

Spring 2019

Cultivating soil, knowledge & connections

FEATURED PRODUCTS



by **Jake Hansen**
Product Manager/Agronomist



Conventional Corn

Viking 44-98: 98-Day RM

- Proven performance in 2 years of yield trials and on-farm yields.
- Strong stalks and a large root system allow for good drought tolerance and excellent standability.
- 11 bushel advantage over Dekalb DKC46-36 and 4.5 bushel advantage over Pioneer P0157 in two years of yield trials.
- 212.9 Bu/A average yield in 9 trials (2018)*

Viking 40-03: 103-Day RM

- Wet ground? Dryland? 40-03 has outstanding stress tolerance to perform on a wide range of environments and soil types.
- Excellent stalk and root strength keep this hybrid standing through harvest.
- Good ear-flex and heavy test weight make this hybrid an excellent choice for any farm.



INSIDE

- Growing Better Oats
- Indigo: Seed Treatment, Markets, and More!
- Alfalfa Scouting
- Palmer Amaranth

Conventional Soybeans

Viking 1518N: 1.5 RM

- A mid-group 1 soybean that has the yields and agronomics to stand up to any traited soybean in its class.
- Good southern movement makes this ideal as an early option or for late planting.
- With strong emergence and overall agronomics, 1518N is a strong candidate for any farm operation.

Viking 2155N: 2.1 RM

- Conventional soybeans can't yield? Think again. 2155N can yield with or above the best traited soybeans in the industry. 3 bushels better than NK S20-J5X and 4 bushels over Pioneer P22T24X in 2018 trials.
- 1st Place Corwith, IA Early - Iowa Crop Performance Tests*
- Consistent performance across locations year-after-year.
- Strong agronomics and disease resistance makes 2155N a very high-yielding, defensive soybean that is an excellent choice.

* See all of our Viking trial data at: www.alseed.com/trial-data2018

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GROWING BETTER OATS



by Matt Leavitt
Transitional Farming
Lead

Oats are a valuable rotational crop for producers in the Upper Midwest. They are widely adapted across soil types and geography, can be planted early, protect the soil from erosion, build soil structure, break pest and disease cycles, and have established markets.

Pre-Planting Decisions

- Rotate crops and do not follow other cereal grains.
- If possible, avoid following corn.
- Select disease-resistant varieties (esp. for crown rust & BYDV).
- 100 bu/A oats requires 73 lbs of available N, 27 lbs of P205, 18 lbs of K20, and 7 lbs of sulfur. Too much N increases lodging and disease while delaying maturity.
- Check the rotational restrictions on last year's herbicides.

Planting Tips

- Use clean, certified seed with a good germination test.
- Avoid fields with weed problems, especially wild oats, thistle, and volunteer wheat.
- Plant early to maximize yields & test weight, and for better weed control. (Mid-March for Iowa, mid-April north).
- Plant 80 - 110 lbs (~3 bushels) per acre, 1" - 1½" deep.
- Reduce to 1½ - 2½ bushels if underseeding with alfalfa.
- Plant in narrow rows of 6" - 7" to outcompete weeds.

Management & Harvest

- Consider herbicides for foxtail & broadleaves during lag phase of growth (weeds less than 2"). Fungicide may also be needed.
- Swath when least mature kernels change from green to cream and panicle has turned yellow.

CHOOSING THE RIGHT OAT VARIETY

Choosing the right variety for your farm, soil type, and rotation depends on your – or your buyer's – end use.

Key Characteristics for End Use

Choose oat varieties for a specific end use to determine the key characteristics you need:

- **Yield stability**
- **Maturity**
- **Test weight**
- **Plant height**
- **Standability**
- **Disease resistance** (*esp. to crown rust*)

Oats for Underseeding Alfalfa & Forage

Historically, many farmers in the Upper Midwest planted oats with a new alfalfa seeding. More commonly now, producers with livestock may underseed alfalfa with oats.

Best Oats for Underseeding Alfalfa/Grasses

(*Early, Short, Good Standing*):

- **Reins**
- **Sumo**
- **Hayden**

Best Oats for Forage

(*Tall, Leafy, Late*):

- **Everleaf 126**
- **Deon**
- **Forage Plus**

Oats for Animal Feed

Producers with livestock understand the value of oats for feed. Oats for animal feed is versatile and forgiving, because oats can be included in rations at various maturity stages and quality levels.

Best Oats for Animal Feed

(*High Yield, Good Crown Rust Resistance*):

- **Deon**
- **Hayden**
- **Reins**

Oats for Consumer/ Milling Markets

For row crop farmers with an available market for food-grade oats, quality is as important as quantity. Buyers making rolled oats want to remove hulls without breaking the groats. Millers making flour look for plump, heavy grain, among other characteristics.

Best Oats to Raise for the Milling/ Food-Grade Market

(*High Test Weight, High Yield, Good Crown Rust Resistance*):

- **Deon**
- **Hayden**
- **Reins**
- **Sumo**

To see an abbreviated list of oat buyers, please refer to the back page of this newsletter.

Albert Lea Seed Partners with Indigo!

Albert Lea Seed is now a preferred provider of Indigo's microbial treatment on Viking and Northstar branded seed varieties and hybrids. Seed treated with Indigo's microbial treatment that is sold through Albert Lea will be eligible for Indigo Certified Crops, a program through which Indigo partners with growers throughout the season to deliver a higher yield potential and higher crop prices.

Indigo® Microbial Technology

Indigo's microbial treatment is based on the study of plant microbiomes. Like humans, plants have a symbiotic relationship with a community of microbes that helps them thrive under stress. Indigo studies plants living in stressed environments to identify the microbes that help them prosper. Through this research, Indigo develops proprietary microbial seed treatments that improves crops' yields

Indigo recently released 2018 corn harvest data from over 48,000 acres contracted with Indigo.* Nationwide, Indigo's grower partners saw an average yield increase of 10.1 bushels per acre when compared to neighboring fields, translating to a 5.5% median uplift.

Indigo's trials also showed yield improvements of seed treated with Indigo® Microbial Technology of 9% in soybeans and 13% in wheat.

Indigo Certified Crops increase grower profitability by offering:

- **Increased yield potential with Indigo's proprietary microbial treatment**
- **Free data-driven agronomic services**
- **Guaranteed premium paid for each bushel of grain sold through Indigo Marketplace™**

Indigo Certified Agronomist™

Throughout the season, growers will have access to an Indigo Certified Agronomist™ at no additional charge to provide agronomic advice and insights. Indigo agronomists will visit grower farms throughout the season to assist from pre-planting through post-harvest. They will also collect data on grower farms so they can deliver advanced, data-based recommendations. If growers sign up at least 300 acres combined across corn, soybeans, and wheat, Indigo will provide an Indigo Certified Agronomist™ to growers at no additional cost. If growers already have an agronomist, Indigo will train and certify that agronomist and help cover their cost.

* The 2018 data represents comparisons across commercial acres encompassing 122 counties and 15 states. Leveraging satellite technology, data was gathered on more than 2,100 fields across the country. For the analysis, Indigo controlled for weather and land factors impacting specific regions and agriculture practices implemented by different growers.



Indigo Marketplace™

Indigo Marketplace is an easy-to-use, online portal to view the best bids and offers to buy and sell grain. The value of the grain inventory and bids submitted on the platform are both over \$10 billion. If growers choose to use Indigo Marketplace, they can either accept a bid already present or bring a buyer to the platform and then accept their bid. In both cases, Indigo will provide an additional premium. Growers will receive the following premiums if they sell their Indigo Certified Crops through Indigo Marketplace:

- Viking Conventional Non-GMO or Northstar GMO corn: 10¢ / bushel
- Viking Conventional Non-GMO or Northstar GMO soybeans: 10¢ / bushel
- Conventional wheat: 5¢ / bushel

Indigo also offers Indigo Transport™, a hassle-free hauling service for both Marketplace and non-Marketplace growers. Growers can choose Indigo Transport for the reliable pick-up and delivery of their grain to any buyer regardless of distance, season, or geography.

There's still time to order seed for 2019. We need 10 days to allow time for the seed treatment application.

Contact Jake Hanson or Brian White at Albert Lea Seed for variety and hybrid selection.

Contact Justin Wrage (jwrage@indigoag.com) at Indigo for more information on the Indigo Certified Crop offer.



EVALUATING ALFALFA

The Whys and Hows



Victoria Kemmits, Sales & Operations Specialist

This winter has not been kind and alfalfa stands are likely to have some damage. Damage is most likely in older stands, areas of low pH, K and S levels and 2018 seedings. Many new seedings last year in high rainfall areas were already under stress going into winter. Rains in December and bitter cold followed by freeze-thaw cycles in January triggered frost heaving and ice-sheeting, which are detrimental to alfalfa health. Assessing that damage, and deciding how to remedy it, will be crucial in making the most of your hay harvest this year.

Assessing Your Stand

There are two major issues to consider when evaluating your alfalfa stand this spring:

1. **Plant viability:** *Is it dead or alive?*
2. **Plant vigor:** *Is it likely to produce a profitable yield this growing season?*

Plant Viability

Plant viability can be determined as soon as the ground begins thawing. Dig a sampling of plants throughout your field and inspect the outer surface of the roots as well as cutting through them to analyze the interior tissue.

A completely healthy alfalfa plant should have a large crown with symmetrical growth, and a large taproot. The root should be a white or off-white color with no discoloration, and the bark should not flake off easily when handled. The stems should be springy and have bright green leaves with no yellowing or browning.

Plants that have been damaged slightly may have a little browning at the crown and slight yellowing of the root but will still grow well. Plants that are severely damaged will have dead crowns and yellow-brown, sometimes hollow and spongy roots. If the great majority of your alfalfa plants are dead, your decision is straightforward. Stands with some damaged and dead plants need further evaluation.



Alfalfa stand with winter damage. Source: Kim Cassida, MSU Extension

Plant Vigor

Don't fire up the tractor too soon and work up a stand that may be viable. The final decision to keep your stand or not should be based on stem counts after green-up. When stems reach minimum cutting height (2 inches to 4 inches), count stems per square foot to assess plant vigor and potential yield. You can use a 17-inch by 17-inch square, or a hoop/ring 19 inches in diameter. Either of these contains two square feet.

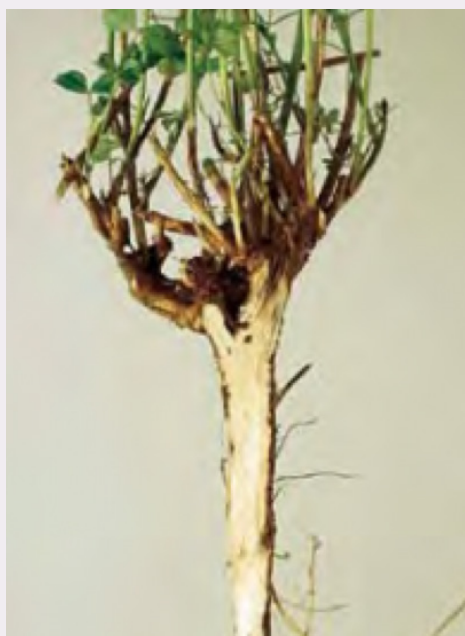
Walk your fields in a random pattern, toss your square or ring in areas of the field representative of your field, then count the stems inside your frame. When counting stems, only count stems from crowns that appear healthy enough to produce all season long.

Stems that are small, spindly, or off-color should not be counted. Count only those taller than two inches: shorter stems won't grow as fast and won't contribute to your yield as much as larger ones growing in the same space.

What Should a Healthy Alfalfa Plant Look Like?

A completely healthy alfalfa plant should have these characteristics:

- Large crown with symmetrical growth
- Large taproot, white or off-white with no discoloration
- Bark should not flake off easily when handled
- Stems should be springy and have bright green leaves with no yellowing or browning



Healthy alfalfa plant: no discoloration.
Source: Dan Undersander, University of Wisconsin



Severely damaged alfalfa plant: 50% or more discoloration. Source: Dan Undersander, University of Wisconsin

Divide your stem counts by two for the number of stems per square foot count. This will give you a fair estimate of your entire field

Stand Criteria

- If you count **55 or more stems per square foot**, your stand is in good shape, and you can expect normal yields for the age of the stand.
- If you find a range of **40 to 55 stems per square foot**, then you have some damage and yield will be likely be reduced, though not severely.
- **Fewer than 40 stems per square foot** means a sizable portion of the alfalfa plants have been affected, and yield will be significantly impacted. You should take action to make this hay stand profitable in 2019.

Taking Action

Even with fewer than 40 alfalfa stems per square foot, you do have options to make the most of your existing stand in 2019

If you seeded alfalfa in 2018, you may consider re-seeding alfalfa directly into the existing plot, but there is some risk. Although many farmers have reported successfully interseeding alfalfa into the previous year's seeding, avoid planting into older alfalfa stands. Alfalfa is naturally self-allelopathic, or autotoxic, exuding chemicals from its roots that create a toxic environment for new alfalfa seedlings. The longer a stand has been established, the more toxicity exists in the soil.

It is possible to drill in a grass mix to add tonnage and reduce weed pressure while still benefiting from the high nutritional value of the alfalfa. Interseeding with another legume, such as red clover, is another option that can produce hay comparable to straight alfalfa if harvested at the proper time.

Alfalfa Assessment Resources

- "Assessing Alfalfa Stands"
Dan Undersander
<https://ipcm.wisc.edu/download/Assessing%20Alfalfa%20Stands%20for%20Winterkill.pdf>
- "Alfalfa Stand Assessment: Is this Stand Good Enough to Keep?"
Dan Undersander, Craig Grau, Dennis Cosgrove, Jerry Doll, and Neal Martin
http://forage.msu.edu/wp-content/uploads/2014/07/WI-A3620-IsThisAlfalfaStandGoodEnoughToKeep-Undersander-et-al_2011.pdf
- "Assessing Spring Alfalfa Stands and Managing Winter Injured Stands"
Syngenta
<http://www.premiercooperative.com/images/E0182501/AssessingAlfalfa1.pdf>
- "Working Through Winterkill"
John Goeser
<https://hayandforage.com/article-1949-working-through-winterkill.html>
- "Alfalfa Stand Assessment"
Scott Banks
http://www.omafr.gov.on.ca/english/crops/facts/info_alfalfa_stand00.htm
- "Seeding into and Existing Alfalfa Stand"
Rhonda Gildersleeve, Dan Undersander, and Tim Wood
<https://fyi.extension.wisc.edu/forage/seeding-into-an-existing-alfalfa-stand/>
- "Overseeding Alfalfa into Alfalfa: When It Works and When It Doesn't"
Rachel Long and Daniel H. Putnam
<https://ucanr.edu/blogs/blogcore/postdetail.cfm?postnum=22549>

Palmer Amaranth

Take a Proactive Approach to Management

“Do not let these plants go to seed.”

by Dr. Jeff Gunsolus
Extension Weed Scientist
University of Minnesota
gunso001@umn.edu

Palmer amaranth in Yellow Medicine County, Minnesota.

Early detection and eradication of Palmer amaranth will pay you dividends in reduced management costs. Differentiating Palmer amaranth from the other common amaranth species is challenging. However, because Palmer amaranth and tall waterhemp are biologically similar, you can approach this challenge with the weed management tactics that you would use for effective tall waterhemp control.

Steps to successful management of Palmer amaranth and tall waterhemp:

- **Identify and report Palmer amaranth to ensure proper management.**
- **Determine if they are herbicide-resistant.**
- **Prevent seed production.**
- **Use residual herbicides in both corn and soybean for effective control. This is essential.**

IDENTIFICATION AND REPORTING PROCESS FOR PALMER AMARANTH

Prevention of Palmer amaranth infestations is the goal of the partnership between the U of MN Extension, Minnesota Department of Agriculture and the farmer and crop consultant relationship.

Early detection and eradication of Palmer amaranth will reduce farmer management costs, help to determine primary means of seed movement and prevent the rapid spread of this challenging weed.

For More Information: See the U of MN Extension's post *Detecting and reporting Palmer amaranth in Minnesota: Timeliness is key outlines identification and reporting procedures.* (<http://blog-crop-news.extension.umn.edu/2018/10/detecting-and-reporting-palmer-amaranth.html>)

ARE THE PALMER AMARANTH PLANTS FOUND IN MINNESOTA EXPRESSING HERBICIDE RESISTANCE?

In the six counties where Palmer amaranth has been detected only plants from Jackson and Redwood counties tested positive for glyphosate resistance (Group 9). None of the populations tested positive

for PPO resistance (Group 14 – e.g. Flexstar and Cobra).

Tall waterhemp populations are more likely to express resistance to multiple herbicides. Figure 1 shows the results of PPO and glyphosate resistance testing for 86 plants from west central and southern Minnesota. The largest portion of tall waterhemp plants was resistant to both PPO and glyphosate herbicides (43 percent), reinforcing the idea that this is a serious and prevalent issue. In addition, the majority of tall waterhemp populations are historically resistant to group 2 herbicides (ALS – e.g. Pursuit).

Do not let these plants go to seed

PLANTS CAN ADAPT QUICKLY TO HERBICIDES

Palmer amaranth and tall waterhemp resistance to various groups of herbicides (e.g. glyphosate – group 9, Pursuit – group 2 and Flexstar – group 14) brings uncertainty about which herbicides will be most effective in any given field. Molecular tests for group 9 and 14 herbicides are readily available through the University of Illinois Plant Clinic for \$50 per sample.

POLLEN CAN TRANSFER HERBICIDE RESISTANCE TRAITS

Pollen from these weeds has been shown to transfer herbicide resistant traits to nearby plants of the same species. Therefore your weed management goals should not only focus on reducing

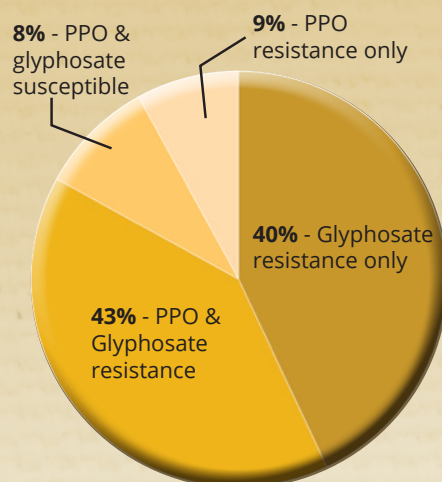


Figure 1. Percentage of 86 tall waterhemp plants resistant or sensitive to PPO and/or glyphosate herbicides.

weed impact on crop yield but just as importantly, to reduce weed seed production that increases the amount of seed in the soil seed bank.

PLANTS PRODUCE LARGE AMOUNTS OF SEED

Palmer amaranth and tall waterhemp are capable of producing hundreds of thousands of small seeds that can be easily transported via field equipment, water, wildlife and manure. Fortunately if Palmer amaranth and tall waterhemp seed production is eliminated, seed already present in the soil can be reduced to much more manageable levels in just four to five years. The bottom line is, annual herbicide costs can easily double and multiple passes through a field will be necessary once either of these weed species becomes established. Setting a goal of zero weed seed production for the next four to five years can reap long-term dividends. Prevention of establishment is still the best option.

Influence of weed germination, duration of emergence & growth rate on management tactics

USE EFFECTIVE SOIL-RESIDUAL HERBICIDES

Both Palmer amaranth and tall waterhemp have high germination rates and emergence patterns that extend well into July. Application of a full rate (based on label recommendations for soil texture and organic matter) of effective soil-residual herbicides applied preemergence is essential. Note that after Palmer amaranth emerges from the soil it has a rapid growth rate of up to 2 to 3 inches per day. This growth rate makes timely postemergence applications challenging, especially when application should occur before weeds reach 3 inches in height. The odds of effectively controlling either amaranth species by relying solely on postemergence weed control is not in your favor.

An effective preemergence residual herbicide program followed by an effective postemergence herbicide program is essential for control of both Palmer amaranth and tall waterhemp.

INCLUDE EFFECTIVE POSTEMERGENCE HERBICIDES IN YOUR PROGRAM

High germination rates create the potential for a large weed flush that can overwhelm even a highly effective preemergence or postemergence herbicide. A long duration of weed

emergence means that multiple passes in the field will be necessary to control fields with a high weed density. Including a soil-residual group 15 herbicide in your postemergence program can extend the control of late-emerging weeds and allow the crop to gain a competitive advantage. Fortunately these two species are effectively controlled by the same herbicides, unless the biotype is resistant to a particular class of herbicide (i.e. glyphosate resistance is common).

Addressing the uncertainties created by herbicide resistant weed populations

MANAGEMENT IN SOYBEAN

Regardless of which amaranth species is present, herbicide resistance limits your herbicide choices, especially in soybean. Cultural practices that shift the competitive advantage to the crop are fundamental. Early canopy closure is beneficial in limiting the impact of late-emerging weeds. In Minnesota, the impact of iron chlorosis (IDC) and soybean cyst nematodes (SCN) on slowing soybean canopy closure is significant as an open canopy results in more late-emerging weeds. Please consider IDC and SCN tolerance traits during your seed selection process.

Effective soil-applied residual herbicides are essential. Group 14 herbicides such as Valor and Fierce (Group 14 & 15) or Authority (Group 14)-based package mixtures (e.g. Authority MTZ (Group 14 & 5), Authority First and Sonic (Group 14 & 2) provide a good start to an effective management strategy. Group 15 herbicides (e.g. Dual II Magnum, Warrant, Outlook, or Zidua) also provide good initial control but may be best utilized as tank mixtures with the postemergence application (i.e. herbicide layering) for extended control late into the growing season – Got waterhemp? Layer residual herbicides to maintain control.

Soybean postemergence options are limiting due to herbicide resistance, inconsistency of control, and label restrictions. As glyphosate resistance becomes more prevalent Liberty (Group 10 for use only in LibertyLink soybeans) and Group 14/15 PPO herbicides (e.g. Authority Elite and Broadaxe XC) offer effective alternatives when applied to small, 3 inches or less, weeds. However, adjustments such as increased gallon per acre rate and finer spray droplets are necessary for complete coverage with these contact herbicides.

Xtendimax with VaporGrip™ Technology, Engenia and FeXapan Plus VaporGrip™ Technology (Group 4 – dicamba) applied

to Roundup Ready 2 Xtend soybean is best suited for early emerging weeds.

NOTE: In Minnesota, these three products can be applied only through June 20 and through June 30 in North Dakota. For effective control weeds must not exceed 3-inches in height at the time of application. The rapid growth rate and extended emergence period of Palmer amaranth and tall waterhemp creates challenges for the Xtendimax technology as you near the end of June, a timeframe when tall waterhemp and Palmer amaranth can have large flushes of emergence.

MANAGEMENT IN CORN

A sequential preemergence followed by postemergence herbicide approach is recommended for effective management of Palmer amaranth and tall waterhemp in corn. Effective preemergence herbicides are in the following groups:

- Group 4 (e.g. dicamba)
- Group 5 (e.g. atrazine)
- Group 14 (e.g. Sharpen)
- Group 15 (e.g. Dual, Harness/Surpass, Outlook, Zidua)
- Group 27 (Callisto, Balance)

Postemergence control of Palmer amaranth and tall waterhemp requires an effective herbicide to be applied to small (3-inches or shorter) plants and often requires an herbicide that provides residual control. Emerged Palmer amaranth control in corn can be achieved with a Group 27 herbicide plus atrazine. These herbicides include:

- Mesotrione (active ingredient in Callisto and Halex GT)
- Topramezone (Impact or Armezon)
- Tembotrione (Laudis, Capreno, DiFlexx Duo)

Including atrazine with the Group 27 herbicides requires these applications be applied before the corn is 12 inches tall.

Liberty is an option with Liberty Link corn. Dicamba products such as Status or DiFlexx will control small Palmer amaranth. Liberty and dicamba do not provide residual control and should be tank mixed with atrazine or a Group 15 product such as Dual, Harness/Surpass, or Zidua to provide residual control. Be sure to check the label for maximum corn size with any herbicide applied postemergence.

REPORTING PALMER AMARANTH

Arrest the Pest

www.mda.state.mn.us/plants-insects/arrest-pest
arrest.the.pest@state.mn.us
1-888-545-6684



1414 W. Main
Albert Lea, MN 56007



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@alseedorganics

www.alseed.com

See the Entire 2019 Farm Seed Line Up



Chances are, you've already been paging through the 2019 Albert Lea Seed Spring Catalog. In case you haven't received one, you can view it online at www.alseed.com or call us **(800) 352-5247** to ask for a mailed version.

Who's BUYING OATS?

Here's an abbreviated list of oat buyers in the Midwest to accompany our "Growing Better Oats" article on page 2. Call us for more information at (800) 352-5247.

FARMERS COOPERATIVE ASSOCIATION

Forest City, IA • (641) 585-2814

GAVILON

Joice, IA • (641) 588-3131

GRAIN MILLERS

(952) 829-8821, ext. 227

Call for all receiving locations.

LA CROSSE MILLING COMPANY

La Crosse, WI • (800) 441-5411

NORTHERN COUNTRY COOP

- Conger, MN • (507) 265-3231
- Oakland, MN • (507) 437-3219
- Le Roy, MN • (507) 324-5242

SCOULAR COMPANY

Omaha, NE • (402) 342-3500

Call for all receiving locations.

VIAFIELD

Rudd, IA • (641) 395-2271