NORTHARVEST
BeanGrower

INSIDE

VOLUME 27, ISSUE 1 WWW.NORTHARVESTBEAN.ORG WINTER 2021

Quality comes in a variety of ways.

Pinto, Vibrant[1] SDP, Gleam[2] SDP, Monterrey, Torreon, and Cowboy[2], Navy, Medalist, Armada, and Bounty to name a few.
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[1] Vibrant is a SDP (Slow Darkening Pinto) variety and is a patented variety, US Patent No. 9,532,523. All varieties listed above are PVP protected.
[2] Cowboy and Gleam are Patent Pending.

NORTHARVEST
BeanGrower

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VOLUME 27 ISSUE 1

WEATHERING A DIFFERENT TYPE OF STORM

2019 was a harvest for the history books. Thankfully, those harvest conditions shaped up in 2020 and most farmers were able to get the crop out of fields and into the bin in a timely fashion. Let's just say Mother Nature owed us one.

The planting season was not necessarily easy. Late fall rains and an early October snowstorm in 2019 left farmers of the Northarvest region with plenty of moisture and prevent plant acreage. While the growing and harvest seasons brought more favorable weather, farmers were busy weathering a different storm: COVID-19.

Before the coronavirus pandemic hit, the dry bean industry was facing their own battles. Dry bean supplies were short in spring 2020 due to harvest delays and quality issues in the previous year's crop. The seed situation was very tight in some areas. However, farmers did get most of the crop planted.

That's when the tone within the dry bean industry started to change.

There was positivity that came from COVID-19, as the consumer demand for pantry staples, like dry beans, surged. Pantries were fully stocked, and more Americans were cooking at home as restaurants started to limit in-person dining. This prompted Northarvest to launch a social media campaign promoting dry bean recipes and how to prepare this nutritious product at home.

Fortunately, the U.S. government continued to lend a helping hand. In addition to crop insurance updates, there was WHIP+ disaster assistance and two rounds of the Coronavirus Food Assistance Programs made available to farmers. While these federal dollars are welcomed, they don't make up for the losses endured.

As much as we all would've liked to gather and network in person at the 2021 Bean Day, the continued restrictions that come with COVID-19 made that impossible. The health and wellbeing of our dry bean growers is the number one priority.

In this edition of the *BeanGrower* magazine, you will find articles from the presenters we had slated for the Bean Day program. We hope this information from experts in the field on dry bean markets, exports, diseases and more serves as a valuable resource.

The Northarvest Bean Growers Association is looking forward to a much more prosperous and healthier 2021!

David Dickson, President
Northarvest Bean Growers Association

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2021 NORTHARVEST BEAN GROWERS SCHOLARSHIP

APPLICATION

The Northarvest Bean Growers Association is offering two - $1,000 scholarships to the children and grandchildren of members in 2021. The association is comprised of dry bean farmers from North Dakota and Minnesota.

Applicants must meet the following requirements:

1. A parent or grandparent must be a current participating grower-member of the Northarvest Bean Growers Association.
2. Applicant must be planning to enroll or be enrolled in their first year of college or technical college.
3. Applicant must have at least a 3.0 grade point average from high school.

If the above criteria are met, the student must complete an application for the scholarship. Applications must be received no later than June 1, 2021. The association looks forward to helping students with their educational goals.

DATE: _____

NAME: _____

ADDRESS _____

CITY: _____ STATE: _____ ZIP: _____

TELEPHONE: _____ DATE OF BIRTH: _____

EMAIL ADDRESS: _____

NAME AND ADDRESS OF PARENTS/GRANDPARENTS:

_____

_____

_____

NAME AND ADDRESS OF COLLEGE/UNIVERSITY PLANNING ON OR CURRENTLY ATTENDING:

_____

_____

_____

COURSE OF STUDY: _____

_____

Please type/print responses to the following questions on a separate sheet(s) of paper and attach to this page along with your reference letters. Please keep each response to 200 words or less.

1. Please list your scholastic achievements (GPA, Academic awards, Scholarships, etc.) Include current grades or transcript.
2. Demonstrated Leadership (Offices held in school, projects directed, athletic involvement, band, choir, FFA, student council, boys/girls state, etc.)
3. Service to Community (Volunteer work, theater groups, coaching and any other activities which have contributed to the betterment of your community)
4. Describe the benefit(s) of being involved with dry bean production for you and your family.
5. Career Plans?
6. At least two references *must be attached*

**Northarvest scholarship winners are asked to attend "Bean Day" January 2022

☐ Check if are willing to attend

**Enclose a recent wallet size photo that can be used with an announcement story if you are selected.

** Mail application to Northarvest Bean Growers Association, 50072 East Lake Seven Road, Frazee, MN 56544, or email nhbean@loretel.net, no later than June 1, 2021.

SIGNATURE: _____

From the Archives of the Northarvest Bean Growers Association

1 YEAR AGO:

Bean Improvement Meeting Returns to Fargo -- Over 150 researchers, organizations and bean industry professionals representing 12 countries gathered in Fargo, North Dakota for the biennial meeting of the Bean Improvement Cooperative (BIC). A diverse group of members and colleagues interacted and exchanged information with the goal of improving bean production worldwide.

Serving on the local organizing committee for the meeting were North Dakota State University (NDSU) plant pathologist Dr. Julie Pasche, NDSU dry bean breeder Dr. Juan Osorno and NDSU Genomic and Bioinformatics Program director Dr. Phil McClean.

Global Reverse Trade Mission Team Visits North Dakota -- Every year, the U.S. Dry Bean Council hosts an annual global reverse trade mission. This flagship event allows new global industry contacts and buyers to observe dry bean harvest, learn of new advancements in dry bean research and meet with farmers and dealers.

The trade mission took place September 7-13, 2019 and went to Michigan, North Dakota and Nebraska. The trip started in Michigan with a tour of field evaluation, receiving and processing facilities and one-on-one business networking. In Fargo, North Dakota, the participants enjoyed one-on-one meetings with industry representatives and spent a day at the Northern Crops Institute (NCI) to learn about the laboratory facilities and new research

on dry bean ingredients.

5 YEARS AGO:

Rail Service Improves

Rail service for dry bean processors is better than last year, but some issues remained. Dan Fuglesten at Central Valley Bean Cooperative in Buxton, North Dakota, thought the main problem was BNSF Railway's pulse COT ordering system. Dean Nelson, with Kelley Bean Company in Hatton, North Dakota, explained that a lot of dry bean processors are not used to ordering every day for months in advance.

Fuglesten, Nelson and John Berthold, from Walhalla Bean Company, along with Northarvest Bean Growers Association Vice President Tom Kennelly, met with BNSF officials in Fort Worth, Texas in early November. BNSF announced in November they intend to spend another $6 billion in capital improvements in 2015, after investing $5.5 billion in 2014.

Maatz Knows Beans

-- The U.S. Dry Bean Council's (USDBC) new executive director Duane Maatz is no stranger to either association management or dry beans. Maatz most recently served as executive director of the Wisconsin Potato and Vegetable Growers Association, and prior to that was the president of the Northern Plains Potato Growers Association in East Grand Forks, Minnesota.

Maatz sees opportunities for dry beans by communicating to nutritionists. "With the creativity in our cooking and all the attention to our diets, we need to combine those two with recipes and a nutrition message," said Maatz.

10 YEARS AGO:

New Bean Combine

-- North Dakota State University researchers put a new Wintersteiger Classic plot combine to work this fall. This new combine, which is made exclusively for harvesting plots, replaces a 25-year-old soybean combine that had been modified for dry beans.

NDSU dry bean breeder Dr. Juan Osorno says the old combine was in the shop most of the time, which delayed harvesting of the plots and caused additional costs. The new $170,000 combine was paid for with joint funds from the Northarvest Bean Growers Association, the North Dakota Dry Edible Bean Seed Growers Association and the North Dakota Agricultural Experiment Station.

15 YEARS AGO:

Excited About the Russian Market -- Kevin Anderson, an East Grand Forks, Minn., farmer and Northarvest Bean Growers Association board member, along with Gary Paur, Gilby, N.D., represented Northarvest as part of a U.S. Dry Bean Council team at an international food show held in Moscow.

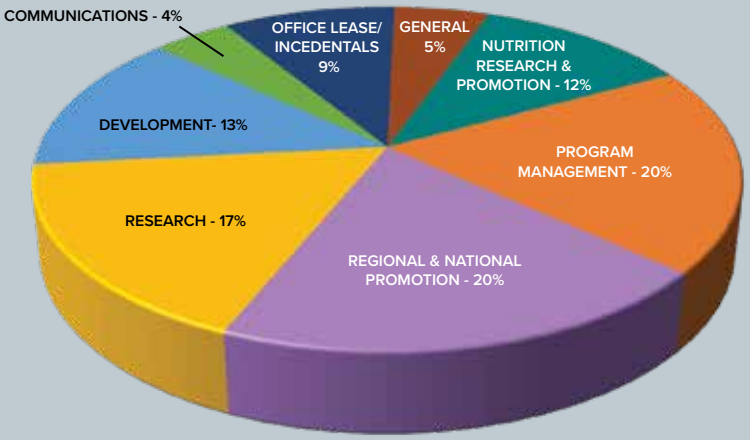
"I am excited about the Russian market for beans," Anderson said. "There seems to be different things that we can offer them. Russians grow some interesting looking beans," One is called a "skirted" bean. The top half is white and bottom half is speckled (or vice-versa). It gets its name from the fact that the bean looks as if it is wearing a skirt.

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

www.northarvestbean.org

2020 ANNUAL REPORT

2020-2021
Budget by Category



ANNUAL BUDGET APPROPRIATION BY CATEGORY

EXPENSE	2019-20	2020-21
Nutrition Research/Promotion	201,080	186,080
Program Management	319,350	311,050
Regional & National Promotion	290,945	315,750
Research	319,961	272,340
Development	193,200	213,200
Communication	69,000	69,000
Executive Director/Office Lease/Incidentals	100,000	150,000
General	0	82,580
TOTAL	**1,493,536**	**1,600,000**

INCOME	2019-20	2020-21
North Dakota Dry Bean Council	1,045,265	903,000
Minnesota Dry Bean Research & Promotion Council	447,971	417,000
Northarvest Bean Growers Association	300	280,000
TOTAL	**1,493,536**	**1,600,000**

Northarvest Directory

NORTHARVEST BEAN GROWERS ASSOCIATION

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48041 County Road 13
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Mission Statement:

The Northarvest Bean Growers Association, growers representing growers through the check-off system, is North America's largest supplier of quality dry bean. Working together to better the bean industry through promotion, research, market development, education of consumers, and monitoring of government policy. Our future goals must be continued market exposure and careful monitoring of new ideas, consumer choices, and producer needs.

NORTHARVEST COMMITTEE MEMBERS

RESEARCH
Norm Krause, (Chair), Eric Jorgenson, Tom Arnold, Joe Mauch, Karl Jodock, Don Stueve, Mark Dombeck, Ryan Peterson, Troy Newhouse

LEGISLATIVE
Eric Samuelson (Chair), Ryan Peterson, Justin Retterath, Tom Arnold, Karl Jodock, Ben Vig, Joshua Ihry, Cordell Huebsch, Joe Mauch, Eric Jorgenson

CROP INSURANCE
Joshua Ihry, (Chair), Tom Arnold, Ben Vig, Eric Samuelson, Karl Jodock, Joe Mauch, Norm Krause, Don Stueve, Troy Newhouse

PROMOTION
Leann Schafer (Chair), Ryan Peterson, Cordell Huebsch, Norm Krause, Justin Retterath, Matt Thompson, Mark Dombeck, Don Stueve, Eric Jorgenson

COMMUNICATION
Matt Thompson (Chair), Eric Jorgenson, Leann Schafer, Don Stueve, Mark Dombeck, Joshua Ihry, Cordell Huebsch, Ben Vig

U.S. DRY BEAN COUNCIL
Delegate: Kevin Regan
Alternate: Roger Carignan

FOOD AID
Mark Dombeck (Chair), Joshua Ihry, Ryan Peterson, Leann Schafer, Karl Jodock, Joe Mauch, Ben Vig

POLICY AND NOMINATION COMMITTEE
Joshua Ihry (Chair), Norm Krause, Eric Jorgenson, Joe Mauch, Ben Vig

SCHOLARSHIP
Eric Samuelson (Chair), Eric Jorgenson, Karl Jodock, Matt Thompson

SEARCH
Kevin Regan (Chair), Leann Schafer, Joshua Ihry, Matt Thompson, Mark Dombeck, Tom Arnold, Karl Jocock

The Northarvest Board President is Ex-officio member of all committees

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EXECUTIVE DIRECTOR
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Fargo, ND 58104 | 701-365-5103

DIRECTOR OF FINANCE / OFFICE MANAGER
Courtney Payne
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FROM THE PRESIDENT

2020 was the Year of Covid-19

The world will never forget 2020, the year of COVID-19. Everyone's lives were disrupted with their children now educating from home and the working adults shifting to home office atmospheres. Health protocols took over everyone's minds and the normal life we all knew was gone.

I wrote in my spring column of Northarvest *BeanGrower* magazine spring edition, "Our world has been flipped upside down with COVID-19, bringing the global economy to a halt. 'Social distancing' and 'shelter-at-home' are now part of our vocabulary and our daily lives." Who would have guessed that we would still be clouded by this pandemic entering 2021.

As I ponder on the 2020 crop season, I look back at some of the overwhelming hurdles that Northarvest farmers encountered and know we are blessed with the outcome from the past year. The planting season was not a picnic for anyone. The late fall rains and early October snowstorm of 2019 left Northarvest farmers fighting the entire winter to harvest poor crops or carry prevent plant acreage. Without the ability to do fall tillage, much of the ground was left with a poor seedbed to plant the 2020 crop.

The summer of 2020 was also filled with several zoom meetings as the Northarvest Bean Growers Association began their search for a new Executive Director to mentor under the longtime experienced leadership of Tim Courneya. In July of 2020, Mitch Coulter was selected to mentor under Tim's tutelage. We look forward to the same exemplary leadership that we have come to know under Tim.

The 2020 fall harvest is complete and USDA estimates North Dakota finished strong with 800,000 acres, 14.6 million bags of dry beans, and Minnesota is estimated at 263,000 acres, 5.8 million bags. The harvested acreage in Northarvest looks to be a new record.

COVID-19 continued to shape 2020 and resulted in a positive surge in consumer buying of dry beans. Pantries were full, prompting Northarvest to push a social media campaign to move beans from the pantry onto the table. The promotion of bean recipes, bean preparation, and new menu ideas were top of mind, and timing of consumer need with a large crop, could not have been timed better for the Northarvest farmer.

We look forward to a prosperous and much healthier 2021 and let's hope we find a post COVID-19 year!

David Dickson
Northarvest Bean Growers President

Regional & National Promotion

Northarvest supports a variety of events, outreach activities and promotional materials to increase awareness of the Northarvest bean industry, the use and consumption of beans. This is a highlight of some of the activities this year:

CULINARY INSTITUTE OF AMERICA PROGRAMS

Northarvest supports a number of programs through the Culinary Institute of America each year. The goal of this sponsorship is to connect with key decision makers in the culinary and food service sector, and to share inspiration to include more beans on American menus. The retreats include the *Flavor Summit* – An international audience of healthcare professionals to educate on the health benefits of beans; *Menus of Change University Research Collaborative* - a working group of leaders in college and university dining working to create healthier, more sustainable, plant-forward menus; *Healthy Kids Collaborative* - a national initiative working to improve K-12 dining; *Healthy Kitchens, Healthy Lives* - an international audience of healthcare professionals learning the latest nutrition research coupled with healthy culinary strategies; and the *Global Plant-Forward Summit* - a culinary summit of foodservice leaders focused on elevating plant-forward dining. This outreach allows Northarvest to directly connect with thousands of food decision makers each year with the goal of increasing bean usage and inspiring new menu concepts across American dining operations.

WORLD BEAN KITCHEN

The World Bean Kitchen is a website housed on the Culinary Institute of America's ProChef site, designed to inspire chefs and food service operators to innovate with beans. Annually, Northarvest develops five new recipes with video for the CIA culinary team to showcase unique bean dishes. The five trending areas of recipes include: Beans in Sweets, Animal Proteins & Bean Blends, Plant-Forward Bean Concepts, and Bean Salads. These recipes, and the supporting videos, are housed on the World Bean Kitchen website, as well as the Bean Institute website. The CIA Digital Media team also promotes these recipes through their various CIA social channels, including Facebook, Twitter, Pinterest and SmartBrief newsletters.

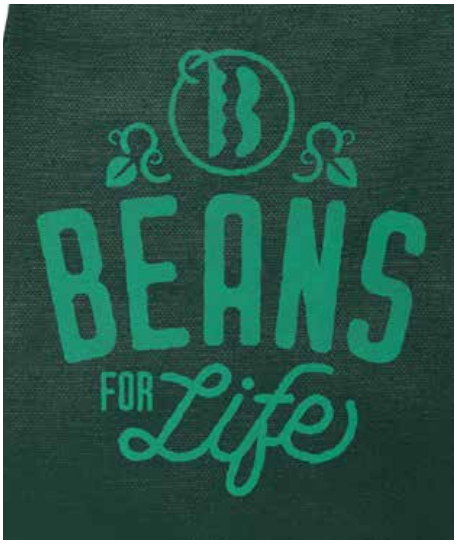
AG IN THE CLASSROOM

Ag in the Classroom is a unique educational experience for youth in North Dakota and Minnesota to learn about the farming industry and its impact on the world. This year's shows were held in Minot, Bismarck, and Fargo. The Northarvest booth focuses on educating youth about the decisions that go into bean farming through an interactive game called 'Bean Crazy.' Throughout the game students make financial farming decisions, like whether or not to invest in equipment maintenance, fertilizer, or controlling for insects, weeds, and diseases. The game takes students through a season of farming where they roll dice, and the number rolled is assigned to something that impacts their profitability. Thousands of North Dakota students went through Ag in the Classroom experience in 2020. www.agclassroom.org

TEN ACRE MARKETING – SOCIAL MEDIA & DIGITAL ADVERTISING CAMPAIGN

Covid-19 presented new trends in the dry edible bean marketplace. Market data showed consumers were purchasing edible beans to stockpile their pantries for the prolonged stay at home. The Northarvest Bean Growers Association recognized the need to educate the consumer about cooking their purchased bean choices.

In 2020, Northarvest selected the Public Relations firm Ten Acre Marketing to generate a social media and digital advertising campaign. The program included a social media "21-day Bean Challenge." The robust campaign includes working with celebrity chef, Molly Yeh from the Food Network, communications across social media platforms Facebook, Instagram, and Pinterest as well as a digital advertising campaign around cooking dry edible beans for the consumer. Messaging is centered around cardio health, cancer prevention, food preparation, and plant-based protein and fiber. www.beans4life.org



NORTHARVEST SCHOLARSHIP PROGRAM:
The Northarvest Bean Growers Association awards two, $1,000 scholarships to support the children and/or grandchildren of Northarvest Bean Growers Association (NBGA) members annually. The 2020 winners were Tristen Uglem of Northwood, ND, son of Troy and Bobbie Uglem and Soren Larson, son of James and Jennifer Larson of Fertile, MN.


Tristen Uglem, Northwood, ND


Soren Larson, Fertile, MN

Communications

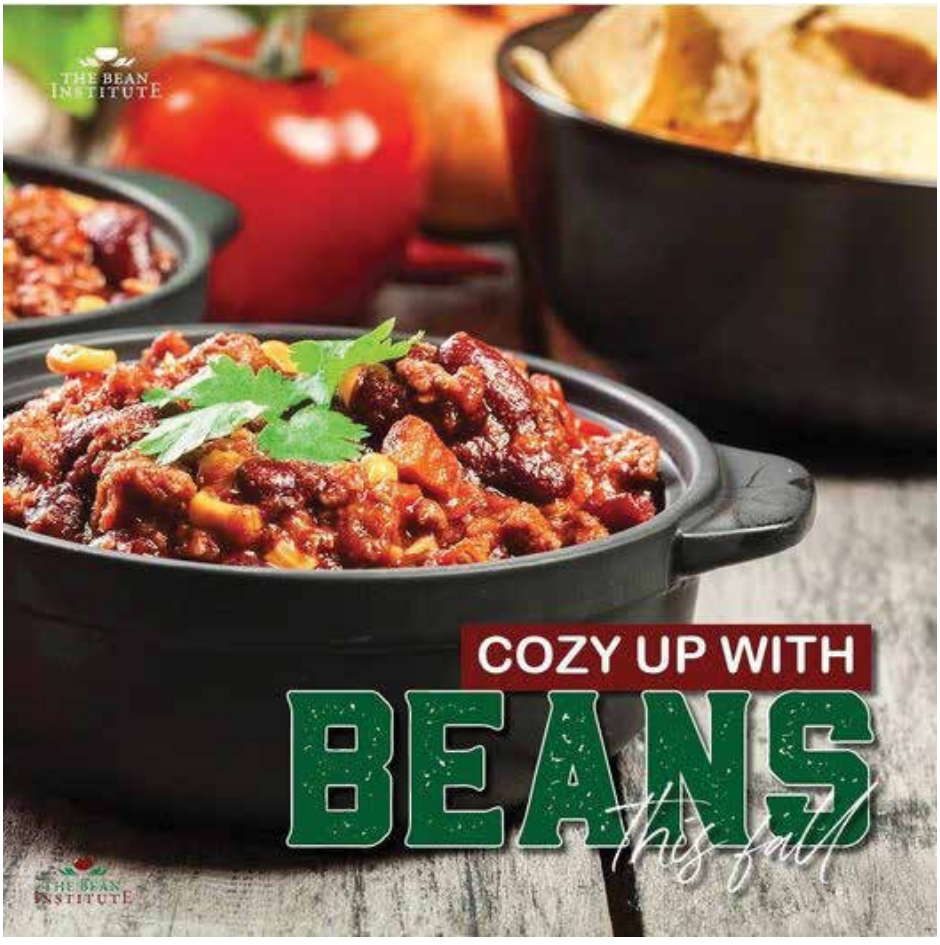
RED RIVER FARM NETWORK – DRY EDIBLE BEANS COMMUNICATIONS
Northarvest has had a longstanding relationship with the Red River Farm Network (RRFN) to keep growers updated on the latest agricultural issues, bean industry updates, and related information for farmers. This unique partnership is an effort to keep growers informed with timely news impacting the dry bean industry. This partnership provides the following communications:

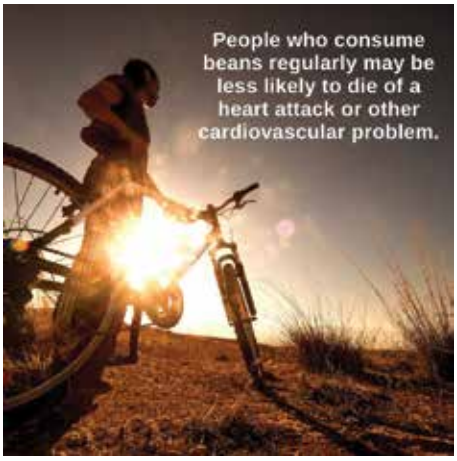
- Five issues of the Northarvest BeanGrowers magazine annually.
- The "Dry Bean Scene," a weekly radio segment which is available on 20 radio stations, as well as highlighted on our website and social media channels.
- A weekly Northarvest e-newsletter that is circulated to approximately 1,500 subscribers and available on our website every Friday at: www.northarvestbean.org

Nutrition Research & Promotion

Northarvest works with Communique, an agriculture, health and nutrition communications firm to promote beans for health, culinary and school professionals, as well as home cooks, through the Bean Institute online community, and to support dry-bean related health research. The goal of the promotional work is to connect with food influencers to increase bean use and consumption across America, and to support the continued human health related to dry edible beans. This partnership provides the following services for Northarvest:

BEAN INSTITUTE SOCIAL MEDIA:
Communique manages the Bean Institute social media platforms on behalf of Northarvest, including Facebook, Instagram, Twitter and Pinterest. This online community targets health professionals, home cooks, culinary and food service professionals, nutrition educators and school nutrition professionals with timely, impactful bean messaging. They also utilize advertising and promotions to increase brand visibility and followers. At the end of the contract year the accounts had the following number of followers: Facebook: 6,341 (4,318 previous year); Twitter: 2,129 (1,717 previous year); Instagram: 3,188 (1,408 previous year) and Pinterest: 1,000 (784 previous year).





BEAN INSTITUTE WEBSITE:
Northarvest also supports the continued development, maintenance, and the addition of new content to the Bean Institute website, the online platform that supports complementary messaging and content to the Bean Institute social media accounts. Communique's services include monitoring the web and keeping it fresh, responding to visitor questions, adding educational content, videos and other materials, and monitoring web traffic and usage. Over contract year 2020, the site had 397,047 visitors.

DRY BEAN HEALTH RESEARCH PROGRAM (DBHRP):
Northarvest awards three incentive grants of $20,000 each to highly qualified researchers for the development of research proposals on dry beans and human health to be submitted to the National Institute of Health (NIH) and/or the U.S. Department of Agriculture (USDA). Communique administers the DBHRP on behalf of Northarvest. Since the program's inception, the studies Northarvest has supported have

received funding of approximately $12.2 million from other sources. In 2020, Dr. Stephen O'Keefe's Northarvest supported research project beans and colon cancer was approved by the National Institute on Health (NIH) for $3.7 million over five years.

REGISTERED DIETICIAN:
Communique will retain the services of a registered Dietician for the 2020-2021 fiscal year to attend the Culinary Institute of America, the Food and Nutrition

Conference & Expo, and National School Nutrition Association Conferences. The individual will develop content for handouts and provide Dry Edible Bean nutrition information to food experts and influencers.

SERVING UP BEANS KIDS LOVE
Nearly 30 million students eat lunch every day in the United States through the National School Lunch Program. That number, and the potential impact of increasing consumption of beans through the school nutrition program, is the reason Northarvest works to engage with and develop resources to support school nutrition professionals. Throughout 2020 Northarvest supported a variety of activities to promote beans in schools, including developing a series of new credited, tested school recipes for the Bean Institute website. Northarvest shared these recipes and other school resources at the Culinary Institute of America Healthy Kids Collaborative.

REGISTERED DIETITIAN CONFERENCES
Registered Dietitians (RDs) are the nutrition experts and are sought after for commentary and guidance to determine healthy food choices. In addition to the work Northarvest does online to connect with RDs, we also engage directly with dietitians at the annual Food & Nutrition Conference & Expo (FNCE). This year Northarvest connected with over 2,800 RDs at this event sharing publications, recipes, and ideas to encourage their patients and clients to eat more beans. Northarvest gave away a bean inspired Tiffany & Co. silver necklace gaining over 400 new followers on Facebook, 183 on Instagram, 186 on Twitter, generating 1,400 positive engagements and 350 clicks on Facebook. There were 2,810 new email addresses registered to communicate bean nutrition and health information.

Development

U.S. DRY BEAN COUNCIL
The Northarvest Bean Growers Association is a major contributing member of the U.S. Dry Bean Council (USDBC), whose work is to increase the consumption of U.S. dry beans worldwide. Working with USDBC, our dry bean growers made contact with countries around the world to maintain existing markets and explore opportunities to develop new markets, monitor trade policy and market trends, and discuss dry bean demand with importers, wholesalers, packagers and retailers. Kevin Regan, Webster, N.D. and Roger Carignan, Cavalier, N.D. represent Northarvest on the USDBC Board of Directors.

NORTHERN CROPS INSTITUTE
Northarvest supports the efforts of the Northern Crops Institute (NCI), a collaborative effort among North Dakota, Minnesota, Montana, and South Dakota to support the promotion and market development of crops grown in this four-state region. NCI is an international meeting and learning center that brings together customers, commodity traders, technical experts, and processors for discussion, education, and technical services. For more information about Northern Crops Institute go to their website at: www.northern-crops.com

U.S./MEXICO INTERNATIONAL DRY BEAN CONGRESS
The International U.S./Mexico Dry Bean Congress was held February 6-8, 2020 in Cancun, Mexico. Over 150 buyers, traders, and industry representatives gathered for the two-day event which included seminars, discussions, and one on one business meetings with the Mexico trade. The gathering was also an opportunity to celebrate several concurrent events including International Day of Pulses, Dry Bean Food Innovation Trends, and Dry Bean Production and Market Trends. For more information about U.S. Mexico International Dry Bean Congress go to their website at: www.usbeancongress.com

U.S. DRY BEAN COUNCIL GOES VIRTUAL
The year 2020 was the beginning of a newfound era of homebound virtual meetings as a result of Covid-19. U.S. Dry Bean Council (USDBC) found themselves adjusting to hosting virtual meetings for in-person activity. USDBC held their summer meetings online including selecting trade team delegates, signing of MOU's for global & nutritional initiatives for food insecure nations, developing social media RFP priorities, planning a D.C. Congressional fly-in for 2021, and building an agenda for the inaugural global bean buyer event (Bean-Con21).

GROWER DRIVEN RESEARCH

For more than 40 years, Northarvest has provided extensive funding to support research aimed at improving bean production. The Northarvest Research Committee identified a number of research priorities this year and submitted those to scientists as guidelines to receive funding requests. In April 2020, the Northarvest board approved the following research projects for a total budget of $272,340:

- Develop high yielding, high quality genotypes adapted to the northern plains.
- Improve control of white mold in pinto beans optimizing fungicide nozzle spray patterns, droplet size, and application pressure.
- Develop dry bean genetic lines resistant to soybean cyst nematode.
- Develop soil health best management practices for a soybean, wheat, pinto bean, corn rotation and share results through extension services with farmer members.
- Farmer survey documenting changes in agronomic practices, varieties of beans grown, pest problems, and chemical use in the northern plains.
- Evaluation of selected plant establishment factors and nutrition inputs for pinto beans.
- Improving abiotic stress resilience and nutrient utilization efficiency in dry beans.
- Dry Bean variety trials with added Staples, MN site.
- Genetic panel for herbicide resistant traits in palmer amaranth and pigweed.

Dr. Juan Osorno, NDSU Dry Bean Breeder.

2020/21 Dry Bean Market Outlook

By Frayne Olson, crop economist and marketing specialist, NDSU Extension

2020 will certainly go down in history as a year of turmoil and change. The impacts of the coronavirus pandemic have added to the existing economic, social and political instability that existed at the beginning of the year. The dry bean industry has not been sheltered from this turbulence.

No one has a crystal ball that can see into the future and tell us what 2021 will look like, but we still need to make plans and ultimately make decisions about marketing existing grain inventories and decide what to plant in 2021.

NDSU Extension Crop Economist and Marketing Specialist Frayne Olson

The goal of this article is to provide a brief overview of the current supply and demand conditions for pinto and navy beans and identify market factors that could influence 2021 prices.

PINTO BEANS

The 2020 pinto bean production was very good, and possibly a new record. The exact size of the crop is still being debated, but everyone agrees that quality was good and inventories have been rebuilt. The U.S. Department of Agriculture (USDA) will provide dry bean production levels by class in the Annual Crop Production Summary report on January 12, 2021.

Bean market traders are currently focused on monitoring demand, or

Continued on Next Page

usage rates. Historically, about 75% of U.S. pinto beans are used domestically for food service, canned or processed products. The remaining 25% is exported to variety of countries around the world.

The coronavirus pandemic has created significant shifts in domestic pinto bean supply chains. Because of COVID-19, consumers are eating more meals prepared at home or from drive-through restaurants, while eating fewer meals at dine-in restaurants. Institutional buyers, like restaurants and schools, prefer buying and receiving product in bulk or large container sizes because they are more cost effective.

In contrast, consumers prefer small container, package or serving sizes to limit waste and spoilage. Although there are no firm industry statistics available, the general industry view is total domestic pinto bean consumption has increased over last year's levels.

However, the change in package sizes and the need to shift product flow away from dine-in restaurants and towards grocery stores and drive-through restaurants has created challenges for both bean processors and distributors.

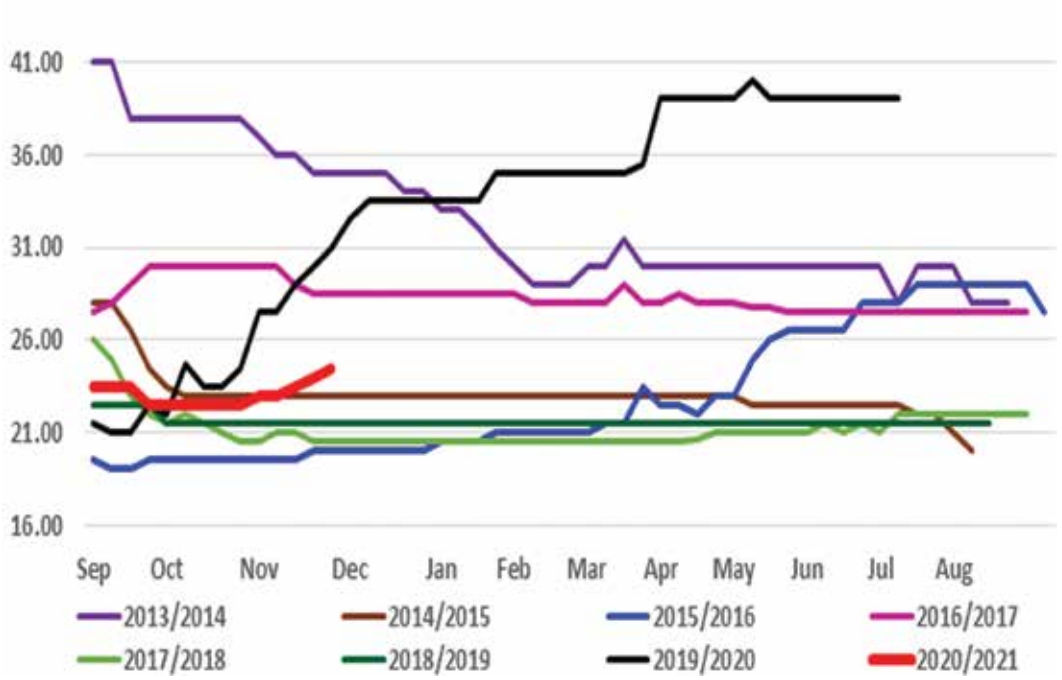


Table 1. Historical Weekly Average Pinto Bean Grower Prices for North Dakota/Minnesota. August 3, 2013 to December 1, 2020. USDA-AMS-Bean Market News

Pinto bean export sales are running slightly behind last year's levels, although it is still very early in the marketing year. Historically, Mexico, Dominican Republic and Haiti have been the three largest export markets for U.S. pinto beans.

The global economic recession created by COVID-19 is raising concerns about the international demand base for pinto beans. One viewpoint is that economic uncertainty may lead to increased export sales because dry beans are a low-cost source of dietary protein.

An alternative viewpoint is that the economic uncertainty will make it more difficult for international buyers to source the financing required to purchase U.S. dry beans and export sales will remain slow. Unfortunately, it is still too early to determine which viewpoint is more accurate.

The size of the Mexican pinto bean crop is another important variable for estimating total U.S. pinto bean exports. The current consensus is Mexican production will be "good, but not "great", and export sales into Mexico will begin to increase in January or February 2021. Once again, the ability to obtain financing for purchases can impact export levels and pace.

Table 1 shows the average weekly grower level pinto bean prices from August 3, 2013 through December 1, 2020 for North Dakota and Minnesota. Pinto bean prices are typically very stable from December through March.

However, uncertainty about planted acreage and next year's production levels can provide some price variability during the spring planting and summer growing months. The current dry soil conditions in both the Northarvest and Rocky Mountain growing regions is being watched closely, but will likely not impact pinto bean prices this winter.

NAVY BEANS

The 2020 navy bean crop was also larger than expected, primarily due to above average yields. Navy bean inventories have also

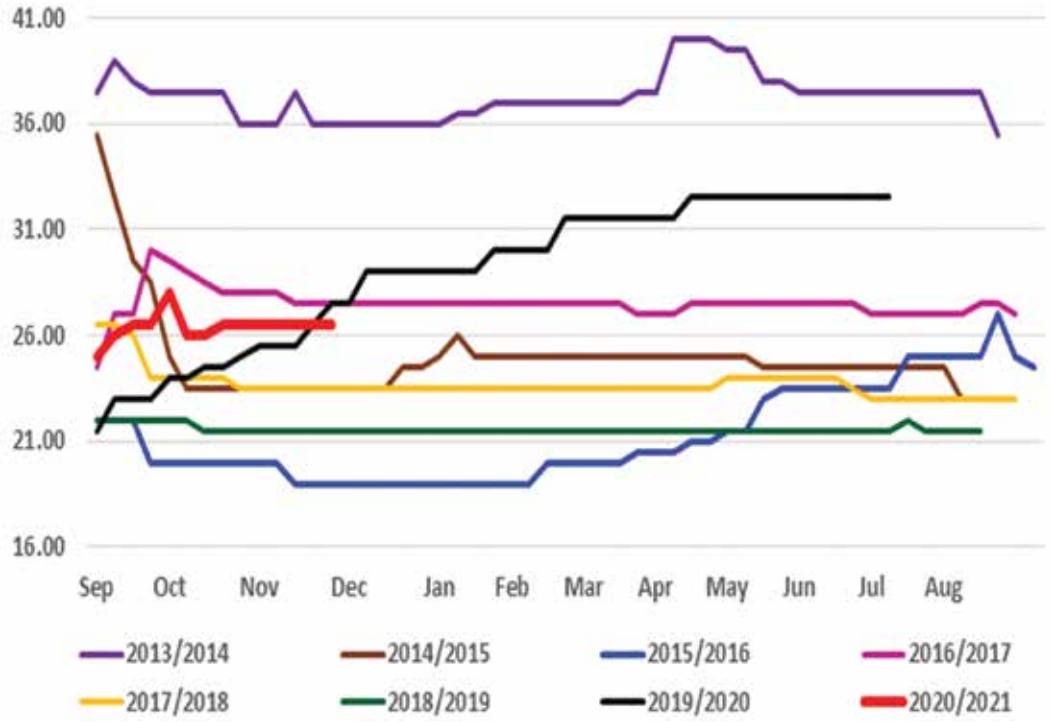


Table 2. Historical Weekly Average Navy Bean Grower Prices for North Dakota/Minnesota. August 3, 2013 to December 1, 2020. USDA-AMS-Bean Market News

been rebuilt and are considered to be very comfortable.

Historically, 50% to 55% of U.S. navy beans are consumed in the domestic market, primarily for canned products or sold to institutional buyers. Once again, COVID-19 has shifted navy bean supply chains and the demand for canned products has expanded rapidly.

Unfortunately, demand from sit-down restaurants is lower and there are fewer navy bean products included in drive-through restaurant menus. As a result, total domestic use is expected to be similar to or slightly lower than last year.

About 45% to 50% of U.S. navy beans are exported, with the United Kingdom (UK), Italy and Canada being the largest export customers. The 25% import tariff imposed by the European Union (EU) on U.S. navy, great northern and kidney beans in June 2018, is still in effect. This has impacted trade flows and lead to lower export levels in 2019 and early 2020.

The future of trade relations between the U.S. and EU is very unclear, especially given the uncertainty surrounding the BREXIT negotiations. BREXIT is the term being used for the exit of Great Britain, or the UK, from the EU. The deadline for an exit agreement is December 31, 2020.

If an agreement is not reached, trade between the UK and EU will be governed under the broader World Trade Organization (WTO) rules. This means the UK will be required to pay the higher non-EU tariff rates and comply with EU trade restrictions and quotas for imported and exported products. Smooth trade between the UK and EU is important for the economic stability and grow of both groups.

The UK has already negotiated a bilateral trade agreement with Canada and an agreement with the U.S. is expected soon. However, the BREXIT negotiations have dominated the time and attention of UK trade officials.

A trade agreement between the U.S. and UK is very likely and there is optimism that the tariffs on U.S. dry beans will be reduced or eliminated in an agreement. A new trade agreement between the U.S. and EU is less likely.

U.S. trade officials are demanding that reductions in trade barriers for U.S. agricultural products be part of any negotiations, while EU trade officials say agricultural trade will not be part of a new trade agreement.

Table 2 shows the average weekly grower level navy bean prices from August 3, 2013 through December 1, 2020 for North Dakota and Minnesota. Like pinto beans, navy bean prices tend to be stable from December through March. Once again, uncertainty about planted acreage and next year's production levels can provide price variability during the spring planting and summer growing months.

Even though dry soil moisture conditions in the Northarvest growing region are a concern, soil moisture levels in Michigan are near normal. 2021 production contract prices will need to be strong enough to maintain the current acreage base, given higher forward prices for soybeans.

North Dakota Dry Bean Variety Trial Results for 2020

By Hans Kandel, NDSU Extension Agronomist

Dry edible beans have been a significant crop grown in eastern North Dakota throughout the past decades. The yield data presented in this article are from replicated research plots using experimental designs that enable the use of statistical analysis.

The LSD (least significant difference) numbers beneath the columns in the tables are derived from the statistical analyses and only apply to the numbers in the column in which they appear.

If the difference between two varieties exceeds the LSD value, it means that with 95% probability (LSD 0.05 level), the higher-yielding variety has a significant yield advantage. If the difference between two varieties is less than the LSD value, then the variety yields are considered similar. The abbreviation NS is used to indicate no significant difference.

Compare values within the tables and look for trends for the desired trait among different experimental sites. Characteristics to evaluate when selecting a dry bean variety include marketing class, yield potential in your area, test weight, reaction to problematic diseases and maturity date.

Full information on dry bean variety performance can be accessed on the NDSU website at: www.ag.ndsu.edu/varietytrials.

NDSU Extension Agronomist Hans Kandel

Dry bean variety trial at the Carrington Research Extension Center.

Table 1. Navy bean variety results 2020 NDSU trials.

	Forest River	Perham	Langdon	Hettinger	Minot	Carrington	Carrington Irr	Williston Irr.	Average 6 Loc[1]
	Yield in pounds per acre								
AAC Argosy	1679	--	3313	--	--	--	--	--	--
Blizzard	1331	--	3321	787	1803	2087	3029	2327	2060
HMS Medalist	1279	1444	3891	962	1675	2188	2993	--	2165
Nautica	1272	--	2367	--	--	--	--	--	--
Portage	1002	1322	--	--	--	--	--	--	--
AAC Shock	1763	--	3065	--	--	--	--	--	--
T9905	1843	1513	3781	878	1366	2040	2475	2533	2064
LSD 0.05	840	460	446	184	351	351	380	720	NS

[1] Forest River, Langdon, Hettinger, Minot, Carrington and Carrigton Irr.

Table 2. Pinto variety results 2020 NDSU trials.

	Forest river	Hatton	Perham	Oakes irrigated	Langdon	Hettinger	Minot	Carrington	Carrington Irr	Williston Irr.	Average 9 Loc[1]
	Yield in pounds per acre										
Centennial	--	--	--	--	--	--	1223	1843	2336	--	--
Charro	1344	2417	--	--	--	--	--	--	--	--	--
Cowboy	2018	3299	--	--	--	--	--	2512	2990	--	--
Croissant	--	--	--	--	--	--	1403	2163	2239	--	--
DR Wood	--	--	--	--	--	--	1833	1820	1322	--	--
Gleam	1724	3346	--	--	--	--	--	--	--	--	--
GTS-904	1360	2560	--	--	--	--	--	--	--	--	--
GTS-907	793	1959	--	--	--	--	--	--	--	--	--
La Paz	1609	3409	1651	2850	3693	1139	1867	2620	3076	4259	2725
Lariat	1789	2993	1485	2833	3455	1159	1952	2494	3212	3579	2607
Long's Peak	--	--	--	--	--	--	1455	1593	1966	--	--
Lumen	1525	1572	--	--	--	--	--	--	--	--	--
Monterrey	1822	2537	1575	2851	3807	1036	2443	2109	3145	3069	2535
ND Falcon	1202	2233	1512	2732	3114	1105	1513	2284	2550	2284	2113
ND Palomino	1588	2190	839	2065	3020	1019	1766	2252	2608	3405	2213
Radiant	1454	2482	--	--	--	--	--	2334	2831	--	--
Sinaloa	1907	3007	--	--	--	--	--	--	--	--	--
Stampede	1657	2501	992	2258	3899	1207	1761	2265	3220	3262	2448
StayBright	1660	2488	--	--	--	--	--	--	--	--	--
SV6139GR	1556	2735	--	--	--	--	--	--	--	--	--
Torreon	1734	2476	--	2135	3804	1031	1823	2747	3130	3799	2520
Vibrant	1361	2413	--	2355	4033	1150	1945	2598	2873	2708	2382
Windbreaker	1691	2901	1397	2791	3876	1070	2090	2146	2767	2120	2384
LSD 0.05	580	1050	460	412	446	184	351	351	380	720	297

[1]Forest River, Hatton, Oakes Irr., Langdon, Hettinger, Minot, Carrington, Carrington Irr., and Williston.

Table 3. Black bean variety results 2020 NDSU trials.

	Forest River	perham	oakes	Langdon	Hettinger	Minot	Carrington	Carrington Irr.	Williston Irr.	Average 6 loc[1]
						Yield in pounds per acre				
AAC Knight Rider	1215	1430	--	--	--	--	--	--	--	--
Black Tails	1294	--	1153	3759	1151	1752	2252	2719	2706	2155
Eclipse	1498	1859	1544	3634	1250	1936	1782	2454	2053	2092
ND Twilight	1516	1713	--	3205	1073	1392	2141	2385	--	1952
LSD 0.05	370	460	259	446	184	351	351	380	720.25	NS

[1] Forest River, Langdon, Hettinger, Minot, Carrington, and Carrington Irr.

Table 4. Kindney and Great Northern bean variety results 2020 NDSU trials.

		Forest River	Perham	Staples	Oakes irrigated	Langdon	Hettinger	Minot	Carrington	Carrington Irr.	Williston Irr.	Average 7 Loc[1]
							Yield in pounds per acre					
Chaparral	Dark Red Kidney	--	1373	1799	--	--	--	--	--	--	--	--
Dynasty	Dark Red Kidney	--	1232	1729	--	2717	--	--	--	--	--	--
Epic	Dark Red Kidney	--	707	949	--	--	--	--	--	--	--	--
Montcalm	Dark Red Kidney	--	1004	1665	--	--	--	--	--	--	--	--
Rampart	Dark Red Kidney	--	787	1148	--	--	--	--	--	--	--	--
Red Hawk	Dark Red Kidney	--	819	1672	--	--	--	--	--	--	--	--
Red Rover	Dark Red Kidney	--	1009	1939	--	--	--	--	--	--	--	--
Spire	Dark Red Kidney	--	1177	1223	--	--	--	--	--	--	--	--
Talon	Dark Red Kidney	--	1009	1841	--	--	--	--	--	--	--	--
ND Pegasus	Great Northern	2034	--	--	2390	4124	1342	1546	2608	3353	3834	2841
Big Red	Light Red Kidney	--	532	898	--	--	--	--	--	--	--	--
Clouseau	Light Red Kidney	--	1059	1814	--	--	--	--	--	--	--	--
Foxfire	Light Red Kidney	--	510	1290	--	--	--	--	--	--	--	--
Pink Panther	Light Red Kidney	--	418	1227	--	--	--	--	--	--	--	--
Red Dawn	Light Red Kidney	--	485	769	--	--	--	--	--	--	--	--
Ronnie's Red	Light Red Kidney	--	927	885	--	--	--	--	--	--	--	--
Rosie	Light Red Kidney	--	1154	2557	--	--	--	--	--	--	--	--
Merlot	Small red	1222	--	--	1671	3089		1210	2095	2683	2287	2037
Viper	Small red	1477	--	--	1509	3329	--	2170	2410	3082	3768	2535
ND Whitetail	White Kidney	--	1437	1757	--	--	--	--	--	--	--	--
LDS 0.05		440	280	690	259	446	184	351	351	380	720	402

[1] Forest River, Oakes Irr., Langdon, Minot, Carrington, Carrington Irr., and Willistion Irr.

2021 Weather Outlook

By Daryl Ritchison, North Dakota Agricultural Weather Network Director

The ability to know future weather conditions provides substantial economic benefits. Medium range forecasts in the six-to-ten-day range are often accurate enough to allow preparations to be made before a change in the weather. This proactive approach leads to savings, both financially and in human lives. The benefits of proactive approaches are clear, yet become more difficult the farther into the future you try to forecast.

There are known global impacts to weather patterns based on the temporal and spatial distribution of ocean sea-surface temperature anomalies. These fluctuations work in seasonal to even decadal time scales.

The most well known of these oceanic thermal fluctuations are El Niño and La Niña, that occur over the equatorial Pacific Ocean that are part of a broader oscillation of surface wind movements references as ENSO (El Niño Southern Oscillation.)

Although not perfected, the understanding of how oceanic phenomena impact atmospheric patterns offer clues to what the general weather conditions may be in certain parts of the world in the upcoming months. These clues bring prospects for higher economic benefits using seasonal forecasts for those willing to take a higher risk.

El Niño and La Niña that are two terms frequently mentioned when dealing with changes to weather patterns and particularly with long range weather forecasting. Both El Niño and La Niña occur every two to seven years on average.

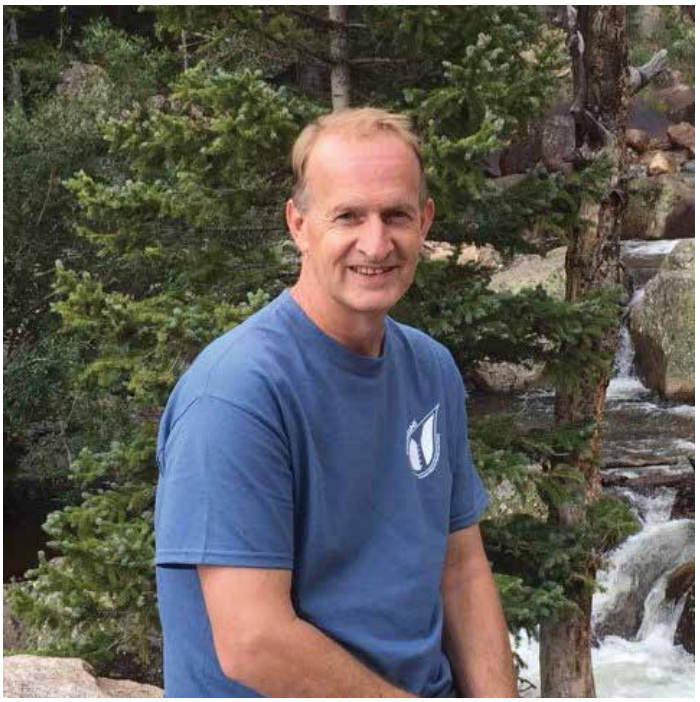
The term El Niño is used when temperatures in the central and eastern

equatorial Pacific Ocean temperatures are at least 0.5° C warmer than average over a three-month period. When that same equatorial Pacific Ocean area is at least 0.5° C or cooler than average over a three-month period it is referenced as a La Niña.

When the central and eastern equatorial Pacific Ocean overall average temperatures are -0.5° C to 0.5° C it is referenced as a La Nada. The term La Nada literally means nothing, in other words, there is neither an El Niño nor a La Niña present.

In the current winter of 2020/2021, there is a La Niña present in the equatorial Pacific Ocean. The term La Niña became part of the vocabulary in agricultural circles in 1988. That year, many parts of the lower United States were suffering through the worst drought since the 1930s dust bowl. Because of the extremely dry and hot conditions of that summer. the question commonly asked was "What caused these conditions?"

The news reports blamed a strong La Niña, the opposite of an El Niño, as the cause of the dry and hot summer that year. The economic impacts of the widespread drought of 1988 went far beyond just agriculture, yet farmers were probably hardest hit. Therefore, the word La Niña has become a buzz word for drought ever since the late 1980s.



NDAWN Director Daryl Ritchison

That concept of La Niña equaling drought is overly simplified and false on many levels. Yes, there are examples of drought with a La Niña present, but there are also examples of that not being true. This idea that La Niña conditions cause drought was evident during the winter of 2017-2018.

In early January 2018, a major national newspaper had a headline proclaiming that a La Niña could shake up agricultural markets in 2018. Instead, there were record breaking crop yields across much of the country in 2018.

Oceanic influences are an ingredient to what may occur in an upcoming season, not necessarily the direct cause. Timing, strength, and location of ENSO combined with other factors needs to be examined as well.

Past years with similar conditions, both oceanic and atmospheric, are used to create analogs. Analogs are then used to create future projections based on past conditions that are similar to what is going on currently or projected to be in place in the future. Using such techniques are the main approach I use in my long-range weather forecasts.

For example, my forecast for the Northern Plains for the 2020 growing season originally created at this time last year was for most of the region to be drier than average and warmer than average. Almost everyone was warmer than average. In North Dakota outside of the Red River Valley, dry conditions were dominant. In northwestern Minnesota, May through September was a mix of near average or above.

A perfect forecast? No. But, overall, the analog concept for that projection worked quite well.

For 2021, the analogs suggest that like 2020 there will be another growing season with near or below average precipitation. It is unlikely that will be the case for all locations as summer thunderstorms produce wide variation in precipitation totals. The analogs are never perfect but are hinting at more dry than wet.

Temperatures, which tend to be more widespread in one range or another, come in near average according to analogs. If true, that would mean fewer growing degrees days than in 2020.

However, considering how exceptionally warm the summer of 2020 was, having two summers in a row that warm have rarely occurred. This means fewer growing degrees days should be expected even without my analog package suggesting that same thing.

Dry Bean Budgets

By Ron Haugen, NDSU Extension Farm Management Specialist

This 2021 dry bean budget provides an estimate of revenues and costs. There is considerable variation in soil type and productivity, weather conditions, management and production practices.

The profitability budget accounts for full economic opportunity costs for land and machinery investment, regardless of farm operator equity position. The bottom line is the return to labor and management. This is the expected "payment" to the producer for the labor and managerial efforts required by the crop enterprise. Everyone must make the decision whether it is sufficient.

Ron Haugen, NDSU Extension Farm Management Specialist

The budget can be changed to conform to the more common definition of accounting profit (return to unpaid labor and management and owner equity) by replacing the machinery investment and land charge cost items with your own per acre interest, rental expense of machinery and land and real estate tax if land is owned.

This budget can be used for long run decisions if the revenues and costs are realistic for several years. Crop prices, direct costs and the land charge are best estimates for only the 2021 crop year, but crop yields are historic averages and machinery ownership costs are an average for the total length of ownership.

If the budget shows a high return to labor and management, and is representative for several years, increased acreage and corresponding investment should be considered. However, if long-run returns to labor and management are unsatisfactory the best decision may be to exit the crop enterprise and employ the machinery

and land investment and labor and management in a different enterprise or investment.

For short-run planning decisions, you can omit the indirect costs if the land and machinery required to produce the different enterprises are in place. Simply compare the crop enterprises by calculating return over direct costs. Labor requirements and risk should also be considered.

ASSUMPTIONS INCLUDE:

- Fuel price: Diesel $2.00 per gallon
- Lubrication charge: 15% of fuel cost
- Crop Insurance: Revenue Protection with a 75% coverage level and enterprise units.
- Operating Interest: Direct costs charged 5.0% interest for a six-month period.
- Miscellaneous Overhead: Machinery housing and insurance at 0.5% and 0.85%, respectively, of average machinery investment; also, liability insurance and license fees of trucks. In addition, $4.00 per acre is assumed for general farm utilities, farm publications, meetings, dues, income tax preparation, legal fees, etc.
- Land charge = average cash rent.
- Machinery investment: 4.5% real interest rate, over the years of machine ownership, is charged on average machinery investment. The real, or inflation adjusted, rate is the commercial rate minus the inflation rate. The average machinery investment = (purchase price + disposal price)/2
- Depreciation = (Purchase price - disposal price/years ownership)

DRYBEANS	Per Acre	Notes:
Market Yield (lb)	1,800.00	Average historical yeild
Market Price	0.26	Price projection as of Dec 1, 2020
MARKET REVENUE	**468.00**	
DIRECT COSTS		
Seed	60.00	upright
Herbicides	47.00	Includes dessicant prior to straight cutting.
Fungicides	20.00	Fungicide for white mold. May need second treatment.
Insecticides	0.00	
Fertilizer	35.00	
Crop Insurance	14.00	
Fuel & Lubrication	13.00	
Repairs	22.40	
Drying	0.00	
Miscellaneous	13.50	roller, soil test, aerial application
Operating Interest	5.60	
SUM OF LISTED DIRECT COSTS	**230.50**	
INDIRECT (FIXED) COSTS		
Misc. Overhead	9.20	
Machinery Depreciation	27.90	
Machinery Investment	16.10	
Land Charge	56.00	land rents much higher in the Red River Valley
SUM OF LISTED INDIRECT COSTS	**109.20**	
SUM OF ALL LISTED COSTS	**339.70**	
RETURN TO LABOR & MGMT	**128.30**	
LISTED COSTS PER BUDGET UNIT	**(lb) :**	
Direct Costs	0.128	
Indirect Costs	0.061	
Total Listed Costs	0.189	

DISCLAIMER: *This is a preliminary dry bean budget. Official NDSU crop budget estimates are being developed and will be available later. Budgets are only intended to be used as a guide. Every individual is highly encouraged to develop his or her own budgets.*

30 Years of the Dry Bean Grower Survey

By NDSU Extension Entomologist Jan Knodel

The annual Dry Bean Grower Survey has been conducted for 30 years. This is a cooperative effort between the Northarvest Bean Growers Association and NDSU Extension that is made possible through a grant from Northarvest.

The survey provides important data on the varieties grown, pest problems, pesticide use and grower practices of the Northarvest Bean Growers Association. Below is just a small 'snap shot' of some of its interesting and valuable facts that it identifies for growers, educators, researchers and agronomists.

PRODUCTION

Juan Osorno, Dry Bean Breeder

Given the fact the USDA's National Agriculture Statistics Service doesn't keep track of which dry bean varieties are grown in the region, the survey is a critical tool to get this information. This allows many industry players to make plans and forecasts regarding seedstocks and production, among other factors.

NDSU Extension Entomologist Jan Knodel

One of the first interesting observations across years is that, except for kidney beans, adoption of new/modern varieties happens very quick in most cases. This is, in part, responsible for the increased productivity of dry beans in the region during the last 50 years.

Also, the questions about production and pest problems help in prioritizing the traits that breeders need to work on within the breeding program in addition to allocating efforts and resources. For example, the conversion from conventional harvest to direct harvest as shown by the survey data across years.

Rather than looking at specific years, it is interest-

ing to look at the trends and preferences of varieties across the years. Still, data from each year give us a "pulse" of the market and variety preferences.

For example, in 2019 for the Northarvest region, newer pinto varieties such as Monterrey and Torreon are replacing older varieties such as Windbreaker and La Paz. In the case of the new slow darkening pintos, Vibrant and ND Palomino, are the most common.

With almost 70% of the total area grown in black beans, Eclipse is the top variety, followed by Zorro and Blacktails. Medalist and T-9905 were the most grown navy beans, with 90% of the fields planted to these varieties.

Finally, kidney beans are mostly grown in Minnesota, where there is a combination of old and new varieties. Dynasty and Montcalm are the top 2 dark red kidney beans, while Pink Panther and Clouseau were the most common light red kidney varieties for 2019.

AGRONOMY

Hans Kandel, Extension Agronomist and Greg Endres, Cropping Systems Specialist

Survey questions began in 2017 regarding use of cover crops associated with dry bean production. In the Northarvest region, 14.8% of dry bean producers completing the survey indicated use of cover crops; the percentage increased slightly to 17.8% in 2019.

The primary reason for cover crop use was for soil conservation. The majority of cover crop type were cereals, indicated by 72% and 78% of respondents in 2018 and 2019, respectively.

Dry bean plants are usually much poorer at nitrogen fixation than most legume crops. The inoculant used for dry bean is Rhizobium leguminosarum and is relatively inexpensive. An effective rhizobium nodule is big and spherical and it has a pink tinge. If the nodule is small and not pink, then it is not really fixing nitrogen.

Inoculation is often effective in well-drained medium- to coarser-textured soils in the northern half of the North Dakota. An average of 18% of surveyed bean growers utilize seed inoculation. More growers could use inoculation to increase bacteria near the bean roots.

In North Dakota and northwestern Minnesota during the past decade, we have had several excessive rainfall events prior to and/or during the bean growing season. One of the management strategies to reduce excess water stress on crops is to install subsurface tile drainage.

Tile drainage does not remove plant available water, only excess water. Tile normally results in deep root development. However, the number of bean acres with tile drainage during the period 2012-2019 averaged only 9%. There is an opportunity to increase bean production by utilizing tile drainage where possible.

Continued on Next Page

SOILS

David Franzen, Extension Soil Specialist

It is encouraging to see the increase in no-till/strip-till in dry bean management in North Dakota. Also, the percent of growers utilizing cover crops as a soil conservation tool compared to the number just a few years ago is also exciting.

Most growers prefer to utilize nitrogen fertilizer in their management, and this confirms our suspicions that this is the preferred N management tool. Banded fertilizer is also utilized by many growers, and the research success at the NDSU Carrington Research Extension Center with banding phosphorus on dry beans will probably result in increasing adoption of this practice in the future.

Most growers soil test, and this number might increase when there are more favorable fall/spring periods to accomplish the sampling. The use of site-specific management is roughly 30% across the region, and it is increasing over time.

INSECTS AND PESTS

Janet Knodel, Extension Entomologist, and Patrick Beauzay, Research Specialist

Most growers, crop consultants and agronomist follow Integrated Pest Management protocols and scout for insect pests, diseases and weeds. Over the past five years, about 96% of growers used economic thresholds for making insect management decisions.

The major insect pests of dry edible beans grown in Minnesota and North Dakota were leafhoppers, grasshoppers, cutworms and foliage-feeding caterpillars such as thistle caterpillar and green cloverworm. Foliage-feeding caterpillars were especially problematic in 2018 and 2019. Occasional insect pests observed were aphids, wireworms, armyworms, spider mites, cutworms, seed corn maggots and bean leaf beetles.

Pyrethroids have been the dominant insecticides used for foliar control of insect pests of dry beans. Lambda-cyhalothrin (Warrior II, generics), bifenthrin + zeta-cypermethrin (Hero), and esfenvalerate (Asana XL) were the most used foliar insecticides for control of insect pests on Northarvest acres.

Insecticide seed treatment use has increased over the past five years, with the neonicotinoid insecticide thiamethoxam (Cruiser) now used on over half of all Northarvest acres, and largely replacing the older neonicotinoid imidacloprid. The organophosphate insecticide chlorpyrifos (Lorsban) continues to be used for control of soil insect pests in about 10% of all Northarvest acres. Imidacloprid (Gaucho & generics) in the neonicotinoid class had the lowest use as an insecticide seed treatment.

DISEASES

Samuel Markell, Extension Plant Pathologist, and Julie Pasche, Extension Plant Pathologist

In 2019, growers reported that white mold was the worst disease problem in the Northarvest region. Similarly, the most used foliar fungicides applied by growers are those that are labeled for and effective against white mold.

Bacterial blights (common, brown spot, wilt), root rots, rust, anthracnose, bean common mosaic virus and 'none' were also reported. A relatively high number of growers reported using a fungicide seed treatment and very few reported using fungicide applied as an in-furrow.

Many diseases are economically important on dry beans. We recommend growers use as many tools available to manage them, such as lengthening crop rotation, planting certified seed, using a variety with resistance/tolerance, fungicide use and others.

WEEDS

Joseph Ikley, Extension Weed Control Specialist

The survey has been useful in tracking weed pressure in dry beans over the years. For example, we can track that the increase in waterhemp being reported as the top weed problem increased three-fold between 2015 and 2019.

This is important when writing letters of support for 24 (c) registrations for herbicides, since we are limited with effective herbicides for multiple herbicide-resistant weeds like waterhemp. We can also track herbicide use patterns over the years and see that some active ingredients, like sulfentrazone (Spartan, others), are increasing in usage, while some postemergence active ingredients, like imazamox (Raptor, others), are decreasing in usage.

This can be attributed to an increase in preemergence applications in dry bean to control the top weed problems, like waterhemp or kochia, that are very difficult to control with postemergence herbicides. Overall, this survey gives a good snapshot of weed management problems over the years and helps guide research and extension programming for weed control in dry bean.

DISCLAIMER: *Trade names of chemicals often are presented as an aid for clearer communication. Mention of trade names does not constitute endorsement or recommendation by North Dakota State University or the Northarvest Bean Growers Association.*

NDSU Dry Bean Breeding Program Update

Including the performance of newly released varieties adapted to the region

By Juan M. Osorno, dry bean breeder, North Dakota State University; Research Specialists: A. Jody Vander Wal and John Posch; Research Assistants: Kristin Simons; and Graduate Students: Edgar Escobar, Eddy Ixcotoyac and Oscar Rodriguez.

OBJECTIVES

The objective of the dry bean breeding program at North Dakota State University (NDSU) is to develop high yielding, high quality dry bean cultivars adapted to the northern Great Plains. This involves many characteristics of dry beans and different disciplines of research (e.g. genetics/breeding, pathology, physiology, soils, nutrition, etc.).

The main priority is to improve pinto, navy, black, and kidney bean market classes, along with Great Northern, red and pink beans. Crosses involve adapted cultivars grown in the Northern Plains, breeding lines developed at NDSU and germplasm possessing desirable traits from other breeding programs.

Each year, the breeding program evaluates material from around the world as possible sources of resistance/tolerance to both biotic and abiotic stresses such as white mold, rust, root rots, anthracnose, virus, bacterial blights, flooding and nutrient deficiencies, among others.

2020 GROWING SEASON

Across all eight locations, the beginning of the growing season started with normal conditions during planting, emergence and early crop establishment. However, heavy rainfalls experienced in June caused ma-

Continued on Next Page

Osorno showing off one of the dry bean trials.

jor flooding problems in nurseries at Hatton and Prosper, North Dakota variety trials, losing ~90% of trials at each location.

The Hatton nursery also had losses of ~20% due to flooding. Fortunately, the rest of locations were very uniform and allowed us to obtain high-quality data for selections.

This is very important because as reported last year, no selections could be made during the 2020 growing season due to the bad weather during harvest. The rest of the season progressed under normal conditions across all locations, except at the Hatton nursery where volunteer wheat caused some minimal problems during harvest.

Besides common bacterial blight and halo blight at some locations, there was no pressure from other common diseases such as white mold and rust. The frost that occurred at the end of September caused some problems with seed quality but, overall, did not affect seed yields.

Root rot pressure at nurseries in Minnesota allowed the identification of superior kidney genotypes, especially in the case of resistance to Fusarium solani. A second location in Minnesota was grown in collaboration with the Central Lakes College Agriculture and Energy Center at Staples that included a variety trial and a trial with our advanced kidney breeding lines.

PERFORMANCE OF NEWLY RELEASED VARIETIES

During the 2020 growing season, the varieties released by NDSU continued to show either similar or superior performance compared with other varieties commonly grown in the region.

A new black bean variety, ND Twilight, was released in early 2020 and has shown either superior performance when compared with common cultivars such as Zorro and similar performance compared to Eclipse.

In addition, ND Twilight is resistant to bean common mosaic virus and rust (race 20-3), has intermediate resistance to soybean cyst nematode and is ~five days earlier than Eclipse.

Across locations, seed yield of ND Falcon pinto bean was like Windbreaker, but slightly lower than La Paz and Monterrey. No statistical difference could be detected for all the slow darkening pinto varieties commonly grown in the region (ND Palomino, Radian and Vibrant).

ND Pegasus continues to be the Great Northern variety with the highest seed yield in trials. Similarly, ND Whitetail white kidney bean continues to show superior agronomic performance in seed yield and resistance to bacterial diseases (see images).

2020 RESEARCH ACTIVITIES

Variety testing is made in collaboration with the NDSU Research Extension Centers (REC) across the state. Results of these variety trials can be found in the NDSU Extension publication A-654. These trials are grown at more than eight locations in North Dakota (including several RECs) and two in Minnesota includes all the public and private varieties plus few breeding lines at final stages of testing.

These are great decision tools not only for growers, but also for public and private breeding programs when deciding about potential variety releases. The NDSU dry bean breeding program continues to test and screen every year thousands of early generation genotypes, hundreds of preliminary and advanced breeding lines, commercial cultivars and other germplasm.

This breeding pipeline is grown in field experiments across the Northarvest region. On average, every year the NDSU dry bean breeding program grows field trials and nurseries accounting for ~9,000 plots across all locations that, when combined, are equivalent to

~35 acres.

Consequently, this is the largest public dry bean breeding program in the United State. In addition, the aid of winter nurseries that were made at Puerto Rico (~1800 rows each year) and New Zealand (~300 rows plus breeder seed increases) help to speed up the breeding process, especially at the early generations.

Breeding activities mainly involved crosses in the greenhouse, selection at early generations, yield testing of preliminary and advanced breeding lines, marker-assisted selection for specific disease-resistance genes and some genetic/agronomic studies. Breeding targets include high seed yield and quality, disease resistance, early maturity, upright plant architecture for efficient mechanical harvest and canning quality, among others.

Greenhouse activities complement the field work by doing disease screening (bean rust, common bacterial blight, BCMV, anthracnose and white mold), crossings and seed increases. Inoculum for disease screening is provided by the Plant Pathology Department.

Each year, the crossing block in the greenhouse facilities involves approximately 250 new parental combinations. Greenhouse screening for disease resistance have allowed the identification of some genotypes with improved resistance to some of the most important pathogens in the area, especially for bean rust, white mold, common bacterial blight and anthracnose.

ND Whitetail white kidney bean continues to show superior agronomic performance in seed yield and resistance to bacterial diseases

Additional research conducted by graduate students and postdoctoral scientists focuses on seed coat slow darkening, upright plant architecture, nutritional traits, multiple disease resistance (common bacterial blight, anthracnose, rust, white mold and bean common mosaic virus), as well as genetic resistance to root rots in large-seeded types.

New potential sources of resistance have been identified for waterlogging tolerance, slow darkening, root rots, halo blight, common bacterial blight, white mold and anthracnose through some of these studies. Additional research is also underway on genetic resistance to soybean cyst nematode.

In collaboration with Dr. Phil McClean, studies are focused on the use/application of molecular markers to improve the efficiency of selection within the breeding program such as Genome-Wide Association Mapping and Genotyping by Sequencing methods.

ACKNOWLEDGEMENTS

The support from Northarvest Bean Growers Association, NDSU and the North Dakota Dry Edible Bean Seed Growers Association has been fundamental for the long-term success of the dry bean breeding program at NDSU and the growers of the Northarvest region. Other funding agencies include USDA-ARS, USDA-NIFA, USDA-AMS, North Dakota Department of Agriculture and USAID.

Finally, thank you to the following growers for allowing research trials on their farms: Mark Dombeck of Perham, MN, Jim and Dylan Karley of Johnstown ND, Brian Shanilec of Forest River, ND, Tim Skjoiton of Hatton, ND and Mark and Jim Sleeten of Hatton, ND.

Diseases: Moving Forward by Learning from the Past

By Sam Markell, NDSU Extension Plant Pathologist and Brad Brummond, NDSU Extension Agent - Walsh County

Diseases are a problem in dry edible beans, period. In 2020, growers reported the usual players: white mold, rust, bacterial blights and root rots (See Dr. Jan Knodel's article on page XX). Similarly, growers reported actively managing most of the players with fungicides and seed treatments. Yet, we still have diseases.

NDSU Extension Plant Pathologist Sam Markell

NDSU Extension Agent - Walsh County Brad Brummond

WHAT'S MISSING?

No matter what is done, diseases are not going away any time soon. However, there are better management tools than in the past. Sometimes those tools simply may not meet expectations.

Its aggravating. It causes yield loss. It's not financially sustainable. But why?

Failure is often not a function of the grower, applicator or the input itself, rather, it may be related to how much disease pressure are put on management tools. This is particularly true with the more expensive inputs like fungicides.

Fungicides now are far better than those year ago, but if disease pressure is great enough, the disease will overwhelm them. The disease pressure that we face today is greater than

what we faced years ago; the history of dry bean production is longer; we have been in a long term wet cycle; and there is less tillage.

All these factors add up to increased disease pressure, while at the same time, relying more heavily on the best and most expensive management tools to carry the weight. he results are not always what we want.

WHAT CAN BE DONE?

To manage disease more effectively, we want to stack the deck against diseases by doing everything we can to manage them before utilizing another input (a fungicide, for example). We may be able to learn from the past.

Crop Rotation -- Lengthening a crop rotation will improve the management of most diseases. Longer time between crops gives the beneficial microorganisms more time to breakdown pathogens. It also reduces the opportunity for pathogens to adapt and overcome fungicides and resistance genes, helping to manage diseases now and in the future.

Longer crop rotations are not necessarily 'cost-free' because a dry bean crop is often worth more than other crops, but they still need to yield. Many dry bean growers and other industry folks see an increase in disease pressure and lower yields after years of tight crop rotations. The opposite can be true when rotations are lengthened.

Tillage -- To be clear, this is not advocating tillage for disease management. However, it is important to recognize that disease pressure on a variety of crops has increased over time, in part, because there is much less tillage across the countryside.

Tillage moves residue, which is often full of pathogen material, into the soil profile where many pathogens are less able to incite an epidemic and tend to degrade faster. Improved fungicides and resistance genes have helped compensate, but the trade-off is that those tools are expected to perform under higher pressure, and sometimes they are overwhelmed.

Again, the message here is not to advocate for more tillage, rather it is to emphasize that disease pressure in many crops is higher than it was years ago.

Question: What else can we do reduce disease pressure?

Answer: Lengthen a crop rotation.

Optimizing Tools -- Gathering as much information as possible on the tools being used is critical. It starts with variety selection. Varieties will respond differently to diseases, and while dry beans may not be 'resistant' to some diseases, some varieties perform better than others.

Breeders, agronomists and others that work closely with the varieties often have some information on performance under disease pressure. Clean seed is critical, as several pathogens can survive in or on seed. Fungicide seed treatments and foliar fungicide applications are also critical. While the development of a new mode-of-action fungicide is very uncommon, the understanding of how best to use the chemicals we have is always improving.

For example, research to optimize fungicide timing and techniques for management of white mold in dry beans has been ongoing at the Carrington Research Extension Center for years and is bearing fruit. Link to Carrington Plant pathology webpage?

Fungicides are expensive inputs, and optimizing the application is critical to get the most out the investment, especially under high disease pressure.

Question: What else can we do reduce disease pressure?

Answer: Lengthen a crop rotation.

Disease are still causing yield loss, despite using the excellent management tools we have. While we can't eliminate disease problems, we may be able to manage them better by incorporating underutilized management tools of the past, like longer crop rotations.

The Outlook for Dry Beans Remains Optimistic

By U.S. Dry Bean Council Executive Director Rebecca Bratter

2020 has been an unusual year for U.S. dry bean exports due to a combination of factors, including unexpected supply constraints resulting from a difficult harvest. Building new export streams is long term work that requires consistency, strong market presence, awareness building, and a favorable trade climate.

In general, top export markets don't fluctuate much over a five-year

U.S. Dry Bean Council Executive Director Rebecca Bratter

period, with some exceptions. However, micro dynamics change in-line with emerging markets that develop into reliable export destinations and trade disputes disrupt the ability to gain new market share.

While the smaller overall bean harvest and a global pandemic were the two defining aspects of the 2020 marketing year, several other developments, negative and positive, had an impact on U.S. dry bean flows across the globe. These include:

- Ongoing trade disputes and subsequent retaliatory tariffs in China the European Union (EU) and other key markets.
- Strong domestic crops in some export destinations.
- Availability of cheaper product from competitor markets.
- Lack of enforcement of trade obligations defined in ongoing trade agreements such as the Dominican Republic-Central America FTA (CAFTA-DR).

On the positive side, strong interest in plant based sustainable diets continued to spur demand for beans. Also, it would be remiss not to mention the impact of COVID as consumers looked to stock their

pantries with healthy shelf stable foods, like dry beans.

This article looks at global dry bean flows to the top five markets for the most exported classes of dry beans for the 2020 calendar year-to-date, not the marketing year. It also looks at quantity and not value, which is tracked separately and doesn't always reflect trade flows as prices fluctuate with supply.

It is always possible to have a higher trade value in a year when less product is exported. The latest export statistics available from USDA's Global Agricultural Trade System (GATS) represent trade through the end of September 2020.

BLACK BEANS

Mexico and the Dominican Republic (DR) are consistently the top two export markets for black beans year on year. Free trade agreements are in place with both countries. The one exception is 2016 when Brazil took around 9,000 metric tons (MT) of black beans due to a poor crop from their top supplier, Argentina. The U.S. Dry Bean Council (USDBC) continues to build a market presence there and see a small, but consistent, amount shipped annually.

2020 black bean exports to date are up significantly in Mexico and the DR compared to the January-September period of 2019. Mexico's demand is determined primarily by their own bean crop, which has been short over the past few years. The DR is a more complicated market where recently the government has tried to control the amount of U.S. dry bean imports despite obligations outlined in the CAFTA-DR free trade agreement.

Costa Rica is an interesting prospect, as product availability from their traditional supplier, China, has decreased.

PINTO BEANS

Mexico and the DR are the top two export markets for pinto beans, with Mexico holding the top spot. While exports to Mexico are up slightly for the reporting period in 2020 compared to 2019, they are down significantly to the DR.

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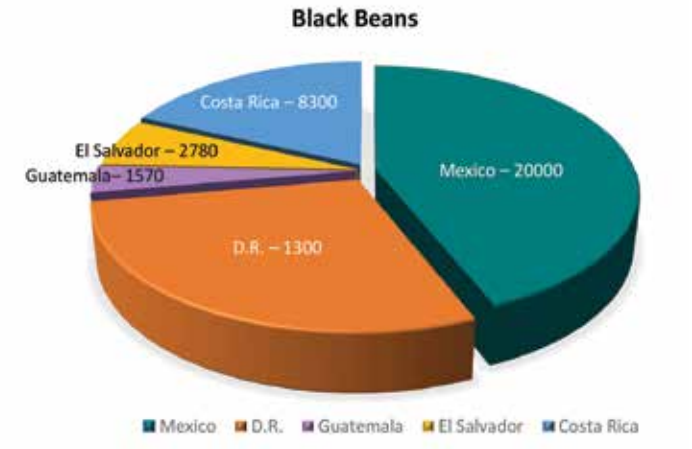

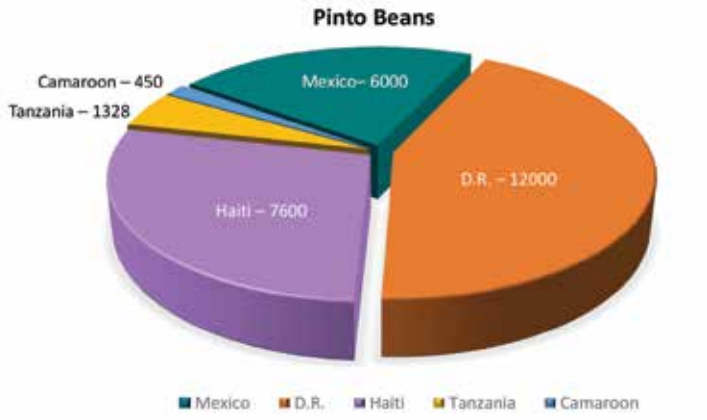

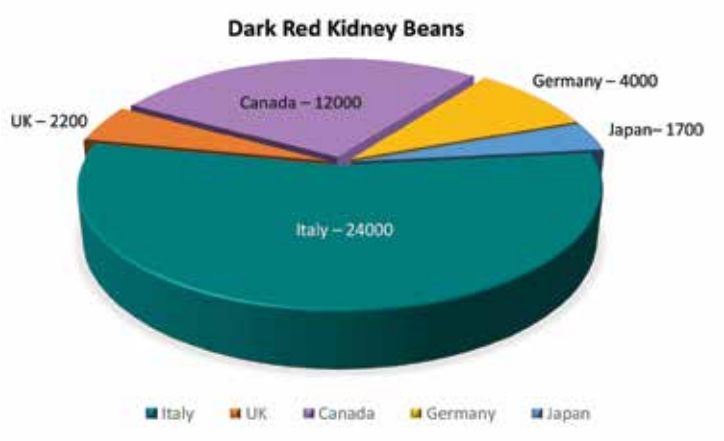

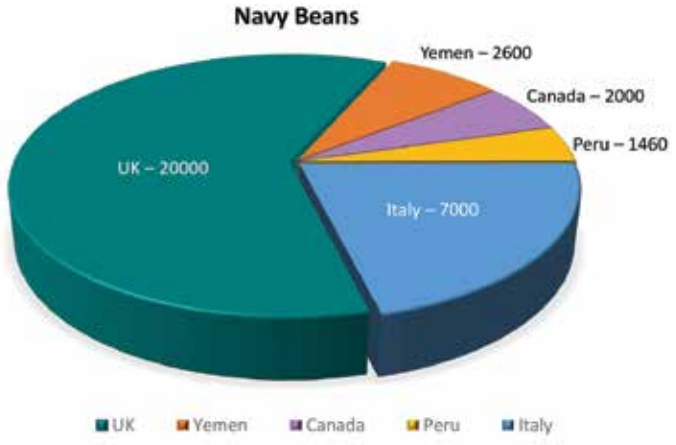

Since the full implementation of the CAFTA-DR trade agreement and the disappearance of Tariff Rate Quotes (TRQs), the current government of the DR has tried to protect the local dry bean industry by limiting imports and delaying phytosanitary certificates. However, purchasing has picked up in October and November as domestic supply wanes. Year-end reports will almost certainly show an increase in pinto bean exports to the DR in 2020.

Haiti has continued to emerge as a solid export destination for U.S. pintos, and exports are up for the reporting period in 2020 over 2019. Pintos have also shown up in a few Sub-Sahara Africa destinations due to food aid purchases. Depending on prices, this trend will likely continue in 2020.

NAVY BEANS

The UK is consistently by far the top export market for navy beans. This comes even though 2019 was the worst year for U.S. dry bean exports to the UK, with total exports not even reaching 20,000 MT in a market that exceeds 30,000 MT in a good year.

This is most certainly due to the imposition of 25% retaliatory tariffs which remain in place. Exports are up 14% for the January-September 2020 period. Tariffs need to disappear to get U.S. numbers back to the 30,000 MT range.

Italy is the second most important export destination for navy beans, but these numbers have slipped significantly; also, likely due to the same 25% retaliatory tariffs. Navy bean exports for the January-September 2020 period are down 50%.

Navy beans started going into Yemen for food aid over the last year and will likely continue to do so this year as white beans are the nutrition of choice for this extremely vulnerable population.

DARK RED KIDNEY BEANS

Dark red kidney beans (DRKs) have shown resilience in the face of retaliatory tariffs to the top export destination, Italy. While retaliatory tariffs have had an impact on all dry bean exports to the EU, DRK exports to Italy, have continued to grow each year and are up 30% for the January-September 2020 period.

The story for DRK exports to the rest of the EU this year is uneven,

with some significant decreases for the first nine months of 2020 to Belgium, Spain and France. A significant amount of DRKS were shipped to Canada for the first nine months of this year, but it is not clear that these are not for re-export, given the tariff situation.

There is interest in DRKs from China, but the U.S. still faces retaliatory tariffs on bean imports to China and that has prevented the growth of this export stream. However, USDBC continues to get inquiries about DRKs from China.

LIGHT RED KIDNEYS

Light red kidneys have continued to flow to the Americas as part of diets in Panama, Colombia and the French West Indies. Exports were mostly stable except for Colombia due to their own healthy bean harvest.

GREAT NORTHERN BEANS

The big story for Great Northern beans (GNs) has been the demand coming from humanitarian feeding programs in Yemen. GNs are the white bean of choice for this nutritionally vulnerable population.

Demand was extremely high in 2019 but short supply meant that these numbers were not matched in 2020. Demand from Yemen will be high in 2021. We also saw the demand from the Philippines continue and post over 100% growth for the first nine months of 2020.

SMALL RED BEANS

Traditionally Jamaica is the top export market for small reds and still continues to take consistent supply. Exports to Jamaica were down 25% for the first nine months of 2020 compared to the same period in 2019.

However, a massive number of small reds, over 6,000 MT, were shipped to Canada during the period January-September 2020. As noted with other types of beans, these may be for transshipment given the current tariff environment.

Niger takes small reds from time to time, likely for food aid and the same is true of Honduras, Guatemala and El Salvador. Exports to Australia and Costa Rica are both up significantly in 2020, but these are still small markets.

While supply shortages and export tariffs haven't necessarily reordered top export markets for 2020, the U.S. exported less and were prevented from capturing new market share growth in traditional and emerging markets. It is anticipated that this will change in 2021, as sales have already been brisk for the new bean crop and as the U.S. continues to seek resolution of global trade disputes.

It is likely that strong demand will be seen as more consumers explore plant-based diets and as the COVID-19 pandemic continues on in 2021. All in all, 2021 is a great year to be in the business of beans!

Success for the Dry Bean Health Research Program

Dr. Stephen O'Keefe of the University of Pittsburgh has been notified that his research proposal on dry beans and cancer prevention will be funded by the National Institutes of Health (NIH). The study will receive approximately $3.7 million over five years.

Partnering with Dr. Terry Hartman of Emory University to conduct the study, Dr. O'Keefe will investigate whether the fiber in a diet rich in beans will help overweight study participants lose weight and reduce their risk of colon cancer.

Dr. O'Keefe was selected as a Dry Bean Health Research Program (DBHRP) award recipient in 2018 and applied to NIH later that year. He said that the Northarvest Bean Growers Association's grant through DBHRP allowed his successful application to NIH and asked to "extend our deepest gratitude for their generous support."

The program provides $20,000 awards for promising studies on beans and human health to encourage researchers, like Dr. O'Keefe, to apply to NIH for additional funding. To date, $685,000 in DBHRP awards has generated over $11 million from NIH and other funding organizations for research on beans and human health.


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Molly Yeh Partners with Northarvest

Molly Yeh, host of Food Network's "Girl Meets Farm" and wife of a dry bean farmer, has announced a new partnership with Northarvest Bean Growers Association, launching their national "Beans for Life" campaign. Over one half of the United States' dry bean production coming from North Dakota and Minnesota, where Molly Yeh and her husband raise navy beans.

"With many families spending more time at home, juggling distance learning and adapting to the changes that the pandemic has brought us, we all need a little help these

Continued on Next Page

KALE, PANCETTA, AND WHITE BEAN COBBLER

Serves: 6-8
Prep time: 10 minutes
Cook time: 35 minutes
Total time: 45 minutes

INGREDIENTS

- 1 lb thick cut pancetta, diced
- 2 large shallots, finely chopped
- Kosher salt
- 2 cloves garlic, minced
- 1 lb collard greens, stemmed and chopped
- 1 lb kale, stemmed and chopped
- 1 1/2 cups chicken stock
- 1 (14 oz) can cannelini beans (drained and rinsed)
- Black pepper
- A few shakes of tabasco
- 1 tablespoon brown sugar
- 2 tablespoon apple cider vinegar
- 1 can biscuits or 1 batch homemade biscuits
- Egg wash: an egg beaten with a splash of water
- Flaky salt

DIRECTIONS

1. Preheat oven to 425°F.
2. In a 3-quart oven-safe dutch oven or braiser, cook the pancetta over medium heat until crispy. Transfer to a plate using a slotted spoon and keep the fat in the pan. Add the shallots and a pinch of salt and cook until soft, 5-7 minutes. Add the garlic and cook another minute. Add the greens in batches, cooking until slightly wilted (it's a lot of greens! but they cook down). Add the stock, beans, 1/2 tsp salt, pepper, tabasco, brown sugar, and apple cider vinegar, and return the pancetta to the pot and stir to combine.
3. Top with biscuits, brush with egg wash, sprinkle with flaky salt, and bake for 25 minutes, or until golden brown.

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BLACK BEAN AND SWEET POTATO BURRITO

Serves: 10
Prep time: 10 minutes
Cook time: 30 minutes
Total time: 40 minutes

INGREDIENTS

- 1 1/2 pounds sweet potatoes, cut into 1/2-inch cubes
- Olive oil, for drizzling
- Kosher salt and freshly ground black pepper
- 2 cloves garlic, minced
- 1/2 Spanish onion, finely diced
- 1 jalapeño, seeded and finely chopped
- 1 tablespoon chili powder
- 1 tablespoon tomato paste
- 1/2 teaspoon dried Mexican oregano
- 2 cups packed fresh baby spinach
- 1 (15 ounce) can black beans (drained and rinsed)
- 1 (14.5 ounce) can diced tomatoes
- 1 cup crumbled queso fresco
- Juice of 1 lime
- Ten 10-inch whole-wheat tortillas
- 1 bunch fresh cilantro, chopped
- Hot sauce, as desired

DIRECTIONS

1. Preheat the oven to 425 degrees F.
2. Add the sweet potatoes to a baking sheet in an even layer. Drizzle with olive oil and season with salt and pepper. Roast until the potatoes are just tender but still have a bite, 15 to 20 minutes. Set aside.
3. Add 2 tablespoons olive oil to a large saute pan and place over medium heat. Add the garlic and onion and saute until translucent, about 5 minutes. Then, add the jalapeño and stir to combine. Add the chili powder, tomato paste and oregano. Stir to combine and cook for an additional 2 minutes to release the flavors of the herbs. Then, add the spinach, beans and tomatoes. Fold gently to combine. Simmer until the spinach is wilted and the liquid has reduced by half, 7 to 10 minutes. Remove from the heat and stir in the queso fresco, lime juice and sweet potatoes. Taste and season as needed.
4. Distribute the mixture evenly among the tortillas. Roll the tortillas, garnish with the cilantro and hot sauce and serve immediately. For freezer meal prep, wrap tightly in plastic wrap or parchment paper and store in an airtight container or bag. Freeze for up to 3 months.
5. To reheat, place wrapped burrito in the microwave and reheat for 3 minutes, flipping once. Unwrap, garnish with the cilantro and hot sauce, if desired, and serve!

BEANS4LIFE.ORG

days menu planning," said Yeh. "Beans are a great food to integrate easily into your meals to ensure they're healthy without having to break the bank. Plus, beans are fun and so full of flavor."

With the intention of helping to educate and engage consumers, the "Beans for Life" campaign will provide consumers with easy ways to incorporate dry beans into their favorite recipes, tips for preparing and maximizing the flavor profiles of beans and the many health benefits that beans offer when properly integrated into your diet.

Be sure to follow "Bean for Life" on Facebook and Instagram for dry bean recipes and tips. Learn more by visiting beans4life.org.

Girl Meets Farm host Molly Yeh

NORTHARVEST DIRECTORS ELECTED

The Northarvest Policy and Nominating Committee certified the mail ballot election results. Northarvest district directors elected include:

District 1: Garrett Thompson of Grafton, ND raises sugar beets, wheat, dry beans, and soybeans. Garrett will be a new board director for Northarvest Bean Growers Association. Garrett is looking forward to serving on the board representing District 1.

District 4: Tony Richards of Hope, ND raises dry beans, wheat, barley, corn, and soybeans. Tony will be a new board director for Northarvest Bean Growers Association. He is an active member on the Hope Page school board and a Cenex board member. Tony is looking forward to promoting the dry bean industry and market development as well as working with government to assist in program development to support farmers. Tony will be representing District 4.

District 7: Eric Samuelson of Crookston, MN raises dry beans, wheat, soybeans, and sugar beets. Eric is active as a director on the Northarvest Bean Growers Association and serves as Chair of the Legislative Committee, Chair of Scholarship Committee, and is active on the Crop Insurance Committee. He is a member of the Red River Valley Sugar Beet Growers Association. Eric will be representing District 7.

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Larry: Thompson, ND

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