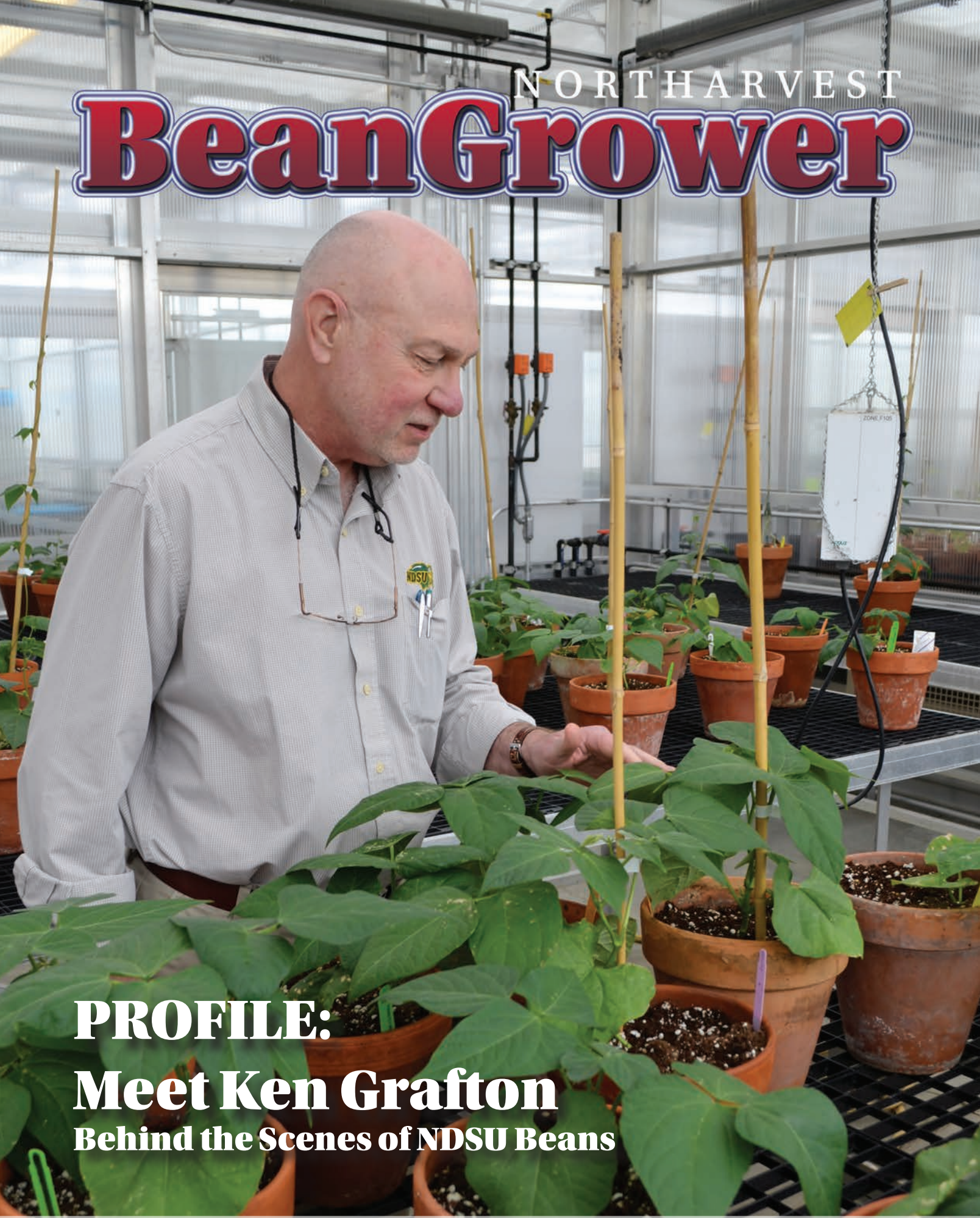
NORTHARVEST
BeanGrower



PROFILE:
Meet Ken Grafton
Behind the Scenes of NDSU Beans

VOLUME 24, ISSUE 4 WWW.NORTHARVESTBEAN.ORG SUMMER 2018

At Seedwest, *quality* comes in

Vibrant* Pinto, Monterrey Pinto and Medalist Navy, to name a few. These high-yielding seed varieties are:**

- **suitable for direct harvest**
- **sourced using Western growers that produce "Blue Tag" certified seed**
- **grown in arid climates and certified to be virtually disease-free**

Discover the advantages of Seedwest seed. Contact your local dealer today!

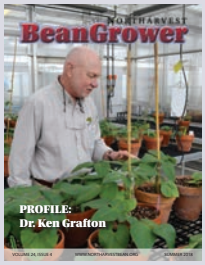
(701) 730-4037 | seedwest@adm.com | www.seedwest.com

ADM

*Vibrant is an SDP (Slow Darkening Pinto) variety and is a patented variety, US Patent No. 9,532,523. All three varieties listed above are PVP protected.

**Yield depends on a variety of factors beyond ADM's control, such as weather conditions, etc.

NORTHARVEST BeanGrower



The Northarvest Bean Grower is published five times a year by the Northarvest Bean Growers Association, 50072 E. Lake Seven Road, Frazee, MN 56544, Phone: (218) 334-6351, Website: www.northarvestbean.org, Email: nhbean@loretel.net.

Send editorial materials to Don Wick, Ag Information Services, Inc., 997 47th Avenue, So., Unit 2, Grand Forks, ND 58201, don@rrfn.com. Send advertising materials to Marlene Dufault, MLD Communications, 2604 Wheat Drive, Red Lake Falls, MN 56750, 218-253-2074, mdufault@gvtel.com. Publication of editorial or advertising material in the Northarvest Bean Grower magazine does not imply endorsement by the Northarvest Bean Growers Association. Check agronomic advice with local sources and always read and follow product labels.

VOLUME 24 ISSUE 4

GOVERNMENT NUTRITION PROGRAMS: GOOD NEWS FOR NORTHARVEST BEAN GROWERS

The Northarvest Bean Growers Association received some very positive news this spring. USDA announced the purchase of $177 million in products for government nutrition programs, including pinto beans. This $11 million buy is the result of a request made by your Northarvest Bean Growers Association. We made the request with the North Central Bean Dealers Association to help reduce the large supply of pinto beans in the U.S. This was the third successful Section 32 request we've made in the past three years.

USDA's Section 32 program began in 1935 as a way to support farmers and build demand for agricultural commodities. Uncle Sam sends surplus food to school lunch programs, food banks and other federal nutrition programs. It is also good to know that taxpayers don't foot the bill, the purchases are funded by import tariffs on farm commodities. By making our pinto beans available, this protein improves the diets of children. It is also a shot in the arm for growers and dealers. Sounds like a pretty good deal, right?

In this issue of *BeanGrower*, you'll find out more about Dr. Ken Grafton from North Dakota State University. Dr. Grafton is now in administrative role, but began his career at NDSU as the dry bean breeder. There's also an interesting disease update from Dr. Sam Markell.

Wishing you a successful growing season!

Sincerely,

Tom Kennelly, President
Northarvest Bean Growers Association

TABLE OF CONTENTS | SUMMER 2018

2017 Dry Bean Grower Survey

For nearly three decades, dry bean growers have responded to an annual survey of varieties grown, pest problems, pesticide use and grower practices. Research and Extension faculty at North Dakota State University, along with 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 239 growers responded to the survey, representing 14.4 percent of last year's total planted acreage. The previous year, 140 growers completed the survey.

In 2017, the two most popular varieties by class

- Black: 1. Eclipse 2. Zorro
- Great Northern: 1. Aries 2. Taurus
- Kidney: 1. Montcalm 2: Clouseau
- Navy: 1. HMS Medalist 2. T9905
- Pink: 1. Floyd
- Pinto: 1. La Paz 2. Windbreaker

More than 25 percent of the growers who responded ranked water damage (beans harvested) as the most significant dry bean production problem in 2017. Drought and weeds were ranked as the next biggest production problems. In 2016, hail was Number 1 on this list and weeds were Number 2.

For the first time, the survey included questions about dicamba drift injury and whether it will affect growers' future planting intentions. Nine growers reported dicamba drift injury on their dry bean acres in 2017. The nine growers affected estimated yield losses of 100 to 2,000 pounds per acre, and only one of those growers came to a successful resolution with the party responsible for dicamba drift. Ninety-six percent of survey respondents said the risk of potential injury from dicamba drift may prevent them from planting dry beans in 2018.

Twenty-six growers reported not getting as much seed as they purchased for their intended acres in 2017, while one grower reported getting too much seed.

Nearly 80 percent of growers surveyed said they direct harvested some of their edible beans last year, including 54.9 percent who said they direct combined all their dry beans. Twenty-one percent of the growers did no direct harvesting. Forty percent of the growers who direct harvested estimated yield losses of one to five percent, while another 58.8 percent had yield losses of six to 20 percent. Growers who

White mold was one disease problem for dry bean growers in 2017

harvested conventionally reported yield losses as well; 70.7 percent experienced losses between one and five percent, while 28.3 percent had losses between six and 20 percent.

Some other highlights from the 2017 grower survey:

- 76.8 percent of the acres reported were grown with conventional tillage. 12.3 percent of the acres reported were in a minimum tillage system
- 89.8 percent of respondents used nitrogen in their dry beans. 84 percent of the respondents used phosphorus
- 86.9 percent of the total respondents used broadcast fertilizer applications. 33.8 percent of the respondents used an in-furrow fertilizer system
- 76.8 percent used a soil test prior to fertilization. 21.3 percent used Rhizobium inoculants on their dry bean fields
- 57.6 percent of growers reported spraying Sharpen as a desiccant; 39 percent sprayed with glyphosate
- 44.6 percent of the growers responding use a 2-year rotation. 15.5 percent use a 3-year rotation
- 69.3 percent of growers reported no insect problems in 2017; 9.5 percent listed leafhoppers as their top insect problem
- 87.3 percent did not apply foliar insecticide. Warrior was the top choice among growers who did
- 29.3 percent of the dry bean growers responding used Cruiser Maxx insecticide seed treatment; 37.1 percent of growers did not use a seed treatment last year
- 56.1 percent of growers said white mold was their worst disease problem last year; 20.1 percent of the growers reported no disease problems
- T-methyl and Endura were the two most-used foliar and banded fungicide treatments. 33 percent of respondents did not use foliar and banded fungicide.
- 20.3 percent of the dry bean growers responding used Cruiser Maxx fungicide seed treatment. Thirty-two percent of growers did not use a seed treatment last year.

As in 2016, the worst weed problems in 2017 were kochia, lambsquarters and ragweed. Basagran/generics and Raptor were the most commonly used herbicides by dry bean growers last year.

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

2018 Northarvest Research Funding Summary

The Northarvest Bean Growers Association's commitment to research is evident by the dollars invested to fund new and continuing public research. The Northarvest Board of Directors met in March and approved research projects for 2018. These projects are designed to increase profitability to dry edible bean producers by mitigating risk and make the production of dry beans easier for growers.

DRY EDIBLE BEAN DISEASE RESEARCH

Principal Investigators: Julie Pasche and Sam Markell, North Dakota State University.

Collaborator: Juan Osorno, North Dakota State University

Project Objective: NDSU dry bean pathology has four primary objectives. They are the monitoring of dry bean fields for diseases increasing in prevalence and severity; the evaluation of pathogens for changes in virulence on the host of fungicide sensitivity; work with NDSU breeding program to identify sources of resistance and the evaluation of chemicals for disease management. In 2017, researchers considered the use of applied in-furrow and seed treatments for the management of root rot; screened dry bean lines for resistance to rust and common bacterial blight; evaluated chemicals for management of bacterial blight, white mold and rust and monitored dry bean fields for disease severity. In 2018, the focus is on characterizing the pathogens that cause root rots and rust while conducting field trials for management of white mold and other diseases.

Northarvest funding request: $47,823 SBARE funding request: $16,006

DRY BEAN IMPROVEMENT FOR THE NORTHERN PLAINS

Principal Investigators: Juan Osorno, North Dakota State University

Research Assistance: Dr. Kristin Simons; Research Specialists: A. Jody Vander Wal and John Posch; Graduate Students, Katelyn Walter, Federico Velazquez and Edgar Escobar

Project Objective: The objective of the dry breeding program at NDSU is to develop high yielding, high quality dry bean genotypes that are adapted for the Northern Great Plains. During the winter, approximately 250 unique hybridizations or crosses are performed in the greenhouse. Variety trials are conducted at more than eight locations in North Dakota and two in Minnesota. During 2017, limited amounts of foundation seed of the new ND-Palomino slow darkening varieties were distributed to certified seed growers. Talon dark red kidney and Rosie light red kidney beans show superior performance. Eclipse is the most widely used cultivar in black bean production.

Northarvest funding request: $146, 580

EVALUATION OF SELECTED PLANT ESTABLISHMENT FACTORS AND NUTRITION TREATMENTS IN DRY BEANS

Principal Investigators: Greg Endres and Mike Ostlie, NDSU Carrington Research Extension Center

Project Objective: This project examines dry bean plant and seed yield response to starter and post-emergence fertilizer treatments in pintos. In addition, the study considers row spacings in black and pinto beans and the use of winter rye as a co-existing cover crop. The fertilizer research will continue this year to build databases of all fertilizer treatments.

All of the studies are being conducted at the Carrington Research and Extension Center.

Northarvest funding request: $15, 500

PRECISION PLANTING OF DRY EDIBLE BEANS

Principal Investigator: Eric Eriksmoen, NDSU North Central Research Extension Center

Project Objective: The main objective of this small plot replicated research trial will be to compare precision seeding with conventional seeding pinto, navy and dark red kidney beans. All three market classes will be planted in 15 inch and 30 inch rows. These row spacings will be planted at various seeding rates. types seeded at different row widths. Data collection will focus on seedling population, final population, plant maturity, plant height at maturity, lodging/harvestability and other notable observations, such as weed competition or disease severity.

Northarvest funding request: $14,400

SOYBEAN CYST NEMATODE RESISTANCE IN DRY BEAN CULTIVARS AND BREEDING MATERIAL

Principal Investigators: Dr. Berlin Nelson, Dr. Juan Osorno and Dr. Shalu Jain, North Dakota State University

Project Objective: SCN has now spread into major dry bean growing areas in North Dakota and northern Minnesota in the Red River Valley. With this research, dry bean cultivars from various market classes and NDSU breeding lines are being screened for resistance/tolerance to virulent types of soybean cyst nematode. SCN survives very well in our soils and nematode egg numbers can increase to high levels in susceptible crops, soybeans and dry beans. At the present time, researchers are not aware of highly resistant bean cultivars grown in Minnesota or North Dakota, especially in pinto, kidney and navy beans.

Northarvest funding request: $29,260

IMPROVING WHITE MOLD MANAGEMENT IN DRY BEANS

Principal Investigator: Michael Wunsch, NDSU Carrington Research Extension Center

Project Objective: This project seeks to improve the control of white mold in pinto beans by optimizing nozzle spray pattern, droplet size, and application pressure for maximum fungicide deposition within the crop canopy, improve Sclerotina disease control and improved dry bean yield and quality under white mold disease pressure by quantifying the response to spray volume and quantifying the response to adjuvants. Studies are being conducted at the NDSU Carrington Extension Research Center on land with previous history of white mold disease pressure.

Northarvest funding request: $18,000

NORTH DAKOTA DRY EDIBLE BEAN VARIETY TRIALS

Principal Investigator: Eric Eriksmoen Co-principal investigators: Justin Jacobs, Bryan Hanson, Mike Ostlie, Kelly Cooper and John Rickertsen, NDSU

Project Objective: These trials support plant breeding efforts in the development of superior adapted varieties trials will be composed of pinto, navy, black and miscellaneous classes grown at four dryland and two irrigated NDSU Research Extension Centers. Trials will be planted utilizing best management practices for the area and farming practices in which the trial is being grown. The trial locations are irrigated conventional till at Oaks and Williston, conventional till at Langdon and Carrington and no-till at Minot and Hettinger. Comparisons will be made for agronomics, seed quality and seed yield.

Northarvest funding request: $13,250

DRY BEAN GROWER SURVEY OF PEST PROBLEMS, PESTICIDE USE AND VARIETIES

Principal Investigator: Janet Knodel

Project Objective: The survey documents changes in dry bean grower agronomic practices, varieties grown, pest problems and pesticide use in North Dakota and Minnesota. These surveys have been conducted since 1987. The data on varieties has made it possible to trace the use of different varieties. It also provides information on the value of the breeding program to the producer. Differences in production issues between North Dakota and Minnesota are also documented.

Northarvest funding request: $5,040

USDA Announces Section 32 Purchase Plan will help dry bean growers and Americans in need

The U.S. Department of Agriculture has announced up to $177.4 million in purchases of American-grown products for nutrition assistance programs using a new streamlined process. The products that will be purchased will be provided to families in need through nutrition assistance programs. Included in the purchase will be $11 million worth of pinto beans.

The purchase, through USDA's Section 32, is the result of a March 2018 request by the Northarvest Bean Growers Association and the North Central Bean Dealers Association. The letter was sent as a joint effort to request action to resolve the surplus inventory problem for pinto beans. This is the third Section 32 purchase since 2015. USDA's Section 32 program is designed to support growers through the purchase of surplus commodities.

"We are grateful to the USDA for their quick action in assisting both dry bean growers and Americans that need it the most, to create a win-win situation for the farming community and Americans in need," said Tom Kennelly, president of the Northarvest Bean Growers Association. "We would also like to congratulate and extend thanks to our leaders in congress from Minnesota and North Dakota, the USDA Agricultural Marketing Service and U.S. Agriculture Secretary Sonny Perdue for their combined efforts and attentiveness on this issue."

Dan Fuglesten, president of the North Central Bean Dealers Association was enthusiastic when asked about the purchase, "Our joint request was timely, and we are happy that action was taken immediately. Programs such as UDSA's Section 32 deliver an immediate and very positive result back to our rural communities."

USDA's Agricultural Marketing Service purchases a variety of high-quality food each year to support the National School Lunch Program, the Commodity Supplemental Food Program, the Food Distribution Program on Indian Reservations and the Emergency Food Assistance Program. USDA also makes emergency food purchases for distribution to victims of natural disasters.

Under the new streamlined process, USDA will proactively monitor market conditions and provide a more predictable and consistent process for determining when to make such purchases.

Decades of Dedication to Agriculture

By Megan Ternquist

Dr. Ken Grafton is a familiar face on the North Dakota State University campus. Some may know him as the current Dean of the College of Agriculture, Food Science and Natural Resources. Others may or may not know about his connection with the NDSU Dry Bean Breeding Program. However, it wasn't always in Grafton's plan to study plant breeding.

Being an Ohio native, Grafton's family had a small farm in western Pennsylvania where they raised small grains and cattle. That's where his passion for agriculture started to develop. "Before going to college, I wanted to be a dairy farmer. My dad told me I could do whatever I want, but I had to get a degree. So, I went to the Ohio State University thinking I was going to study dairy."

Grafton says those plans changed after taking his first genetics class. "I instantly fell in love with the area. Then, when I took an agronomy class and a plant breeding class, and knew I wanted to be a plant breeder. So, that's how I ended up where I am today."

After graduating with a degree in agriculture, Grafton then went on to obtain a M.S. in Planting Breeding and Genetics from Ohio State and a Ph.D. from the University of Missouri. In 1980, Grafton came to NDSU as a Post-Doctoral Research Associate in the Plant Sciences Department. At the time, the Dry Bean Breeding Program was just getting started.

Dry edible beans have been grown in the United States since the late 1900s, with the first dry bean breeding program started in 1906 at Michigan State University. Dry beans were first commercially grown in North Dakota starting in 1962. While the history of dry beans at NDSU may be shorter, Grafton says the program really took off.

"At the time, Dr. Paul W. Sandal was given the task of starting a dry bean breeding project, using some federal earmark money. The goal was to address some of the issues in dry beans, which were a relatively new crop to the state. I came onboard in the research assistant position to help and to continue my education," says Grafton. "When Dr. Sandal retired, Dr. Glen Weiser was hired as his replacement. Then, when Weiser left to go to Clemson University, I became the dry bean breeder."

The Northharvest Bean Growers Association also played a critical role in the beginning years of the NDSU Dry Bean Breeding Program. Grafton says the group and its growers provided not just financial support, but also a general understanding of the commodity.

"At first, the program's primary focus were pinto and navy beans because those were the two highly marketed classes in the state. Over time, we added kidney and black beans. We even had a small program in pinks, small reds and even Mexican reds." Grafton adds the list of dry bean classes and varieties goes on and on. "There's a ton of diversity, but that's what really makes dry

beans exciting to work on as a crop. They're just remarkable!"

In 2002, Grafton became the Director of the North Dakota Agricultural Experiment Station. Additionally, he has served as the Dean of the College of Agriculture, Food Science and Natural Resources since 2005. As Grafton transitioned into his new administrative roles, Dr. Juan Osorno was hired in 2007 for the dry bean breeder position.

Today, the program works with eight market classes of dry edible beans, including pinto, navy black, dark and light red kidney, Great Northern, small red and pink beans. Much of the programs recent work has been focused on the introduction of slow darkening pintos into the region. In total, 17 dry bean varieties have been released by NDSU since 1981.

"In my opinion, NDSU has one of the premier bean breeding programs in the United States; if not in the Western Hemisphere," says Grafton. "It's a remarkable accomplishment not only for the state, but for the Northarvest Bean Growers Association as well. Their financial support and long-term commitment has been crucial for the ongoing success of the program."

At the end of the day, Grafton enjoys being a leadership role that helps NDSU's faculty, staff and scientists succeed. "It's also a rewarding experience to work with North Dakota farmers and ranchers. It's just all around great!"

From the Archives of the Northarvest Bean Growers Association

15 YEARS AGO: SUMMER 2013

Pesticide Harmonization: North Dakota Senator Byron Dorgan introduced the Pesticide Harmonization Act to address the disparity in the prices between what U.S. farmers pay for pesticides and what their Canadian counterparts pay for essentially the same product. Roger Johnson, who was serving as the North Dakota Agriculture Commissioner, wrote a column in this issue of Bean Grower about this bill. Johnson cited pricing studies conducted by the Northern Plains Trade Research Center in 2001 and the North Dakota Department of Agriculture in 2002. The research found North Dakota farmers would save approximately $24-million if they could purchase pesticides at Canadian prices.

Trade Dispute with Mexico: In June of 2003, Mexico lifted its ban on U.S. dry bean imports. Mexico closed its border to U.S. and Canadian dry beans in January of 2003, claiming the beans did not meet phytosanitary regulations. Mexico also alleged U.S. companies were dumping beans on the Mexican market at below-market values. The article in Bean Grower said the trade dispute may have more to do with politics than anything else. "It's an election year in Mexico. Closing the border may be part of the government's strategy to raise domestic bean prices and win farmers' votes."

10 YEARS AGO: SUMMER 2008

Dry Bean Acreage to Decline: Per capita consumption of dry beans increased three percent in 2007, reaching 6.6 pounds. This is the third consecutive annual increase, reversing a string of five annual declines. Bean Grower reviewed the USDA Prospective Plantings Report, saying the area planted to dry edible beans is expected to decline eight percent this spring from last year's 1.53 million acres.

New Officer Team for Northarvest: Jon Ewy of Deer Creek, Minnesota was named president of the Northarvest Bean Growers Association. Don Streifel of Washburn, North Dakota is vice president and Todd Sorenson of Fisher, Minnesota is treasurer. Scott Mund of Milnor, North Dakota was elected to the North Dakota Council. The other members of the Northarvest board are Gary Paur, Gilby, North Dakota; Mark Streed, Milan, Minnesota; Joe Mauch, Hankinson, North Dakota; Alan Juliuson, Hope, North Dakota; Mark Myrdal, Edinburg, North Dakota; and Daniel Webster, Penn, North Dakota.

Election Results

The Northarvest Bean Growers Association Board of Directors has reelected three officers for one-year terms. Tom Kennelly from Grafton, ND was reelected President; David Dickson of Grand Forks will serve as Vice-President; and Crookston, MN grower Eric Samuelson was reelected Secretary/Treasurer. This will be their third year as officers.

TWO REELECTED TO MN DRY BEAN COUNCIL

Troy Newhouse was reelected to a three-year term on the Minnesota Dry Bean Research and Promotion Council from Area 1. Newhouse was first elected in 2012, and has served as secretary since 2013. In addition to dry beans, the East Grand Forks farmer grows wheat, corn, soybeans and sugarbeets. Mark Dombeck was also reelected to a three-year term from Area 5. Dombeck, who was first elected to the Council in 1994 and has served as Chairman since 2001, grows dry beans, corn, soybean, and alfalfa. He also operates a 350-cow dairy near Perham.

NORTH DAKOTA DRY BEAN COUNCIL ELECTION

North Dakota Dry Bean Council election results show Leann Schafer of New Rockford, Kevin Regan of Webster and Matt Thompson of Wyndmere were re-elected to three-year terms. Schafer, the current chair, has served on the Council since 2012. Regan was first elected in 2015, and currently serves as treasurer. Thompson was appointed to the Council in 2017, but needed to be officially elected in 2018 to complete his three-year term.

HEADS UP® W

Alberta Pulse Growers call new seed treatment a valuable t

Evaluating foliar fungicides for controlling Sclerotinia white mould on dry bean crops

Written by Michael Harding and Brian Storozynsky, Alberta Agriculture and Forestry

A BETTER WAY TO PROTECT BEANS FROM WHITE MOULD

IN 2017, ALL DRY BEAN SEED BROUGHT TO ALBERTA WAS TREATED WITH A PRODUCT KNOWN AS HEADS UP®. RESEARCH FUNDED BY APG AND OTHERS HELPED MAKE THIS ADVANCE POSSIBLE.

Until this year, the agronomic package for dry bean production in Southern Alberta might have been described as a case of two out of three ain't bad.

That's according to Michael Harding, Brooks-based Research Scientist, Plant Pathology, with Alberta Agriculture and Forestry.

"We now have good early-maturing, high-yielding varieties," Harding said, "and pretty good tools for weed control. But disease has continued to be an issue. In most years, white mould is the biggest or one of the biggest constraints to dry bean production in southern Alberta."

In 2013, Harding and a team of researchers embarked on a four-year study to evaluate foliar fungicides for controlling white mould in dry beans.

Among the products for testing was one that was unique. It was a product derived from saponins from a plant called Chenopodium quinoa, and had been brought to Harding by an agribusiness entrepreneur who'd wanted to see if it provided a white mould response and hoped to find a market for it.

"It's a product that's normally applied as a seed treatment," Harding said. "White mould usually comes in July or August, so it was hard to imagine it would be effective. It turned out to have a significant effect, possibly due to a phenomenon known as resistance priming. You can prime the plant to use its

INS PRAISE...

tool in the fight against white mold in dry bean production

own natural resistance to the disease. It's a different way of poking at the problem."

A NEW APPROACH ON WHITE MOULD

Through four years of trials at Brooks and Lethbridge, Heads Up® often outperformed the other products. Before long, Harding's results had helped complete a package of performance data that would ultimately support its registration.

The product, now known commercially as Heads Up® Plant Protectant, was used to treat all dry bean seed brought to Alberta by Viterra in 2017.

"We were looking at fungicides for the management of white mould, but we weren't seeing a transformation in the ability to control white mould," Harding said. "That one product showed significant improvement in most years, or a trend to improvement in others. Normally we'd start in the lab and the greenhouse and do growth cabinet trials. In this case, we clearly saw the potential of this product and fast-tracked it to small plot trials."

Another component of this study looked at the use of micro-nutrients within a white mould management program. Despite flashes of performance, no configuration performed consistently enough to offer a real advantage, in Harding's eyes.

Still, this 2013-16 study helped bring dry bean growers a piece of the agronomic puzzle they've long lacked: a new way to manage white mould.

"Part of our job is to try things out so the growers don't have to, so there's less risk for them," Harding said. "That's the purpose. We tried a product out and it was adopted by industry. In that sense, it's one of those projects that has been really satisfying."

Grower-Driven Research

The Northarvest Bean Growers Association's Research Committee took a hands-on approach this year to steer research that will make a difference for bean production. Rather than simply asking researchers to submit proposals, the growers on the Committee met to discuss their research needs with North Dakota State University agronomists and private crop consultants. Following this meeting, a list of research priorities was sent to 32 scientists as a guideline to receiving a request for research proposal

2018 NHBGA RESEARCH PRIORITIES

Research Areas of Interest *(These are not listed in order of priority)*

PRODUCTION ISSUES:

1. Waterlogging. Every year the region of Northarvest has an excess water problem. In 2016, 50 percent of growers responding to the Dry Bean Grower Survey reported some fields that were not harvested or only partially harvested. Root rot is another troubling result of waterlogging. There is interest in addressing the survival of the dry bean in a waterlogging situation through plant genetics.

2. Alkali. In 2017 alkali was worse despite the dry year. In addition, salt is coming to the soil surface in some areas due to the high water table. The alkali problem is getting worse. Tiling helps, but is not affordable for some.

3. Cover Crop Establishment. Interest in cover crops is growing due to blowing topsoil and plant stand loss. Interest is to spring-plant a cereal grain of choice followed by incorporation of Sonalan, Eptam, Treflan or Dual (examples of pre-emerge chemicals) to determine if cover crop establishment will be adequate and to learn optimum time to kill cover crop leading to dry bean productivity.

4. Row Spacing/Plant Population. There is increased interest in narrower rows, and some research has shown increased yields. Crop consultants estimate plant populations are typically 83-85% of the seeding rate. This is likely less than most growers think.

5. Tile Drainage. Growers who have made the investment say it's paying for itself in higher yields. Others question whether their land values justify the investment.

6. Direct Harvest. Crop consultants report significant yield losses with direct harvesting. Will early fertilizer application develop longer internode length so the first set of bean pods are higher off the ground?

7. Rolling Fields. The increased interest in direct harvesting is leading to more rolling. Growers see plant emergence (soil compaction) and water puddling following a rain as a problem due to rolling. Can dry beans be rolled after emergence? It is a common practice with soybeans.

8. Broadcast vs. Band Spraying. Growers suggest band spraying works much better pertaining to white mold control. Can growers be effective in controlling white mold and save money with band application vs. broadcast application?

9. Breeding Beans. Must lead to efficiencies in production/harvesting/marketing with variety releases of the five major classes of dry beans grown in this region, i.e. pinto, navy, black, dark red kidney and light red kidney.

10. Water rate, chemical rate, timing, side-dress versus broadcast application of herbicides and fungicides. There is a lot of uncertainty about what combination is most effective and practical. For example, crop consultants recommend 15-20 gallons of water per acre for herbicides and at least 15 gallons for fungicides.

11. Use of desiccants; rotation concerns, consumer concerns. All need to be kept top of mind in search of new desiccants and application of approved desiccants.

12. Kochia, Lambsquarter, and Ragweed. They remain the top three problem weeds with concern about nightshade, as well as pigweed and waterhemp moving in.

13. White mold. NBGA has been supporting research on managing white mold for 40 years, so what is it we don't know about this disease? Have we been looking at it correctly? Private crop consultants say white mold is likely causing yield losses of 30-50 percent in dry edible beans. The also suggest plant-to-plant spacing is more important than row width and prefer 20-30 gallons of water per acre when applying fungicides. Growers ask "why are we stuck with current fungicide rates and recommended fungicides?" Growers have interest in performance of Sanidate and Oxidate (dryland & irrigated) and when applied through a center pivot irrigator at different water amounts. Is fungicide resistance developing? Plant populations should also be researched as it

pertains to white mold management.

The "Farm QA" fungicide timing tool shows potential. It may be another tool to know the proper time to apply fungicides; however, it is very site-specific. Every field must be monitored every week and fields must be within 8 miles of a weather station. Fungicides are applied only based on Farm QA's recommendation, not every 10-14 days as in the past. Can "Farm QA" be studied and/or compared to NDAWN and/or the Canola Risk Map?

14. Soybean Cyst Nematode. It's only a matter of time before it becomes a production issue. There is a continued interest in addressing the problem through plant genetics.

15. Root Rot. In-furrow banded application of fungicides in conjunction with liquid fertilizer to determine effectiveness in protecting bean seedlings against root rot and other soil-borne diseases.

Northarvest Executive Vice President Tim Courneya, along with board members Eric Jorgenson and Justin Retterath, met this spring with a Minot scientist in order to correct a research project that had been submitted. Both Retterath and Jorgenson helped the researcher design the project to learn what can be applied in the field. The scientist said, " after 34 years doing research, a commodity group has lead with a suggestion and followed with a meeting to design a project that is applicable." The Northarvest board is attempting to establish a working relationship with the scientific community that is targeted to find solutions for the production issues growers have today.

ND Grower Visits the Caribbean on Dry Bean Trade Mission

This past March, representatives from the U.S. Dry Bean Council (USDBC) spent seven days cultivating dry bean industry relationships in the Dominican Republic and Jamaica. Taking part in the trade mission was USDBC board member and Webster, North Dakota grower Kevin Regan. "The whole idea of the trip was to understand the dry bean value chain and figure out different ways get U.S. product into those Caribbean markets," says Regan.

While visiting the Caribbean, the group met with importers, brokers, wholesalers, packagers, food manufacturers, retailers and farmers. Market research was conducted in both countries to evaluate production and consumption trends, as well as new market opportunities. "In particular, the Dominican Republic has become a major importer of U.S. pinto and black beans," says Regan. "The Dominican Republic-Central America Free Trade Agreement (DR-CAFTA) has made this possible."

Regan (right) visits with Caribbean dry bean buyers on the trip.

According to USDBC's Caribbean Trade Mission report, the U.S. exported 31,401 metric tons of dry beans to the Dominican Republic in the 2016/17 marketing year. The report also suggests there is more flexibility for buyers to import dry beans in 2018 because the Dominican government did not ban imports from January to March. In addition to pintos and blacks, the country has market growth potential for cranberry and Great Northern beans. Full implementation of DR-CAFTA means there will be duty-free access for all classes of

U.S. dry beans starting in 2020.

In Jamaica, there is potential for increasing small red bean exports, as well as opportunities for other classes of dry beans. According to the USDBC, the U.S. exported 3168 metric tons of dry beans to Jamaica in 2017. Of that total, 78 percent were small red beans. However, one challenge is high tariffs on U.S. kidney bean imports. Regan says there are markets for other U.S. beans, such as pinto, black and lima beans. "Both the closeness and reliability of the United States make us good supplier for the Jamaican market."

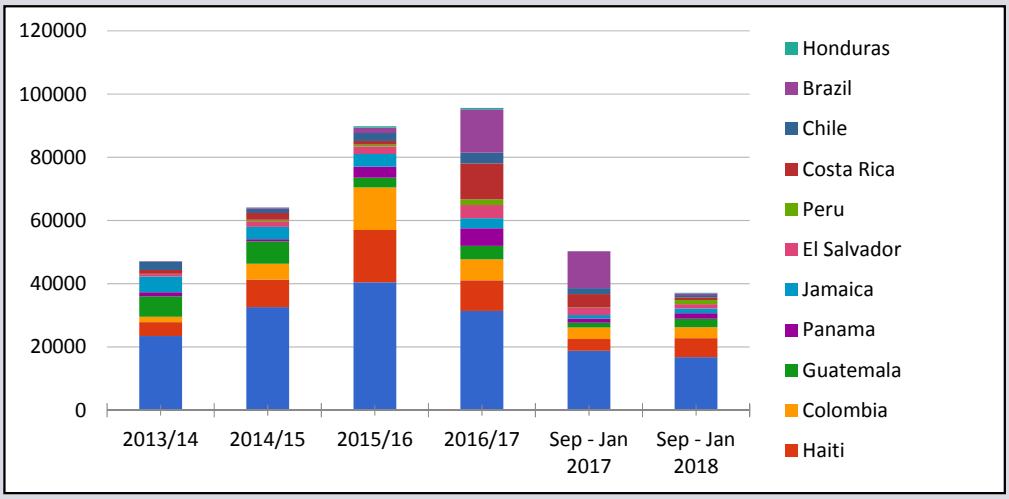
Regan was joined on the trade mission by Multigrain International President George Jibilian, USDBC International Representative Ellen Sue Levinson and USDBC Regional Representative Dario Bard.

Dry Bean Exports Up Through First Five Months of Marketing Year

According to a report from the U.S. Dry Bean Council, U.S. dry bean exports totaled 225,650 metric tons (MT) in the first five months of this marketing year (September-January), up nearly 21 percent compared to the same period the previous year. The top five destinations were Mexico (67,378 MT), Canada (35,013 MT), Italy (21,939 MT), the UK (20,201 MT) and the Dominican Republic (16,745 MT).

The report, filed by South & Central America and Caribbean International Representative Ellen Levinson and Regional Market Consultant Dario Bard, focused on U.S. dry bean exports to trading partners in those regions.

U.S. DRY BEAN EXPORTS TO SOUTH AND CENTRAL AMERICA & THE CARIBBEAN -- TOP DESTINATIONS (MT)



Source: USDA FAS GATS

CHINA'S DRY BEAN EXPORTS TO SOUTH AND CENTRAL AMERICA & CARIBBEAN (MT)

	2013/14	2014/15	2015/16	2016/17	Sep 16-Feb 17	Sep 17-Feb 18
World	311667	378468	403171	293821	165095	132028
Costa Rica	7735	22628	22772	4939	3194	9773
Brazil	11167	15484	64901	30745	30638	132
Venezuela	48796	15026	10472	28958	12586	178
Peru	0	5124	9564	1000	675	1851
El Salvador	132	4510	4620	0	0	0
Colombia	0	2326	5176	0	0	317
Haiti	43	1424	1149	348	174	100
Chile	197	877	2015	170	49	159
Guatemala	1189	741	2893	930	482	589
Panama	72	170	435	219	161	132

Source: Global Trade Atlas

Northarvest Q & A with Crop Consultants

SCOTT EDGAR
North Star Ag Services
Warren, Minnesota

Scott Edgar

Tell us about your crop consulting business. I started North Star Ag Services, Inc. in 1988, providing consulting and soil testing. Since then, the company has expanded to offer complete VRT mapping services and aerial images that provide current drainage maps and VRT planting maps. I've been blessed with many good employees over the years, helping four of them start their own successful consulting businesses in North Dakota and Minnesota.

What's the best part of your job? I enjoy identifying problems in the field and solving them before crop damage is done. Solving problems for growers, who in return get a successful harvest, is rewarding to me.

How has the agriculture industry changed during your career? Over the years, the only constant in this business is change. We use computers for crop records and iPad's for georeferencing problems in the field. GPS has changed the way we do our job more than anything else. Roundup Ready technology has also changed the way the crops are raised. Now with resistant weeds and diseases, it's again changing. I see exciting changes coming in the future.

What's your favorite tool or piece of technology? My favorite tool is GPS. We georeference all problems in the field and use it to create multiple VRT maps. Also, we can use the airplane to spot trouble in the fields and drainage issues. Drones are nice for chemical damage but seem impractical for large scale needs.

What advice would you give dry bean growers to maximize their yields each year? My advice to grow-

ers would be to change their preplant or preemerge chemistry according to weather conditions, soil conditions and weed spectrum. Don't be stuck using the same chemical year after year. All chemicals have weeds and soil conditions they work best on.

When you're not scouting fields and working with growers, what do you do for fun? I enjoy being outside with my wife at our property near Thief River Falls, MN, as well as spending time with my grandsons. Also, I especially enjoy bow hunting elk and deer.

What is your favorite food? My favorite food is a good elk steak or roast.

DAVE SVOBODNY
Midwest Consulting
Park River, North Dakota

Tell us about your crop consulting business

Dave Svobody

Midwest Consulting is an independent crop production consulting company. Primarily based in Walsh County, we serve clients in a six-county area. Our staff consists of five full time agronomists, along with some summer scouting help. We cover a multitude of crops and also provide precision farming services.

What's the best part of your job? The best part of the job is seeing our work pay off. As agronomist, we take the job personally and often refer to fields as "my" field. We take great pride in getting the most production at the least cost.

How has the agriculture industry changed during your career? When I graduated from college, our herbicide book was a paperback folder containing maybe 25 products for weed control. Today, we have online resources because no one could carry that book. Equipment has also grown and improved along the way, making long hours in the field less stressful. That said, the consulting business is still a "boots on the ground" job.

What's your favorite tool or piece of technology? My cell phone sits at the top of technology toys. It allows me to stay in contact with people, as well and serves as my computer for many tasks. I pretty much live with it in my hand or on my belt.

What advice would you give dry bean growers to maximize their yields each year? First, use quality seed. Also, go through the steps to insure it is healthy and vigorous; manage fertility to keep plants healthy. We have had good success using variable nitrogen application, putting more on weak parts of the field and cutting back where plants are prone to excess growth and mold.

When you're not scouting fields and working with growers, what do you do for fun? At my age a nap ranks pretty high up on the fun list of fun. After that, it's outdoor activities and ice fishing for BIG fish.

What is your favorite food? Rack of lamb crusted with peppercorns and served with mint sauce and balsamic reduction, of course only at Spanky's Stone Hearth Grill.

Endres Devotes Career to Serving Others

By Jessie Topp-Becker

The dictionary defines the word "dedicated" as being devoted to a task or purpose; having single-minded loyalty or integrity. There is no question that dedicated accurately describes Greg Endres. For more than three decades, Endres has devoted his career to serving farmers and crop advisers across North Dakota.

A Minnesota native, Endres was raised on a livestock farm in eastern Ottertail County. While growing up, he worked on dairy farms for neighbors and relatives; he was also a 4-H and FFA member. After graduating high school, Endres attended North Dakota State University (NDSU). In 1983, he graduated with a bachelor's degree in crop and weed science. Ten years later, he earned his master's degree in plant sciences.

When considering a career after graduation, Extension seemed like a good fit. "Extension fit my interests in agriculture, continual learning opportunities and serving others in agriculture," he says.

Endres started his career in 1983 in northern North Dakota, working as the Extension assistant and county agent in Ramsey and Rolette counties for seven years. In 1990, he accepted a position at the Carrington Research Extension Center. In his role as area Extension specialist/cropping systems, Endres serves Extension agents, farmers and crop advisers with educational programs, primarily in south-central North Dakota. His education and research focus on small grains and row crops, with an emphasis on plant establishment, nutrition and protection.

Conducting research is a significant part of Endres' job, and is something he greatly enjoys. "It is my chance to be a mini farmer and provides a way to receive in-service training," he says. "Sharing the research experience and results with Extension audiences is fulfilling."

Over the course of his career, Endres has observed many industry trends. One of the most obvious changes in the last several decades is the significant increase in the number of crop advisers across the state. This growth has been a great opportunity for Endres and others involved with the NDSU Extension Service. "This increase gives Extension the opportunity to provide training for crop advisers, as well as cooperate with them in providing crop production advice to farmers," he says.

Another trend is the transition from diversified crop systems to primarily corn and soybean production. "There is, however, a rapidly growing interest and adoption of cover crops," Endres explains.

Endres shares his research findings at field day events.

"Which brings back crop diversity to farms as well as provides soil protection from erosion and increased soil productivity."

The use of cover crops remains limited on dry bean acres, but Endres predicts this will change "due to the benefits of soil protection and productivity, which should translate into increased bean yield and quality."

After more than 30 years in Extension, the highlight of Endres' career is "being a part of the research and Extension education programs to help farmers with row crop production, including dry beans."

Endres frequently attends industry functions, where he speaks to audiences about his research and ways to improve production. Sharing his knowledge with farmers, crop advisers and others involved in agriculture is something he greatly enjoys. "It is rewarding to receive feedback from clients that our information is being used to improve their farm operations."

While Endres is dedicated to helping North Dakota's farmers and crop advisers, he is also dedicated to his family. "Agriculture and education are big parts of our lives," he shares. His wife, Jody, grew up on a beef and crop farm in Pierce County and has devoted her career to elementary education. Together, the couple has four daughters – Erin, Claire, Jill and Ann – who were all 4-H members and some were also involved in FFA, Claire recently served as the North Dakota State FFA president. All four of the girls have, or will, pursue careers in agriculture or education. Their oldest daughter, Erin, recently graduated NDSU with a master's degree in plant sciences and currently works in a crop breeding program at Pennsylvania State University. This fall, Claire, Jill and Ann will all be attending NDSU pursuing degrees in education. In his spare time, Endres enjoys reading, running, archery/hunting and gardening.

New Research Demonstrates Role of Grain Legumes in Fighting Malnutrition

A new report from Washington University, with support from the Feed the Future Legume Innovation Lab (LIL), administered by Michigan State University shows the benefits of grain legumes for improved child growth and gut health.

Stunting is a persistent problem that reduces the physical and mental growth of children caused by poor nutrition, repeated infection and inadequate psychosocial stimulation. Its impacts are so detrimental that it has been selected as part of the United Nations Sustainable Development Goals and the World Health Organization Global Nutrition Targets 2025.

Led by Mark Manary, the Helene B. Robertson Professor of Pediatrics at WU, and Kenneth Maleta, Professor of Public Health at the University of Malawi School of Medicine, this study shows that complementary feeding with cowpea, also known as black-eyed pea, or common bean was found to have positive effects on gut health, nutrient absorption and linear growth during early childhood.

Funded by the United States Agency for International Development through the LIL, the research addressed stunting specifically in young rural African children. Primarily attributed to inadequate dietary intake and chronic inflammation of the small bowel (environmental enteric dysfunction) during early childhood, an estimated 35 percent of children in rural sub-Saharan Africa experience stunting, which has deleterious consequences over an individual's lifetime including reduced cognitive and physical performance and 22 percent lower lifetime income.

Two long-term clinical trials were conducted in Malawi involving approximately 800 children to determine if the regular consumption of small amounts of cowpea or common bean (4.6-5.2 grams of protein and 4-5 grams of indigestible carbohydrate each day) as a flour supplement to a hot cereal porridge would improve growth, gut inflammation or alter the ecology of the intestinal microbiome.

Three landmark publications by the research team present exciting key results. The addition of cowpea to complementary feeding of Malawian infants between 6 and 12 months old resulted in significantly less stunting, with lower linear growth faltering by 0.13 in height-by-age Z-scores, the most widely used statistical descriptor of malnutrition. In addition, common "navy" bean supplements to the diets of children between 12 and 36 months of age led to reduced inflammation and an improvement in gut health.

"No known highly effective interventions have so far been available to reduce stunting in the context of rural Africa," Manary said. "We now have high hopes that our new findings may provide an affordable and accessible solution to the 60 million children under the age of 5 who suffer from stunted growth in Africa."

Irvin Widders, MSU professor, served as director of LIL. "The Legume Innovation Lab believes that grain legume supplements in diets could be game changers for addressing stunting and gut health in undernourished young children in developing countries," said Widders.

FUGITIVES

WANTED

Northarvest Bean Growers Disease Most Wanted List

Fugitives are expected to make an appearance this summer in area fields, and the Northarvest bean growers need your help in identifying and bringing them to justice.

#1: White Mold

Considered the most deadly of the fugitives. Once white mold is seen in a field, there's nothing that can be done. White mold has ravaged the region before and can return with a vengeance at any time.

Description: White mold can first be observed as discrete water soaked lesions that quickly become tan colored as they enlarge. Once lesions dry out, they take on the appearance of a dried bone. White fungal growth are

commonly seen on stems and pods during periods of high moisture. Hard black sclerotia will form on lesions or in stems at the end of the season. The fugitive survives as sclerotia for many years, lying dormant until it reemerges with a vengeance.

Last Known Location: Last year's drought conditions were unfavorable for white mold, but the fugitive has ravaged the area many times in the last decade and can return at any time.

Commonly Known Hangouts: White mold attacks the crop as soon as blooms are present on the plants. Wet soils prior to bloom (that allow sclerotia to germinate) cool daytime temperatures (60s-70s F) and long periods of wetness (rain, frequent heavy dews, lush canopies) during bloom favor white mold.

How to Apprehend: Unlike the other fugitives, white mold must be apprehended preventatively. Fungicide applications at early bloom when environmental conditions are favorable are the best way to manage white mold. Multiple fungicides can help manage the threat; Endura, Topsin (T-methyl), Propulse and others.

#2: Rust

Considered a fugitive on the rise. Rust has been increasing in the region and is primed for a devastating resurgence at any time.

Description: Rust is first seen as dusty cinnamon-brown pustules on leaves, usually in the lower – middle canopy in 'hot spots' in fields. Once rust reaches the upper canopy, the fugitive will blow into new fields and can create a nasty epidemic. Rust is most dangerous when it is seen early in the season.

Last Known Location: Due to very effective genetic resistance, rust was nearly absent from the region in the late 1990's to mid-2000's. Since then, the fugitive has steadily been increasing and was seen in over half the bean growing counties last year.

Commonly Known Hangouts: Anywhere dew commonly occurs in a field. Rust can occur in a drought year, as long as enough dew is on the plants. Temperatures in our region are generally favorable for rust (65-85 F). Rust can attack the crop at any time, however, it is not usually seen until July.

How to Apprehend: Strobilurin (FRAC 11: headline, Quadris, Aproach, etc.) and Triazole fungicides (FRAC 3: Proline, Propulse, Quash, Tebuconazole, etc.) tend to be most effective at managing rust, while other fungicides more commonly used to apprehend white mold (Endura, Topsin) are only moderately effective. As long as fields are scouted, fungicides can be applied after rust is first observed, but don't wait too long, rust can do massive damage if left unchecked. By late maturity (such as striping in Pintos) rust no longer needs to be managed.

#3 Bacterial Blight Posse'

Considered the toughest group to apprehend. Rides thunderstorms into the region.

Description: Three distinct fugitives, all seen first as discrete water soaked lesions. Lesions of the most dangerous fugitive, Common blight, enlarge into large necrotic areas while the others have profuse smaller necrotic areas that coalesce (bacterial brown spot) that may be profuse and may have a halo (halo blight).

Last Known Location: Nearly all fields, particularly those that have hail or powerful thunderstorms.

Commonly Known Hangouts: All three members of the bacterial blight posse' are storm riders favored by frequent thunderstorms, especially hail. However, each member of the posse likes different temperatures, so no matter how cool or hot it is, at least one member can show up.

How to Apprehend: Fungicides are not effective on bacteria. Foliar applications of copper products, sanitizers and other have been tested, but with inconsistent results. Multiple applications may be effective.

Before apprehending any of the suspects with fungicides, please consult the most up-to-date information on efficacy and timing, and remember to read and follow the labels.

Betsy Armour joins NHB staff

Betsy Armour has joined Northarvest Bean Growers Association (NBGA) as director of domestic marketing and communication outreach. This new role will enhance Northarvest Beans' mission and efforts to assist producers and shippers to supply the world with dry beans.

"Northarvest Bean Growers Association is very happy to announce that Betsy will serve as our new director of domestic marketing and communication outreach," said NBGA Executive Vice President Tim Courneya. "She has close to 20 years of experience in marketing, communications and public relations and is well versed in North Dakota and Minnesota agriculture."

Prior to her hire, Betsy was the Communications and Public Relations Manager for Northern Crops Institute (NCI). Prior to that position, she was the Manager of Communications for the North Dakota Corn Utilization Council and North Dakota Corn Growers Association. Betsy directed communications and public relations efforts and assisted with many different courses including NCI's newest NCI-INTSOY course. Before leaving the North Dakota Corn Council, she assisted with a successful effort to bring the National Genotyping Center to North Dakota.

"I am excited and grateful for the opportunity to work with the dry bean growers in North Dakota and Minnesota," said Armour. "I am joyfully looking forward to using my talents and skills as a marketing and communications professional to enhance the efforts of the dry bean growers. I feel that my background in various agricultural communications will creatively assist Northarvest Bean Growers in their mission," said Armour.

Betsy is originally from Fergus Falls, Minnesota and currently resides in Moorhead, Minnesota with her husband Chris and their eight-year-old son, Nash. Her daughter, Emma, started attending North Dakota State University this spring as a junior. Betsy is a professional photographer and has been published and featured in local and international publications. Some of her hobbies include hand-knitting, embroidery and other various crafts.

RYAN WANZEK
Jamestown, North Dakota
Soybeans, corn, pinto beans, and wheat

Family history on the farm? I'm a fifth generation farmer. My cousin Jordan, my dad Terry, uncle Tracy and I own the farm.

How did you get into farming? I grew up in farming. Both of my grandpas farmed. My mom's dad came and helped us combine when I was little kid. I would ride with him in the tractor and the combine.

How long have you been farming? I started in 2006, renting land from a land owner. I started growing corn and soybeans. I grew edible beans the first year. It was kind of a disaster. It didn't keep me from continuing to grow them. Before that, I was laborer on the farm since I was a little kid.

How long have you raised dry beans? The first time I started raising dry beans was in 2006.

What classes of beans do you grow and why? We mainly grow pinto beans and some black beans here and there. We grow pinto beans because we have a processing plant. Pinto beans seem to be the one bean we can market and move somewhat easily.

What other organizations have you been active in? I am a board member of the North Dakota Corn Growers Association. I am also on the Ag Country Farm Credit Services Nominating Committee.

What is your favorite piece of farm equipment? Probably the 4045 John Deere sprayer. We can get more than a ton of acres done in a day.

If you could add any new equipment, what would it be? A high-speed planter.

Do you have any hobbies? I like to hunt and fish. I also like to play golf and being with family.

If you could win a vacation anywhere, where would you want to go? Take a trip to Europe so I can see some of the history and be able to go to different countries; see different areas.

What is the best part of your job? Seeing crops come out of the ground; all the hard work pays off.

Northarvest Bean Growers Association
50072 East Lake Seven Road, Frazee, MN 56544

Non-Profit Organization
US Postage Paid
Fargo, ND 58102
Permit 1570

Dry bean research is on display at an NDSU greenhouse.