating, implementing and refining the use of new products and technologies. These include but are not limited to drone and satellite imagery, data mining tools, Plant Growth Regulator and Bio-Stimulant technology and other traditional chemistry combinations or solutions. This is accomplished through cooperation of Innovative Ag with our suppliers and patrons utilizing things such as Answer Plot data, Innovation Trials and Innovative Advanced Solutions Silver data analysis and individual trials. We continue to evaluate nearly a dozen new products alone participating in the Innovation Trial program offered through Winfield United. I would like to point out while being able to participate and offer our patrons the opportunity to see products as many as two-three years prior to release is important as offered by Innovation Trials; The real value to finding these nuggets is often more of a grass-roots effort by on-farm trials. These trials when replicated and evaluated using data mining tools such as our Silver Program derive real power without sharing data with national databases offered by other suppliers with a specific agenda. I challenge you to reach out to your local Innovative Ag Agronomy Advisor and inquire how we can help you Maximize your Success! Have a Safe Spring Season!

Tissue Sampling Can Help Your Bottom Line

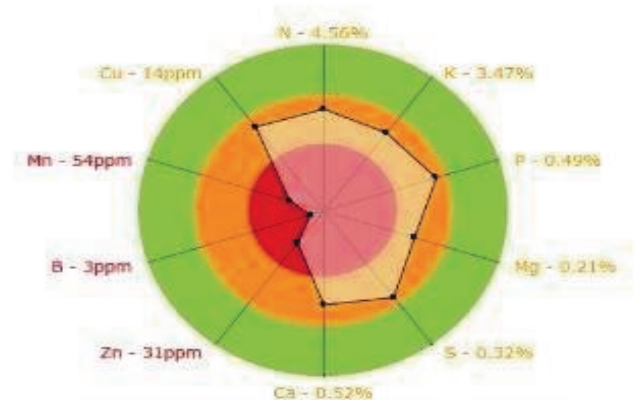
Dylan Humpal, Agronomy Sales Advisor

In the tough markets we are currently experiencing, it is now more important than ever to efficiently utilize nutrients for a successful crop and a successful bottom line. Growers who try to continue to grow more bushels instead of cutting back on major inputs, will find themselves being successful. Price x Bushels = Revenue. Your IAS agronomist team looks to help you with those major decisions to ensure you experience success on your operation.

One major factor that plays into a successful crop is in-season decisions. In order for us to make effective in-season decisions we need to know and understand the current status of our crops, and the best way to do that is by tissue testing. Post-emergence tissue testing indicates what nutrients the plants actually took in at earlier growth stages. As compared to soil sampling, which measure the nutrients available in the soil. Tissue testing and analysis pinpoint nutrient deficiencies at critical growth stages so growers can make adjustments before yield potential is compromised. Once deficiencies are visible in the field, it is often too late to correct the problem. Tissue testing allows for a snapshot view of that particular plant and which crop nutrients may not be getting taken up into the plant and ultimately limiting yield. Only tissue testing can determine which available nutrients have entered the plant and measure their effectiveness.

Tissue tests also give us trends in fertility that can get addressed in fertilizer applications that take place in fall or pre-plant. Nationwide trends the past two years have shown deficiencies of zinc, potassium, and nitrogen in corn, and potassium in soybeans. Individual field testing is the best way to evaluate nutrient deficiencies. Plant health is dynamic and nutrient availability is based on local conditions and practices.

Use your tissue sampling results as a basis for understanding which nutrients may be limiting your crops from reaching full yield potential. Before an in-season application of fertilizer or herbicide, it is important to understand if there are extra additives or nutrients the crop needs that can really help capture maximum yield potential. Tissue sampling results give you an idea of plant nutrient status, but it is ultimately up to you to investigate your fields and put that information to good use to increase yield. Talk to your local IAS Agronomist about taking, interpreting, and analyzing tissue samples to help push your operation to the next yield level.



Field ID	
Crop	Corn
Nutrient displayed	K
Growth stage	V5
Grower Name	
Retailer Name	
Sample Date	



Dicamba: What You Should Know

Donna Swanson, Agronomy Business Development Manager

With weed resistance issues and newly available technologies that came to market last year, it seems that dicamba is on everyone's mind in some way or another. In 2017, 3.1 million acres in the US were damaged by dicamba applied legally to dicamba resistant soybeans. Damage to nearby fields is easy considering only 1/30,000th of the labeled rate can cause damage to non-tolerant crops. This necessitates many restrictions on how and when you can apply dicamba, and unfortunately leads to an ever-changing and confusing label. The current label expires after this growing season. To keep this technology around as a tool in our toolbox, we need to be good stewards of the technology and minimize risk of off target movement by following the label.

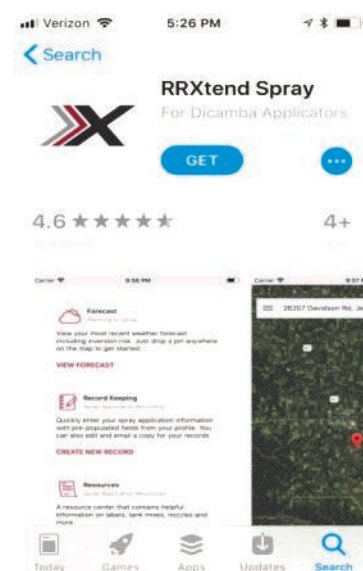
Keeping *every* technology as a tool is important because nothing (not even dicamba) is a silver bullet in this weed control battle by itself.

If you are planning to spray dicamba yourself, adding other things to your tank mix will be necessary for other modes of action and drift control. It is essential that you stay up-to-date on what has been approved for tank mix partners to remain on label and minimize your risk of off target movement. Certain products can increase the volatility of your dicamba herbicide. Also, if we over-rely on dicamba products, history suggests that the cycle of resistance will continue, and we will face increased weed resistance to dicamba as we have with glyphosate, triazine, and ALS-inhibitor herbicides. It is important to remember that there is still no silver bullet for resistant weeds, and dicamba is no exception.¹ The approved tank mix partners continue to change so refer back to the company's online label frequently and before each application to ensure that you are in compliance. The websites have been listed at the end of this article. As always, please consult your Innova-

tive Ag Agronomy Sales Advisor with any questions that you may have.

There are also restrictions on tank mix order, nozzle selection, wind speed and direction, buffer requirements, growth stage, temperature, tank cleanout, carrier volume, rain interval, and weed height. The label names the applicator as responsible for knowing all label restrictions, and knowing the environment in which the application will be made including weather and neighboring crops.

If you are planning to apply dicamba yourself or to custom apply, it is worth talking with your insurance company because of the liability involved to ensure adequate coverage to protect yourself and your neighbors. Monsanto has developed an app to help with weather predictions, predict temperature inversions, and assist with the required record keeping. It is available for iPhone or Android.



In addition to knowing and understanding the label, if you want to self or custom apply dicamba over-the-top of herbicide-tolerant soybeans this year, traditional pesticide training will not keep you compliant. The Iowa Department of Agriculture and Land Stewardship (IDALS) recently issued a Special Local Need registration for Monsanto's XtendiMax™ with VaporGrip Technology®, BASF's Engenia® and DuPont's Fexipan plus VaporGrip®. As a restricted used herbicide, the label requires auxin-specific (dicamba) training for farmers and certified applicators to use the products. These trainings will

continue to run through the growing season. For a list of classes available visit: <http://www.dicambatrainingiowa.org/>.

At Innovative Ag Services, we are committed to being good stewards of the technology and our neighbors. We have sent all applicators, location managers, and agronomy sales advisors to the required dicamba training, additional spray clinics, and agronomic trainings on this. We also have taken a firm stand that absolutely no application will be made off-label. With the intensive restrictions on the label, there will be minimal numbers of days where appli-

<http://www.croplife.com/crop-inputs/herbicides/dicamba-treadmill-herbicide-resistance>
<http://www.croplife.com/special-reports/importance-training-dicamba-age>
<https://www.iasoybeans.com/news/articles/dicamba-training-opportunities/>

cation is feasible. We will make every effort to get dicamba applications made, but strongly suggest a backup plan if Mother Nature does not allow this to happen while meeting label requirements.

For more information including tank mix partners, nozzle selection, and application requirements please visit:

<http://www.xtendimaxapplicationrequirements.com/Pages/nozzles.aspx>

<http://www.engeniatankmix.com>

Energy Update

Randy Swenson, VP of Energy

Hello, from your man with gas!

Volatility continues to be the most used word in the energy complex. Although the U.S. is now a net exporter of crude oil, as long as tensions and terrorism continues to be a major threat in the Middle East, the volatility will continue.

There's a growing tension between Saudi Arabia and Iran, rivals in the Middle East region, and respectively No. 1 and No. 3 oil producing members of the Organization of Petroleum Exporting Countries. Saudi Arabia said recently its air defenses intercepted seven ballistic missiles fired by Yemen's Iran-backed Houthi militia, some of which targeted the Saudi capital of Riyadh. This was the biggest barrage of missiles fired since the Saudis went to war in Yemen in March 2015, and is considered a proxy war between the Saudis and Iranians. Saudi Crown Prince Mohammed bin Salman met with President Trump and discussed how to step up their challenge of Iran in the region.

President Trump appointed John Bolton, a hawk on Iran, as his National security advisor. Bolton has been opposed to the 2015 Iran nuclear accord. If the U.S. were to pull out of the deal, it could trigger more sanctions on Iran that could curtail its oil exports and reduce global supply, which is the goal of the OPEC production cut program.

All this rhetoric has caused wholesale gasoline and diesel fuel prices to have some pretty good upward days. All in all, retail prices have stayed somewhat steady throughout all the volatility, but don't hold your breath too long on filling up your ag diesel storage for this upcoming spring's needs.

Sitting on the sidelines this whole time is propane. As everyone watches and complains about pump prices and ag-diesel prices, propane has been slowly making its upward march. At this point, we haven't gotten a good feel on where prices will be for summer fill and next year's contract prices. Propane is currently undervalued when it is compared to crude oil, so even if crude does make a correction, LP values could be slow to follow. All in all, the upcoming season's propane contracts don't appear they will be a lot higher than last year's contracts. It all depends on what a person's value of "a lot" means!

Thank you very much for your business and continued support. We couldn't do it without you and the great employees that work in our Energy Division. I know I have said it before, but it is a statement that I cannot wear out; IAS has the best employees to take care of your needs and I want to send out a big "THANK YOU" to them as well.

Have a safe spring!

Grain Update

Jim Schendt, VP of Grain

It is with a heavy heart that I write this edition of Ag Biz. This past week, IAS lost an employee to a heart condition. Justin Uthe was a grain originator in Hubbard who was 26 years old. Many of you knew Justin and he was a great individual. I think Justin's Dad said it well. "As someone close to Justin, you know Justin went all in when he did everything. He brought so much joy to so many people." We will miss Justin at Innovative Ag. He was a great employee and a great individual that God called too early. Please keep Justin and his family in your prayers!

The March USDA Stocks and Acreage report was out this past Thursday. The USDA reported corn stocks at a record 8.888 billion bushels. They reported soybean stocks at a record 2.107 billion bushels. For Planting Intentions the USDA reported corn acreage at 88.026 million acres. This is down 2.14 million acres from last year. The USDA reported soybean acreage at 88.982 million acres. This is down 1.2 million acres from last year. Could this be true? Could the US farmer be switching some acres into other crops like spring wheat or cotton? It appears the USDA thinks so. My sources tell me that in each of the last six years, corn and bean acres have increased in the USDA reports moving forward from the March report. I guess time will tell.

So now we wait for the April Supply & Demand report. We also wait to see how the South American corn and bean harvest turns out. We need to also keep an eye on the political scene. Trade wars with China are not good for the American farmer. Exports are still running behind USDA numbers but with the dry weather in Argentina that may change. World grain demand is good so keep an eye on what is happening to worldwide carry out in both corn and beans. It feels like the market has support at these levels.

The calendar tells me spring is here but it sure doesn't feel that way. I'm not sure if we will be planting corn in the middle of April or not. Hopefully it warms up one of these days. There is a lot of grain movement going on and from here we start the planning process of how much space will we need at harvest. You should be getting a call from IAS asking you what your grain plans are for summer and fall. I know it seems early but harvest will be here before you know it. Please let us know if there is any grain marketing we can help you with.

Thanks for your business and please have a safe spring!!



Feed Update

Mike Duncomb, VP of Feed

The livestock business environment has become a little more stressed to say the least. Fortunately demand and exports have been very good, but supply is pushing the limits on what we can consume. Dairy is especially challenged with the additional amount of milk that becomes available each month along with growing competition from other products. There is plenty of pork, beef, and poultry available in the world and we need a strong global economy to encourage protein consumption. Eggs are currently the bright spot with prices increasing significantly over the past few weeks. We do not need any hiccups in demand with exports crucial to keeping supply and demand in line. The meat and milk businesses are additionally challenged by the limits in harvesting and/or processing capacity. On the pork side we are seeing additional capacity and infrastructure being built but also are very aware that the additional capacity is being limited by access to labor including the ability to find truck drivers (both are becoming critical issues). Investment in dairy infrastructure in the U.S. has also been limited.

Your IAS Feed Division has just closed the books on the first 6 months of our fiscal year. We are off to a good start compared to last year and to our current year budget. Volumes are down slightly with most of the decrease in swine feed from some changes in

control of contract sites and disease pressure delaying fills. Beef business is up year to date and dairy business is pretty flat. We are optimistic that your feed department will have a similar or better year than last year. Work is continuing at our feed mills on installation of hazard monitoring equipment along with some upgrades to equipment especially at Hopkinton and Cuba City. All planned work should be completed by early summer.

The IAS business base has and continues to be our local, independent livestock producers. We are very committed to making sure we have the team in place to meet your on farm needs and expectations. Recently we have hired an additional Dairy Production Specialists and are working on ways to effectively increase our focus in the beef feedlot and cow/calf business. We certainly expect to maintain our current swine, beef, and dairy emphasis as well. In addition to making sure we have our team fully staffed, we have increased emphasis in effectively bringing outside resources and tools to your farm gate expanding our expertise and ability to work on continuous improvement and making the best business decisions. As always, we welcome your input on how we can continue improving our commitment of “Growing Relationships to Maximize Success”.



“Starting off on the right hoof: Nursery strategies to improve mortality and create more full-value pigs”

The following are excerpts from an article written by Emily Fruge, M.S., Hubbard Feeds Swine Nutritionist.

A universal truth exists in swine production: Pigs must eat and drink not only to survive, but to thrive. Times of increase stress create the biggest challenge in getting pigs to eat and drink. Weaning is a stressful time for the young pig due to a myriad of factors, including maternal separation, changes in environment, transportation stress, establishment of social hierarchy, abrupt diet change, vaccinations and exposure to pathogens. Hubbard Feeds has identified several feeding strategies that can help improve the transition from sow to dry feed, thereby increasing pigs' chances of thriving.

Equipment to use:

- Gruel feeders or troughs (troughs are easier to wash and can be stacked)
- Plenty of clean mats or trays for mat feeding

Managing small pens:

- Small pigs (bottom 5 to 10 percent) should be sorted off on the first day pigs enter the facility, using normal stocking density.
- Supply small pigs with an appropriate pre starter pellet
 - ⇒ Feed gruel four times per day for no more than 10 days post weaning.
 - ⇒ Mat feed four times per day for no more than 10 days post weaning

Handling sick or starve-out pigs (pulled at days three to five or days seven to 10)

- Identify sick or starve-out pigs.
 - ⇒ Look for pigs that are gaunt, with heads down, exhibiting lameness, fever, etc. (this can include bigger pigs.)
- The number of sick or starve-out pens may vary from group to group, but typically they use 10% of the barn space.
 - ⇒ Stocking density should be 50% of the normal density to reduce competition for feed and water.
- Supply sick or starve-out pigs with the appropriate pre-starter
 - ⇒ Gruel feed for seven days after sick/starve-out pen placement.
 - ⇒ Mat feed four times per day for seven to 10 days after sick/starve-out pen placement
- The poorest-performing pigs from day three to day five pulls may be moved to the day seven to day 10 pull pens to allow for extended gruel and mat feeding

Mat feeding guidelines:

- The biggest opportunity to boost growth and support livability/health is by increasing intakes during the first seven to 10 days post-weaning
- Walking pens and mat feeding four times per day provides the best results.
- Mat feed 15 ounces by volume (.75 lbs.) for every 50 pigs per feeding (60 ounces total for one day).
- A 1-pint scoop works best to provide accurate amounts and reduce wastage verses a larger scoop

Gruel feeding guidelines:

- Similar to mat feeding, gruel feeding helps to boost growth and support the livability/health of small and sick/starve-out pigs that struggle in making the switch to dry feed post-weaning.
- Gruel is a mixture of dry feed, ingredients mixed with water and liquid products that are designed to increase intake.
- Mix dry feed with water/liquid products in a 3:1 ratio by volume. Gruel appearance should resemble an oatmeal consistency
 - ⇒ A 3:1 ratio is equivalent to 1 pound of dry feed and 0.5 gallons of water.
 - ⇒ Feeding a ratio of 3:1, the trough should be licked clean in 30-45 minutes
 - ⇒ The optimal trough space for gruel feeding is 2 inches per pig.
- Gruel pans should be placed away from the sleeping area to keep pigs dry.

Following the steps outlined in the starting protocol will help reduce mortality and increase the number of full value pigs exiting the nursery. Starting pigs off on the right hoof gives them the best opportunity to reach their full potential in the nursery and beyond. Contact your IAS Swine Specialist to determine specific products and feeding strategies for your operation.

The Most Essential Nutrient

Chad Lange, Dairy Production Specialist

A huge part of a dairy cow's diet consists of water. The dairy cow can consume anywhere from 30 to 50 gallons of water. If a cow consumes 50 gallons of water weighing 8.35lbs/gal, this equates to 418 pounds of water a day. Water is required for digestion, energy, nutrients, excretion of waste, heat balance and most importantly milk production. Studies show that lack of fresh clean available water can limit milk production faster than any other nutrient. Water should be a focus for a dairy especially as we will be coming into warmer months.

Factors that affect water quality and water intake could include;

- Amount of milk produced
- Feed intake
- Body Size
- Level of Activity
- Environmental factors
- Air Movement
- Feed Stuffs
- Quality of water
- Temperature of Water
- Odor and Taste
- Physical and Chemical Properties
- Sodium Level in Diet
- Other Factors

As the most essential nutrient it is vital that a dairy provides free choice clean water. It is important that a dairy does the best job in cleaning waters on a regular basis, as it plays a crucial role in a cow's life and production. At Innovative Ag Services we have access to sample kits that test water to ensure levels are acceptable to a dairy. Please contact your nearest specialist and they can assist you.



Performance & Profits in 2017

Dave Rueber, Beef Production Specialist

2017 Feedlot Closeout Analysis from Feedlot Vision

***2017 vs. 2016 Highlights <700 lbs. steers**

- *\$67.22/cwt decrease in purchase price in 2017 vs. 2016
- *66.18 lbs. lighter end weight and 12 lbs. lighter purchased weight
- *\$3.58 drop in feed costs in 2017 vs. 2016
- *\$417.43/hd. Change in profitability (-\$179.70/hd. In '16 vs. \$237.73/hd in '17)

***2017 vs. 2016 Highlights 700-800 lbs. steers**

- *\$37.92/cwt decrease in purchase price in 2017 vs. 2016
- *48 lbs. lighter sale weights
- *Almost identical performance in 2017 vs. 2016
- *\$358.73/hd. Change in profitability (-\$111.57/hd. In '16 vs. \$247.16/hd in '17)

***2017 vs. 2016 Highlights 800+ lbs. steers**

- *\$32.75/cwt decrease in purchase price 2017 vs. 2016
- *-18.29 lbs. in finished weight vs. 2016
- *3.58 vs. 3.50 ADG 2017 vs. 2016
- *\$273.20/hd. Change in profitability (-\$110.40/hd. In '16 vs. \$162.80/hd in '17)

***2017 vs. 2016 Highlights <650 lbs. heifers**

- *\$58.01/cwt decrease in purchase price 2017 vs. 2016
- *37.89 lbs. decrease in end weight vs. '16
- *2.72 vs. 2.61 ADG in 2017 vs. 2016
- *\$322.74/hd change in profitability (-\$141.93/hd. In '16 vs. \$180.81/hd in '17)



2017 Feedlot Closeout Analysis from Feedlot Vision	Steers						Heifers			
	<700		7-800		>800		<650		>650	
	2016 Ave.	2017 Ave.	2016 Ave.	2017 Ave.	2016 Ave.	2017 Ave.	2016 Ave.	2017 Ave.	2016 Ave.	2017 Ave.
# of pens	124	140	122	137	358	409	44	70	82	94
# of cattle	20,937	23,302	21,768	22,183	59,581	68,545	5,608	13,038	12,711	15,451
Purchase price/cwt	\$215.94	\$148.72	\$177.88	\$139.96	\$168.71	\$135.96	\$192.30	\$134.29	\$166.08	\$131.39
Pay weight in	629	617	753	757	893	890	573	573	741	750
Sale pay weight	1,435	1,369	1,463	1,414	1,482	1,463	1,284	1,246	1,317	1,291
ADG	3.22	3.22	3.39	3.40	3.50	3.58	2.61	2.72	2.86	2.97
Days on feed	250	235	208	193	167	159	272	246	202	184
Dry matter F:G	7.03	6.79	7.03	7.02	7.27	7.15	8.10	7.62	8.07	7.79
Feed cost/cwt of gain	\$51.81	\$48.25	\$50.57	\$49.41	\$52.99	\$50.59	\$59.09	\$53.38	\$59.68	\$56.23
Vet & med cost/cwt of gain	\$2.51	\$2.82	\$2.09	\$2.19	\$2.42	\$2.12	\$2.59	\$2.79	\$2.59	\$2.48
Yardage cost/cwt of gain	\$9.29	\$9.66	\$8.69	\$8.92	\$8.64	\$8.47	\$11.78	\$11.66	\$10.45	\$10.43
Interest cost/cwt of gain	\$6.22	\$4.13	\$5.71	\$4.40	\$5.81	\$4.13	\$6.50	\$4.41	\$6.87	\$4.51
Non-feed cost/cwt of gain	\$12.42	\$13.04	\$11.31	\$11.44	\$11.51	\$10.92	\$15.21	\$15.95	\$13.74	\$13.60
Total cost/cwt of gain	\$64.23	\$61.29	\$61.69	\$60.85	\$64.25	\$61.51	\$74.29	\$69.34	\$73.35	\$69.83
Breakeven \$/cwt	\$133.90	\$102.83	\$124.83	\$105.40	\$129.34	\$108.41	\$130.96	\$101.74	\$128.62	\$108.05

Farley Location Begins Liquid Starter Production

Brian Kramer, VP of Operations

Something new to Innovative Ag Services is now underway at our Farley Location. Liquid starter fertilizers are now being produced in Farley after a winter of installing equipment, plumbing, and automation.

The project stemmed from logistical challenges we were facing due to the distance in which our starters were coming from as well as the freight costs associated with it. The initial planning phase looked at what investment we would need to make, the ability to generate revenue and the return on capital, as well as how the proposed construction would fit into what we already had for infrastructure within IAS. Farley was chosen as the site due to its existing infrastructure and rail access to bring in raw ingredients. Reacting phosphoric acid, additional ingredient storage, square footage for blending equipment, and additional automation were all considered.

Reacting Phosphoric Acid

One of the first steps in liquid starter production is the reacting of phosphoric acid which is received into the facility by way of rail cars. A mobile reactor from Garden City, Kansas is brought onto the site. The acid is mixed with anhydrous ammonia and the result is a reaction event creating heat of 600 degrees F. Water is used to cool the product which produces a large steam vapor flume and is also incorporated into the blend of product as well. The resulting mixture is 10-34-0 fertilizer which is then pumped into a storage tank on site.

Additional Ingredient Space

It was decided to convert one of the two one million gallon liquid storage tanks from 32% nitrogen to store the 10-34-0 liquid. We had developed some additional 32% space at some other locations in recent years so those tons were simply shifted to those sites. Five additional 30,000 gallon fiberglass tanks were added into newly built concrete containment to store additional raw ingredients needed in the starter blends. The four original 30,000 gallon tanks were converted into finished product tanks to store the blended product until it is shipped. Several additional poly tanks were added inside the blending room for ingredients with smaller inclusion rates into the blends.

Blending Area

The existing maintenance shop was converted into a blending room. It now contains a new 15 ton stainless steel liquid blender, a two million btu boiler, insulated water tank, (five) poly tanks for ingredient storage, and containment. A new shop area was built from existing warehouse space under the same roof.

In this area, raw ingredients are brought in via plumbing that was installed into the blender and mixed, then pushed out to the finished tanks. The boiler system heats water to be used in blends that require the addition of dry ingredients like soluble potash or urea. The hot water allows the dry ingredients to better dissolve into solution.

Automation

The facility in Farley has had a Kahler Automation System integrated into their liquid load out system since it was constructed in 2006. This system received a few upgrades and will continue to be used to load out all the liquid fertilizers produced and shipped from the facility from the two bay load out that had already existed. A certified, legal for trade mass flow meter is used when loading out products which saves time in loading trucks accurately and keeping them from having to scale numerous times to load.

The new batching & blending system is fully automated and is controlled by Junge Control. This system allows the operator to setup numerous batches of starter production at a time. The automation controls the flow of individual ingredients into the blender, allows adequate mixing time, and is then routed to the assigned “finished” tank to await shipment. Some initial runs have shown the ability to manufacture nearly 100 tons per hour thru the new system.



Five new 30,000 gallon liquid storage tanks were added to hold raw ingredients used in the production of liquid starters.



Pictured is the new 15 ton stainless liquid blender with plumbing from the raw ingredient tanks and to the finished product tanks.



A new two million btu boiler was installed to heat water to be used in dissolving dry ingredients into solution as part of the starter blends.



A new Junge Control automation system was installed to batch, blend, and route finished starters into storage.

A Great Place to Work! How Do We Stand Apart?

Carla Elliott, VP of Human Resources

The competition is fierce. There is no doubt that unemployment is low and applicants have options because the jobs are out there to be had. One of my many hats is to manage the recruitment for Innovative Ag Services (IAS). I am often asking myself how do we stand apart?

Everyone has an answer for this question; it just depends who you ask. You will hear a variety of things, richer benefits, flexible hours, better pay, more vacation time etc. The truth is the answer lies within the individual you are recruiting and what is important to them. It is as well the culture you create within your company, your reputation.

Thursday, April 12, 2018 marks my 6th year with Innovative Ag Services (IAS). Wow how the time has flown. As I reflect on why I came to work here the initial reason was a “connection.” What does that mean? The answer was that IAS was my cultural fit. The people I spoke with asked me the questions I hoped they would ask. Listening to what they asked of me told me the story about their vision for the company, their vision for me and they gave me insight into the character of people working at IAS. This was important because it gave me the opportunity to measure their definition of success and if I thought I could be successful at IAS.

Coming off that interview with IAS they were just a short 6 months coming out of the merger. The challenges and opportunities presented to me and the entire IAS team over the past six years has been countless. The progress we have made has been great. We are tenacious. We are always digging in to do one more thing to improve this cooperative. What you see in front of you is not always the answer for us. We are always asking questions and changing not for change sake but changing to be the best. We are not

interested in being the biggest but being right sized. We are doing this through sound employee and financial decision making along the way.

In today's society there are so many measurements of what it means to be “A Great Place to Work”. The truth is most employers are a lot alike when it comes to the basics. We have similar benefits; we pay similar wages to the geography we compete within. So what really makes a person stay at a company? The key I believe is the individual has to be a match or cultural fit to the company they choose. A person's passion is driven by being surrounded with those who have similar beliefs. I know you're thinking so what are those things you are talking about? It is our core values that IAS stands behind. You may believe that working in agriculture has a higher purpose, and so many believe it's their contribution to help feed the world. I like the idea of this it makes me feel good on the grand picture of life but day to day the core values is what bridges us together.

The Core Values at IAS are:

Exceptional Customer Experience

Employee Excellence

Continuous Improvement

Stewardship

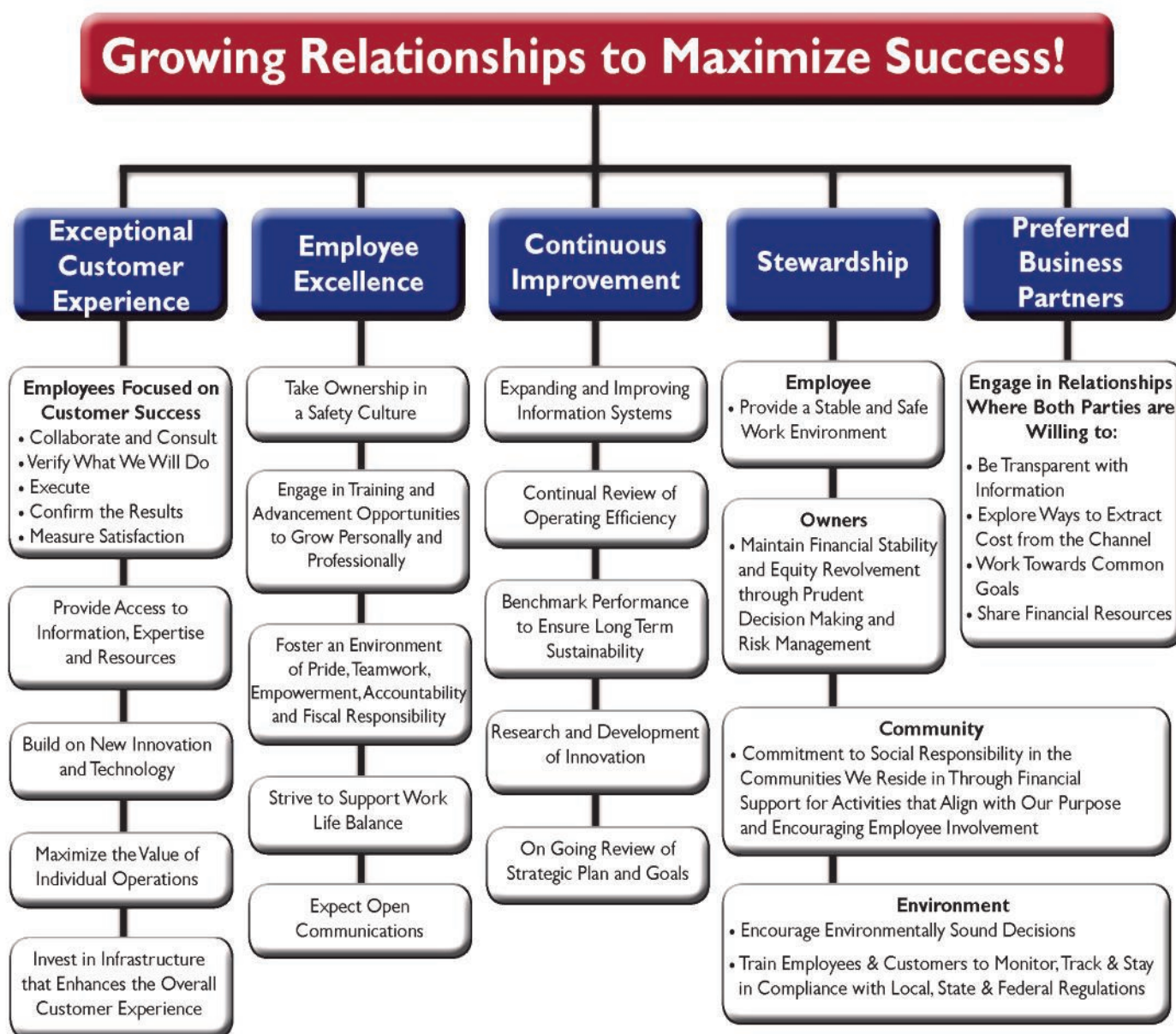
Preferred Business Partners

The strategies for our core values are pictured right in our purpose statement. I encourage you to read them.

The way I was raised you never had to ask people if it was a great place to work when you went to go get a job, your reputation in your community stood on

its own. If a company was financially stable, supported its community, had exceptional customer service and they stood by their word these were measurements of success. I believe IAS still can be measured on these things. We don't need to over complicate it. So how does IAS stand apart? We stand apart by living our purpose statement, exhibiting the core values and then finding people who have the same or similar beliefs that we do to continue to support the culture. We are unique, many companies have purpose statements but most are just hanging on a wall. You have to live

it to apply it and you can see this through your interactions with the exceptional employees we have working with you everyday. We stand apart by being an example. Word of mouth is still the best advertisement. Spread the word what an innovative, forward thinking, engaging, driven, customer focused company we are. Thank the next employee you work with at IAS, small gestures of gratitude go a long way. They are awesome! We look forward every day to Growing Relationships to Maximize Success! Have a safe and successful spring season.





IOWA DEPARTMENT OF AGRICULTURE ENCOURAGES FILTRATION OF DIESEL FUEL FOR FARM AND OFF-ROAD EQUIPMENT

DES MOINES – The Iowa Department of Agriculture and Land Stewardship has been working with pipeline terminal operators, fuel retailers and petroleum marketers following some reports of dispenser fuel filter plugging at several diesel fuel retailers in central and northeast Iowa. Some of the diesel fuel in the system has been clogging the 30 micron fuel filters that are required by Iowa law to be on retail diesel fuel pumps.

The filters required at retail locations have been effective. The Department has received no reports of any vehicles having diesel fuel-related issues. Though dispenser filters have been effective in preventing any vehicle issues, retailers are exercising additional caution by replacing filters at shorter intervals to prevent any potential issues.

On-farm and private diesel fuel tanks and dispensers are not legally required to have the same 30 micron filters as retail equipment. As a result, farmers and others with bulk diesel fuel tanks may want to consider options to filter the diesel in their fuel storage tanks through a 30 micron or finer filter before it is placed in their equipment.

Also, if farmers or others with private fuel tanks do have issues with their equipment's fuel system, they may want to first consider checking the impacted equipment's fuel filter.

Iowa Locations

Ackley	Hopkinton
Alden	Hubbard
Alta Vista	Independence
Andrew	Lawn Hill
Austinville	Manchester
Cascade	Monona
Center Junction	Monticello
Central City	Oran
Cleves	Owasa
Elkader	Packard
Ellsworth	Union
Elma	Waukon
Farley	Williams
Faulkner	Winthrop
Garden City	

Wisconsin Locations

Cuba City
Hazel Green

Store Hours

Monday thru Friday
7:30am to 4:30 pm
Saturday

All locations hours are varied with the season check with your local IAS location to confirm

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