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BeanGrower

Price Later Agreements: Know Your Risks

VOLUME 22, ISSUE 4 WWW.NORTHARVESTBEAN.ORG SUMMER 2016

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NORTHARVEST BeanGrower

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VOLUME 22 ISSUE 4

Stablizing Bean Acreage

Welcome to the Summer Issue of the *BeanGrower*! After a winter spent trying to decide what crops could possibly return a profit, I sense a little more optimism, thanks to some price recovery since the 2015 harvest. Some fairly substantial bean purchases by USDA, and increased export demand from Mexico helped support the pinto bean market, in particular.

I am proud to represent the Northarvest Bean Growers Association as your new president. It's a job I take seriously and hope to continue the excellent leadership we've always had. You get all the way from Appleton, Minnesota to Washburn, North Dakota and everybody's trying to come up with a common goal. I think that is unique to be that broad but yet have a common goal. With the leadership of Tim Courneya, that's why this works. We're all good people, but Tim makes us outstanding people.

Our biggest challenge is to stabilize dry bean acreage. Everybody with a flex head now is an edible bean grower but we can clobber this market, or short it, and it'd be nice to get something stable and to get the buyers to understand that the growers that are consistently in it year-in and year-out deserve a reward.

We have made progress with seed providers after bringing them to our board to discuss our concerns with seed size. We bought bean seed this year for the first time on a unit basis versus a pound. We invited them to the table and here we are three years later and it's been kind of a Godsend. We still get 2,000-pound totes but we know how many units are in them and they sell them by the unit

Research and promotion are other priorities, but I think it depends on the season and what we're up against. I will never discredit promotion but at the same time the growers, with their checkoff dollars, are telling us they want to know how to be better. On the promotion side, if we can get better at raising the crop, that means we're going to have more beans to sell so we have to keep promoting them, so I think the two go hand-in-hand.

Some highlights in this issue include NDSU's new slow darkening pinto bean variety, an update on Mexico, Brazil and Argentina, the risk associated with price-later agreements, and agronomic tips from NDSU Extension specialists.

Here's hoping for a successful 2016 harvest!

Sincerely,

Tom Kennelly, President
Northarvest Bean Growers Association

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BEAN BRIEFS

COUNCIL ELECTION RESULTS

Cavalier grower Roger Carignan has been reelected to serve on the North Dakota Dry Bean Council, representing District 1. This is Roger's second, three-year term. Elected from District 4 was Joshua Ihry from Hope, who will serve his first term. Ihry fills the position held by Jason Mewes of Colgate who had served three terms and was no longer eligible for reelection. Minnesota dry bean growers have reelected Norm Krause to another 3-year term on the Minnesota Dry Edible Bean Research and Promotion Council. Krause, who represents District 2, is the current treasurer of the Council.

DUCKWORTH TO GPC

Randy Duckworth is leaving the U.S. Dry Bean Council to go to the Global Pulse Confederation as Executive Director. Duckworth will remain with USDBC part-time through the end of the year. From 2003 to 2007, Duckworth was the Executive Director of the USDBC, and since then has served in a marketing role for the Council.

CHECKOFF FOR CUBA

As part of President Barack Obama's trip to Cuba, Agriculture Secretary Tom Vilsack announced several measures that will foster further collaboration between the U.S. and Cuban agriculture sectors. Vilsack announced that USDA will allow the 22 Research and Promotion programs and 18 Marketing Order organizations to conduct authorized research and information exchange activities with Cuba. Vilsack says the checkoff funds will not be able to be used to promote U.S. goods in Cuba, but such things as consumer surveys would be allowed. Vilsack also signed a Memorandum of Understanding with Cuba's Minister of Agriculture that establishes a framework for sharing ideas and research between the two countries. Additionally, although travel to Cuba has been expanded, there are still travel restrictions, as well as specific requirements that must be met before travel can be authorized by USDA.

The United States International Trade Commission has issued a report on the positive impact of complete repeal of the trade embargo with Cuba, for U.S. agricultural exports. The analysis says U.S. exports to Cuba of selected agricultural and manufactured products could increase in the medium term by about $1.4 billion from a base year of $401 million, to approximately $1.8 billion. If U.S. restrictions were removed and Cuban import barriers were reduced to the calculated average for developing countries, the ITC analysis suggests that U.S. exports could increase to $2.2 billion.

RECORD BEAN PRICES IN BRAZIL

According to Correpar consulting, dry bean prices have reached record-high levels in Brazil. Two factors have influenced this price rise: the decrease in planted area and weather problems caused by El Nino. The Brazilian government has authorized dry bean imports in order to reduce the price of beans in supermarkets. This will apply to beans originating in Argentina, Paraguay and Bolivia. According to Brazil Agriculture Minister Blairo Maggi,

the government is also considering importing beans from Mexico and China. Maggi says the import exemption should last a maximum of 90 days. At prices as high as 500-600 reais per 60-kilo bag, the dry bean price is equivalent to well over $1 a pound (U.S.) at the farm gate. U.S. Dry Bean Council international representative Randy Duckworth reports that Brazil's Institute of Pulses and Dry Edible Beans has made a formal request to the Brazilian government for an exemption to the 10 percent import tax on non-Mercosur-origin dry beans. The Institute estimates Brazil's dry bean crop at 2.7 million tons, about 700,000 tons below estimated consumption.

LESS BEANS

According to USDA's Prospective Plantings report, dry bean growers planned to plant 1.56 million acres this year, down 12 percent from last year. Six of the 11 estimating states expected a decrease in planted acres this year.

Dry bean planting intentions are down 10 percent from last year in North Dakota, and 18 percent in Minnesota and Nebraska. Michigan growers intend to cut dry bean acres 22 percent this year.

Acres of dry peas are up 24 percent, and farmers intend to plant 72 percent more lentils. North Dakota farmers surveyed in March said they intended to plant 66 percent more dry peas than last year, in fact, acres of dry peas in North Dakota, 640,000, are 50,000 more than the intended 590,000 acres of dry beans.

CANADIAN ACRES

Based on a survey of farmers in the last half of March, Statistics Canada estimates this year's acreage of dry beans at 230,000 acres, down 30,000 (12 percent) from last year. Acres of lentils are estimated to be up 30 percent this year in Canada, and dray peas are expected to increase 16 percent.

APP UPDATED

The NDSU Extension Pest Management App has recently been updated with new features including a banner, a pest identification help tool and calendar function. The banner is displayed on the home screen of the app and will highlight important pest and pesticide information throughout the growing season. The pest identification help tool allows for digital diagnosis of pests through photos submitted by app users. This will help with preliminary assessments of pests, but for a more complete diagnosis, individuals may

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be asked to submit samples to the NDSU Plant Diagnostic Lab. The calendar function provides information no upcoming Extension events.

COVER CROP GRANT

USDA has awarded a grant of nearly $2 million to North Dakota State University for cover crop research. The project is designed to demonstrate how cover crops can increase productivity for crops, while also improving soil health. NDSU is leading the project, but researchers from the University of Minnesota, Iowa State University, and the USDA Agricultural Research lab in Morris, Minnesota will also participate.

PULSE PLEDGE

According to the American Pulse Association's *Pulse Mill*, as of the end of March, the North American brand campaign for the International Year of Pulses, has been more successful than anyone anticipated. At the end of the first three months of this campaign, top-tier media hits, like Cooking Light's Summer & Boil, POPSugar, The San Francisco Chronicle, Today.com, etc., have brought the total reach of coverage directly related to campaign efforts to well over the one-billion reader mark. Bloggers and influencers also continue to generate quality recipes and content that is resonating with their fan bases, reaching more than 19 million consumers in March. Additionally, as a result of key media and influencer mentions, PulsePledge.com experienced very high traffic, with referrals directly tied to social media sites Two Peas & Their Pod, Local Milk, Today.com, and more. The 24,197 individuals that have committed to the 10-week challenge is nearly half-way toward the goal of 50,000 pulse pledgers.

The cumulative impressions figure for the year-to-date across all hashtags is now 288 million. According to the Global Pulse Confederation, there have been five million engagements across its social media accounts with the IYOP 2016 campaign since it began in November 2015.

AG APPROPRIATIONS

The House Appropriations Committee approved its version of the fiscal year 2017 Agriculture Appropriations bill in mid-April. The legislation would provide $21.3 billion in discretionary spending, which is $451 million below the fiscal year 2016 enacted level and $281 million below the President's budget request. Full funding for the Market Access Program (MAP) and Foreign Market Development (FMD) were left intact. The next step for the bill would be consideration by the full House of Representatives.

Over 50 Years of Dry Bean Production

Kennelly Farms at St. Thomas, North Dakota has had dry beans in the crop mix since 1965. Northarvest Bean Growers Association President Tom Kennelly, in partnership with his brother and his nephew are farming the land his grandparents farmed. The farm has expanded to just shy of 4,000 acres. "When I first started out working on the farm I was 10-years-old, so I've seen a lot of changes. It's a true family farm," says Kennelly. "My partner, and one of my best friends, is my brother Mark, and his son, Marcus, works with us."

Tom's dad started raising edible beans in 1965 with the Gormleys, and they've been in the rotation ever since, with the exception of one or two years. "It's always been the navies or pintos, we've never really gone one or the other," says Tom, "and we've dabbled in pinks and kidneys." The Kennelly's also raise sugarbeets, wheat and soybeans.

Asked about their production practices, Kennelly said they strive for good weed control. "I'm not going to say we're perfect but we try to be. The other thing we do with edible beans is plant them on last year's sugarbeet ground, using variable rate fertilizer with satellite imagery and I think we get a nice, even dry down which gets us maybe a day or two ahead of everybody threshing edible beans, and probably a little less dessicant use."

Dry Bean Grower Survey

The 2015 dry bean grower survey was the 26th annual survey of varieties grown, pest problems, pesticide use, and grower practices of the Northarvest Bean Growers Association. Research and Extension faculty at North Dakota State University and the directors of the Northarvest Bean Growers Association developed the survey form, which was mailed to all Northarvest bean growers. All participants in the survey were anonymous.

A total of 154 growers responded to the survey, representing 10.9 percent of last year's total planted acreage.

The two most popular varieties by class were:

Black: 1.Eclipse 2. Zorro
Great Northern: 1T. Orion, Taurus
Kidney: 1. Montcalm 2. Red Hawk
Navy: 1. HMS Medalist 2. T9905
Pinto: 1. Windbreaker 2. La Paz

More than 60 percent of the growers who responded ranked excess water as their worst dry bean production problem in 2015. Diseases, drought, weeds and hail were the next-biggest production problems.

For the first time, the survey included a question about seed size, and whether or not it affected their planting intentions in 2015. Nineteen growers reported not getting as much seed as they purchased for their intended acres, while five growers reported getting too much seed.

Sixty-six percent of the growers said they direct harvested some of their edible beans last year, including 39 percent who said they direct combined all their dry beans. Thirty-four percent of the growers did no direct harvesting in 2015. Thirty-four percent of the growers who direct harvested estimated yield losses of one to five percent, while another 57 percent had yield losses of six to 20 percent. Growers who harvested conventionally reported yield losses as well; 44 percent put their losses between one and five percent, while 48 percent had losses between six and 20 percent.

Some other highlights from the 2015 grower survey:

- 91 percent of respondents used nitrogen on their dry beans
- 30 percent used site-specific

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nutrient management

- 83 percent used a soil test prior to fertilization
- 21 percent used Rhizobium inoculants on their dry bean fields
- 21 percent of the dry bean growers did not use a dessicant
- 49 percent of growers reported spraying Sharpen as a dessicant; 37.5 percent sprayed with glyphosate
- 39 percent of the growers responding use a 2-year rotation; 28.5 percent use a 3-year rotation
- 64 percent of growers reported no insect problem in 2015; 14 percent listed leafhoppers as their top insect problem
- 82 percent did not apply foliar insecticide. Warrior was the top choice among growers that did.
- 32 percent of the dry bean growers responding used Cruiser Maxx insecticide seed treatment. Thirty percent of growers did not use a seed treatment last year
- 54 percent of growers said white mold was their worst disease problem last year; Only 13 percent of the growers reported no disease problems
- Topsin broadcast and Endura were the two most-used foliar and banded fungicide treatments. Apron Maxx was the most popular fungicide seed treatment, used by more than 41 percent of the growers who responded

Lambsquarter was the worst weed problem last year.

The worst weed problems in 2015 were lambsquarters, kochia, and ragweed. Raptor and Basagran were the most commonly used herbicides by dry bean growers last year.

A grant from the Northarvest Bean Growers Association funded the survey.

NDSU Releases Slow-Darkening Pinto Bean Variety

"It's pretty exciting that after all those years of selection, testing and the different things we do, that we're able to come up with something that is superior in any regard to whatever we have commercially available." That was NDSU dry bean breeder Dr. Juan Osorno's reaction to North Dakota State University Vice President, Dean, and Director of the Ag Experiment Station, Dr. Ken Grafton's decision to release a new, slow-darkening pinto bean variety. Tentatively named Palomino, this will be a joint release with USDA's Agricultural Research Service.

A new, naturally occurring gene in common bean, which reduces the rate and amount of after-darkening of pinto beans in storage, was reported in 2008. The sd (slow darkening) gene was discovered almost simultaneously in three different pinto bean germplasm sources, including the 1533-15 pinto breeding line from Canada (released commercially as White Mountain), SDIP-1 pinto from the University of Idaho, and the Saltillo pinto cultivar from Mexico.

Breeding populations of pinto beans that are segregated for the sd gene were developed by a collaborative program between Dr. Phil Miklas from the USDA-Agricultural Research Service at Prosser, Washington, and Osorno. More than 150 breeding lines were tested across North Dakota and Minnesota locations between 2011 and 2013 for agronomic performance, slow darkening, and other traits of economic importance. After analyzing the performance of these lines across years and locations, breeding line SF103-8 (Palomino) was selected because of its competitive agronomic performance, in addition to the slow darkening trait. Initial crosses were made by Dr. Miklas in 2010.

Palomino, a new, slow-darkening pinto variety, has been released.

"The earliest I've seen a variety develop is probably seven years," says Osorno. "I think this is a special case because Phil Miklas was already making crosses, trying to move this gene into good commercial-type pintos probably two years ahead of everybody else. I was lucky enough to convince him to bring that material here and start using it to solve a real problem we had here in this region."

Osorno says the biggest challenge was that all the original sources of the sd gene had very poor agronomic characteristics—poor seed yield, not good plant type, and the wrong shape for a pinto bean. "So trying to get rid those bad traits and still keep the sd trait was the main challenge," says Osorno. "Now I think it's possible to keep moving that yield barrier even further, it's just a matter of time. I have a whole pipeline of slow darkening pintos and even preliminary testing is showing that some lines look even better than what we're releasing today (Palomino)."

Palomino has an upright, indeterminate (short vine) growth habit, white flowers, and matures in approximately 102 days. Agronomic performance and seed color, size and shape are within acceptable commercial ranges of popular pinto bean cultivars grown in North Dakota. Tested across 22 common locations in North Dakota and Minnesota from 2012-2015, Palomino had statistically similar seed yield (2,630 lbs/a) as Stampede (2,540 lbs/a). When compared with other commercial checks grown across 10 common environments, seed yield of Palomino (2,550 lbs/a) is statistically similar to Lariat (2,570 lbs/a), but approximately 200 lbs/a less than La Paz (2,760) and Windbreaker (2,740 lbs/a), which are the most commonly grown pinto cultivars in the region. However, this difference in seed yield could be compensated at the elevator by receiving a higher price with the slow dark-

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ening bean versus the regular darkening cultivars.

Northarvest Bean Growers Association President Tom Kennelly is excited to grow the new, slow darkening pinto. "Just from the discussions I've had with the buyers at the Mexican Bean Congress that said the color is everything, and if that's what the consumer wants, that's what we should grow."

So, will Palomino put Northarvest pintos on an equal footing in the market with western-grown pintos? "I would think it should, but somehow or other I bet it won't; I think we'll always be at a disadvantage here," says Kennelly. Osorno says he hopes Palomino will level the playing field with western-grown beans, "I hope so, or otherwise I think the buyers are going to have to get very creative to find a good excuse to buy cheaper beans."

Dry bean dealers are somewhat cautious about the slow darkening pinto. John Berthold at Walhalla Bean Company in Merrifield, North Dakota, thinks it is a solution to the end-users' concerns about dark pintos. "I've said all along that the slow darkening pinto gives us access to the markets that want the nice white, bright color. It allows us to compete with some of the other growing regions throughout the United States that can more consistently grow that color," says Berthold.

NDSU Dry Bean Breeder Dr. Juan Osorno.

However, he says the challenge is it's like handling a completely different bean through any kind of a bean processor's system. "It's a pinto bean, but it's almost like a Chevrolet and a GMC-they look the same, but they're not," says Berthold. "The last thing that we want is to mix these with non-slow darkening pintos because the darkening process starts immediately, so as soon as they're harvested they start losing their color," says Berthold. "Sometimes our crop doesn't ship out for nine months or a year later, so you can really start seeing what those differences are. It would almost look like

Vander Wal Recognized for Service to NDSU Plant Sciences Department

Jody Vander Wal was recently recognized by NDSU for his 35 years of service to the Department of Plant Sciences. Vander Wal started in 1981 as a research technician in the Plant Sciences Department, then switched to a research specialist-always with the dry bean breeding program.

Vander Wal says they'll plant "way into the thousands" of lines of dry beans at various locations each year. "We get the seed in from the companies, plus our breeding material, and work with our cooperators to set up the trials. It gets to be a puzzle, but it's kind of fun because it's a challenge to make it all fit," says Vander Wal.

But winter is his busiest time because of the greenhouse, analyzing all the data from the previous growing season, winter nurseries, disease testing, and the crossing. "Out here (planting), we get to see the crossing that we did and watch it progress from day one to releasing a variety, like Palomino for example."

Asked what he likes best about his job, Vander Wal listed the challenges, the people he works with at NDSU, and the agricultural family, "It's great."

The Linton, N.D. native went to Dakota College at Bottineau before transferring to NDSU, where's he's been ever since.

mixed beans at that point. It's almost like handling an identity-preserved, totally different variety. It's no different than handling black beans and navy beans-you can't mix them."

Canning tests were performed on Palomino pintos by two major canning companies, both of which rated the final canned product as acceptable but warned against mixing or comingling regular darkening with slow darkening in the same canning line. Their recommendation was to keep the slow darkening beans as a separate class.

For growers who think they'll get a premium for slow darkening pintos, Berthold says, "Maybe. But just because you're growing it doesn't mean that it comes with a premium because if all the other color is good, what do you have to offer?"

Osorno says certified growers have planted nearly 60,000 pounds of foundation seed that was produced last year. Dry bean growers will hopefully be able to plant Palomino in 2017.

Palomino is not the only slow darkening pinto available to growers. Osorno says ADM's Seedwest has released two slow darkening pinto bean varieties: Vibrant and Radiant 2. ADM Corporate Communications declined to comment for this article.

Vanna _____

Betty _____

Barry _____

The one name to know for superior white mold control.

Once again, Topsin® fungicide is the biggest name in dry bean fields across the country. In fact, Topsin is the brand used by more dry bean growers to control white mold, protect their crops and improve their yields. Available in dry and liquid formulations, Topsin is trusted to provide superior protection against white mold. So this season, don't go with some unknown and unproven fungicide. Go with the name you can trust – Topsin. To learn more, visit your UPI distributor or call your area UPI sales representative. Visit us at upi-usa.com.

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Dry Bean Desiccants

Dry bean desiccants and preharvest herbicides provide an effective method to facilitate harvest and remove unwanted weeds. Not all desiccants are the same. Knowing the factors that affect activity of each herbicide may help increase the final result. Refer to the table below for a list of registered desiccants and harvest aid products.

Glyphosate is registered as a harvest aid for weed control in dry beans, not to desiccate dry beans. A harvest aid is to remove unwanted weeds to facilitate harvest. Glyphosate is systemic and can kill most weeds. Dry bean plants should be mature prior to spraying glyphosate to avoid systemic transport of glyphosate to dry bean seed. Glyphosate activity on weeds is slow and may take 10 to 14 days for full activity. Addition of ammonium sulfate (AMS) increases glyphosate effectiveness. Activity also increases in low applied water volumes which also increases the risk of spray particle drift. The preharvest interval (PHI) for glyphosate is 7 days following application.

Defol 750, paraquat, Sharpen, and Valor are dry bean desiccants, and contact-type herbicides, and require high spray volume (>15 gpa) for full activity. These herbicides may cause poor weed desiccation and only burn leaf foliage of weeds, especially if weeds are large. They may not desiccate weed stems and branches. Weather during dry bean harvest may be cool and cloudy, which decreases activity of contact dry bean desiccants. Hot temperature and full sunlight increases the activity of contact desiccants.

Adjuvant selection is important and can enhance activity, especially during cool weather. Apply paraquat with a reputable nonionic surfactant (NIS) at 0.25 to 0.5% v/v. Apply Sharpen and Valor with a methylated seed oil (MSO) adjuvant at 1 to 1.5 pt/A. Adjuvant use rate is very important. Some oil adjuvant labels may recommend use on a volume basis (i.e. 1% v/v). Always apply oil adjuvants on an area basis (1 to 1.5 pt/A) with contact desiccants to ensure optimum herbicide enhancement from oil adjuvants. Addition of AMS will also increase activity of Sharpen and Valor. For both weed and dry bean desiccation, Sharpen and Valor may be applied with glyphosate.

Observe the proper preharvest interval (PHI) for each desiccant: Defol: 0 days, paraquat: 7 days, Sharpen: 2 days, and Valor: 5 days. Sharpen and Valor may leave a residue in the soil and restrict the rotation to some crops the next year. Refer to page 6 in the 2016 North Dakota Weed Guide for crop rotation restrictions for Sharpen and Valor.

Dry Edible Bean Preharvest/Desiccation Herbicides

Glyphosate[9]	Up to 0.75 lb ae	Harvest aid/ Weed control.	Prior to harvest. Pods = yellow and leather texture. Seed = hard dough stage with <30% moisture. PHI = 7 days.	**Do not apply to dry bean grown for seed because reduced germination/vigor may occur.** Use only labeled formulations. Add AMS at 8.5 lb/100 gal. Non-selective, non-residual, translocated, foliar herbicide. A3-7 B1 B8
Defol 750 + oil adjuvant (sodium chlorate)	**3.2 qt + 1 qt/A**	Dry bean and weed desiccant.	Prior to harvest. >80% pods yellow/ brown. >70% leaves lost green color. PHI: Defol = 0 Days paraquat = 7 days Sharpen = 2 days Valor = 5 days	Contact herbicides require >15 gpa and full sunlight. Apply at >10 gpa for ground and >5 gpa for aerial application. Apply Sharpen and Valor with AMS at 8.5 to 17 lb/100 gal water or UAN at 2.5 gal/100 gal water and with glyphosate or paraquat for weed desiccation. **Do not apply Sharpen to dry bean grown for seed because reduced germination/vigor may occur.** Do not feed or graze treated plants. B11-12 E12
Paraquat[22] + NIS **RUP**	**1.5 to 2 pt 2SL 1 to 1.3 pt 3SL** (0.375 to 0.5 lb)			
Sharpen + MSO adjuvant (saflufenacil[14])	**1 to 2 fl oz + 1 to 1.5 pt/A** (0.36 to 0.72 oz)			
Valor + MSO adjuvant (flumioxazin[14])	**1.5 to 3 oz + 1 to 1.5 pt/A** (0.77 to 1.53 oz)			

Refer to the North Dakota Weed Control Guide for information referenced in this table at: www.ag.ndsu.edu/weeds/weed-control-guides/nd-weed-control-guide-1/wcg-files/5-Soy.pdf

Big Four Disease Guide

Sam Markell, Julie Pasche, NDSU Plant Pathologists

White Mold

SYMPTOMS:

Figure 1. Small tan mushrooms (apothecia) about ¼" in diameter emerge from hard black structures (sclerotia) (Photo Markell).

Figure 2. Lesions begin on the stem as water soaked spots, enlarge and white mold grows (Photo Wunsch).

Figure 3. Lesions dry out and appear cream colored; stems may shred and hard black structures (sclerotia) form (Photo Markell).

FACTORS FAVORING DISEASE:

- Wet soils prior to bloom allows sclerotia to germinate and release spores
- Cool daytime temperatures (60's – 70's) during and after bloom
- Rainfall during bloom
- Long periods of canopy wetness
- Lush plant growth

MANAGEMENT:

- Preventative fungicide applications during early bloom or at canopy closure
- Long rotation between broadleaf crops

OTHER IMPORTANT FACTS:

- The white mold pathogen can cause disease on every important broadleaf crop in ND and many weed hosts
- Every dry bean market class is affected

Figure 1

Figure 2

Figure 3

Rust

SYMPTOMS:

Figure 1. Small (1/16") cinnamon-brown pustules that may have a yellow halo (Photo Markell).

Figure 2. Dusty cinnamon-brown spores that are easily rubbed off the pustule (Photo Markell).

Figure 3. Rust often begins in 'hot spots', or small clusters of infected plants that are often hard to find (Photo Markell).

FACTORS FAVORING DISEASE:

- Heavy morning dew, fog or frequent light rain/drizzle
- Moderate to warm temperatures (70's – 80's)
- Lush plant growth

Figure 1

MANAGEMENT:

- Scout for rust, especially during reproductive growth stages
- When scouting, look for hot spots and concentrate on areas near dry bean residue, low areas and tree rows
- Fungicides are most effective when applied soon after finding rust
- Fungicide are not recommended to manage rust at R7 (pintos begin to stripe) or later

Figure 2

Figure 3

OTHER IMPORTANT FACTS:

- The pathogen that causes rust in dry beans is very specific to dry beans and will not cause rust on any other field crop in ND
- Since a new race was found in 2008, all bean varieties in every market class are considered susceptible

Soybean Cyst Nematode

SYMPTOMS:

Figure 1. Small (1/32" -1/64") cream-colored female nematodes swollen into lemon-shaped cysts on dry edible bean roots (Photo Poromarto).

Figure 2. Severe stunting caused by growing a pinto bean in a pot with 10,000 eggs/cc of SCN (right), compared to a pinto growing in a pot with no SCN eggs (left) (Photo Poromarto).

Figure 3. Distribution of egg levels from 2013-2015 in SE ND as identified by a grower-based sampling program funded through the North Dakota Soybean Council. Note, low level egg counts could be false positives (Map Knudson).

FACTORS FAVORING DISEASE:

- Rotation with soybeans
- High soil pH
- Light soil texture

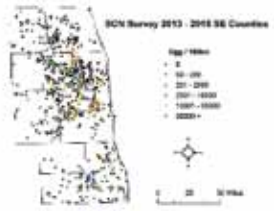

Figure 3

MANAGEMENT:

- Soil sample to detect SCN
- Rotation with non-hosts (any crop except soybeans and dry beans)
- Use resistant soybeans when soybeans are grown

OTHER IMPORTANT FACTS:

- NDSU research indicates that kidneys are the most susceptible market class to SCN and that black beans are the least susceptible
- Dirty equipment, flooding, and wind erosion are all mechanisms of SCN dispersal
- If soil sampling for the first time, sample around harvest and focus in the field entrance or low spots

Figure 1

Figure 2

Bacterial Blight

SYMPTOMS:

Figure 1. Common blight begins as water-soaked lesions (commonly at the leaf margins) that turn necrotic and quickly enlarge (Left left). Bacterial brown spot lesions begin as small water soaked spots that turn necrotic and coalesce, creating a shot-hole tattered appearance (Right Leaf) (Photo Pasche).

Figure 1

Figure 2. Halo blight lesions begin as small water-soaked spots that may turn necrotic and have yellow halos that coalesce (Photo Ghising).

Figure 2

Figure 3. Pod infections begin as water soaked spots, may ooze bacteria, turn necrotic and spread to seed (Photo Markell).

Figure 3

FACTORS FAVORING DISEASE:

- Infected seed
- Heavy and frequent rainfall, particularly if associated with high winds
- Anything that damages plant tissue (high winds, hail, etc.)

MANAGEMENT:

- Plant clean seed
- Stay out of field while wet
- Curpic hydroxide fungicides have shown mixed results, and impact each disease differently

OTHER IMPORTANT FACTS:

- Approximate optimal temperatures for each disease are different; above 85 F for Common blight, below 85 F for Bacterial brown spot, and below 75 F for Halo blight.
- All bacterial blights can occur at the same time on the same plant

Which Insect Pests Should You Scout for in Dry Beans This Summer?

The three most common insect pests in dry beans during June through August are potato leafhoppers, grasshoppers and spider mites. Here's some scouting tips and action thresholds for each insect pest. Walk a 'W or V' pattern in the field and inspect 10 plants per five sampling sites for a total of 50 plants per field. Calculate an average number of insects per plant or per sweep.

Adult potato leafhopper (top) and nymph (bottom).

POTATO LEAFHOPPERS

Potato Leafhoppers are the number one dry bean insect pest in North Dakota and Minnesota. They do not overwinter in the region. Adult leafhoppers migrate from southeastern states during the spring and early summer. Large numbers of adults may appear early in the season if weather conditions favor their migration into North Dakota and Minnesota. Adult potato leafhoppers can move from cut alfalfa fields, a preferred host, to dry bean fields quickly.

The adult is wedge-shaped and pale green in color. Adults are very active, jumping or flying when disturbed. Nymphs are wingless. Both adults and nymphs will run backwards or sideways rapidly. Nymphs usually complete their growth on the leaf where they hatched, feeding on the underside of the leaf. Because nymphs are not as mobile as adults, they are regarded as the more damaging life stage to the bean plant.

Damage by leafhoppers is referred to as 'hopperburn.' Damage is the result of leafhopper saliva that is injected into the phloem tissue in the leaf during feeding. Foliage becomes dwarfed, crinkled and curled. Small triangular brown areas appear at the tips of leaves, gradually spreading around the entire leaf margin.

Threshold: Potato leafhoppers are typically found on the undersides of leaves. When counting leafhoppers, cup your hands under the leaves and leafhoppers will move to the upper leaf surface for easier counting. The threshold for spray decisions is when an average of one leafhopper per trifoliate leaf is found. Do not let infestations and damage progress to the point that yellowing of foliage is easily detected.

GRASSHOPPERS

In the northern plains, grasshopper egg hatch normally begins in late April to early May. Most grasshoppers emerge from eggs deposited in uncultivated ground. In the spring, bean growers should expect to find grasshoppers feeding first along bean field margins adjacent to these sites. Later infestations may develop when grasshopper adults migrate from harvested small grain fields.

Grasshopper Threshold

Rating	Nymphs per sq. yd.		Adults per sq. yd.	
	Margin	Field	Margin	Field
Light	25-35	15-25	10-20	3-7
Threatening (action threshold)	**50-75**	**30-45**	**21-40**	**8-14**
Severe	100-150	60-90	41-80	15-28
Very Severe	200+	120+	80+	28+

Adult red-legged grasshopper (top), and grasshopper nymph (bottom).

Grasshoppers will attack leaves and pods. Due to these migrations, bean fields become sites for significant egg laying.

Thresholds: 'Threatening' is considered the action threshold for grasshoppers. Since it is difficult to estimate the number of grasshoppers per square yard when population densities are high, pest managers can use four 180-degree sweeps with a 15-inch sweep net, which is equivalent to the number of adult (or nymph) grasshoppers per square yard. Sweep net are available for about $40 from insect trap suppliers, such as Great Lakes IPM or Gemplers.

SPIDER MITES

Spider mites are small and magnification is required to see them. A

quick sampling procedure to determine whether mites are present is to hold a piece of white paper below the leaves and gently beat them to dislodge the mites. The mites appear as tiny dust specks; however, they will move after being knocked off the leaf. Feeding damage by mites first appears as small yellow spots ("stippling"). As feeding activity increases, leaves become yellow, bronzed or brown, and eventually shed from the plant. Mite webbing may be present on plants as mites balloon on webs to disperse among plants and between fields.

Spider mite webbing (top), and spider mite stippling (middle), and spider mite (bottom).

Mites usually become a problem when hot, dry weather occurs. Infestations typically are first noted near field edges. Dry conditions stress the plants, whether mites are present or not. If conditions continue, treating for mites is no guarantee plants will recover. In addition, products labeled for mite control often do not give adequate control and the population of mites may rebound quickly to pretreatment levels or higher. When rain and humidity are present, natural reductions in mite populations occur due to infection by a fungal pathogen. Conditions that are good for the development of the pathogen are temperatures cooler than 85 F, with at least 90% R.H. for 12 to 24 hours.

Threshold: Deciding whether to treat is difficult. There is no specific threshold that has been developed for two-spotted spider mite in dry edible beans. A general action threshold is to treat when the lower ¼ to ⅓ of canopy has mite damage symptoms and/or mites present. (Source: University of Minnesota, Ostlie & Potter).

Remember to use an organophosphate insecticide (e.g. Dimethoate) rather than a pyrethroid insecticide to avoid flaring mite populations. However, the active ingredient bifenthrin (a pyrethroid) does not flare mite populations and provides control. Reasons for the increase in mite populations from some pyethroids include: disruption of the natural enemies that control spider mites (predatory mites); increased movement of mites out of fields, and increased reproductive rates of female mites. Early detection facilitates timely and effective rescue treatments. Insecticides provide short-term protection, maybe 7 days, from the spider mites. Fields will need to be monitored continually for resurging populations. The efficacy of an insecticide can be improved significantly with sufficient water coverage (>18 GPA) by ground and 3-5 GPA by air and application at high pressure to penetrate foliage. For insecticide resistance management of mites, do not apply the same class of insecticide (or mode of action) more than twice and alternate the class of the insecticides (or mode of action) to prevent buildup of resistant mite strains.

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Red-legged grasshopper adult (J. Knodel, North Dakota State University)

Grasshopper nymph (G. Fauske, North Dakota State University)

Potato leafhopper adult (S. Brown, University of Georgia, Bugwood.org)

Potato leafhopper nymph (J. Knodel, North Dakota State University)

Close-up of two-spotted spider mite (P. Beauzay, North Dakota State University)

Two-spotted spider mite stippling injury on leaves (J. Knodel, North Dakota State University)

Webbing from two-spotted spider mites (D. Cappaert, Michigan State University, Bugwood.org)

Price-Later Agreements: Know Your Risks

There are almost as many ways that dry beans are sold as there are classes of beans. Some options carry more risk to the grower than others. Some beans are grown under contract and are considered to be sold when beans are delivered. Any overage, or production that exceeds the contracted level, is stored by the buyer who charges the grower for storage costs until the grower sells the overage beans.

Growers who do not have a contract usually deliver their beans to the elevator at harvest, pay storage, and retain ownership of the beans until they are sold. Some elevators have an agreement with growers to store their beans until a certain date, at which time they are sold at the market price that day. Dealers in North Dakota are required by the Public Service Commission to maintain inventories of unsold product that equals the amount of unsold growers inventories held in the elevator.

Still other growers choose to deliver their beans, and sell them to an elevator with an agreement to price them at a later date. In this case, the elevator receives ownership of the beans at the time of the sale, even though the price is set and payment is made at a later date. The advantage to this is that there are usually no storage costs. The disadvantage is that the grower is an unsecured creditor and may not be paid if the elevator does not have the money to pay for the beans, or becomes insolvent.

Another option with even higher risk is growing beans without a contract and storing them on the farm. North Dakota State University (NDSU) Extension crops marketing economist Frayne Olson says the price after harvest could be higher or lower than the contract price. Second, most dry bean elevators subsidize storage costs, at least for a certain time, to encourage farmers to deliver and store in the elevator rather than on the farm. According to Olson, on-farm storage also is riskier if farmers do not handle and store the beans properly.

MINNESOTA LAW

Dry bean buyers in Minnesota are required to be bonded before the State will issue a license to buy and store beans. Bob Zelenka, Executive Director of the Minnesota Grain and Feed Association, says bonding was never meant to be insurance against loss. It is simply a screening process where an independent, third party reviews the finances of an applicant and if the buyer is found to be financially sound, then and only then will they be eligible to be licensed as a grain buyer. The state does require that a bond underwriter include up to $150,000 to cover potential claims made by a seller over non-payment on a cash sale.

On a contract sale in Minnesota, current state law requires all contracts to carry language where the farmer signs the contract that states this contract constitutes a voluntary extension of credit. This contract is not covered by any grain buyer's bond. This contractual language is meant to convey some clarity about the risks involved in selling grain using a price later, or other form of a contract. According to Zelenka, sellers need to understand that when

that contract is signed, title transfers to the buyer, with a future price and/or delivery date.

For added producer protection, Minnesota state law requires that a grain buyer purchasing grain by voluntary extension of credit contracts shall at all times maintain grain, rights in grain, or proceeds from the sale of grain totaling 90 percent of the grain buyer's obligation for grain purchased by voluntary extension of credit contracts. The Minnesota Department of Agriculture, which licenses dry edible bean buyers, is responsible for enforcing this requirement during an annual on-site inspection. Contrary to North Dakota law, Minnesota does not offer an indemnity fund to cover potential losses related to grain transactions involving extension of credit.

Zelenka says the best form of protection is to know who you do business with. "Check to see if they are bonded and licensed by the State, ask for references and for a copy of their most recent financial statement, " says Zelenka. "With your money at stake, don't be afraid to ask questions."

NORTH DAKOTA LAW

Elevators in North Dakota are required to be licensed and bonded. According to information on the North Dakota Public Service Commission's website, bond levels range from $50,000-$1.5 million for public grain warehouses, facility-based grain buyers, and roving grain buyers. These bonds offer protection for farmers who are storing their grain or have sold their grain by using a non-credit sale contract. These bonds do not protect farmers who have sold their grain by using a credit sale contract.

According to the North Dakota PSC, a credit sale contract means a written contract for the sale of grain (includes dry beans) pursuant to which the sale price is to be paid or may be paid more than 30 days after the delivery or release of the grain for sale. A non-credit sale contract means a contract for the sale of grain other than a credit sale contract.

The State of North Dakota has an indemnity fund to offer some protection for farmers who use credit-sale contracts. The coverage limit is 80 percent, or $280,000, and the fund balance is approximately $6.7 million.

David Saxowsky is an associate professor at NDSU who teaches agricultural law, food law, farm and agribusiness management and water law. Saxowsky says an Extension bulletin from 1985 states that bean growers who are considered unsecured creditors should ask themselves if they really want to be a banker, because that is what they are. That question has not changed in the last 30 years. "Understand the risks associated with credit sales, which include delayed pricing and deferred payment contracts," says Saxowsky. "Unless these contracts require payment within 30 days after delivery or release of the grain, the bond will not apply. Ownership of the grain will have transferred to the elevator and you will be considered having extended credit. You will not have the same rights as storage depositors."

Delayed pricing (also known as priced later contracts) is when a farmer delivers and sells his grain with an understanding that he will set the price at a future date. Deferred payment is when grain is delivered, priced and sold with an understanding that the farmer will not receive payment until a later date, probably the next tax year. Likewise, a farmer is extending credit when he delivers his grain for immediate sale and pricing without a contract or payment.

CLOSING THOUGHT

If you sell grain to a buyer or warehouseman and agree to any of these arrangements, you are extending credit to the buyer. "You're lending money in the form of transferring product to them without taking payment at the same time. Ask yourself if you would loan the buyer a like amount of cash without security," says Saxowsky. "You should ask the same questions that a banker is going to ask. Know who you're doing business with, know their financial situation."

Dealers' Participation Critical for Revenue Insurance Price Discovery

For many major commodities, farmers can take the availability of revenue-based crop insurance for granted. Pulse crop growers, on the other hand, understand the uphill fight they and their industry partners have endured to win access to revenue coverage in 2012. Warehouses, processors, and individual growers provided literally thousands of historical settlement sheets and annual sales data to assure USDA that a revenue-based crop insurance plan could be offered without dependence on a futures market. Finally, dry bean growers prevailed and the program was approved. The availability of revenue coverage for pulse crops, however, came with a commitment to continue to provide the data necessary to support the ongoing availability of the program.

Alex Offerdahl, Watts and Associates

For the first two years the program was offered for dry beans, data collection processes largely worked as planned and the projected and harvest prices upon which revenue plans depend were released without issues. In the summer and fall of 2015 however, the program encountered a setback. Put simply, nearly all market data for several insured dry bean varieties disappeared and no harvest prices were released for several bean varieties. Growers are asking how this happened and what can be done to assure that it doesn't happen again. Probably the best place to start is to get a stronger understanding of how a revenue crop insurance plan works.

Revenue Protection insures expected revenue. This is determined by multiplying the grower's expected yield by the projected price and the selected coverage level. The coverage therefore protects against price declines, yield losses, or the combined effect of reductions in both. Prior to the availability of the dry bean revenue endorsement insurance program, the futures market was a requirement for the offering of revenue insurance. In the case of corn for example, in order to establish a projected price in the spring and a harvest price in the fall, an average of the December futures contract prices during those respective seasons is used.

Without a futures market to rely upon, the determination of projected and harvest prices for dry beans was instead based on contract offer prices in the spring (projected price) and average grower prices received over the harvest sales period, as reported by the USDA Agricultural Marketing Service in the Bean Market News publications. This approach is novel and was faced with considerable skepticism by crop insurance regulators. To assure that the prices determined using these sources were representative and reliable, a minimum standard for the quality of these observations was mandated. Under the program rules, a minimum number of processors must provide their contract price offers in the spring to establish a projected price. If these data standards are not met, no revenue coverage is offered for that variety in that year. In order to establish a harvest price, a minimum number of weekly price reports is required. If these data standards are not met, the harvest price is set equal to the projected price. These rules are laid out in detail in the revenue policy for dry beans.

In the summer and fall of 2015, many bean types "went off the board." As a result, these types lacked the required number of weeks with established AMS prices under the federally enforced crop insurance provisions to

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establish a harvest price. Under the dry bean insurance provisions, at least three dry bean processors must report a price for a given variety during at least 50% of the weeks in order for a harvest price to be established for a given variety. This requirement was not met and the harvest price was set equal to the projected price per the rules in the policy.

In an effort to prevent this situation from occurring again, the Northarvest Bean Growers Association and its partners submitted several proposed changes to the insurance provisions to RMA in order to increase the likelihood of establishing a harvest price for each insurable dry bean variety in the future. These proposed changes are intended to loosen the requirements for harvest price establishment, while still maintaining the integrity of harvest prices. In addition, Northarvest has worked with its member dry bean purchasers who have agreed to respond to future AMS surveys during the harvest price discovery period. These handlers made it clear that they had not recognized the importance of participating in the weekly AMS surveys to crop insurance, and would offer full support to assuring that there is never another instance where no harvest price can be determined.

Revenue protection offers an important risk management tool to bean growers and we can all play a part in helping to improve the program and making it more reliable in the future.

While the Federal Crop Insurance Corporation is in the process of approving the changes Northarvest proposed to make determination of harvest prices more reliable going forward, the process will continue to depend on the ongoing support and participation of the industry. Growers can help by making sure the warehouses that handle your beans are aware of your support for the program and your appreciation of their efforts. Revenue protection offers an important risk management tool to bean growers and we can all play a part in helping to improve the program and making it more reliable in the future.

Clean Beans; What Processors Can and Cannot Do

"We can only make it worse when it gets here," says John Berthold at Walhalla Bean Company in Merrifield, North Dakota about the ability of color sorters to clean beans. "There's no magic machine to fix it." Berthold thinks the issue of soybeans in dry beans is getting worse. "I had a load that probably contained 20 percent soybeans," says Berthold. "When I told the grower I couldn't accept his beans, his response was, 'you've got a color sorter, why can't you fix it?'"

Walhalla Bean Company plant manager Jamie Carlson says how well color sorters work sometimes depends on the beans. "For instance, if you're trying to take soybeans out, it'll do a good job but it's never going to do 100 percent of what you want it to do." The color sorters can be adjusted, but Carlson says as you fine-tune it, the beans are also going to change, for better or worse, or your foreign material is going to be either better or worse. "Sometimes it does great and then all of a sudden your beans change and it doesn't do as well as it was before."

If a grower has 10-20 percent dockage, Carlson says the color sorter is not the answer. But, today's color sorters are a vast improvement over what was available even five years ago. Jim Vrolyk, manager of Thompsons in East Grand Forks, Minnesota, agrees that color sorters are getting better, but the demands of consumers are also rising. "They're demanding a purer and purer, cleaner and cleaner product," says Vrolyk, "and are much more apt to be concerned when all of a sudden they see a bean that's red instead of white, or black instead of orange, or whatever color depending on the type of bean they're eating."

Jamie Carlson, Walhalla Bean Company.

Berthold says the accuracy and speed of color sorters have also increased to keep up with the lines, but he points out the tolerance for soybeans is still zero, or near zero. "We see more and more issues coming in (with dry beans), so we're making these investments and putting these things in to try to get to that specification, but there's only so much that it can do."

While it's the grower's responsibility to deliver a clean product, Berthold says processors have perhaps allowed some of it to happen. "They've maybe gotten away with it with other things," says Berthold, "but quality specifications and allergy specifications are not going to decrease anytime soon."

The Buhler Sortex-A color sorter at Walhalla Bean has front and rear cameras that look at both sides of the beans as they move through the processing line. So if, for instance there's a pinto split, one of the cameras will detect that it's all white and smooth and kick it out as a split. The sorter also has infrared cameras which detect differences in moisture content between black beans and dirt balls, for instance.

Berthold says part of the reason for seeing more soybeans in dry beans is because of the increased acreage of soybeans, even in the last 10 years. "It just becomes more and more of an issue, and you see a bigger mix of crops going through the same type of equipment. There's room for all of us, but we need to keep in mind some of these allergen issues and quality parameters," according to Berthold.

If you start with a load that maybe didn't even need color sorting, Vrolyk says it can do an almost perfect job, but as you get more and more different types of issues, the reliability of the color sorter declines. It can be as simple as mud tag, says Vrolyk. "You want me to pay you for that bean, but my color sorter is taking out anything that's got a little bit of dirt on it," says Vrolyk. "So now you start getting into different shades of colors, especially items such as soybeans, and you think we've got

white versus yellow. On the color spectrum, white versus yellow really isn't that far apart, so you don't want the color sorter to take out all that stuff with a little bit of dirt because if I tell you that your load is 100 percent pick, we're probably not going to be doing business very long."

With soybeans, Vrolyk says dry bean processors have to be "darn near" zero tolerance. "We have to sign off on all our customers that we're not aware of any soybeans in there. We need to be zero or as close as physically possible, and unfortunately that color sorter is not going to take out every last defect that's in those beans."

Vrolyk has some tips on how to reduce the number of soybeans that get into dry bean loads. "Clean out trucks and combines, and don't get into your neighbor's field," says Vrolyk. "A lot of times, your neighbor comes and plants and all of a sudden he swings around in your field and you're not even aware he's planted it. So when you're scouting fields, if you see there's a corner that has soybeans or other types in there, remove them before the combine does." And until later in the growing season, soybeans can look very similar to dry beans, so scout carefully.

Seeding a Future

It was a warm May afternoon in central North Dakota. Despite the steady wind, the unusual above-normal temperatures provided the perfect opportunity for Harvey dry bean grower Bill Ongstad to wrap up pinto bean planting early for the season.

"Pintos are our primary bean," Ongstad explains. "We've grown navy beans, too, but pintos seem to work the best."

Ongstad planted a pinto bean variety called ND-307. He gets the seed from North Dakota State University Foundation Seed Stocks. They plant the seed, harvest registered seed and then plant that again to produce certified seed they can sell.

"ND-307 is not the most popular variety, so we don't sell a lot of pinto seed, but we produce seed each year and use it ourselves," says Ongstad. "The cost is less when you produce it yourself. It's not a big return-on-investment, but every little bit helps."

The Ongstad family has produced certified seed since the 1970s. The family business, Ongstad Seed, is currently operated by Bill and his son, Sam. Ongstad Seed is well known for producing spring wheat seed.

"Our family started raising pinto bean seed in the 1980s. We took advantage of an opportunity and the market was good for a few years," says Sam. "Now, pinto bean seed has shifted into western grown seed. Our edible bean seed sales have gone down the last few years. However, soybean seed is contract production and there's a good market for that and wheat seed is popular."

PARTIAL TO PINTOS

The Ongstad family is partial to pinto beans. They'll have around 1,500

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Sam and Bill Ongstad

acres this year. Before the planter fills up with another load of pinto beans, Ongstad explains how their interest in pintos sparked almost fifty years ago.

"With the Russian wheat deal, wheat was a good price. But in the second half of the decade, wheat and barley prices petered out," says Ongstad. "There were people looking for another profitable crop. Lots of people planted sunflowers, but we tried pintos."

Pintos also work well for the Ongstad family, because they adapt fairly well to growing conditions in the area.

"Pintos flower for a longer period of time," says Sam. "If there are a few days of tough weather, you can set a few pods, whereas navy beans have a short flowering period and if you have bad weather, yield really suffers."

Wells County, North Dakota has lots of dry beans. According to the 2012 Census of Agriculture, Wells County ranked fourth in acreage of dry edible beans in North Dakota. "We were also the first county outside the Red River Valley to do pintos," says Ongstad. "We were the first area who made an effort at seed, too."

The pinto market is still profitable, but like any specialty crop, the markets can be volatile.

The Ongstad family has 1,500 acres of pinto beans.

"There are lots of challenges with growing pinto beans, which is why the acreage is relatively small compared to soybeans," says Sam. "The market is quite a deep and tall cycle. You hope to hit the dry parts of the cycle. You hope to hit the high parts."

Despite tough times in agriculture, Ongstad thinks there's a good future for pinto beans so they plan to continue growing them in the years ahead. "People need protein and fiber: two things pintos have to offer," says Ongstad. "The crops in the Red River Valley may change. Corn and soybeans have pushed oats, barley and flax out, except in limited areas. The real money is in specialty crops."

REAPING WHAT IS SOWN

A few hours later, the planter is still rolling along, but nearly complete with the day's work. Sam explains they could have a decent crop this year, thanks to good soil conditions and an earlier start to the planting season.

"But getting enough rain in July is key to raising good pintos," says Sam. "That and good weed management."

Reflecting on the challenges and opportunities in the pinto bean business, Sam is optimistic about the future of the family farm and Ongstad Seed business. He says the goal is to continue with well-managed, productive growth.

"As technology gets bigger, better and faster, it aids in the ability to grow and do a good job," says Sam. "In the 1990s, we grew too fast, too quick. Now, we're in a lot better positon for growth on the farm."

Sam wants to do a good enough job farming so he can farm as long as he wants and maybe pass the business on to his children, if that's what they want to do.

"Both of my kids are interested in equipment and what's going on. They are farming in the living room as we farm in the field, but I'm going to try and let my kids make their own decisions," says Sam. "It's their decision to make and it's my job to teach them what's available in the world."

Cannery Expansion Offers Potential for Dry Bean Growers

Faribault Foods, a big player in the canned bean market, is making a $100 million investment in its cannery located south of the Twin Cities, in Faribault, Minnesota. This expansion looks to boost dry bean demand in the area. The executive vice president of Faribault Foods, Gary Kindseth, says once completed, the expanded plant will allow the company to grow 40 percent. Northarvest BeanGrower magazine caught up with Kindseth to talk more about the expansion and gain insight into their interest in the dry bean market.

Q: Tell us more about the Faribault Foods Expansion.

A: We're building a 600,000 square-foot addition, which will be attached to an existing warehouse with new cooking systems and filling lines. We had a groundbreaking ceremony on April 26. When the addition is completed, we will have slightly under one million square feet under one roof, which will basically be doing all of the processing, cooking, packaging and distribution out of one facility with dry beans. There aren't too many $100 million expansions in the food business and we're ready for it. The end goal is more customers and more business.

Q: How did Faribault Foods get an interest in the dry bean market?

A: Faribault was basically the classic seasonal cannery until the mid-1980s. Then, we acquired Kuner-Empson of Colorado Company and that got us into the dry bean business. We got into soups and organic pasta; we acquired more retail brands and continued to expand our business base using private labels, retail brands and contract manufacturing as the base. We later acquired the S&W dry bean brand and diversified the company by getting into the juice pouch business. We also acquired the K.C. Masterpiece baked bean brand.

Q: What kind of dry beans are used at the cannery?

A: Our bean procurement is mostly out of the Red River Valley. We have organics. The cannery uses all bean types: black, pinto, navy and kidney beans. The majority is canned: sauce beans, ingredient beans, baked beans or refried beans. Anything in a can or could be in a can, we do. We do a multitude of can sizes. We are migrating into a pulse line.

Q: Where do you see the dry bean business in the next five years?

A: Dry beans are healthy. They are also some of the few products we feel still have lots of growth potential. We are pretty confident dry beans will be around and that's why we've made an investment in this industry.

Q: What is the most important thing dry bean growers need to know about Faribault Foods?

A: We're focusing and growing our dry bean business in Minnesota. The vision is that the La Costeña group wants to grow the business in the U.S. The Faribault facility expansion will be the cornerstone of that dry bean growth. I think we are fortunate that our location gives us some advantages, because of the proximity to our dry beans in Minnesota and North Dakota.

ADDITIONS TO NDSU FUNGICIDE GUIDE

Each year, the North Dakota State University Extension Plant Pathology team receives information to update the fungicide guide. The table below highlights the recent additions of recently labeled combinations of active ingredients. Updates will not cover generic products with solo active ingredients (i.e.: metalaxyl, tebuconazole, propiconazole, etc.)

As always, read and follow directions on the label. For more information on active ingredients, rates and pests managed, please review the information found in the 2016 North Dakota Field Crop Plant Disease Management Guide.

Trade Name	Application	FRAC Group(s)	Crops Registered
Aprovia Top	foliar fungicide	3 and 7	chickpea, dry bean, lentil, field pea
Obvius	seed treatment	4, 7 and 11	canola, chickpea, dry bean, flax, lentil, field pea

South of the Border

Initial information received by the U.S. Dry Bean Council from the key Mexican bean growing state of Chihuahua notes that for the 2016 spring/summer planting program, Chihuahua has programmed more than 25,000 hectares of irrigated pinto beans. In addition, more than 95,000 acres of dryland pintos are programmed to be planted into early August, depending on the weather. Total dry bean planted area is programmed at 120,399 hectares in Chihuahua, down about 5,000 hectares from each of the last two years.

With scarce rainfall forecast for Chihuahua, and the possibility of drought, producers recognize they may be in trouble, especially since the start of the rainy season was delayed.

The lack of an elevators' integral strategy and the increase of bean imports from the U.S. has caused a price reduction of pinto beans in Durango, Mexico. Agricultural Markets consultant Roberto Delgado said the strategy of some Durango elevators and ag leaders of creating a perception that yields dropped drastically last season created a positive effect on prices paid to producers in the November-February period. However, this manipulation of production numbers has also provoked a negative effect for those producers that didn't sell on time and for the elevators. The supposed 23.4 percent decline in production estimates from 2015 prompted the Mexican government to increase the non-NAFTA import quota from 100,000 metric tons to 150,000 metric tons, from Argentina and China. The import quota began on April 1 and is valid through the end of November. Normally, the import quota is August through November.

For this reason, at the end of the ASERCA-SAGARPA bean collection program, intermediaries, elevators and large producers started selling their beans. Nevertheless, many packers stopped buying domestic beans and opted to buy U.S. beans that had a more competitive price. The

result was an increase in bean inventories and a reduction in prices.

ARGENTINA

In Argentina, the local trade suggests that excessive rains that fell in April likely impacted yields, by reducing pods and seed count. Yield in the northwest Argentine provinces of Salta and Jujuy is expected to be down up to 30 percent.

USDBC international representative Randy Duckworth reports that rains delayed planting of dry beans in many parts of Argentina and some early-planted beans needed to be replanted. Duckworth thinks yield reductions of 25-30 percent are possible, because of excessive rains during flowering and pod fill. Plants are too viney with too few pods and seeds, according to Duckworth. "I've also heard there are disease issues in the Tucuman region, which is Argentina's largest black bean production area," says Duckworth. "Those disease issues have been ongoing due to reusing seed year after year, as well as weather issues."

The late plantings pushed harvest into mid-June/early July, which is winter season in Argentina.

In early May, Argentina's southern bean production zones of Rosario de la Frontera, Metán, Anta and La Candelaria, where black beans and color beans were planted, frost reportedly damaged 50,000 hectares and is expected to reduce yields by as much as 50% in some areas. The yield losses are generally expected to be non-recoverable as many of the plants were in pod formation stage when the frost hit.

Randy Duckworth, U.S. Dry Bean Council.

With this news most of Argentina's bean production areas have been hit by some sort of adverse weather--too little rain early on, too much rain during flowering/pod formation, and/or frost. As a result, depending on the area, yields are likely to drop between 25-50% for much of the Argentine dry bean crop. Compounding the farmers' problems is the fact that transportation costs have increased by 30% over the past year and many find access to credit impossible because interest rates are over 30%.

BRAZIL

Duckworth reports that Brazil's first dry bean crop had too much rain at harvest time, which affected quality. The second crop was planted late and was affected by drought in the center-west and northeast. In southern Brazil, which is the main black bean area, there were two weeks of low temperatures and unexpected frosts during flowering and filling, which is expected to result in significant yield losses. There are also concerns about white flies, which are vectors for golden mosaic virus which can have serious yield impacts on both soybeans and black beans.

"The bottom line," says Duckworth, "is that there are expectations within the trade that Brazil will be short beans from July to November or December." In terms of black beans, as a member of MERCOSUR, Argentina would be the first country to supply black beans to Brazil. Second, Brazil would then look to Bolivia, and finally to international suppliers such as China or the United States.

In recent years, Brazil has imported 80,000 to 100,000 metric tons of black beans from Argentina. Due to the weather issues this year, Duckworth expects the supply/demand gap to be significantly larger than average. Carioca beans have likely also been affected by drought and frost, and no other country produces cariocas. Duckworth says recent research sponsored by the USDBC in Brazil points to a possible opportunity to introduce U.S. pinto beans during this shortfall period.

COLOMBIA

The Colombian government reduced taxes to 0 percent on imported lentils, beans and garlic through the end of June, to help reduce the rising cost of food for Colombian families. Consumers there have seen prices of agricultural products rise between eight and 18 percent since the beginning of the year, according the Colombian Ministry of Agriculture. Not only has the value of the Colombian peso affected the sharp rise, but also the need for farmers to import fertilizers and other inputs to sustain this year's harvest, due to climate conditions.

Duckworth says dry bean production has been reduced by 20 percent since January, forcing Colombian agricultural businesses to rely on imports. ABURRA in Medellin has reported sales of U.S. pinto beans of up to 15,000 kilos per month.

A Food Aid Update: Building Dry Bean Demand Overseas

The U.S. agricultural sector contributes commodities, including dry beans, to the U.S. government food aid programs. U.S. Dry Bean Council Executive Director Rebecca Bratter says sometimes the quantities can be very significant and in years when you have a surplus, food aid becomes something we look at even closer.

Bratter says there are very strong efforts going on right now to stop the practice of contributing food for food aid and turning it into an all cash-based system. "I think that would have a pretty devastating impact on U.S. agriculture," says Bratter. "I also think it would have a devastating impact on our diplomatic efforts around the world because we do donate our food with the idea that we are saving lives, and so the U.S. Dry Bean Council is fighting very hard to stop that from happening."

The USDBC has been successful so far, working in coalition with about 20 other agricultural groups, and will keep doing that, according to Bratter. "This is an effort that's going to require a long-term commitment," says Bratter. "We're going to keep working on it. It's not an emerging market, per se, but it is something that does end up taking our supplies off shore and in turn impacts our pricing and supply."

Mexico is traditionally the No. 1 export market for U.S. dry beans. Canada is No.2, followed by the United Kingdom, the Dominican Republic, and Italy. Japan, France, Turkey, New Zealand, Angola, Guatemala, Haiti, Spain, Australia and Algeria round out the top 15 export markets.

One of the markets the USDBC thinks may offer some exciting opportunities this year is Colombia. Thanks to the recent U.S.-Colombia free trade agreement, U.S. dry beans now enjoy a zero entry tariff, which leveled the playing field with our competitors. "The USDBC began a promotional campaign in Colombia in 2015, and we saw a huge spike in export sales," says Bratter

The USDBC has signed agreements with four Colombian bean distributors to conduct promotional campaigns, including putting the U.S. logo on pinto bean packages and in-store promotions and cooking demonstrations. "This has nowhere to go but up in the next years," says Bratter, "and I think you'll be hearing a lot more about this."

According to Bratter, another potential emerging market for U.S. dry beans is southeast Asia. USDBC charts from 2010 to 2015, and projecting out to 2018, show growth in both volume and value. "There's a lot of interest in using dry beans for processed products, for flours, and there's a lot of interest in the snack food market," says Bratter. "There are a number of snacks that are commonly eaten in Southeast Asia that use beans. We're making really good connections with some of the distributors there, and they now want to put our logo on their packaging as well."

The fact that different distributors around the world are starting to see the U.S. logo as a sign of quality and helps them sell more product in country is a very positive story, according to Bratter.

Bratter also mentions Turkey, Bulgaria and Hungary as possible emerging markets for U.S. dry beans. Bratter calls Turkey a market with tremendous potential with a number of great companies that are really interested in doing business with us. "As a large number of Middle Eastern refugees are coming into Turkey, a number of feeding programs have been set up," says Bratter. "Because beans are already consumed, that has also created a bit of a spike in demand for dry beans."

Bratter says the USDBC has also been approached by a foundation in Spain interested in promoting healthy eating in the schools. The goal is to have children eat more plant-based protein instead of meat, in their lunches. 'They want to have them consuming dry beans," says Bratter.

USDBC will also be shoring up its promotional efforts in India this year. USDBC has a new representative in India and also sent a delegation to India for a pulse conclave in February. "We have a lot of work to do there, and we have our work cut out for us, but I think the important story is that India might be the next great opportunity for U.S. dry bean exports."

Health Professionals Targeted in Napa Valley

The annual Healthy Kitchens, Healthy Lives leadership conference was a successful way for the Northarvest Bean Growers Association to connect with a variety of health professionals to share delicious ways to enjoy more beans, and direct them to online resources to share with patients and clients. Northarvest was among seventeen sponsors at the conference, and was represented by Megan Myrdal, registered dietician nutritionist and research and education associate for Farmer's Daughter Consulting.

Healthy Kitchens attracted over 400 health professionals from various backgrounds to the Culinary Institute of America (CIA) in St. Helena, California. Throughout the four day conference, sponsors engaged with attendees at two evening receptions, two lunch exhibits, and various programming activities. The Northarvest Bean Growers/Bean Institute exhibit table provided a great location to engage with attendees and was good exposure for bean literature and recipes.

Megan Myrdal and Chef Lars serving up beans at Healthy Kitchens, Healthy Lives 2016.

Myrdal and chef Lars Kronmark, a professor at the CIA, shared six delicious recipes during the meal exhibit times, including Smokey Tomato & Great Northern Bean Soup, Spiced Black Bean Burgers, Pinto Bean & Quinoa Burgers, Brown Rice & Kidney Bean Salad, Red Quinoa & Navy Bean Salad, and Pinto Bean Hummus. Three of the recipes were provided to attendees on newly developed recipe cards.

Myrdal also shared a newly created Bean Institute website driver that encourages visitors to check out the newly designed Bean Institute website and also highlights the Culinary Bean Toolkit as a resource for patient/client education. Many attendees said they were excited about the handouts created to address gas/flatulence issues, as well as guidelines for introducing beans to babies.

Northarvest also raffled off a Cuisinart Pressure Cooker which was demonstrated during a kitchen session. During a happy hour reception, Northarvest had an engaging booth where seven varieties of dry beans were placed in white bowls with note cards. In order to qualify to win, attendees had to guess what bean name card matched the bean in the bowl. Many attendees commented that they had no idea so many beans were grown in this region of the country.

Beth Schatz Kaylor, a food blogger from Bismarck, N.D., assisted Myrdal with booth activities and talked to health professionals about delicious culinary applications for beans and good flavor profiles to complement certain bean varieties.

Beans Promoted in Africa, Dubai and India

Northarvest director David Dickson, from Gilby, North Dakota, attended Gulfood 2016, a major food and hospitality trade event, in late February at the Dubai World Trade Centre. The show featured more than 5,000 companies and 117 pavilions, and was expected to draw more than 85,000 visitors from more than 170 countries.

Attendees include international heads of state, ministers, government officials and national trade associations. "The show facilitates multimillion dollar transactions as the global food industry meets, networks, sources new products and trades out of Dubai," said Trixie LohMirmand, Senior Vice President at DWTC, the organizer of Gulfood, in a statement.

The U.S. Dry Bean Council had a booth at Gulfood. Dickson spent time in the booth, along with a dry bean grower from Nebraska, USDBC representative for Spain, Italy and North Africa, David McLellan, and some U.S. brokers. Dickson was amazed by the size of the food show. "It was huge, it was non-stop, we had six people in the booth and we were talking non-stop with somebody," said Dickson. "And there were a lot of good showings from other U.S. commodity groups, like U.S. dairy and U.S. beef."

Dickson sees some potential for dry bean exports to the Middle East. "I think there were some deals with brokers," according to Dickson. "From what we heard, they really want to do business with the U.S.; they really like the quality of U.S. beans. I think there's a lot of potential for pinto beans in the area." However, Dickson said the majority of the interest from buyers was for peas, lentils and chickpeas.

INDIA NOT SELF-SUFFICIENT

Northarvest Bean Growers Association board member Grady Thorsgard, from Northwood, North Dakota, was one of the U.S. dry bean industry representatives that attended the India Pulses and Grains Association's third edition of its biennial event, The Pulses Conclave, from February 17th to 19th, in Jaipur, India.

This official International Year of Pulses event also featured the national finalists from the India Pulse Food Innovation Competition for students from India culinary and food science and technology colleges. The competition helped build awareness of the United Nations-declared International Year of Pulses (IYOP) in 2016. The Pulse Conclave drew a record 1,200 delegates who came to hear about India's anticipated pulse crop shortfall and forecast for imports.

Government reports note that weather problems the last two years have resulted in a crop shortfall of over two million metric tons below the 2013-14 levels. Speakers at the Conclave forecast that there will be stock shortages as early as June.

While chickpeas and lentils are a food staple in India, Thorsgard thinks there may be an opportunity to sell dry beans there in the future. "The Indian leaders made it clear that they were really short of crop production, and their population is growing so fast so there should be a lot of opportunities to hopefully get some dry beans included in the rest of the pulse crops," said Thorsgard. "And, visiting with the U.S. Embassy, we were told that India's middle class is growing fast, wants a varied diet and is willing to pay for it. One example is avocados which are selling for $10 a piece."

Thorsgard found it interesting to be at the U.S. Embassy at the same time as the North Dakota Trade Office's trade mission was there. North Dakota Agriculture Commissioner Doug Goehring met with Indian government officials for talks on India's agricultural economy and the demand for North Dakota commodities. Goehring learned that by 2025, India's growing middle class will be 41 percent of its population, an estimated 680 million people.

TWO-PHASE TRIP TO AFRICA

Minnesota Dry Bean Council Chairman Mark Dombeck represented Northarvest on a trip to Zimbabwe and Zambia in early March. In Zimbabwe, the Perham, Minnesota dry bean grower was part of meetings with five food aid non-governmental organizations (NGOs). The U.S. delegation provided the NGOs contacts of food aid suppliers in the United States for dry beans, peas and lentils. Some of these NGOs are receiving money for food aid from other worldwide charity organizations,

such as the Bill and Melinda Gates Foundation, Feed the Children, U.S. Food Aid, etc.

The five NGOs the U.S. delegation visited included Save the Children, EMMAUS International, Heifer International, Foundations for Farming, and World Vision. The group also met with the U.S. Embassy in Zimbabwe. "The economy in Zimbabwe is terrible and getting worse, very high unemployment, food shortages, and now they have a bad drought," says Dombeck.

Relief from Zambia has stopped, aid from South Africa has slowed to almost nothing. There has been a huge brain drain because of the very corrupt government. The only hope is that when the 93-year-old president dies things might get a little better."

Dombeck says all the food aid groups are looking for funding from the rest of the world, so there may be an opportunity to move some dry beans into this part of Africa.

Dombeck also attended the Pan-Africa Grain Legume and World Cowpea Conference in Zambia, which was part of the 2016 International Year of the Pulse. The theme of the conference was a sustainable grain legume system for food, income and nutritional security. "This was a scientific conference with attendees from government food aid agencies, plant breeders, agronomists, equipment representatives for proper storage and handling of pulses, as well as dieticians and nutritionists," says Dombeck. "Local aid agencies were there to teach small farmers proper crop rotation and nutrition."

Dombeck learned that many of the soils in Africa are depleted of important crop minerals. The focus of the 6-day conference, which featured 525 presentations from 46 countries, was to improve soil health by planting more legumes in crop rotation, which will also improve human diets. "Many areas plant continuous corn which is not good for soil health, or the human diet," says Dombeck. "There is very little commercial fertilizer used, so proper crop rotation is very important."

Plant breeders from Washington State University, North Dakota State University, the University of Nebraska, and Michigan State University attended the conference. Among the sponsors were Archer Daniels Midland, the Crop Science Society of America, the Global Pulse Confederation, Pulse Canada, the Legume Innovation Lab, the Bill and Melinda Gates Foundation, the McKnight Foundation, the U.S. Agency for International Development (USAID), and Feed the Future.

NORTHARVEST Pulse of the Industry

LUKE KUSTER
Reynolds, North Dakota

How long have you been farming? I am the fourth generation to farm on our family farm. My uncle Gene Finstrom was farming and was kind enough to let me farm the land he was farming, because he saw the interest I had. My Grandpa Gerald Kuster and my uncle Loren Kuster allowed me to acquire the land and to farm with them. I've been farming 11 years.

What classes of dry beans do you grow and why? We grow Navies, because they yield well for us.

What has been your favorite piece of farm equipment? Harvest Equipment (Massey combine, Pickett combine and the sugar beet lifter)

If you could add any new equipment, what would it be? If I could add a piece of equipment it would be an air seeder.

What is one piece of equipment you wouldn't want to be without? GPS or the Bobcat.

Do you have any hobbies? I love spending time with my wife Sarah and two kids: Madelynn and Brayden. The lake is always fun in the summer along with a few rounds of golf.

What's the best part of your job? I enjoy the flexibility and the opportunity to work with family on a daily basis.

LES PUPPE
Hensel, North Dakota

Tell us the history of your farm. My dad worked for a farmer named Leonard Schwartz 30-some years and when he retired my dad rented a little bit of land from him. He had started farming a few years before that when he bought two quarters from a bachelor farmer, Harrietts Goetz, he used to help when he had time. We just started back in the 70s. My dad and I farmed together until he passed away 18 years ago. We never did get very big-I'm still farming about the same amount, about 1,800 acres. I've taken off-farm income, at the ASCS office in Cavalier for 20 years, and now selling Crystal beet seed for the last 17 years. My wife worked too, and we enjoy weekends at the lake. I'm now farming with my son, Chris.

What else do you raise besides edible beans? Corn, sunflowers, wheat and sugarbeets. Not a lot of acres of any of them but I just try to be diversified. I'm not going to make it rich but I'm just trying to have steady income.

Do you enjoy farming? I've always enjoyed it. I remember being in school and seeing the trucks go by and all I wanted was to be done with high school and I wanted to be on the farm so bad-it was my dream. I never could have an office job because I love being outside.

Have you always raised edible beans? I raised edibles every year until last year. My rotation was getting tight so I didn't raise beans and it was probably the first time in 35 years that I didn't have any pinto beans and now I'm back in them and back out of soybeans.

Have you had a favorite piece of equipment? Yes, my boat! But to be honest, the best piece of machinery I've ever bought would have to be a 3-rank multi-weeder to go through trashy stuff. I also have a 20-year-old Flexi-Coil packer. I like the s-tines with the three rows, the harrow and then the packer on the back. I do all my beans with that. I think it does a fabulous job. Even though there's newer stuff out there, it works great for me.

Is there a piece of equipment you couldn't do without? A few years ago I bought a joker, which is like a disc with sharp, angled discs. You go fast, 9 to 11 miles per hour and it will not ridge. And then it has packer wheels on the back that you put down pressure on. I'm breaking up some CRP right now with it and I also use it as a seed preparation for my beets so it's kind of an all-around machine for me.

Do you direct-harvest your beans? No, I've never tried it. I like getting out there early. Usually the wheat is off and I like to cut the beans on the green side so they don't blow away. If they ever blow away I'll probably quit cutting them and go to flexing them off. But right now, I like getting in the field early and I like the job I do. I have an old 1480 combine that has a spike tooth and a conveyer.

What are your hobbies? I love to fish. We try to go to the lake every weekend during the summer. I also love to hunt deer, I do a lot of bow hunting, and I also love to golf.

If you could win a vacation, where would you like to go? Next year, I hope our family can get to Disneyworld for 3 weeks to a month. Last year we went to Arizona. I don't know, I'm pretty happy staying in the United States.

Do you have a favorite food? All of it. I like Mexican, and Chinese-I guess I do like them all. A good steak is pretty good too.

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