

CELEBRATING NATIONAL AGRICULTURE WEEK



NDA announces Hilary Maricle as agency's new Deputy Director

Nebraska Department of Agriculture (NDA) Director Sherry Vinton has announced the hiring of Hilary Maricle for the position of deputy director. Maricle, who has extensive experience and education in agriculture, agribusiness, natural resources, and leadership, began her duties at NDA on Jan. 18.

"Hilary is a multi-generation farmer/rancher in Nebraska, studied agriculture at the University of Nebraska in Lincoln and has devoted her career to ag education, mentoring and leadership," said NDA Director Vinton. "With her extensive background and knowledge, Hilary understands agriculture and how important ag is to growing Nebraska's economy. I can't think of a better person to promote and support Nebraska's ag industry."

Maricle has a Bachelor of Science degree in Agricultural Sciences and



Hilary Maricle

a Master of Science in Leadership Education, both from UNL. She holds a Nebraska teaching certificate in ag education and has taught ag education in Spalding and Albion. She taught ag business and was an Associate Dean at Northeast Community College and has most recently served on UNL's Extension Leadership team.

Maricle is actively involved in public service and has represented Boone County on the Nebraska Environmental Quality Council and served as County Board Chair and Boone County Development Agency Vice Chair. Her professional affiliations and activities include the Ag Builders of Nebraska, American Farm Bureau, and Nebraska Farm Bureau.

"I have a deep-rooted passion for agriculture that I want to share with others, and I'm excited to be a part of

NDA in my home state where agriculture is our number one industry," said Maricle. "As deputy director, I will build on Nebraska's current successes in agriculture and pursue future opportunities for Nebraska's ag industry both locally and internationally to grow Nebraska's economy. I look forward to learning more about the work NDA does for Nebraska's farmers and ranchers and to help capitalize on the many opportunities we have to promote and support Nebraska's ag industry."

"Public service is a high calling, and I know Hilary will work hard each day to promote Nebraska agriculture and help us navigate challenges we face in the ag industry," said Vinton. "I'm looking forward to working with her and seeing the strengths she will bring to NDA and the ag industry."

Nebraska LEAD 40 Travels to Costa Rica, Colombia, and Panama

Twenty-one Nebraska LEAD 40 Fellows recently returned from the 2023 International Study/Travel Seminar to Costa Rica, Colombia, and Panama.

“Our international study/travel seminar is designed to provide first-hand appreciation and understanding of our international community and the potential for people of all nations to work together,” said Terry Hejny, Nebraska LEAD Program Director and group leader.

During the Jan. 5-18 seminar,

LEAD Fellows visited and studied at CATIE (Centro Agronomico Tropical de Investigacion y Ensenanza) near Turrialba. CATIE is an international entity with a unique combination of science, graduate education and innovation for development. LEAD Fellows received briefings and tours of CATIE’s research on agricultural practices in cropping, conservation and livestock systems. LEAD 40 also toured the Aquiares Coffee plantations and processing facility.

While in Bogota, the LEAD



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Fellows participated in briefings that included Don Mason, Project Specialist in Colombia, U.S. Meat Export Federation; Abigail Mackey - Agricultural Attaché and Jose Quintero, Agricultural Specialist with the USDA Foreign Ag Service; and Miguel Galdos, Regional Director, U.S. Wheat Associates. Traveling outside of Bogota, LEAD 40 visited the working cattle ranch of Juan Ramon Giraldo Arciniegas, who shared the history, philosophy, and management of his family’s Normando cow/calf operation. Later, the class visited Ayura Flowers, a carnation flower production farm growing several varieties of export quality cut flowers.

Near Cali, Colombia, the LEAD Fellows visited AGROSAVIA Research Center, which is dedicated to researching production of tropical fruits important to Colombian trade and economics. AGOSAVIA is funded primarily by the Colombian Ministry of Agriculture. In addition to research, they are charged to preserve many of the varieties of tropical fruits common in the region. Near Medellin, Colombia, the LEAD Fellows visited the Colombian Coffee Federation’s scientific investigation headquarters (CENICAFE) and received presentations on coffee culti-

vation techniques, scientific development, main regions of productions, the role of the small producer, and sustainable development within the industry.

While in Panama, the LEAD Fellows visited the Panama Canal and the Miraflores Locks, visited pineapple and watermelon farms and participated in briefings that included Ana Maria Ballesteros, Regional Director, U.S. Grains Council; Peter Olson, Agricultural Attaché, USDA Foreign Ag Service; Stephanie Bryant-Erdmann, Assistant Regional Director, U.S. Wheat Associates, and Carlos Salinas, Regional Director, U.S. Soybean Export Council.

“The people-to-people encounters provided the members of Nebraska LEAD Group 40 an opportunity to view characteristics, conditions and trends in Costa Rica, Colombia, and Panama allowing them to determine relationships to issues and situations in our country,” Hejny said. “Through this experience LEAD Fellows develop techniques in identifying comparisons and contrasts of the countries they studied in areas such as agriculture, politics, economics, energy, religion, culture and history as well as technology, trade, food, art and philosophy.”

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Spread of red cedar tree may threaten quantity, quality of Nebraska's water

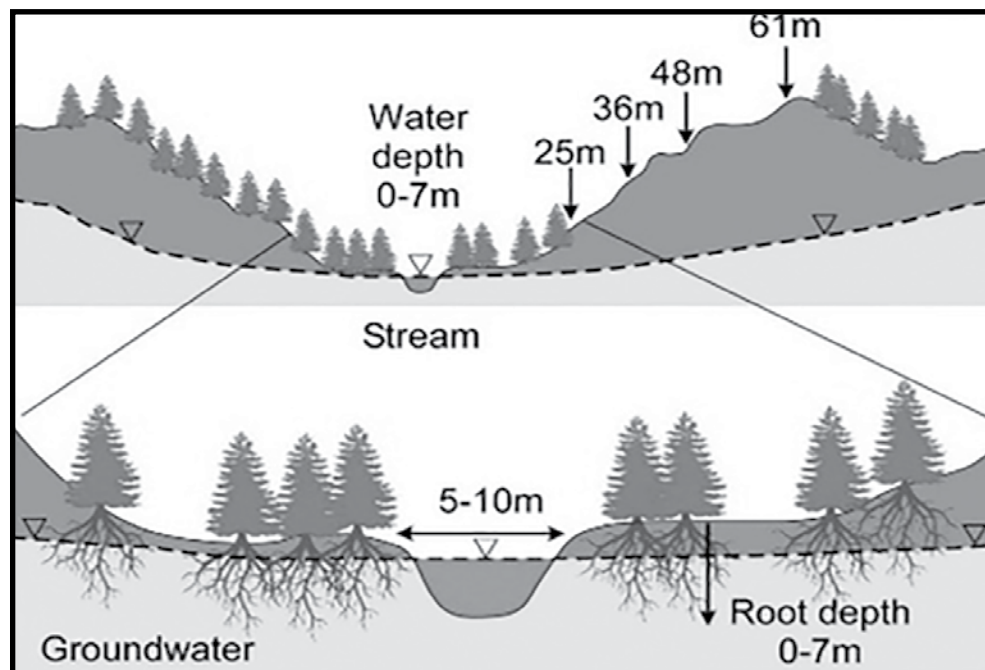
Editor's note: The following is part of an Institute of Agriculture and Natural Resources feature called Pocket Science: a glimpse at recent research from Husker scientists and engineers. For those who want to quickly learn the "What," "So what" and "Now what" of Husker research.

What?

Though planting the eastern red-

it transforms native wildlife habitat, reduces the forage on which livestock depends, and multiplies the risks of uncontrollable wildfire. Less attention has focused on how the encroachment of eastern redcedar — whose thirsty roots may plunge as deep as 25 feet — could curb the quantity and possibly the quality of Nebraska's water.

So what?



An illustration of how eastern redcedar roots can penetrate the groundwater that feeds a stream.

cedar tree in grasslands often began as an effort to establish windbreaks against dangerous gusts and detrimental erosion, the woody vegetation has since spread well beyond those shelterbelt origins.

In the past 20 years, Nebraska has seen the planting and expansion of more eastern redcedar than almost any other state. Even the Nebraska Sandhills, a semiarid region once thought too dry for eastern redcedar, has experienced a 30-fold increase in the tree's presence over the past two decades.

Much of the concern over redcedar encroachment stems from the fact that

Relying on a combination of historical water data and model-based simulations, Nebraska's Aaron Mittelstet and five Husker colleagues examined how further redcedar encroachment in the Sandhills might influence the state's future water supply.

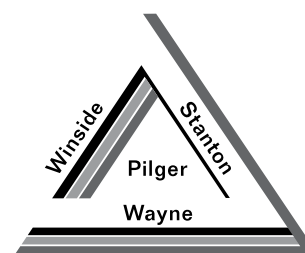
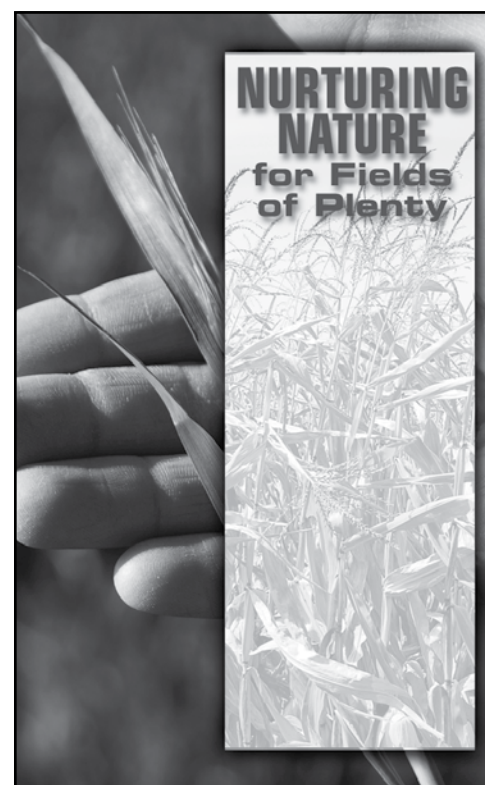
The team first analyzed the Upper Middle Loup watershed, at the heart of the Sandhills, where redcedar currently covers less than 1% of grasslands. If redcedar coverage increased to even 12%, the researchers concluded, the streamflow of the Upper Middle Loup River might decrease by nearly 5%. If that redcedar coverage were to reach 41%, streamflow could

be reduced by 24%; at 100% encroachment, it might diminish by up to 47%.

The researchers then trained their eyes on the entire Loup River watershed, which helps feed the Platte River — itself a major source of water for Lincoln and Omaha. Though the effects of redcedar on streamflow were less pronounced — 100% encroachment was projected to reduce the Platte's flow by roughly 10% — the team also considered whether less flow might alter the Platte's concentrations of hazardous fertilizer-based chemicals. According to simulations, it did: 100% redcedar coverage could increase concentrations of nitrate by 4-15% and atrazine by 4-30%.

Now what?

Integrating another model, this one better at simulating groundwater, could improve estimates of just how redcedar encroachment might alter both that groundwater and thousands of lakes in the Sandhills. And future studies should try to account for factors introduced by climate change, the researchers said. But the findings represent yet another warning against allowing eastern redcedar to continue spreading, the team said — and another impetus for halting that spread before doing so becomes logistically and financially impossible.



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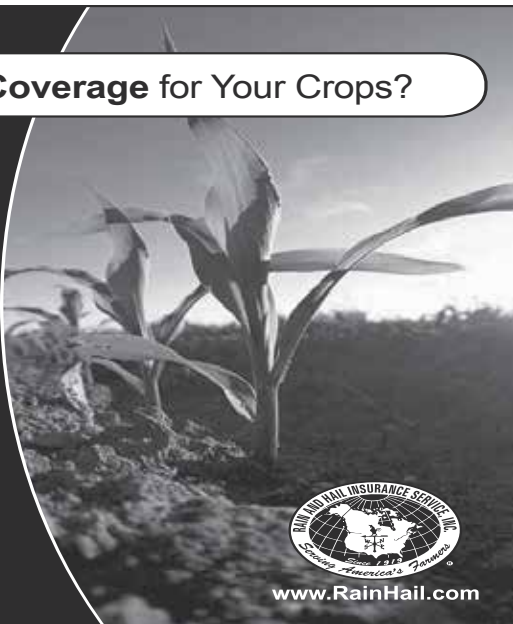
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Posadas Martinez continues to pursue research on soybeans

Luis Gerardo Alejandro Posadas Martinez began June 1, 2022, as a research assistant professor in the Department of Agronomy and Horticulture.

Posadas Martinez is developing genetic tools to measure the impact of biological nitrogen fixation in soybeans. He works in Nebraska’s soybean breeding program with George Graef, professor and presidential chair in soybean breeding.

“Our primary focus is to provide Nebraska farmers with the best soy-

bean varieties they can grow in their fields,” Posadas Martinez said. “This is a comprehensive program that entails field and laboratory work and there is a multitude of projects going through the breeding pipeline at any given time.”

Posadas Martinez supports the program in molecular genetics, trait introgression, early generation and bioinformatics. He’s also involved in more specific projects like increasing the genetic pool of U.S. commercial soybeans, developing high-protein germplasm and studying the different



ments with Arabidopsis and soybean then. I appreciated that no blood was involved when dissecting plant tissue and that killing plants went a lot smoother than what I heard from my classmates dealing with mice.”

Slaymaker also introduced him to plant genetic improvement and told Posadas Martinez that the scientists really making a difference in crop improvement, were plant breeders.

He received a Bachelor of Science in biotechnology from William Paterson University in 2005.

He was recruited by the University of Nebraska–Lincoln’s graduate program through the Othmer Fellowship in 2008 intended to assist exceptional scholars seeking a doctorate.

“I was looking for a high-quality graduate program at a location where the cost of living was reasonable,” he said. “It didn’t take long to realize why the highway signs on the Nebraska State borders display the tagline, ‘Nebraska...the good life.’”

His adviser was Graef. Posadas Martinez says Graef was a great, tough mentor who pushed him to earn his doctorate through exciting research. He earned a doctorate in agronomy with a specialization in plant breeding and a minor in statistics in 2013.

After graduation, Posadas Martinez became a postdoc in agronomy and horticulture, working with Graef. He then took a job with Bayer as the Corn Breeding Pipeline Coordinator for one and a half years. This involved a large global breeding pipeline and interacting with multiple countries representing the world’s major agricultural regions.

Posadas Martinez returned to the university for more postdoc work with Graef and soybean research in 2016. He considers Graef a valued friend and colleague today.

Outside of work, Posadas Martinez enjoys taking long walks with his wife at Pioneers Park and spending time at Pawnee Lake with his family. He tries to stay in shape and bikes to work when there’s no snow.

routes of nitrogen uptake in soybean.

He was born in Nezahualcóyotl, Mexico, which is a municipality in the outskirts of Mexico City. The city’s name comes from the Nahuatl, meaning fasting coyote. Nahuatl is an indigenous language spoken by some of Posadas Martinez’ family members and about 1.5 million people in central Mexico. Posadas Martinez has found that the plant seed, whether symbolic or actual, has deep connotations in this native culture.

“For the most part, I grew up oblivious to agriculture and farming as everything known to me was engulfed by a jungle of asphalt,” he said. “So, as a kid, I never imagined I would become a professional working in agriculture.”

Posadas Martinez became interested in science when he took an introduction to general chemistry class in high school. He said that class really lit a spark as he remembered some of his classmates told him to consider a major in science since he was good at it.

He was fortunate to have two great genetics professors and mentors as an undergraduate — David Slaymaker and Pradeep Patnaik from the Department of Biology at William Paterson University in New Jersey — who introduced him to genetics and molecular biology.

“I started working as an undergraduate with Dr. Slaymaker in his lab,” he said. “He was doing some experi-

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Ag Sack Lunch Program kicks off spring with presentations

The 13th Annual Ag Sack Lunch program, designed to increase awareness of the importance of agriculture in Nebraska to fourth-grade students and their families, heads into the spring semester offering both in-person and virtual presentations to schools across the state.

The in-person version of the program is offered to classes visiting the

State Capitol Building, the program provides free sack lunches to the students while they listen to a short presentation about the importance of agriculture in Nebraska. They also receive fun card games that feature Nebraska agriculture facts to take home to play with their families. The sessions are led by “Ag Ambassadors,” students from the University of Nebraska-



Ag Ambassador Samantha Oborny, UNL student from Garland, leads an in-person session in the fall of 2022.

State Capitol Building in Lincoln as part of their curriculum. Virtual presentations are available for schools which, for a variety of reasons including distance from Lincoln, makes in-person State Capitol visits unfeasible.

This spring many schools have resumed their Lincoln visits, so in-person reservations are full, according to Karen Brokaw, program coordinator. “While our in-person reservations are full, we encourage teachers to sign up for virtual presentations,” she said. The virtual presentations provide an opportunity to reach students from schools from across the state. Teachers can register online for a virtual presentation by visiting AgSackLunchProgram.com.

For fourth-grade classes choosing to make the trip to Lincoln to visit the

Lincoln College of Agriculture.

Students at schools opting for virtual presentations hear the same lively and interactive presentation about Nebraska agriculture, connecting the food we eat with Nebraska farmers. They also receive the card games to play with their families.

Teachers who have had their classes participate in the program, both in-person and virtual, say the presentations are very informative, and their students learned a great deal about the importance of agriculture in the state.

“The virtual presentation provides basic information to the students, and the cards are great way for them to review what they learned and continue learning more,” said Jennifer Alder, teacher at Stuart Public School,

Stuart. “The virtual presentation was very informative and relative to what we were studying. The deck of cards will be a great reminder of what Nebraska offers,” she said. “The students were excited to take them home and show their parents!”

Ag Ambassadors for the spring semester include Emily Zimmer, Pleasanton; Jadyn Fleischman, Herman; Karlie Gerlach, Wellfleet; Megan Vrbka, Staplehurst; Mikayla Martensen, Humphrey; Samantha

Oborny, Garland; Emma Schmidt, Bridgman, Mich.; Emily Hatterman, Wisner; Alexis Jansen, Gretna; Holly Schacht, Orchard; and Jessie Lamp, Ashland.

The Ag Sack Lunch Program is sponsored by the Nebraska Corn Board; the Nebraska Soybean Board; the Nebraska Pork Producers Association; Nebraska Beef Council; Midwest Dairy; Nebraska Poultry Industries; and Nebraska Wheat Board.

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Husker analysis of ancient carbon cycle deepens understanding of modern Earth

By Geitner Simmons,
IANR Media

Scientists continue to refine techniques for understanding present-day changes in Earth’s environmental systems, but the planet’s distant past also offers crucial information to deepen that understanding. A geological study by University of Nebraska–Lincoln scientist Matt Joeckel and colleagues provides such information.

Scientific research in recent decades

has confirmed that major changes in the global carbon cycle caused significant changes in the Earth’s atmosphere and oceans 135 million years ago, during the early Cretaceous Period. A range of questions remain about the details of climate change dynamics in that era. This new research, involving wide-ranging chemical and radioactivity-based analyses of rock strata in Utah’s Cedar Mountain Formation, helps fill in that knowledge gap by confirming that such carbon-cycle



Matt Joeckel, a professor in the School of Natural Resources at Nebraska, headed the field work for a collaborative project at Utah’s Cedar Mountain Formation. The scientists expanded knowledge of ancient carbon-cycle changes relevant to understanding present-day environmental conditions.

shifts were recorded on land in ancient North America.

The carbon cycle is one of Earth’s fundamental environmental phenomena, involving the ongoing transfer of carbon among the atmosphere, oceans and living organisms, as well as soils, sediments and rocks in the solid Earth. The cycle is crucial to biological processes for living things on land and sea. When large-scale changes in the cycle occur, they can produce major shifts in climate and the oceans’ biological conditions.

“We’re studying how the global carbon cycle has functioned in the past, how changes are recorded in the sedimentary rocks around the world,” said Joeckel, a professor in the School of Natural Resources at Nebraska. The environmental phenomena he and his colleagues analyzed “are exactly the kind of things we’re talking about today, as people increase the input of carbon dioxide into the atmosphere at a much-accelerated rate by burning fossil fuels.”

Joeckel, the Nebraska state geologist, headed the Utah fieldwork

and organized the study, published as a peer-reviewed paper in a special February issue of the journal *Geosciences*.

Over the past two decades, Joeckel and several colleagues have studied a range of geological aspects of southeastern Utah’s Cedar Mountain Formation, known for its exceptional dinosaur fossils. The steep, 150-foot slope where the scientists conducted their recent carbon-cycle research is known as Utahraptor Ridge, named for the discovery there of raptors, the ferocious bipedal predators familiar to moviegoers through the *Jurassic Park* movies.

To determine whether carbon-cycle changes have occurred, scientists analyze the minute amounts of organic carbon held in rocks for major changes in two carbon isotopes. Carbon cycles are evident if scientists find that significant increases and decreases in isotope ratios occurred over time. Joeckel and his colleagues found evidence for two distinct peaks in a curve rep-

See ANALYSIS, page 7

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Analysis

(continued from page 6)

resenting changes in a key isotope ratio during the early Cretaceous period. This discovery indicates that the Utah site, though on land, experienced the same major carbon-cycle change recorded in marine sedimentary rocks in Europe.

Many geologists refer to this ancient carbon-cycle phenomenon as the “Weissert Event,” which was driven by large, sustained volcanic eruptions in the Southern Hemisphere. These eruptions greatly increased carbon dioxide levels in the atmosphere, producing significant greenhouse climate effects over a prolonged time.

A central uncertainty has been whether carbon-cycle changes recorded in sediments in ancient oceans were also recorded by sediments on land. The work by Joeckel and his colleagues strongly suggests that happened.

Analyzing the Utah samples for these carbon isotope changes was a challenging scientific endeavor, said Joeckel, director of Nebraska’s state Conservation and Survey Division, which conducts a wide array of geological, geographic, water and soil research in the state and beyond.

“We’re talking about a minute amount of organic carbon that has to be very laboriously isolated from fist-sized samples of sedimentary rock,” he said. Such complex work is “like having to go through a whole pile of phone books by hand just to get to the point where you can generate numbers, and you have to generate a lot of them. There’s a lot of hard work in the laboratory that needs to be done.”

To accurately date the carbon-cycle changes, the scientists also analyzed microscopic crystals of the mineral zircon. These crystals “are important

because they are a way to actually put an age date on the rocks,” Joeckel said. The volcanically produced zircon crystals are “nearly indestructible treasure troves of information that are spread all over the place” after an eruption.

Joeckel’s coauthors on the paper are Celina Suarez and Garrett Hatzell of the University of Arkansas; Noah McLean, Andreas Möller, Marina Suarez and Joseph Andrew of the University of Kansas; Gregory Ludvigson and Spencer Kiessling of

the Kansas Geological Survey; and James Kirkland of the Utah Geological Survey.

The project, Joeckel said, illustrates how geology as a discipline continues to reveal new insights.

“In some ways, the past may be the key to the present, rather than vice versa, as geologists traditionally posited,” he said. “The better we understand the ancient carbon cycle and ancient global change, the more we can understand what happens today.”



Ag tour

Ben Beckman, Extension Educator with the University of Nebraska spoke on the topic of alfalfa during last year's Family Day at the Haskell Ag Lab. He was one of several extension educators who provided information on various ag topics throughout the event. Attendees at the event were able to see several on-going research projects and gather information.

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Plant-derived pheromones show promise as greener insecticides

Editor's note: Pocket Science is a glimpse at recent research from Husker scientists and engineers. For those who want to quickly learn the "What," "So what" and "Now what" of Husker research.

What?

Plant-chomping and sap-sucking insects destroy more than 20% of the world's crops each year. In response, growers annually apply about 450,000

U.S. tons of conventional insecticides, which, while often effective, can damage the environment and threaten human health.

For several decades, researchers have explored how to repurpose the active ingredients of sex pheromones — chemicals released by insects and other organisms to attract sexual partners — for the sake of trapping insect pests or disrupting their reproduction. But producing synthetic versions of

those pheromones on a commercial scale remains expensive enough that only growers of orchard fruit and other high-value crops can afford it.

In a poetic twist, researchers have since pivoted to other plants, including oilseed crops, that naturally yield chemical precursors of those insect pheromones and can be engineered to yield even more.

So what?

Led by researchers at Lund University, the Swedish University of Agricultural Sciences and the California-based ISCA Inc., Nebraska's Ed Cahoon and Tara Nazarenius joined an effort to optimize the natural pheromone-part factories. They focused on *Camelina sativa*, or camelina, the sort of oilseed crop that Cahoon has devoted years to studying.

The team started by developing a line of camelina that yields oil with high concentrations of certain fatty acids. From a chemistry standpoint, the fatty acids act as raw materials in the production of pheromones employed by several crop-destroying moth species. After extracting and chemically converting those fatty acids into pheromone ingredients, the team deployed separate batches of

the pheromones in cabbage and bean fields, respectively.

In the cabbage fields, the researchers set up lures coated with either synthetically produced or camelina-derived pheromones, recording the ability of each to capture and monitor diamondback moths. In the bean fields, the team compared how well synthetic versus oilseed-based formulations interfered with the cotton bollworm's ability to locate sex pheromones — a proxy for the pheromones' ability to disrupt mating. Across both cases, the oilseed-derived pheromones performed just as well as their synthetic counterparts. To the team's surprise, the oilseed editions were up to the tasks even when containing high levels of impurities, which could equate to lower costs and quicker processing.

Now what?


Even in its current form, the team's oilseed-based processing of pheromones would likely cost less than producing synthetics. Streamlining that processing, and further reducing costs, could put pheromones within reach of farmers who grow corn, soybean and other high-volume crops, the team said.



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The Ag Promotion and Development (AP&D) division of the Nebraska Department of Agriculture works closely with farm and commodity organizations, public and private research institutions, and other State agencies to open new markets for Nebraska farm commodities and value-added agricultural products. This cooperative effort multiplies the marketing impact for Nebraska by increasing consumer awareness of new food and nonfood uses for Nebraska commodities. This effort takes both a domestic and international focus.

To best represent the diversity of agriculture in Nebraska, the division has identified four key areas of involvement: livestock, bulk commod-

ities, value-added foods and meats, and diversified ag.

Livestock: The livestock industry contributes more than \$6 billion annually to the state's economy. This expanding industry uses modern production techniques and a surplus of quality grains to sustain its growth. Nebraska livestock breeders depend on top blood lines to continually improve the genetic package available to buyers. When combined with extensive performance records, these programs give Nebraska producers a competitive edge in U.S. livestock production for domestic and international markets.

Bulk Commodities: Nebraska is known to be a dependable supplier of high-quality grains. Fertile and productive soils and extensive irrigation capabilities ensure a stable supply of Nebraska grain for domestic and international buyers. Additional emphasis has been placed on the development of specialty, organic, and identity-preserved crops as Nebraska producers seek niche marketing opportunities to meet market demands.

Value-Added Foods and Meats: With an abundance of raw commodities and a growing list of available resources, Nebraska has been identified as

a leading producer of high-quality food products. The value-added food industry is comprised of nearly 400 food companies offering thousands of name-brand items in grocery stores and the food service industry. Access to information, research, and educational opportunities has enabled these Nebraska companies to implement solid domestic and international marketing plans. In addition, the division is also involved in the initiative to encourage agricultural co-ops.

Diversified Agriculture: Nebraska

agricultural producers have successfully diversified their operations by finding new and alternative markets - both food and nonfood applications. The move away from traditional crop and livestock enterprises and toward nontraditional opportunities is not a new idea. However, diversification has become increasingly important because of intense international competition and changing consumer patterns.



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SMART Nutrient Management means savings on fertilizer costs, healthier soil, and improved water quality

USDA’s Natural Resources Conservation Service (NRCS) works with farmers to develop nutrient management plans that optimize plant yields while reducing the amount of nutrients lost to the environment, where they can impact greenhouse gas emissions and air and water quality.

SMART Nutrient Management includes the 4Rs of nutrient stewardship – the right Source, right Method, right Rate, and right Timing – and emphasizes smart activities to reduce nutrient loss by Assessment of comprehensive, site-specific conditions.

A SMART Nutrient Management Plan considers all conditions on the farm and how they influence one another. It is tailored to the unique farm location, soil, climate, crops grown, management conditions, and other site-specific factors.

NRCS offers voluntary programs and free one-on-one technical assistance to support a range of conservation goals, including nutrient management. Contact the NRCS office at your local USDA Service Center to get started with a nutrient management plan for utilizing and applying nutrients such as nitrogen (N), phosphorus (P), and

potassium (K) on your cropland operation.

A local NRCS conservationist can help you evaluate your specific nutrient needs, assess your site-specific risks for nutrient and soil loss, and discuss opportunities to address those risks. This will result in a plan that includes details such as:

Soil information – soil type, surface texture, drainage class, permeability, available water capacity, depth to water table, restrictive features, and flooding and ponding frequency.

Available test results – for soil, water, compost, manure, organic by-product, and/or plant tissue sample analyses – to be leveraged in planning.

Results of appropriate risk assessments for potential N, P, and erosion losses specific to your operation.

Crop nutrient budget for the crop rotation, using your recent crop average yields.

Science-based recommendations for the right source, application method, rate, and timing for all nutrient sources that are planned for use.

Tips to support implementation and maintenance of your individual nutrient management plan.

Many of the tools for nutrient management planning don’t require a big investment. Using methods like soil and manure testing, in-season plant

tissue testing, enhanced efficiency fertilizer products, and split application are examples of low-cost ways for managing nutrients more efficiently.

AGRICULTURE PRODUCTS WORD SEARCH

Y P H N Z B U R G E R S A X O C O S F U
X O O U S V V Z P P E F X T T R G H S H
V T N B B O O C B A I J Z C R A U O L K
E A E C A E C L D C I G G O E Y I E X T
G T Y L L L H K L U F N S R E O T S H P
E O O O U T L O S E D U T N P N A W A E
T M G T M B G B R C Y B E B I S R H R A
A A O H B I M R A S A B A L R R E E V C
B T I E E S I E X T E T A C S U V A E H
L O P S R O L A N O L S T L O H S T S C
E G E F A N K D F R U I T L L N E H T Z
S G N I C U C U M B E R R M E A K E D C
P L C S E O X M B A S E B A L L Q C P A
U U I H E A W M O U T H W A S H J V C N
M E L X A P P L E O Y C A R R O T S E D
P S S W E E T C O R N B O O K S P F G L
K T P O P C O R N I B E A N S U N M G E
I E T O O T H P A S T E S N T H N F S D
N A M U Y M Q N F O O T B A L L F O O D
S K W W A T E R M E L O N A I R B V A L

- | | | | | |
|-------------|------------|------------|---------|------------|
| CORN | MOUTH WASH | TREE | SHEEP | FOOD |
| GLUE | SOCKS | PUMPKINS | HORSES | BACON |
| BASEBALL | CRAYONS | HONEY | POPCORN | STEAK |
| BALL BAT | APPLE | SWEET CORN | WHEAT | BURGERS |
| PENCIL | CARROTS | POTATO | BREAD | SHOES |
| TOOTHPASTE | PEACH | FISH | MILK | LUMBER |
| CANDLE | FRUIT | WATERMELON | HARVEST | GUITAR |
| FOOTBALL | BEANS | BISON | EGGS | VEGETABLES |
| VOLLEYBALL | TOMATO | CATTLE | FUEL | BOOKS |
| PAINT BRUSH | CUCUMBER | PIGS | CLOTHES | |

Answers on Page 11





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History of National Agriculture Week is shared

Agriculture is the biggest food contributor in America. America is the net exporter of food, which means that this industry is a source of food and wealth.

The rich history of agriculture in the U.S. attracted colonists to the area. Since most colonists were European, the styles of agricultural cultivation and production were Europe influenced as well. Colonists also brought a large amount of livestock with them to America, which caused changes in its natural landscape.

As the population grew, farms expanded, and settlements moved from the east into the west. This caused the agricultural industry to grow exponentially, with a larger variety of produce being rooted. Once the west was populated and cultivated, a wheat frontier was formed. The east was firmly set on cattle and livestock with only a handful of small-scale crops. On the other hand, the south was dominated by tobacco and cotton. Lastly, the north was dominated by people who planted only what they

needed, anything in excess was sold to the market.

It was only during the Civil War and the Second World War that the agricultural system became centralized, and a proper agricultural system was introduced. The Agriculture Council of America, formed in 1973, has supported the farmers and agricultural advancements in farming techniques in the U.S. It comprises influential leaders in agriculture, food, and farming who work together as a non-profit organization dedicated to educating the world on the importance of agriculture in American Society.

At the same time when the council was formed, the first National Agriculture Day was also introduced, which soon developed into an entire week-long celebration. National Agriculture Week has been celebrated ever since, with full enthusiasm to support agriculture and spread awareness about the potential and vitality of agriculture.

Dicamba use deadline to remain as June 30 in Nebraska

Nebraska Department of Agriculture (NDA) Director Sherry Vinton recently sent a letter to the U.S. Environmental Protection Agency (EPA) objecting to a label revision for the herbicide dicamba and a proposed early cutoff date for its use. The NDA has been notified that the cutoff date for dicamba products in Nebraska will remain as June 30.

“At this late date, Nebraska producers have already made their 2023 planting decisions and have likely purchased seed and pesticide products to implement their plans,” said NDA Director Sherry Vinton. “The proposed early cutoff date of June 12 for dicamba use would negatively impact this growing season for many farmers in Nebraska. We appreciate the EPA retaining the June 30 cutoff date for this year.”

Nebraska was one of six states that the EPA discussed the use of

an early cutoff date with. NDA is responsible for the administration and enforcement of the Nebraska Pesticide Act. Under the Act and a cooperative agreement with EPA, NDA registers all pesticides used in Nebraska.

AGRICULTURE PRODUCTS WORD SEARCH ANSWER KEY

Y	P	H	N	Z	B	U	R	G	E	R	S	A	X	O	C	O	S	F	U
X	O	O	U	S	V	V	Z	P	P	E	F	X	T	T	R	G	H	S	H
V	T	N	B	B	O	O	C	B	A	I	J	Z	C	R	A	U	O	L	K
E	A	E	C	A	E	C	L	D	C	I	G	G	O	E	Y	I	E	X	T
G	T	Y	L	L	L	H	K	L	U	F	N	S	R	E	O	T	S	H	P
E	O	O	O	U	T	L	O	S	E	D	U	T	N	P	N	A	W	A	E
T	M	G	T	M	B	G	B	R	C	Y	B	E	B	I	S	R	H	R	A
A	A	O	H	B	I	M	R	A	S	A	B	A	L	R	R	E	E	V	C
B	T	I	E	E	S	I	E	X	T	E	T	A	C	S	U	V	A	E	H
L	O	P	S	R	O	L	A	N	O	L	S	T	L	O	H	S	T	S	C
E	G	E	F	A	N	K	D	F	R	U	I	T	L	L	N	E	H	T	Z
S	G	N	I	C	U	C	U	M	B	E	R	R	M	E	A	K	E	D	C
P	L	C	S	E	O	X	M	B	A	S	E	B	A	L	L	Q	C	P	A
U	U	I	H	E	A	W	M	O	U	T	H	W	A	S	H	J	V	C	N
M	E	L	X	A	P	P	L	E	O	Y	C	A	R	R	O	T	S	E	D
P	S	S	W	E	E	T	C	O	R	N	B	O	O	K	S	P	F	G	L
K	T	P	O	P	C	O	R	N	I	B	E	A	N	S	U	N	M	G	E
I	E	T	O	O	T	H	P	A	S	T	E	S	N	T	H	N	F	S	D
N	A	M	U	Y	M	Q	N	F	O	O	T	B	A	L	L	F	O	O	D
S	K	W	W	A	T	E	R	M	E	L	O	N	A	I	R	B	V	A	L



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USDA AMS establishes cattle and carcass grading correlation training center

By Eric Buck,
Animal Science

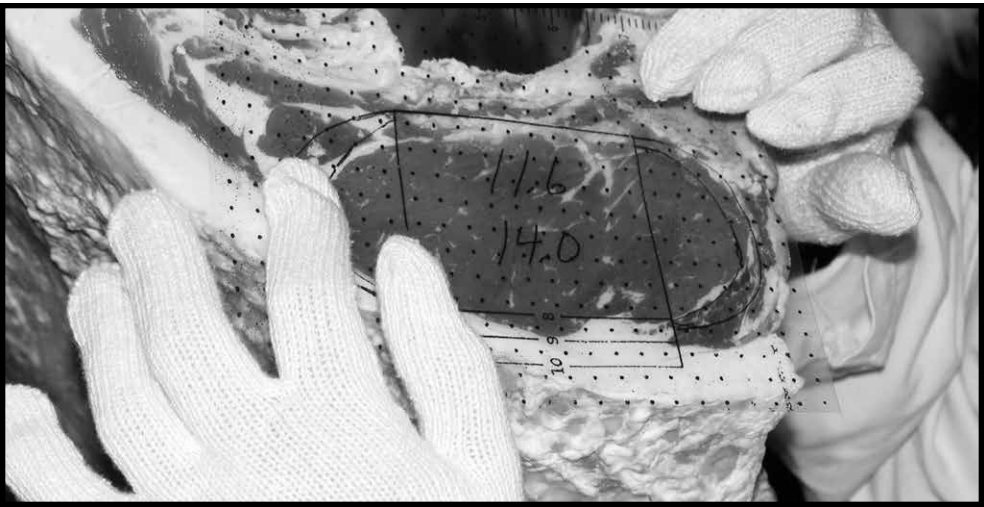
The USDA Agricultural Marketing Service (AMS) announced that the University of Nebraska-Lincoln would be the site of one of three regional Cattle and Carcass Grading Correlation Training Centers on Wednesday.

West Texas A&M University and Colorado State University join Nebraska as the other regional sites.

Also known as Cattle and Carcass

Training Centers or Training Centers, the sites will foster collaboration between industry and academia and provide educational and training opportunities to stakeholders interested in the official quality grading of feeder cattle, fed cattle, and beef carcasses in the United States.

"This partnership with the USDA gives us an opportunity to provide cattle producers in Nebraska and throughout the region with great educational resources on grading cattle and beef carcass merit," said Ty



Schmidt, Associate Professor of Meat Science and Muscle Biology.

"It provides our stakeholders with a larger network of information to assist them in making the best choices for their operations."

The Nebraska training center will host an event targeted to producers, feeders, and other stakeholders who want a better understanding of the factors that contribute to the market value of cattle on June 15-16 showcasing technology used in the meat and livestock industries. Speakers from the USDA, the university, and the CME Group will share their knowledge and offer information covering a wide range of topics related to CME

live cattle specifications and deliveries. AMS will also provide updates on the USDA's supply chain initiatives, including an overview of USDA's Meat and Poultry Processing Capacity Technical Assistance Program (MPPTA), which ensures that participants in USDA's meat and poultry supply chain initiatives can access full-range technical assistance to support their project development and success.

The two-day event is free and open to the public but will be first come, first served, and limited to 75 participants. Those interested in attending are asked to pre-register for the event at ams.usda.gov.



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