SUCCEED

WINNING WITH SUNFLOWERS

Volume 2 Harvest 2018

Are YOU Harvest Ready?

From the field to the bin, tips and information for a successful sunflower harvest.

PLUS

- Desiccation
- 2019 Market Outlook
- Harvest Attachments and Settings
- Apps for Efficiency

Publications Mail Agreement #40030841

NUSEED.COM

What does quality assurance mean for our customers? In short, everything. Attention to each step in the production chain is essential, from the beginning of seed production to placing bags of top-quality seed into growers' hands.

With seed production, it's critical the supply chain group is in step with the sales team and market demands, what the trends are, and what our customers want in terms of product performance and portfolios. This ensures we're not only growing the right hybrids year over year, but also the inbreds needed to maintain that hybrid production.

Nuseed is always looking ahead to anticipate growth projections for a hybrid line or market, to guarantee the right hybrid seed is available for our customers.

To bring new hybrids to market we're looking a few years into the future. For example, to sell a sunflower hybrid in 2019, we need to produce it in 2018, which means the foundation lines, the inbreds, had to be grown in 2017. And this is only after multi-year research trials have confirmed the hybrid performs to our high standards in regional conditions.

Editor's Note: Garrett Driver, Nuseed supply chain manager for North America, grew up on a farm about 15 miles from where he now works at the company's facility in Woodland, Calif. Three generations of Drivers have grown certified seed, primarily cereal grains, for the region. From these roots, and his 12 plus year career mostly in sunflower production, Driver has developed the expertise and a passion for quality control at every stage of sunflower seed production.

When it comes to quality assurance, Nuseed strives for operational excellence and we always play it safe. If there's any doubt about a hybrid we'll hold it, do more testing, investigate further, or pull in more expertise when it comes to decision making – in my opinion, that's the true purpose of quality assurance, and what earns us customer confidence.

Garrett Driver
Nuseed supply chain
manager for North America

Nuseed's Woodland Team. Back row: Jerry Miller – agronomist, Angel Montano – QA lead, Stacy Millang – logistics coordinator, Kelsey Lohse – customer service, Garrett Driver – supply chain manager **Front row:** Rosio Corona – QA lab technician, Veronica Aleotti – production specialist, Pamela Jenkins – supply chain/R&D, Regina Martin – logistics support

SUCCEED
WINNING WITH SUNFLOWERS

HARVEST 2018 ISSUE

PUBLISHER
Nuseed Americas

EDITOR
Colleen Shaw
colleen.shaw@nuseed.com

PRODUCTION COORDINATOR
DeeDee Rezac

EDITORIAL
Garrett Driver
Jim Gerdes
Shanna Groeneveld
Ross Hakes
Mark Jackson
Trygg Olson
Fred Parnow
Alison Pokrzywinski
Nick Tollefson

CONTRIBUTORS
Kari Belanger, Issues Ink
Peter Gredig, AgNition Inc.
Lindsay Hoffman, Issues Ink

DESIGN
Kyle Drawatony, Issues Ink

Printed in Canada

Return undeliverable Canadian addresses to:
Issues Ink
403-313 Pacific Avenue, Winnipeg, MB R3A 0M2

TIME TO TRY DESICCATION?

Desiccate for improved quality plus risk and time management.

Efficiency and speed. These are the two biggest reasons Texas producer Steven Beakley chooses to apply a desiccant to his sunflower crop as a pre-harvest aid.

"We desiccate primarily for a cleaner, more uniform harvest," he says. "We always have some fields around sensitive areas we'll save for last and let dry down on their own, but just to speed harvest and for uniformity, desiccation works better for us."

It's been a decade since Beakley planted his first sunflower crop for the oil market on his 7,400-acre farm near Ennis in Ellis County. He includes roughly 2,000 acres of sunflowers annually to add some diversity to his cotton, corn and wheat rotation.

Nuseed technical agronomist **Alison Pokrzywinski** finds crops are often ready for desiccation earlier than some growers expect, especially during warm sunny weather.

"It's a good rotation for weed control as the herbicide rotation keeps the resistant pigweed in check. Wheat seeded after sunflowers does well for this part of Texas," he says. "Plus being dryland and so dependent on rainfall, the sunflowers seem to take the dry years better than other crops."

Natural sunflower dry down can be slow and uneven. Desiccants decrease losses due to inclement weather, lodging and bird depredation by speeding up the dry down process.

Before he tried it, Travis Iglehart thought desiccating his sunflower crop was a waste of money. "I was the guy who said, 'just let the frost get it.' I tried it one year, and now I won't go a year without it," he says.

Iglehart, who grows roughly 3,000 sunflower acres near Garrison, North Dakota for the oil, confection and dehull markets, says the benefits of getting the crop off early with the help of a desiccant far outweigh the input cost.

"A desiccant kills the plant so you can harvest it sooner. The earlier you harvest, the less damage from birds and you get the crop off before the snow comes," says Iglehart. "You also get a drier crop that is a lot easier and faster to combine. It's an additional expense but it saves money in the long run," he says.

Alison Pokrzywinski, sunflower technical agronomist for Nuseed, says she's also a fan of desiccation. "If a grower doesn't desiccate then they are at the mercy of Mother Nature waiting for a hard frost to kill off the plants. Sometimes growers are waiting until October or November for that to happen."

Pokrzywinski provides three important reasons for growers to desiccate:

1) Disease – with late-season stalk disease you want to get the crop off as soon as possible to prevent further stalk damage.

2) Peace of mind – the earlier the crop is in the bin, and not at the continued mercy of late-season environmental conditions, the more peace of mind for the producer.

3) Blackbirds – these pests can settle into a field two weeks after petal drop and once established, it's hard to get them to leave. Getting the crop off earlier is the best solution to a difficult problem.

Desiccant Timing and Products

Desiccants can be applied to the crop once plants have reached physiological maturity. At this stage (R-9), the back of the head turns yellow, the shoulders of the bracts turn brown and seed moisture is about 35 percent. Applying desiccant before physiological maturity may reduce test weight and seed quality.

"I like to tell growers if they have it in their plan to desiccate, to make sure they're checking their fields, especially if the weather is sunny and warm," says Pokrzywinski. "A lot of times they can desiccate earlier than they realize."

"I WAS THE GUY WHO SAID, 'JUST LET THE FROST GET IT.' I TRIED IT ONE YEAR, AND NOW I WON'T GO A YEAR WITHOUT IT."

Desiccation products for use on sunflowers include glyphosate; Gramoxone® (paraquat), which is known as Reglone in Canada; Drexel Defol® (sodium chlorate), which is only registered in the U.S.; Sharpen® (saflufenacil), which is known as Heat® in Canada; and Valor (flumioxazin), which is only registered in the U.S. Always follow registered uses on the product label.

One of the big differences in desiccation products is speed. Usually growers can start harvesting approximately three weeks after applying glyphosate. Alternatively, products like Gramoxone (Reglone in Canada) and Drexel Defol work faster allowing growers to harvest about 10 days after application.

Signals it's time to desiccate (R-9 Plant stage) – first the head turns yellow and bracts turn brown, secondly seed moisture is about 35%.

However, another important difference that Pokrzywinski points out is that products like Gramaxone and Drexel Defol will remove the waxy layer on the back of the sunflower heads, whereas glyphosate will not. This waxy layer prevents water absorption into the head if it rains. "If you get rain a couple days after spraying, the sunflower head is going to absorb water and you could be waiting longer [to harvest] than if you hadn't sprayed," says Pokrzywinski.

Growers can typically harvest sunflowers 10 to 14 days after applying a tank mix of Sharpen and gylphosate, she adds.

When considering desiccation as a harvest aid, growers should factor in planting date, weather, typical hard frost date and market.

"You have to weigh your odds on what the weather's like, your potential for a hard freeze, when you planted and how much time you have. For example, are you going to be waiting for a hard frost for 30 days or more?" asks Pokrzywinski.

"The other part to consider is what the price of the crop is, and what market you're going into. Those in a higher value specialty market, like confections, want the highest quality to get the best price they can."

HARVEST ATTACHMENTS AND SETTINGS

Sunflower specific headers and adjustments reduce loss.

Lee Moran, sales and project manager with Hamilton Systems.

Combines used for small grains can be adapted to harvest sunflowers. While a row-crop header can be used without modifications, platform and corn headers require some modifications including catch pans, a deflector bar and a small reel. Alternatively, a rotating drum can be used to replace the deflector bar and reel. Growers often debate the return on investment of a sunflower specific header.

From the get-go, Texas producer Steven Beakley has used a combine header designed specifically for harvesting sunflowers. He says it has more than paid for itself in efficiency. In fact, he once borrowed a neighbor's all-crop header to determine if the expense on his unit was justified. He wasn't disappointed.

"The first year we grew sunflowers, we wanted to plant enough to justify spending the money to grow them right. Through research, we came across the Fantini sunflower header. What's fantastic about it is you have zero header loss. It does a wonderful job gathering your crop and getting it through the machine without loss. I compared the two [headers] and I think [the Fantini] pays for itself," says Beakley.

According to Lee Moran, a sales and project manager at Hamilton Systems, farmers using headers designed specifically for harvesting sunflowers, such as the Fantini sunflower and sorghum headers he sells, see an average of 300 to 600 more pounds per acre in the combine.

"If you use today's numbers, either in the NuSun® or high oleic markets, at 300 pounds an acre at 18 cents, gives a grower a $55 per acre bonus for preventing seed loss," says Moran.

Brandy Edland, a sales representative for Sheyenne Tooling and Manufacturing, also believes yields are increased and field losses are decreased by using headers designed specifically for harvesting sunflowers. Out of all the steps associated with sunflower production he feels harvesting gets the least attention.

"Growers tend to use old technology adapted to work for sunflowers. They put so much time, money and effort into raising sunflowers but then harvest them with something adapted to do so, and it does a mediocre job."

His company sells Sunmaster headers, which are high capacity sunflower headers. He's done the math, and figures the header pays for itself just by decreased field losses.

"About two years ago, when we did the math, you could buy a Sunmaster off the loss in about a few thousand acres. There's not much on the farm that can do that," he says. "We advertise a 10 percent yield increase, but we see a lot higher – which is huge. Ten percent is a big deal."

These headers work miracles under adverse conditions, according to Edland, such as harvesting downed crops. The snouts are designed to get underneath the sunflowers to stand them back up for harvesting.

"Your rows go out the window. You find an angle that works to stand those flowers back up."

Combine Adjustments

Minor adjustments to combines can also make a big difference at harvest. To attain optimal yields and reduce field losses, the following combine adjustments should be considered:

- Combine speed should average between three and five miles per hour (4.8 to eight kilometers per hour)
- Cylinder speeds can range from 300 to 500 revolutions per minute
- Concave settings should be open (cylinder-to-concave spacing of one inch at the front of cylinder and ¾ inch at rear)
- Using the slowest cylinder speed with the largest concave opening results in reduced seed damage
- Adjust fan to accommodate sunflower seed, which is lighter than other grains, so that air flow just keeps trash floating across the sieve

Beakley makes a further adjustment to his combine. He blocks off the back 12 inches of the cleaning screens with a piece of plastic. "That helps conserve the seed and keep them in the combine," he says.

In general, 10 seeds per square foot represents a field loss of 100 pounds per acre; however, in the discharge area, 40 seeds per square foot represents a loss of 100 pounds per acre.

To reduce seed loss at harvest, Moran says his biggest tip for farmers involves settings. "Make sure your harvesting equipment is running as close to, if not the same as, the feederhouse on the combine," he says.

Although sunflower headers generally require little upkeep, Moran also suggests check-ups twice per growing season. "We want to make sure the chains are tight and everything is lubricated well at the beginning and end of the year," he says.

A grower is faced with many choices when it comes to harvesting a sunflower crop. Some of those choices will directly affect yield and quality, ultimately influencing a grower's bottom line.

Texas producer Steven Beakley's header-to-header comparison confirms one specifically designed for sunflowers more than pays for itself in efficiency.

"I THINK WHAT WORKS WELL FOR US IS WE GROW SUNFLOWERS AS A PRIMARY CROP."

However, a successful harvest begins with a grower's mindset, says Alison Pokrzywinski, Nuseed's technical agronomist.

"Some people still think of flowers as the bottom of the barrel. They think soybeans or corn are more important. Sunflowers need to be properly managed like any other crop and they can deliver good yields and make your farm successful," she says.

"I think what works well for us is we grow sunflowers as a primary crop. As long as we're doing that, we're making good yields and good oil. It's not a double crop for us, it's not a leftover crop. It's actually a primary crop in this area, and that really helps," concludes Beakley.

Additional Sources:

- *North Dakota State University Sunflower Production Guide (www.ag.ndsu.edu/publications/landing-pages/crops/sunflower-production-a-1331)*
- *National Sunflower Association Growers' Section (sunflowernsa.com/growers/)*
- *National Sunflower Association of Canada (www.canadasunflower.com/)*
- *Nuseed Sunflower Field Guide (www.nuseed.com/wp-content/uploads/2017/05/2015-Sunflower-Field-Guide-LoRes-for-Website.pdf)*

DRYING AND STORAGE
FINDING YOUR EQUILIBRIUM

Kenneth Hellevang wrote the book on grain drying and storage. Although drying sunflowers is similar to drying other grains, there are a few key differences growers must understand and put into practice.

Kenneth Hellevang, extension engineer and professor at NDSU, reminds sunflower growers of important differences when drying.


Photo provided by: Mathews Company

Drying sunflowers isn't that much different from drying other grain types, says Kenneth Hellevang, an extension engineer and professor at North Dakota State University's Department of Agriculture and Biosystems Engineering. What's important to remember is all grain drying fundamentals apply, no matter what method is being used to dry the grain, he says.

These fundamentals can be found in the NDSU Extension Service Publications written by Hellevang, *Natural Air and Low Temperature Crop Drying (EB-35) and Grain Drying (AE-701).*

However, there are several important differences between drying sunflowers and other grains growers should understand, he says. The biggest being the grain's weight.

The Waiting Game

"Sunflowers weigh less per bushel, so if you're accustomed to drying a heavier crop like corn or wheat, you'll find sunflowers dry quicker because there are less pounds of water that need to be removed."

When it comes to natural-air or low-temperature in-bin drying, Hellevang says he gets many phone calls from sunflower growers in the fall who have left harvest too late, and have run into trouble trying to dry their crops in cooler temperatures.

"The moisture holding capacity of air is related to the air temperature. If we look at drying sunflowers in late October or November, it's going to dry much slower, and differently, than drying wheat in September," he says. "Farmers need to make sure they start early enough if they're using a natural-air drying system."

Although it may be tempting for growers to delay harvest and leave a sunflower crop in the field to dry, there is less drying ability in the air as temperatures fall in October and November. Temperatures near freezing have no drying ability left.

"Frequently I recommend people harvest [the crop] at a little higher moisture content than they might be inclined to, and then utilize the warmer air in October to dry, rather than try to dry in November," says Hellevang.

"With temperatures down near freezing, we can't just add a little supplemental heat and fix it. It's very inefficient drying. If the farmer harvests too late in the fall, they will often need to hold [the crop] over winter and actually do the drying in the spring and early summer."

"SUNFLOWERS DRY QUICKER BECAUSE THERE ARE LESS POUNDS OF WATER THAT NEED TO BE REMOVED."

Drying Differences and Moisture Rebound

When drying sunflowers in a high-temperature dryer, fires are a significant risk. With other grains, dryers may operate with minimal supervision, whereas constant monitoring is needed when drying sunflowers as the chaff, lint, and other debris associated with the grain is highly combustible.

"Being there to monitor that dryer becomes very important. When you look at what causes the actual fire, it's typically some of the debris associated with the sunflower, or the sunflowers get hung up in the dryer, become over-dried and very combustible," says Hellevang. "You can go from a bit of smoke to a big fire very quickly."

Housekeeping is important with a high-temperature dryer according to Hellevang. If the dryer is not kept clean of debris, or if the

grain is not kept flowing through the dryer, fire risk is high.

Another point growers must keep in mind is due to the sunflower's lighter weight, the drying rate is considerably different. It flows through the dryer quicker than heavier grains.

"If we're starting at 15 or 16 percent moisture, and we're trying to dry it down to eight or 10 percent moisture, that drying process will occur quickly because we're taking out less pounds of water than we would out of wheat or corn, or other types of grain," says Hellevang.

Essentially, sunflower grain is comprised of two different materials – the outside hull and the kernel inside. These distinct materials create two different drying rates. The hull will dry rapidly, whereas the kernel will remain at a higher moisture content. This differential can create problems for sunflower growers when drying and storing grain.

For instance, the moisture content measurement can be off as the meter is more sensitive to the seed's external portion. The meter may indicate the sunflower is at 10 percent moisture content, but the meter has been fooled, says Hellevang. The hull may be dry and the meter indicates 10 percent moisture, however, the kernel could be 12 or 13 percent moisture content. This phenomenon is called moisture rebound and is more frequently an issue associated with high-temperature drying.

Photo provided by: Mathews Company

Keeping dryers clean of debris and the grain flowing are two ways to reduce the risk of fire.

To estimate moisture rebound, growers can take a grain sample from the dryer and place it in a covered container for 12 to 24 hours. Moisture moves from the kernel to the hull, creating a more uniform moisture content. The moisture meter will now present a more accurate moisture content reading.

"THE GOAL IS TO HAVE IT DRY ENOUGH TO STORE, BUT NOT TOO DRY SO THAT WE START LOSING VALUE IN WHAT WE'RE DELIVERING TO MARKET."

"It's not that there's been any additional moisture added to the seed. Rather we have, over that period, established more of an equilibrium, and the moisture meter is getting a more accurate, true moisture content. That's typically associated with high-temperature drying rather than natural-air or low temperature in-bin drying because [the latter] process takes place at a much slower rate," says Hellevang.

Furthermore, an accurate reading for storage moisture content may require the same moisture rebound correction.

Oilseeds Require Lower Moisture Content

Another aspect to consider is storage moisture content doesn't necessarily correspond to the market moisture content. "The sunflower trade has been marketed based on a 10 percent moisture content as the standard," Hellevang says.

Confection and non-oil seeds can be stored short-term at 10 percent moisture content, but going into warmer-season or long-term storage, Hellevang encourages growers to dry grain just below that value, to somewhere between nine and 10 percent moisture content.

Alternatively, oilseeds must be at eight percent moisture or lower, he says. "The eight percent is associated with a 40 percent oil content of the seed. Now, we're seeing oil contents closer to 45 percent, which is good from a marketing and oil production standpoint, but it also means the storage moisture content needs to be lower – somewhere between seven and eight percent," says Hellevang.

Steven Beakley, a Texas producer who grows sunflowers for the oil market, tries to get below 10 percent moisture content before he harvests his crop. The grain is put directly into storage in July and August when the temperatures hover around 100°F (38°C). He checks every few loads for moisture content and insects. And, if Beakley knows a load is coming in a bit wet, he turns air on it for a few days.

In the fall, once temperatures start dropping, he puts the air on again, as he tries to get the grain as cold as he can. "That helps with the insect damage and slows them down," says Beakley. 50°F (10°C) is about as cold as he can get the grain at his farm in Ennis, Ellis County.

His top tip for fellow southern growers is to watch out for moisture. "Absolutely, don't let anything come in that's wet. Usually our seed is dry, but maybe the stalk or the sponge in the back of the head is not completely dry," says Beakley.

His solution is to fill up a five-gallon bucket with grain and let it sit until he re-checks the moisture content a few hours later. "That'll give the green stems time to sweat and provide a true indication of what you've got," he says.

Geographic location also factors into the equation when it comes to storage moisture content. Growers, like Beakley, farming in regions with warmer climates, such as Kansas and Texas, should be storing oilseeds between seven and eight percent, says Hellevang.

Northern regions, such as North Dakota and into Canada, have cooler temperatures during the fall and winter, so oilseeds can be stored during those months at higher moisture

contents. However, storage into late spring or the following summer, requires oilseeds to be below market moisture content.

Growers could also focus more on managing stored grain temperatures by cooling grain in the fall and winter. In northern regions, bring grain temperatures down to just below freezing, roughly 30°F (-1°C). In southern climates, a realistic goal is 40°F (4.4°C) or cooler. For storing grain through warmer temperatures, such as the following summer, the target is to keep the grain as cool as possible, says Hellevang.

Another, often overlooked, aspect of storage management is for growers to cover the fan or air duct when not in use. If the fan or air duct is left uncovered, a natural chimney effect can be produced. When wind blows and hits that opening, the grain will be ventilated and warmed, much like running the aeration system.

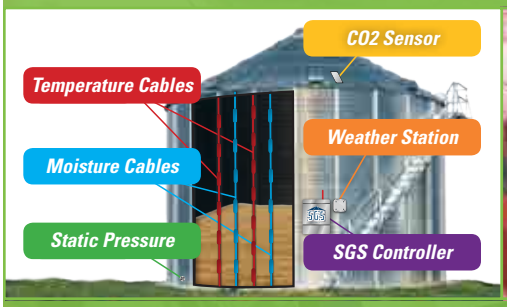
"Both the blowing wind and this natural chimney effect will warm the grain in storage, which makes the grain more susceptible to insect infestations. Or if we're marginal on moisture content, and a little on the damp side, it increases the potential for mold growth as well," says Hellevang.

In general, Hellevang recommends growers conduct a thorough evaluation of stored grain conditions every couple of weeks when outside temperatures are warm. In the winter months, stored grain should be checked every two to four weeks, he says.

Techniques for achieving successful drying and storage in one region may not work in others, notes Hellevang. "The weather changes, and what we can do in Iowa is different from what we can do in North Dakota or Kansas. Farmers need to make sure they're applying the fundamentals to whatever climate they're working in," he says.

Ultimately, drying and storing sunflowers is a balancing act.

"We get paid on how many pounds we deliver, whether it's oil or sunflower seeds. The goal is to have it dry enough to store, but not too dry so that we start losing value in what we're delivering to market," says Hellevang.



Monitoring Stored Grain

Technology and management are key.

Managing grain in storage, especially as bins keep getting larger, can be challenging. Grain monitoring systems can help growers stay on top of moisture management, storage temperatures, grain conditioning, and more, says Kevin Boeder, operations manager with Minnesota-based Smart Grain Solutions (SGS).

From anywhere on or off the farm, growers can monitor bin status on smart phones or computers and remotely shut fans on and off, change storage parameters and a host of other storage functions.

"If something goes wrong in a grain bin, let's say a fan kicks out because it blew a power breaker or a bin begins to heat, a hot spot is detected, or Junior runs over something with a big tractor, it's going to notify the owner via text or email that there is a problem at that site," says Boeder.

The system is a programmable logistics center-based unit, used to control an entire storage site. Built-in data from equilibrium moisture content charts allows the unit to determine when to turn fans on and off when certain conditions arise, detected by temperature and moisture sensors inside and outside of the grain bins. "It takes away all of the guesswork," says Boeder.

He also maintains grain monitoring systems create more value coming out of the bins. "A lot of people just fill the bin up, turn the fans on, and live with what happens. I don't think that's acceptable anymore. It can be much more profitable," he says.

Boeder provides an example that after installing the monitoring system on one site alone, the grower realized up to $10,000 per bin more value. "If you start taking those numbers over a five or 10-year period, these are impressive numbers," adds Boeder.

Not only can growers identify and address problems in the bin, the system generates other types of information. "At least growers know what it is they have to do, what they need to fix, and how to approach it. [The system] tracks everything it does for the entire year. You'll know how much energy a motor uses, what the cost per unit was, and a whole host of useful information that can be used for budgeting and planning for the future," says Boeder.

The SGS system reads conditions in multiple grain bins on one unit, making the system more economical, says Boeder. "Say you had four bins, two have wet sunflowers in it, one has dry, and one you just wanted to cool. It'll operate every one of those bins individually."

Kenneth Hellevang, an extension engineer and professor at NDSU thinks grain monitoring systems are wonderful tools for growers. However, bins still need to be physically checked, he says. "It doesn't eliminate the need for storage managers to be observing the bin: to use their sense of smell to try to determine if there are off odors, look for indications of condensation and other problems that might be showing up."

BYE BYE BIRDIE

A bird's eye view on blackbird deterrents.

Blackbird depredation and damage is quickly becoming a serious problem in areas of North Dakota. Recently areas around Bottineau, Crosby, Max and north of Minot have been hardest hit.

"That whole area, it's a big triangle, has really been hit by blackbirds," says Alison Pokrzywinski, Nuseed's sunflower technical agronomist. "It's an ongoing battle, with no single fix."

However, in addition to getting the crop off earlier by using a desiccant, there are other measures growers can take to discourage blackbirds from settling in their sunflower fields and eating their yield. Specifically, there are two registered bird repellent products on the market called Bird Shield™ and Flock Buster®, which contain natural ingredients. Farmers' feedback to these products is mixed.

"Some growers like them, some don't. Sometimes it's effective and sometimes it's not – it's hit and miss," according to Pokrzywinski. "Some growers have to spray numerous times, which costs not only in product but [aerial] application can really get up there in price."

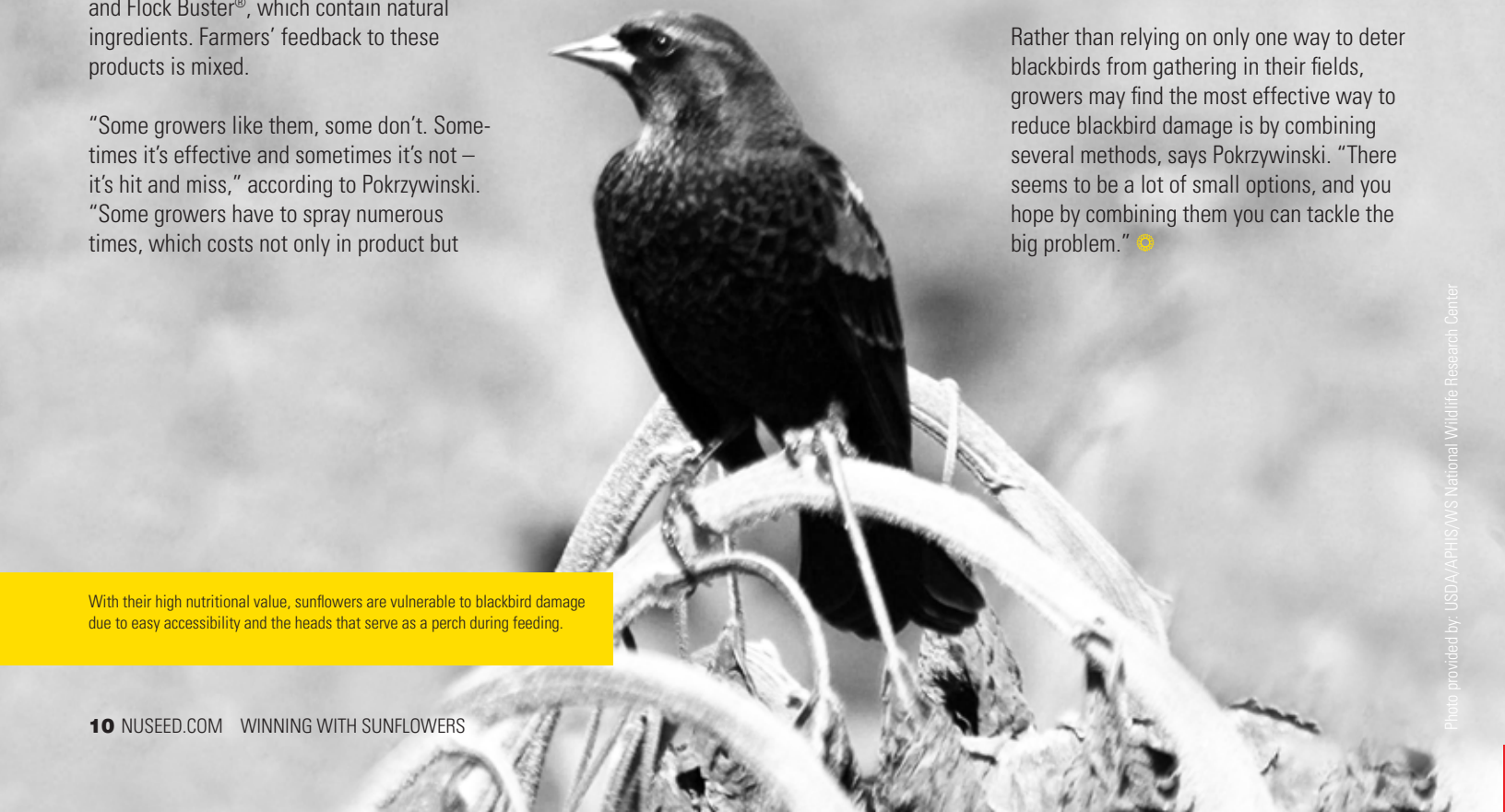
Pokrzywinski knows growers who are using drones to scare blackbirds away from sunflower fields. She's also aware of a study underway by North Dakota State University and the USDA-APHIS-WS National Wildlife Research Center that's testing the efficacy of deterring blackbirds with drones that look like hawks.

Propane cannons are also being used by growers to keep blackbirds away from their fields. Some growers find them effective; however, the noise only carries so far. "If you are in a 320-acre sunflower field, you'd need a lot of propane cannons. It works on a smaller scale," says Pokrzywinski.

Blackbirds are also drawn to cattails, so some growers remove the cattails to try to reduce blackbird populations. A tactic tried by others is monitoring sunflower fields close to cattails or sloughs where blackbirds like to roost at night. Shot gun fire while blackbirds are roosting, or coming into roost, may provoke them to leave.

In addition, the National Sunflower Association is helping fund research on the use of Avipel® (active ingredient is anthraquinone) on sunflowers as a blackbird repellent. It is currently used on seed corn as a pheasant deterrent in North and South Dakota.

Rather than relying on only one way to deter blackbirds from gathering in their fields, growers may find the most effective way to reduce blackbird damage is by combining several methods, says Pokrzywinski. "There seems to be a lot of small options, and you hope by combining them you can tackle the big problem."



With their high nutritional value, sunflowers are vulnerable to blackbird damage due to easy accessibility and the heads that serve as a perch during feeding.

Photo provided by: USDA/APHIS/WS National Wildlife Research Center

Helping Farmers & Ranchers in Crisis

Farm Rescue®

Free Planting, Harvesting, Hay Moving, Haying & Livestock Feeding Assistance to farmers & ranchers who have experienced a major injury, illness or natural disaster.

Anonymous referrals accepted.

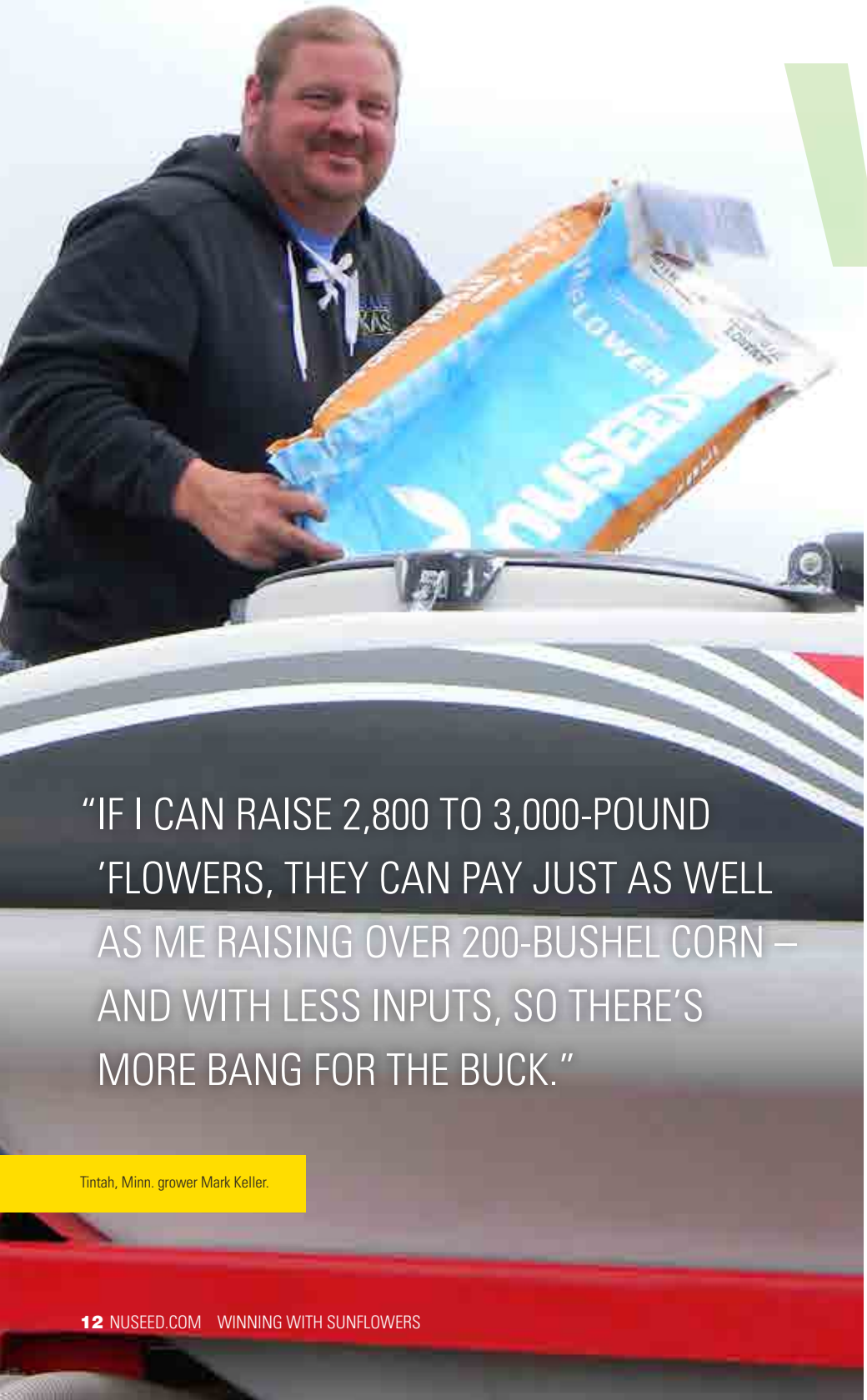
FOR MORE INFORMATION

farmrescue.org

Nuseed is a proud sponsor of Farm Rescue

WHO'S LAUGHING NOW?

This Minnesota producer shows growing sunflowers in his region is easy and profitable, and offers his top tips for a successful harvest.



"IF I CAN RAISE 2,800 TO 3,000-POUND 'FLOWERS, THEY CAN PAY JUST AS WELL AS ME RAISING OVER 200-BUSHEL CORN – AND WITH LESS INPUTS, SO THERE'S MORE BANG FOR THE BUCK."

Tintah, Minn. grower Mark Keller.

When other farmers hear Mark Keller talk about raising sunflowers at the southern end of the Red River Valley near Tintah, Minn., the reactions range from skepticism to amusement. However, it's really Keller who's laughing – all the way to the bank.

Keller planted a sunflower crop for the first time in 2015. It was an oil-type variety and it yielded about 2,800 pounds per acre. The following year was his best so far as his confection crop yielded more than 2,500 pounds per acre and his oil-type sunflower crop yielded more than 2,800. That year, he says his returns on sunflowers were better than corn or soybeans.

"If I can raise 2,800 to 3,000-pound 'flowers, they can pay just as well as me raising over 200-bushel corn – and with less inputs, so there's more bang for the buck," he says.

This third-generation producer farms 2,300 acres in Traverse County, where younger farmers have little experience growing sunflowers, he says, and the ones who did in the '70s and early '80s write the crop off as too risky. But Keller was willing to try.

"There's another option out there to diversify your farm. In my area, we're corn, soybeans, sugarbeets, a little wheat and very few sunflowers. Most farmers don't have any experience with sunflowers," he says.

"Those who had sunflowers back in the '70s or '80s had all the diseases and insects – it turned into a train wreck, and they swore they'd never do that again. But with new technologies and varieties it's much better," says Keller.

He also argues sunflowers could be a fit for land not suitable for corn or soybeans. "Some farmers struggle growing soybeans and other crops because there are so many issues. Why waste your money on planting corn, or where iron chlorosis is too hard on the soybeans? When sunflowers are a better fit," says Keller.

Although, at first, Keller planted sunflowers to diversify his farm, he soon discovered sunflowers can take the heat, while other crops will take a hit when drought conditions prevail, and sunflowers can mine nutrients as well as moisture from deeper in the soil profile.

Furthermore, Keller says he's watched other crop markets decline and prices fall, whereas sunflowers are holding their own. Also, because input costs are generally much lower than other crops, sunflower offers a good return on investment, he adds.

These last few years, Keller's mission has been to increase the number of farmers growing sunflowers in his region of the Red River Valley, and to help them discover the ease and profitability of growing the crop. "Most farmers in my area laughed about growing sunflowers. Now I get more and more guys asking how to grow them – I tell them it's not hard," says Keller.

As the owner of Keller Ag Service, a seed dealer, many turn to Keller for advice on sunflower agronomics, markets, contracts, and prices. At the time of this interview Keller's oilseed crop looked excellent, and if the weather cooperated, could be another record-breaking harvest.

"I've had my rows closed for two weeks already. I planted at 22 inches and I've never seen it that thick, that fast," he says.

Keller is growing 235 acres of oil-type sunflowers under contract for the NuSun® market. He's also hoping for a better return on investment by using variable-rate technology for seeding and crop inputs across his fields.

Keller often fields questions about harvesting sunflowers. He offers the following tips for those growers just starting out as well as those looking to maximize yields.

Setting Smarts

At the end of the day, and no matter the brand, a successful harvest really comes down to farmers knowing how to set their combine harvesters for sunflowers.

Keller says producers must put the work in to determine the settings that provide the best results. This is often trial and error, he warns. Input from other sunflower growers in the region as well as advice from seed dealers is also advantageous, says Keller. "Be on top of your settings. That's the biggest thing. The combines will do it, but you've got to put a little time and effort in."

More Wind?

One setting that's important to get right is air speed. "You need a lot of wind or high fan, which is hard to comprehend because you think sunflowers are light, but if you don't [have enough wind] you get too much trash," Keller says. "Higher [fan] speeds and more wind actually do a better job mainly because, to conserve time, most farmers run their corn and soybean sieves when they harvest their sunflowers," he says.

"Farmers aren't going to stop and redo their sieves, and that makes a bigger gap in the back for corn and 'beans to fall through. If they're doing oil sunflowers versus confection, that creates a bigger space, so you need more wind in the back in order to get more debris out the back," he says.

This pays off big at the processor, Keller says. "We're talking a lot of money. Sunflowers are always higher in foreign material, no matter what, versus other crops. If you can be under 10 percent and down to five, you're doing a darned good job," he says.

Desiccate for Timing Convenience

Keller recommends desiccating sunflowers, which takes all the worry out of drying the crop as well as harvest timing. "You can pick your [harvesting] window easier," he says.

Harvest is busy for growers, says Keller, as they are sometimes harvesting corn, soybeans and sugarbeets within a short time frame, and often in the same month. Finding an opportunity to harvest sunflowers can be challenging.

"If someone asks me 'when do I combine flowers?' I tell them you can pick that window when you desiccate, to work around some of the other crops – that helps a lot," he says.

Header Investment

Having a decent header for the combine makes a big difference to the bottom line, says Keller. "You'll have less header loss if you don't run these all-crop heads." Last year, Keller invested in a specific sunflower head instead of using a straight head and bolting pans on it, or putting an after-market kit on a grain head.

"If you're going to raise enough sunflowers, invest in a sunflower header if you have the acres to justify it. You will have less header loss. If you raise enough acres of soybeans, you buy a draper head, if you're going to raise 'flowers, invest in a good sunflower header."

A Man and His Machine

Mark Keller trusts his combine's twin rotor design to do the best job at harvest. "The two rotors offer twice the cleaning capacity and does a gentler job on the crop with less foreign material than combines with one rotor," he says. "The twin rotor design is important. When I custom combine for growers, they actually see the foreign material drop."

Legend SEEDS

OFFICIAL NUSEED SUNFLOWER DISTRIBUTOR

PARTNERED FOR YOUR SUCCESS.

TOP PERFORMING SUNFLOWERS FOR EVERY MARKET

As a producer, we know you are looking to get the most return on your investment. That's why Legend Seeds partnered with Nuseed in 2016 to become the exclusive distributor of Nuseed sunflowers in the United States.

"Our focus is on delivering the best genetics and outstanding service to our customers. Our partnership with Nuseed continues to help us meet that goal for our customers."

TIM BRATLAND - LEGEND SEEDS PRESIDENT

HOW DOES THIS BENEFIT YOU?

1. You'll have an expanded portfolio of Nuseed branded sunflowers and the extensive portfolio of Legend Seeds' corn, soybeans, and alfalfa.
2. Growers benefit from a full lineup of locally selected products with the best genetics and latest trait technologies.
3. Our dealers and growers have access to a full array of agronomic services through Legend Seeds' exclusive Farmacology® offerings.

TO FIND A DEALER NEAR YOU OR TO LEARN MORE ABOUT WHAT LEGEND AND NUSEED HAVE TO OFFER YOUR OPERATION, CONTACT YOUR LOCAL LEGEND SEEDS REPRESENTATIVE:

Dan Schilling
Wessington, SD
605-354-1809

Colby Brink
Pierre, SD
605-295-2745

Dave Olson
Bloomfield, NE
605-660-5558

Matthew Petersen
Centerville, SD
605-359-7602

Maria Harvey
Bismarck, ND
701-640-8445

Dan Schmit
Fairmount, ND
701-640-4568

Jared Swiontek
Fergus Falls, MN
218-770-5480

Reed Erickson
Fargo, ND
701-361-4911

Mike Schaefer
Des Lacs, ND
701-818-2375

Kelly Clarey
Wahpeton, ND
701-640-2338

Kyle Mueller
Faulkton, SD
605-824-4796

Todd Lauseng
Watertown, SD
605-880-8608

MARKET OUTLOOK 2019

Early signals indicate a good year for sunflower markets.

John Sandbakken, National Sunflower Association's executive director.

The United States Department of Agriculture's June 29 acreage report indicates the area planted to sunflower in 2018 is 1.46 million acres, up four percent from 2017, and harvested area is expected to increase four percent to 1.41 million acres from the previous year, says John Sandbakken, the National Sunflower Association's executive director.

Planted acreage of oil-type varieties is up eight percent at 1.31 million acres, and harvested area is also expected to increase eight percent to 1.27 million acres, from last year.

There is some carryover in stocks this year, says Sandbakken, however, the increase in planted acres is minimal, creating an advantageous position for sunflower in the marketplace.

"Oils were only up eight percent in the U.S., that's not a lot given the demand. I think it shapes up 2019 to be a very attractive year for sunflower because we're going to come in with minimal stocks, and we're going to need acres – we just don't have that carryover to count on," says Sandbakken. "It's going to make processors aggressive."

Mark Jackson, Nuseed's general manager for North America, also foresees opportunities for oilseed producers and predicts even higher acres for oil-type varieties. "It's wonderful to see oil sunflower acres bounce back this year," he says. "I think acres are going to be a little higher than USDA's estimate of eight percent growth." At time of interview Jackson also anticipates a decent production year for sunflowers. "We have a long way to go before the season is over, but from what I've seen so far, we're off to a great start."

According to Jackson, certain circumstances are helping boost acreage of oil-type varieties. "There are many factors helping push acres up – from late snowfalls and a lingering winter in the Dakotas, to dwindling stocks and low commodity prices. Sunflowers are set to provide growers with some of the best returns of the year," he says.

Planted acreage of non-oil varieties is down 21 percent from 2017 at 147,000 acres. Harvested area is also expected to decrease 21 percent to 136,700 acres. In addition to large stocks, a strong U.S. dollar continues to affect confection exports, says Sandbakken.

"The confection industry has traditionally exported about 50 percent of the product we

"FOR SUSTAINABLE GROWTH, IT'S ESSENTIAL THAT SUNFLOWER TAKES A GREATER SHARE OF AMERICA'S DINNER TABLE."

Mark Jackson, Nuseed's general manager for North America.

produce in the United States. With the strong dollar, it has made it difficult in some markets to continue a strong export pace because our product is more expensive right now," he says.

Increasing competition from Chinese and European processors plus changing export trends are also constraining non-oil sunflower markets, says Jackson. "Compounding the issue is the shift in export market demand for larger confection grain, which is limiting the opportunities our traditional in-shell confections have in the global market," he adds.

However, new varieties in the pipeline will help meet the demand for larger confection seeds. "To help relieve some of the competitive pressure, Nuseed is working with U.S. processors to commercialize two new products specifically designed for the export market. We are excited about the opportunity to help our U.S. processors and growers gain back some market share they've lost," says Jackson.

And diminishing stocks and decreased acres mean confection producers are still well placed for 2019.

"If we have demand the rest of this market year and into next year, given the decrease in acres, it's going to be the same situation as oil sunflower. The inventory will be low and they're going to have to refill that," says Sandbakken. "Both segments of the industry – oils and confections – are going to be set up to rally well in 2019."

The key to oilseed prices going forward, says Sandbakken, is demand and weather. For example, long-term tariffs imposed on U.S. soybeans entering China will affect oilseed prices.

"If the tariffs are in place for any amount of time, it's going to put a real drag on soybean prices," says Sandbakken.

Furthermore, the United States exports about one-third of its soybeans to China, and if these tariffs are in place and the products don't move, the industry must find a home for them. "That will put pressure on markets, especially the soybean market, and that sometimes spills over onto the other oilseed markets. Until we get a little further down the road that's hard to know," says Sandbakken.

Environmental factors are more likely to play a role on sunflower prices. "We are tied to the soybean oil contract to some extent. However, it's going to have an indirect effect. What's going to play more into sunflower prices is the growing season we're going to have this year, given the number of acres we have," he says.

To really change the dynamics of the North American sunflower crop, and create sustainable growth, Jackson suggests there is more opportunity to grow demand in the health-conscious consumer market.

"Sunflower oil has natural health benefits including low saturated fats and high heart-healthy monounsaturated fats, combined with great natural stability for cooking. Sunflower oil is an easy, non-GM alternative to traditional commodity oils," says Jackson.

"For sustainable growth, it's essential that sunflower takes a greater share of America's dinner table," he says.

QUALITY ASSURANCE AT HARVEST

Stringent protocols mean high-quality seed for sunflower growers.

Quality assurance is the cornerstone of Nuseed's business, says Garrett Driver, the company's North American supply chain manager. "Not only are we offering the right genetics for a given market and geographic area, but we're also ensuring the product quality in the bag is reliably consistent for growers, year after year," he says.

From planting to putting seed into growers' hands, Driver analyzes each production step along the way to create high-quality sunflower seed.

"Ensuring quality is a big part of what we do," he says. "It's also the most complicated part of what we do, since we're dealing with a living organism: it's seed, it's alive. Our job is to manage that life from the field to the farmer who plants that seed."

Seed Quality and Harvest

To produce high-quality seed, field inspections are performed throughout the entire growing season. However, seed quality is most affected by the field's physical conditions at harvest, says Driver. At this time, the quality assurance team makes its final inspections, which determines if a sunflower field meets Nuseed's specifications.

Fields are inspected for foreign matter, weeds or other undesirable pests that could get into clean grain or seed samples. "At that point, we're monitoring the physical condition of the seed in the fields. That final check or inspection for a field's quality at harvest is essentially our go or no-go signal for taking the field from a seed grower," says Driver.

Nuseed's production team has little tolerance for weeds and other crop seeds. "As we get more valuable seed going into customers' hands, the last thing we want to have is any weed seeds going with that seed to customers' fields. The tolerance is always zero," he says.

Tolerance is also low for another physical impurity – damaged seed. "Not only do we have higher standards for overall physical purity, we also have higher standards for damaged seed. Those two things show the focus Nuseed has on providing quality seed to our customers," he says.

Harvesting the cleanest seed possible helps satisfy physical seed and genetic purity standards. "A seed crop must be true to type so the hybrid you're producing is the hybrid you're harvesting," says Driver.

The seed moisture content level at harvest also affects quality and is monitored to ensure the seed is "coming off with high germination and better value for our customers," he says.

Kernel Clean

If all of those factors measure up to Nuseed's standards, a seed grower is given the go-ahead to combine the field. However, before they enter sunflower fields, combines must be made "kernel clean."

Kernel clean means no other sunflower or crop seeds are present in the combine or header. "It's an important part of our harvest protocol. It's also something that takes significant time," he says.

Before a new sunflower variety is harvested, the combine must be thoroughly cleaned, including the removal of panels, and in some cases, unbolting doors and sheet metal siding for cleanout and inspection purposes.

In addition, the trucks and trailers moving between growers' fields and Nuseed's receiving plant must be kernel clean. Trailers and trucks will be cleaned by hand using air or a vacuum to remove any physical impurity prior to seed transport. "We do that for every field and every load," says Driver.

For growers, these stringent protocols are significant. "They're getting cleaner seed, they're getting purer seed, and they're not seeing as much inert matter in that bag when they open it up," he says.

In fact, one harvested lot of seed may be tested at least nine times before it ends up in a Nuseed bag, says Driver.

"We are handling the seed numerous times throughout the process, including repeatedly analyzing it to determine if it does or doesn't meet our specifications," he says. "It really supports the confidence we have in our process, which puts high-quality Nuseed product into a bag every time. [Quality assurance] is not something we look at in the end. We look at it from the beginning, and monitor it all the way through."

THERE'S AN APP FOR THAT

Make mobile work harder for you.

Peter Gredig
Peter Gredig is a corn, soybean and wheat producer based near London, Ontario. As a partner in AgNition Inc., Peter is involved in developing mobile products and strategies for agri-business, producer organizations and for farmers across North America.

peter.gredig@agnition.ca

You are walking around with a computing and communication powerhouse in your pocket, but are you maximizing your smartphone's potential? Get your money's worth from that expensive device and take it to the next level with these mobile apps and tools.

When I started talking with fellow farmers eight years ago about the power of smartphones to save time, money, and make them more organized and efficient, there were only about a dozen true ag apps.

Today, there are literally hundreds of ag and mainstream apps to consider and it's up to you to find the apps, sites and functionalities inherent in smartphones that work for you and your farm. It takes some time and effort, but the cumulative payoff is significant.

When searching for new apps use Google, rather than the search function at the app stores, and be as specific as you can with your search. Also, think about non-ag apps that you can make work for your situation. There are real estate apps that you can use to calculate field area, traveling sales apps that you can use to keep track of custom work, clients and invoicing, and timesheet apps that may be helpful for employee management. Chances are there is an app of some kind that will address your needs.

To get started, there are categories of apps, services, built in functionalities and software that should be considered and revisited on a regular basis. For sunflower specific apps and mobile sites, see the box below. Start with these categories and keep going!

1. Marketing: The best case scenario is to have a crop price app or mobile site that provides local bids and more importantly, allows you to enter alert values so that if a price objective is reached, the app sends you a notification so you can pull the trigger on a sale. I also use an app called Grain Storage Manager to keep track of on-farm storage inventories as loads come in and out.

2. Agronomy/Scouting: There are numerous apps to help growers identify weeds, diseases and insects. Trial and error is required to find the best fit. The Ag Phd Field Guide app is a good example.

There are numerous scouting apps that let you record what you see, pin drop (mark via GPS) where the problem is in the field and make notes. There are free and subscription-based options, some of which are linked to comprehensive desktop record keeping software. You can try Trimble's free version of Connected Farm™ Scout to get a feel for GPS enabled scouting apps.

3. Weather: The old joke here is that we all need three or four weather apps so we can keep checking them until we find one that tells us what you want to hear. An accurate forecast is great, but during the growing season a good radar app is even more valuable to help you make decisions around field work (spraying, seeding, harvesting, etc.). Animated radar apps let you see where the rain is, where it's heading and how big/small the system is. I use the Intellicast mobile website (www.intellicast.com) and an app called Rain Alarm that lets me know if rain is imminent. Weather Underground lets you see connected weather station information in your area.

4. Record Keeping/Note Taking: There are a wide range of options here ranging from fully customized farm financial and production record keeping software with mobile capability, to simple generic and free note apps like Evernote®. It should be easy to keep track of what is happening on the farm day to day without having to visit the desktop in the office at the end of the day to transfer written notes into the computer. Check out FarmLogs, Sirrus and eCropScout for free trials.

The advantage of cloud-based apps is the ability to access records stored on the cloud from any connected device and you don't lose anything if you drive over your smartphone.

5. GPS and Mapping App: GPS enabled smartphones were not developed with farmers in mind but there are so many potential uses for growers. Step one is to get comfortable with Google Maps or Apple Maps (or others) so you know how to create and name a favorite location, use pin drops to record a problem area in a field, and get directions to the hydraulic pump repair shop in town that you are visiting for the first time. It's not an exaggeration to say that your smartphone can save your life, partly because it knows where you are. Just remember that your smartphone can only save you if you have it available. It should be with you when you leave the tractor or combine, not sitting in the cup holder. A personal safety app like Mandown App automates the alert process in an emergency.

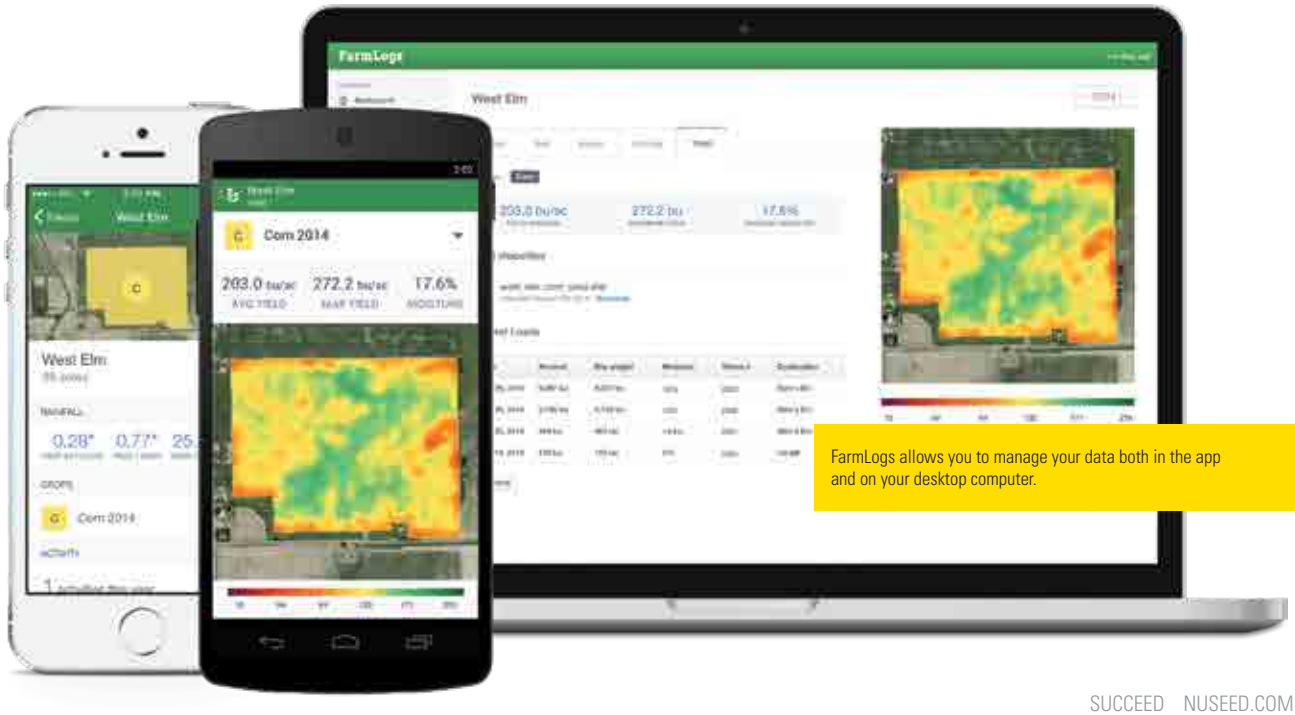
6. Communication/Community: Mobile technology lets us connect with our peers via social media platforms, literally creating a global virtual coffee shop. I follow progressive farmers, extension experts, agronomists and researchers on Twitter so that I know what they know and share in their experiences in real time. Collective intelligence can be a powerful thing when an unexpected pest or production issue arises through the growing season. Other social media platforms like Facebook and Instagram can work equally well. Follow smart people who will help you be a better farmer.

7. Utilities/Calculators: There are dozens of calculator apps to help with sprayer fills, unit conversions, field area, fertilizer blends, crop nutrient removal and more. Find utilities that make it easier to do common tasks on your operation. Smartphones are great at making complex math quick and easy. Try the TankMix Calculator and the nutrient removal calculator called PlantCalc from IPNI to get a feel for these easy to use number crunchers. Keep looking for more!

Lock and Load

Apps and sites for sunflower growers.

1. NDSU Pest Management App: Applies to sunflowers. Search at Google Play and Apple App store
2. ND Sunflower Nitrogen Calculator: (www.ndsu.edu/pubweb/soils/sunflower/)
3. Canadian National Sunflower Association: (www.canadasunflower.com/production/resources/) offers info on planter set-up, mildew assessment, and other production resources
4. Daily sunflower prices and other marketing resources are available via the National Sunflower Association at www.sunflowernsa.com/growers/marketing/
5. Under the Resources section at nuseed.com you can also access Confection Best Practices and Planting guides plus additional tools specific for sunflowers



FarmLogs allows you to manage your data both in the app and on your desktop computer.

EXCELLING IN THEIR FIELD

Shining the Spotlight on Sunflowers

As one of Nuseed's field sales leaders, Nick Tollefson is making it his business to raise the profile of sunflowers in his region. Tollefson says there's great potential for the crop.

"What drew me to sunflowers, especially in the Red River Valley, is everybody focuses on corn, soybeans and sugarbeets for the most part. There's big market potential for sunflowers," he says. "With corn and soybeans, the markets are down, commodities are down, but there's a niche market for sunflowers for growers who want to put in the work."

Growing up immersed in the soybean production world, and as a North Dakota State University graduate with a Bachelor of Science degree, majoring in crop and weed sciences, Tollefson feels at home in his new role. "My dad was the plant manager at Pioneer in Wahpeton. I got roped in when I was about 14, pushing a broom and running equipment," says Tollefson.

Tollefson returned to the plant as a production agronomist after completing his degree in 2012 until accepting his position at Nuseed in May this year.

Another focus area for Tollefson is building strong relationships. He's in place to support Legend Seeds, the exclusive distributor for Nuseed sunflowers in the U.S., their account managers, and their growers to succeed with sunflowers. "Establishing and maintaining those key relationships is a very important part of my position," he says.

In addition to strengthening the business of growing sunflowers, Tollefson helps Legend Seeds representatives and customers by answering agronomic questions. "If there are emergence issues or in-season crop problems, we are one of the few companies focused on sunflowers that are there to help growers achieve the best results possible."

Although he's enjoying all aspects of his new role, Tollefson says the job's biggest perk is interacting with the ag community. "What I love most about this job is the people I get to meet. The area I cover is the whole state of South Dakota, so I meet a pretty broad spectrum of individuals."

Nick Tollefson, Nuseed South Dakota field sales leader

Trygg Olson, Nuseed North Dakota field sales leader

Helping farmers put more profit in their pockets fuels his enthusiasm for the job. "What I've done my whole career is I've maintained a focus on areas where putting in a little extra work, whether it be production acres or sunflower acres, helps growers capture more revenue. And there's great potential for growers to make money on their farms if they plant sunflowers," he says.

Thriving in an Ever-Changing Environment

No two days are alike, says Trygg Olson, about his position as a field sales leader for Nuseed, which is exactly the way he likes it. Olson thrives on the variety of tasks his job provides him.

"I get up in the morning and I'm excited to get going. One day, you'll drive 600 miles to see a client, the next day you'll spend all day in the fields, and then maybe you'll have a day in the office to get caught up on paperwork."

Growing up on a farm in the Red River Valley of North Dakota, Olson discovered he wanted the challenge and diversity a career in agronomy offered. He's also no stranger to raising sunflowers.

"We grew sunflowers early on – back in the 1980s and early '90s. I've been around sunflowers most of my life."

After attending the University of Minnesota Crookston and earning a Bachelor of Science degree with a major in agronomy in 2000, Olson covered all crops as an agronomist for Barlow Grain and the Farmers Union Carrington, including sunflowers. "It was huge acres for sunflowers. We had sunflowers then like we have corn now," he says.

After Barlow Grain merged with Allied Companies, Olson continued work as an agronomist at Allied Agronomy until joining Nuseed in 2017. He says he's happy to see sunflower acres on the rise again after witnessing the crop's steady decline from 2008 to 2014.

After almost a year with Nuseed, Olson says he's fully committed to the Legend Seeds dealers he works with and their grower customers. "We work side by side as much as we can. If the Legend account managers have issues, or they need our assistance, we're out there supporting them," he says. "We do what it takes to help them do what they must to meet their goals."

This includes examining crops and walking the fields and other agronomic assistance, says Olson. "We will be out there for Legend's plot days and field tours, or if they have issues with planting or through the growing season."

The partnership between Nuseed and Legend Seeds is a winning combination he says. "We've got the seed and the background on the technology. On the Legend side, they're very professional and good at what they do. It's a really good fit for both companies and growers," he says.

This is reflected in Olson's experience this past year. "It's been an excellent first year, and really fun. It's a great company to work for. The products and the people are outstanding – it's the whole package," he says.

MORE TROPHIES PER ACRE

A season of success starts with the right team.

Step up to the plate with Nuseed and experience total dedication to sunflower success. Whether you grow for oil, conoil or confection, we bring our best game all season long. Contact your Legend Seeds dealer to book your sunflower seed.

NUSEED®

nuseed.com

OFFICIAL NUSEED DISTRIBUTOR

Legend SEEDS

Your Regional Seed Leader

LegendSeeds.net

800.678.3346

HARVEST CHECKLIST

Before you start up the combine this fall, review this checklist as a quick reminder of best practices to attain optimal yields and reduce field losses at sunflower harvest.

1. Desiccants

☐ Get the crop off early by applying a desiccant. Natural sunflower dry down can be slow and uneven. By speeding up the dry down process, chemical desiccants decrease crop losses due to inclement weather, lodging, disease and bird depredation.

☐ Desiccants can be applied to the crop once plants have reached physiological maturity. At this point, seed moisture is about 35 percent, the backs of the heads turn yellow, and bracts turn brown in color (R-9 stage). Applying desiccant before this stage may reduce test weight and seed quality.

☐ Remember to check local regulations for approved desiccants.

2. Prepare Harvest Equipment

☐ Minor adjustments to combines can make a big difference at harvest. Combine speed should average between three to five miles per hour.

☐ Cylinder speeds should range from 300 to 500 revolutions per minute.

☐ Concave settings should be open.

☐ Use the slowest cylinder speed with the largest concave opening to reduce seed damage.

☐ Adjust the fan to accommodate sunflower seeds, which are lighter than other grains, so that air flow keeps only trash floating across the sieve.

3. Seed Moisture

☐ Sunflowers are ready for harvest when the backs of the heads turn from yellow to brown in color.

☐ Combine when seed moisture reaches 20 percent or less – experts recommend 12 to 15 percent. Seed moisture can be brought under 10 percent by drying for storage.

4. Drying

☐ All grain-drying fundamentals apply, no matter what method is being used to dry the grain.

☐ Check drying rates as sunflowers dry quicker than other grain because there are fewer pounds of water to be removed.

☐ When drying in a high-temperature dryer, constant monitoring is needed as the chaff, lint and other debris associated with sunflowers are highly combustible.

5. Storage

☐ Typically, confection and non-oil seeds can be stored short term at 10 percent moisture content, but for long-term storage growers must dry grain to nine percent.

☐ Oilseeds (at 40 percent oil content) should be stored at eight percent moisture, however that value is determined by the oil content. Oilseeds with higher oil contents (closer to 45 percent) should be stored between seven and eight percent.

☐ In storage, monitor grain every couple of weeks when outside temperatures are warm and every two to four weeks in the winter months.

Sources:

- *Nuseed Sunflower Field Guide (www.nuseed.com/wp-content/uploads/2017/05/2015-Sunflower-Field-Guide-LoRes-for-Website.pdf)*
- *Nuseed Confection Sunflower: Best Practices Guide (www.nuseed.com/wp-content/uploads/2017/05/5-1-17-NuseedBestPracticesGuide_US_online_version.pdf)*
- *North Dakota State University Sunflower Production Guide (www.ag.ndsu.edu/publications/landing-pages/crops/sunflower-production-a-1331)*

MARK YOUR CALENDARS

2018 SUNFLOWER UNIVERSITY

Reserve your spot at the 2018 Sunflower U, hosted by Nuseed® and Legend™ Seeds. Learn the latest in sunflower agronomics and marketing from industry experts during this full day workshop. RSVP now and start preparing for sunflower success in 2019!

Tuesday, Dec. 11, 2018
Ramkota Hotel & Conference Center
800 S 3rd St • Bismarck, ND

Thursday, Dec. 13, 2018
Clubhouse Hotel & Suites
808 W Sioux Ave • Pierre, SD

Don't miss out – register today at legendseeds.net/nuseed-sunflower-u

nuseed®

nuseed.com

OFFICIAL NUSEED DISTRIBUTOR

Legend™ SEEDS

Your Regional Seed Leader

LegendSeeds.net

800.678.3346

MEET THE NUSEED 2019 ALL-STAR LINEUP

We've added three new high oleic oil hybrids to our roster.

Nuseed® is proud to introduce our newest players – the adaptable N4H302 E, the strong N4H470 CL Plus and the high-yielding N4H521 CL. Developed in the USA, our new high oleic oil hybrids deliver on high-performance agronomics, yield and top-end oil content.

Learn more about Nuseed hybrids at nuseed.com.

Visit www.legendseeds.net and contact your Legend™ Seeds dealer to recruit one of our top performers for your high-yielding season.

nuSEED®

nuseed.com