For the Land and Its People

NDSU College of Agriculture, Food Systems, and Natural Resources › North Dakota Agricultural Experiment Station › NDSU Extension

NDSU Research Examines the Global Grain and Oilseed Market Implications of the Russia-Ukraine War

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The mission of NDSU Agricultural Affairs is to provide life-long learning opportunities and effective solutions that improve the lives of North Dakotans and build a better world. To build a better world, we must better understand global issues, encourage growth and wellness among our citizens and share knowledge with those who seek it. This issue of the For the Land and Its People highlights some of the ways the College of Agriculture, Food Systems, and Natural Resources (CAFSNR); North Dakota Agricultural Experiment Station (NDAES); and NDSU Extension are working to build a better world.

Enjoy.

Greg Lardy
Vice President for Agricultural Affairs

NDSU NORTH DAKOTA STATE UNIVERSITY

College of Agriculture, Food Systems, and Natural Resources
North Dakota Agricultural Experiment Station
NDSU Extension

NDSU Research Examines the Global Grain and Oilseed

Market Implications of the Russia-Ukraine War

The research found that:

- Between February and July 2022, grain imports from Ukraine were 12.9 million tons below their previous historical level. At the same time, Russia experienced limited trade diversion, increasing its overall grain and oilseed exports by 0.4 million tons.
- Export losses for Ukraine concentrated on grains, with minor quantity effects for milled grains, oilseeds and vegetable oils.
- The war benefited grain and oilseed exporters in Europe and North America, which increased their grain export by 10.5% and 22.1%, respectively.
- The Black Sea Grain Initiative eased some quantity constraints and price pressure after July 2022 by pushing an additional 31 million tons of grains and oilseeds out of Ukraine.

The Russian invasion of Ukraine has created immense human suffering and damaged global trade, says an NDSU economist. The World Trade Organization estimated that the global economic prospect has "darkened" considerably since the war started on February 24, 2022. Global trade growth has fallen from 4.7% to between 2.5% and 3.4%, with the adverse trade effects being concentrated in Europe and Africa.

Ukraine and Russia are major agricultural commodity exporters that ship most of their grain and oilseed harvest via Black Sea ports. Prior to the Black Sea Grain Initiative, the war limited this mode of transport considerably for Ukraine in particular, causing repercussions for farmers all around the globe and inducing a global reallocation of trade flows for some agricultural commodities.

Sandro Steinbach, associate professor in the NDSU Department of Agribusiness and Applied Economics, director for The Center for Agricultural Policy and Trade Studies, and Challey Institute Scholar, is working with researchers from the University of Connecticut to understand the implications of the Russian invasion of Ukraine for agricultural trade.

"The goal of our research was to quantify the direct and indirect impact of the war on global grain and oilseed markets and to assess the global reallocation trade dynamics for these crops," says Steinbach.

To complete the study, the researchers examined commodity-level import data from 85 reporting countries and 197 partner countries from August 2015 to July 2022.

"Before the Russian invasion of Ukraine, a significant share of Ukraine's grain and oilseed exports were shipped to vulnerable net-food-importing countries," explains Steinbach. "Our analysis shows that grains produced in Ukraine were replaced by exports of similar varieties from other regions not impacted by the war disruptions, implying that the Black Sea Grain Initiative could have benefited some developed countries more than vulnerable developing countries. Our analysis indicates that the Russia-Ukraine war had substantial trade implications for the directly involved countries, but only limited ones for the global grain and oilseed markets."

North Dakota Implications

"This research is important to North Dakota because it helps us to better understand, predict and react to global price adjustments as a result of the war," says Frayne Olson, NDSU Extension crops economist and marketing specialist.

"Wheat farmers in North Dakota don't compete head-to-head with Ukraine and Russia to sell wheat on the global market," explains Olson. "But countries that typically bought Ukrainian and Russian wheat had to shift their buying to other countries, thus affecting and redistributing global supply."

"Dr. Steinbach's research shows that the turmoil and uncertainty of the war, caused global grain prices to increase approximately $1.86 per bushel, which translated into higher prices for North Dakota wheat and corn farmers," says Olson. "North Dakota farmers should expect the continuing war to influence global prices and prices at the local elevator, and should be ready to make marketing decisions quickly as prices change."

This research was funded by the U.S. Department of Agriculture – Foreign Agricultural Service. Along with researchers from the University of Tennessee-Knoxville and Louisiana State University, Steinbach was recently awarded an $800,000 grant from the USDA – National Institute of Food and Agriculture to examine how global agricultural supply chains adjusted to the Russia-Ukraine war.

FOR MORE INFORMATION:
Sandro Steinbach, 701-231-7459, sandro.steinbach@ndsu.edu
Frayne Olson, 701-231-7377, frayne.olson@ndsu.edu

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NDSU Extension Builds Leadership Capacity in Communities Facing Health Disparities

NDSU Extension, the NDSU Department of Public Health and the NDSU Center for Social Research are taking steps to address health disparities in North Dakota.

Health disparities are preventable differences in health that are closely linked with social or economic disadvantages.

NDSU Extension is engaging urban Native American and new American communities in Fargo, Grand Forks and Bismarck. Each of these populations faces a degree of health disparities.

"We wanted to learn about the lived experience of folks in these communities," says Jan Stankiewicz, community health and nutrition specialist and tribal liaison for NDSU Extension. "What does living, working and raising a family look and feel like?"

The first phase of the project was hiring and training Indigenous and new American community coaches who would lead initiatives in their own communities. NDSU Extension specialists trained the coaches in facilitation and leadership skills.

After completing the training program, the coaches organized and facilitated dialogue circles with members of their community.

"A dialogue circle is a guided discussion around health equity," says Stankiewicz. "It allows participants to have hard conversations around racism, language or cultural barriers, and health access. The structure of the discussion helps to ensure all voices are heard."

NDSU Extension professionals were present to take notes and answer questions about the process, but they did not participate in the discussions, allowing the coaches and community members to lead their own dialogue.

After exploring health disparities in the dialogue circles, the community coaches will host broader community action forums to engage local decision makers such as representatives from city councils, school boards, public health, housing and healthcare. The goal is to inspire action plans that can begin addressing issues.

The health equity project is supported by a grant NDSU received from the North Dakota Department of Health. As a part of the grant, each community will have funds available to initiate a project of their choice.

MORE INFORMATION:
Jan Stankiewicz, 701-328-9719, jan.stankiewicz@ndsu.edu

4-H Ribbons Help Youth Improve Goal-setting and Evaluation

The 4-H motto, To Make the Best Better, requires youth to engage evaluation skills to discover where they are and how well they are doing. 4-H'ers learn how to evaluate and gain feedback on their efforts by entering projects in county fairs and achievement days.

4-H uses the Danish system of evaluation to evaluate 4-H projects relative to the standards developed for each class, show or contest. The system does not evaluate participants against other participants. Each project earns a white, red or blue ribbon based on how well the project meets the average standard, but the focus at each level is on what the youth has accomplished and how they can challenge themselves in the future.

Leigh Ann Skurupey, director for the Center for 4-H Youth Development, reminds 4-H leaders and judges that the "best" 4-H is trying to make better is the young people involved in 4-H.

"In 4-H, we target the learning process as a way to help young people build essential life skills to grow, lead and thrive," she says. "As a result, we are helping young people to achieve the best in themselves to reach their full potential."

She explains that the items exhibited at fairs are not the end goal and do not illustrate all the learning that takes place in a 4-H project. As youth participate in 4-H projects, they develop skills, gain knowledge and build confidence. The judging experience helps to foster a positive growth mindset and skills for evaluation and goal setting.

"Through the process of planning, creating and exhibiting projects for judging, young people develop key life skills and explore careers," Skurupey says. "While no evaluation system is perfect, the Danish system helps 4-H develop top-quality youth instead of focusing on blue ribbon projects."

MORE INFORMATION:

https://www.ndsu.edu/agriculture/extension/extension-topics/4-h-youth-development/members-volunteers/projects

Leigh Ann Skurupey, 701-231-7253, leighann.skurupey@ndsu.edu

NDSU Research at the LREC Seeks New Solutions for Canola Flea Beetle Resistance

North Dakota ranks No. 1 in the production of canola, growing about 80% of the canola produced in the U.S. Early in the growing season, farmers growing canola are on the lookout for damage from the canola flea beetle, the most serious early season insect pest threatens the survival and establishment of the crop.

Adult canola flea beetles overwinter in the leaf litter of shelterbelts or grassy areas and emerge in the spring. The major crop injury usually occurs in the first two weeks after the crop emerges.

Historically, farmers relied on neonicotinoid seed treatments to manage flea beetles. However, in recent years, farmers have noted that these treatments were beginning to be ineffective.

"We had very few options for treating canola flea beetles, and farmers had to rely on one mode of action," explains Anitha Chirumamilla, Extension cropping systems specialist at the NDSU Langdon Research Extension Center (LREC). "When we started to see resistance to this treatment, we were losing our only tool for managing flea beetles."

In order to prevent resistance issues, farmers need to have multiple modes of action available to them, so NDSU began a multi-year seed treatment efficacy study at the LREC and sites near Fargo to compare existing and new insecticide products.

"By varying the mode of action, farmers are exposing the flea beetles to new or multiple modes of action, making it harder for them to develop resistance," says Chirumamilla. "When seed treatments are effective, farmers might save the added expense of needing to apply a foliar treatment later in the season."

Chirumamilla led efforts to share recommendations with farmers across the region last summer. This summer, she will continue partnering with other NDSU researchers across the state to evaluate which seed and foliar treatments are the most effective and economical for controlling canola flea beetles.

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MORE INFORMATION:
www.ndsu.edu/agriculture/ag-hub/ag-topics/crop-production/crops/canola/scouting-and-treating-canola-flea-beetle
Anitha Chirumamilla, 701-256-2582, anitha.chirumamilla@ndsu.edu

Inspiring Future Leaders
Through Agricultural Education

"Growing up on a farm and ranch near Manning, North Dakota, I always knew my future would involve agriculture," says Iris Dukart, a 2023 graduate of NDSU's agricultural education degree program. "This degree program combines my love for agriculture with teaching students where their food, fiber and fuel come from, as well as helping them develop into strong leaders for our rural communities."

Agricultural education majors are people interested in teaching others the skills needed to become the next generation of agricultural innovators and leaders through classroom and laboratory instruction, leadership development and hands-on learning.

Formerly part of the NDSU College of Human Sciences and Education, the agricultural education major along with the family and consumer science education major, and the North Dakota Center for 4-H Youth Development will become part of the College of Agriculture, Food Systems, and Natural Resources on July 1.

"Bringing agricultural education back to CAFSNR is a long-time coming, almost 35 years in fact," says Adam Marx, NDSU associate professor of agricultural education. "It offers the program and our students' greater alignment to the stakeholders of the industry we serve. Further, joining with 4-H Youth Development will only benefit the advancement of youth across North Dakota through meaningful collaborations to support our schools and communities. Our programs expose young people to diverse agricultural experiences and focused leadership development which prepare them for careers across agriculture and our rural landscape."

"Our degree program is growing as the demand for agricultural education in North Dakota schools is growing," says Brooke Thiel, NDSU assistant professor of agricultural education. "While most of our graduates are seeking jobs in high-school education, other graduates seek employment in Cooperative Extension, farming, agricultural finance, agribusiness, and government agencies in agriculture, or continue their studies at the graduate level."

"I chose NDSU because I knew that it would offer me the opportunity to pursue a degree in agricultural education in an environment that has a history deeply rooted in agriculture," shares Dukart. "Additionally, I felt very at home on campus and knew I would be supported by professors and staff who wanted to see their students succeed."

FOR MORE INFORMATION:
www.ndsu.edu/programs/undergraduate/agricultural-education
Adam Marx, 701-231-7439, adam.marx@ndsu.edu
Brooke Thiel, 701-231-5839, brooke.thiel@ndsu.edu

NDSU
Agricultural Affairs
North Dakota State University
Dept 7520, PO Box 6050
Fargo, ND 58108-6050

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www.ndsu.edu/vpag

NDSU's Land-Grant Mission

The College of Agriculture, Food Systems, and Natural Resources has a tradition of excellence in educating students for real-world careers. Our students learn from and work with world-class scientists in state-of-the-art facilities. These interactions, along with a relatively low student-faculty ratio, provide opportunities for students to develop their critical thinking skills, to work in a team setting, and to capitalize on hands-on learning experiences that will allow them to be competitive in a global economy.

The North Dakota Agricultural Experiment Station consists of seven Research Extension Centers placed strategically throughout the state, the Agronomy Seed Farm in Casselton and the Main Station in Fargo. We work to develop techniques and technologies to enhance the production and use of food, feed, fiber and fuel from crop and livestock enterprises.

NDSU Extension empowers North Dakotans to improve their lives and communities through science-based education. We serve all people of the state through our 52 county and Fort Berthold offices, seven Research Extension Centers and the main campus in Fargo.

For more information on the programs in this publication, contact the faculty and staff listed. For more information about our other programs or have questions, comments or suggestions, please contact me.

Greg Lardy
Vice President for Agricultural Affairs
NDSU Dept. 7520, 314 Morrill Hall, Box 6050
Fargo, ND 58108-6050
701-231-7660
gregory.lardy@ndsu.edu

NDSU NORTH DAKOTA STATE UNIVERSITY

NDSU Research Extension Centers
2023 Field Days Schedule

The North Dakota State University Research Extension Centers' annual field days are set. The events take place at the Research Extension Center sites across the state and feature speakers, presentations and tours covering a diverse array of topics. The field days are open to the public.

The dates and locations for the field days are:

July 10 – Central Grasslands Research Extension Center – Streeter (10 a.m.-3 p.m. CDT)

July 11 – Hettinger Research Extension Center (5-7 p.m. MDT followed by supper)

July 12 and 13 – Dickinson Research Extension Center
- July 12 – Livestock tour at Manning Ranch (9 a.m.-noon MDT followed by lunch)
- July 13 – Horticulture tour (9 a.m.-noon MDT followed by lunch), agronomy tour (1:30-5 p.m.)

July 12 and 13 – Williston Research Extension Center
- July 12 – Main site agronomy and horticulture (4-8 p.m. CDT)
- July 13 – Irrigated tour – Nesson Valley Irrigation Research and Development farm, located 23 miles east of Williston on Highway 1804 (8:30 a.m.-Noon CDT)

July 17 – Agronomy Seed Farm – Casselton (5 p.m. CDT agronomy, 7 p.m. supper)

July 18 – Carrington Research Extension Center – Carrington (9:15 a.m.-3:30 p.m. CDT)

July 19 – North Central Research Extension Center – Minot (8:30 a.m.-Noon CDT)

July 20 – Langdon Research Extension Center – Langdon (8:45 a.m.-Noon CDT)
- July 25 – Horticulture Research and Demonstration Gardens – Fargo (3-7 p.m. CDT plants, local foods and outdoor spaces)
- Aug. 3 – Carrington Research Extension Center's Oakes Irrigation Research Site – Oakes (8:30 a.m.-noon CDT followed by lunch)

Sept. 9 – NDSU Research Arboretum – Amenia (12:30 p.m. CDT)

FOR MORE INFORMATION: visit www.ndsu.edu/agriculture/ag-hub/rec-field-days

NDSU is an R1 research institution as defined by the Carnegie Classification of Institutions of Higher Education.