

**2021 SENATE AGRICULTURE**

**SB 2053**

# 2021 SENATE STANDING COMMITTEE MINUTES

**Agriculture Committee**  
Fort Union Room, State Capitol

SB 2053  
1/7/2021

A BILL for an Act to amend and reenact section 4.1.01.1.06 of the NDCC, relating to the required uses of the agricultural products utilization fund.

**Chair Luick** called the committee to order at 11:00 am. All committee members were present: Chair Luick, V. Chair Myrdal, Senators: Klein, Lemm, O. Larsen, Hogan.

**Discussion Topic:**

- Agricultural products utilization fund.

**11:02 AM John Schneider, Director of APUC, Business Marketing, and Information Division Director**, representing Agriculture Commissioner, Doug Goehring, in favor and testimony # 164.

**11:25 AM Senator Jerry Klein** moved the Emergency Clause. 2<sup>nd</sup> by **V. Chair. Myrdal**. A Roll Call vote was taken.

11:26 Senators	Vote
Senator Larry Luick	Y
Senator Janne Myrdal	Y
Senator Kathy Hogan	Y
Senator Jerry Klein	Y
Senator Oley Larsen	Y
Senator Randy D. Lemm	Y

**11:26 AM** The motion for the Emergency Clause passed 6-0-0  
Amendment # 21.8007.01001 Title: 02000

**11:26 AM V. Chair. Myrdal** moved A DO PASS AS AMENDED. 2<sup>nd</sup> by **Senator Klein**. A roll call vote was taken.

11:27 Senators	Vote
Senator Larry Luick	Y
Senator Janne Myrdal	Y
Senator Kathy Hogan	Y
Senator Jerry Klein	Y
Senator Oley Larsen	Y
Senator Randy D. Lemm	Y

**11:27 AM** The motion passed 6-0-0  
**Senator Oley Larsen** will carry the Bill.

**11:30 AM Chair Luick** closed the hearing.

*Alice Delzer, Committee Clerk*

21.8007.01001  
Title.02000

Adopted by the Agriculture Committee

January 7, 2021

C-3  
1/7/20  
1 of 1

PROPOSED AMENDMENTS TO SENATE BILL NO. 2053

Page 1, line 2, after "fund" insert "; and to declare an emergency"

Page 1, after line 11, insert:

**"SECTION 2. EMERGENCY.** This Act is declared to be an emergency measure."

Renumber accordingly

**REPORT OF STANDING COMMITTEE**

**SB 2053, as engrossed and amended: Agriculture Committee (Sen. Luick, Chairman)** recommends **AMENDMENTS AS FOLLOWS** and when so amended, recommends **DO PASS** (6 YEAS, 0 NAYS, 0 ABSENT AND NOT VOTING). Engrossed SB 2053, as amended, was placed on the Sixth order on the calendar.

Page 1, line 2, after "fund" insert "; and to declare an emergency"

Page 1, after line 11, insert:

**"SECTION 2. EMERGENCY.** This Act is declared to be an emergency measure."

Renumber accordingly

COMMISSIONER  
DOUG GOEHRING



[ndda@nd.gov](mailto:ndda@nd.gov)  
[www.agdepartment.com](http://www.agdepartment.com)

**Testimony of John Schneider  
Senate Bill 2053  
Senate Agriculture Committee  
January 7, 2021**

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Chairman Luick and members of the Senate Agriculture Committee, I am John Schneider, Business Marketing, and Information Division Director, and I am representing Agriculture Commissioner Doug Goehring. I am here today in support of Senate Bill 2053 which would amend §4.1-01.1-06 of the North Dakota Century Code (NDCC) relating to the purposes of the Agricultural Products Utilization fund. The program was moved from the ND Department of Commerce by the 66<sup>th</sup> Legislative Assembly, and I'm happy to report the move went flawlessly with both agencies working together to ensure a smooth transition of the program.

The mission of the Agricultural Products Utilization Commission (APUC) is to create new wealth through the development of new and expanded uses for all North Dakota agricultural products and bi-products. This is accomplished through the administration of seven grant programs in the areas of basic and applied research, marketing and utilization, technical assistance, farm diversification, prototype, technology, and nature based agricultural grants. APUC funded fifty-six projects through grants totaling over two and a half million dollars through December 2020, the project summaries can be found in the provided annual report.

As the number of grants have grown and the types of requests have changed, it has become unclear if APUC can fund equipment. Many applicants have expressed the need for specialized equipment especially in the prototype and technology categories which would assist

in a commercialized product. SB 2053 will provide clarity for applicants by adding equipment to the list of how the fund must be used.

Chairman Luick and committee members, thank you for your consideration of SB 2053.

I would be happy to answer any questions you may have.

**2021 HOUSE AGRICULTURE**

**SB 2053**

# 2021 HOUSE STANDING COMMITTEE MINUTES

**Agriculture Committee**  
Room JW327C, State Capitol

SB 2053  
3/4/2021

<b>Relating to the required uses of the agricultural products utilization fund; and to declare an emergency.</b>
--

Chair D. Johnson called the hearing to order at 9:23 a.m.

<b>Attendance</b>	<b>P or Ab</b>
Chair D. Johnson	P
Vice Chair Trottier	P
Representative Beltz	P
Representative Buffalo	P
Representative Dobervich	P
Representative Fisher	P
Representative Headland	P
Representative Kiefert	P
Representative Richter	P
Representative Satrom	P
Representative Schreiber-Beck	P
Representative Skroch	P
Representative Thomas	P
Representative Tveit	P

## **Discussion Topics:**

- Development of new uses for ND agriculture products
- Equipment included

**John Schneider, Business Marketing and Information Division Director, ND Department of Agriculture:** Introduced the bill-Attachment #7360  
APUC Grant Report 2019-2020-Attachment #7420

**Chair D. Johnson** closed the hearing at 9:49 a.m.

**Representative Skroch** moved Do Pass.

**Representative Schreiber-Beck** seconded the motion.



<b>Vote</b>	
Chair D. Johnson	Y
Vice Chair Trottier	Y
Representative Beltz	Y
Representative Fisher	Y
Representative Headland	Y
Representative Kiefert	Y
Representative Richter	Y
Representative Satrom	Y
Representative Schreiber-Beck	Y
Representative Skroch	Y
Representative Thomas	Y
Representative Tveit	Y
Representative Buffalo	Y
Representative Dobervich	Y

**Roll call vote.** Motion carried 14-0-0. Representative Schreiber-Beck is the carrier.

Adjourned at 9:51 a.m.

*ReMae Kuehn, Committee Clerk*

**REPORT OF STANDING COMMITTEE**

**SB 2053, as engrossed: Agriculture Committee (Rep. D. Johnson, Chairman)**  
recommends **DO PASS** (14 YEAS, 0 NAYS, 0 ABSENT AND NOT VOTING).  
Engrossed SB 2053 was placed on the Fourteenth order on the calendar.

COMMISSIONER  
DOUG GOEHRING



# 7360

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**Testimony of John Schneider  
Senate Bill 2053  
House Agriculture Committee  
March 4, 2021**

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Chairman Johnson and members of the House Agriculture Committee, I am John Schneider, Business Marketing, and Information Division Director, and I am representing Agriculture Commissioner Doug Goehring. I am here today in support of Senate Bill 2053 which would amend §4.1-01.1-06 of the North Dakota Century Code (NDCC) relating to the purposes of the Agricultural Products Utilization fund. The program was moved from the ND Department of Commerce by the 66<sup>th</sup> Legislative Assembly, and I'm happy to report the move went flawlessly with both agencies working together to ensure a smooth transition of the program.

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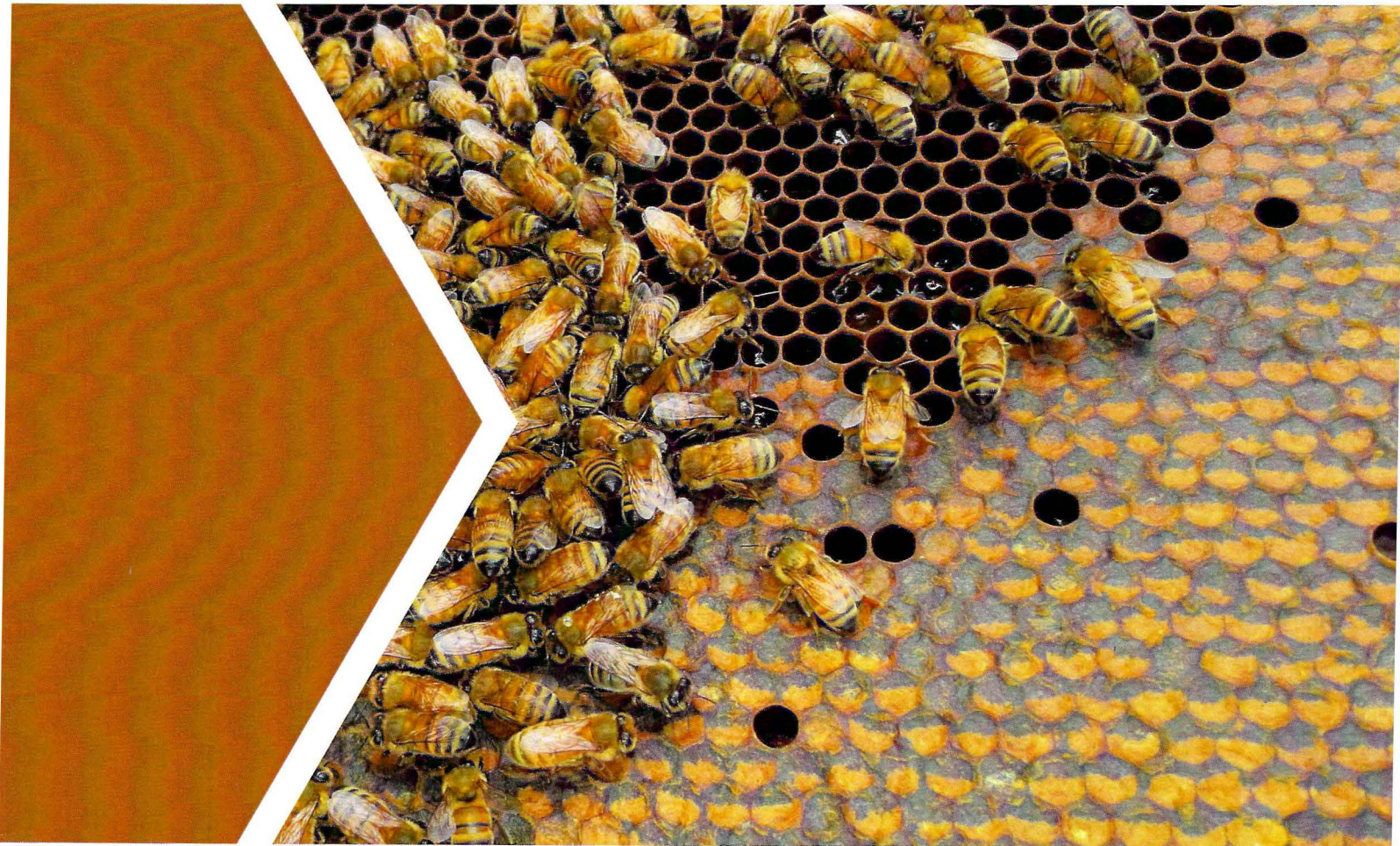
in a commercialized product. SB 2053 will provide clarity for applicants by adding equipment to the list of how the fund must be used.

Chairman Johnson and committee members, thank you for your consideration of SB 2053. I would be happy to answer any questions you may have.

#7420

# AGRICULTURAL PRODUCTS UTILIZATION COMMISSION

GRANT REPORT 2019-2020



Agriculture Commissioner  
Doug Goehring

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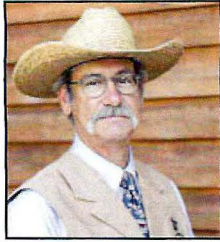
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# ADMINISTRATION

## APUC COMMISSIONERS



DAN KALIL, CHAIRMAN  
Commissioner's Appointee



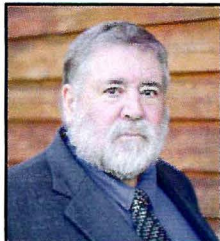
RACHEL RETTERATH, VICE CHAIR  
Commissioner's Appointee



MATTHEW GLESSNER  
Commissioner's Appointee



KEITH PELTIER  
Commissioner's Appointee



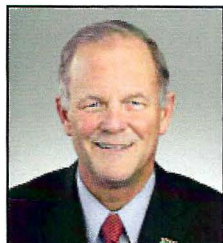
BILL ONGSTAD  
Commissioner's Appointee



DENNIS MING  
Governor's Appointee



DOUG GOEHRING  
Agriculture Commissioner



DEAN BRESCIANI  
NDSU President



KEVIN SONSALLA  
Commerce Designee

The North Dakota Agricultural Products Utilization Commission (APUC) consists of nine board members. The Agriculture Commissioner appoints five members and the Governor appoints one member.

The board also includes three statutory members: the North Dakota Agriculture Commissioner, the Director of the Department of Economic Development & Finance, and the President of North Dakota State University, or their designees.

## APUC STAFF



JOHN F. SCHNEIDER  
Business, Marketing  
& Information Division  
Director



BRADLEY DEAN  
Administration

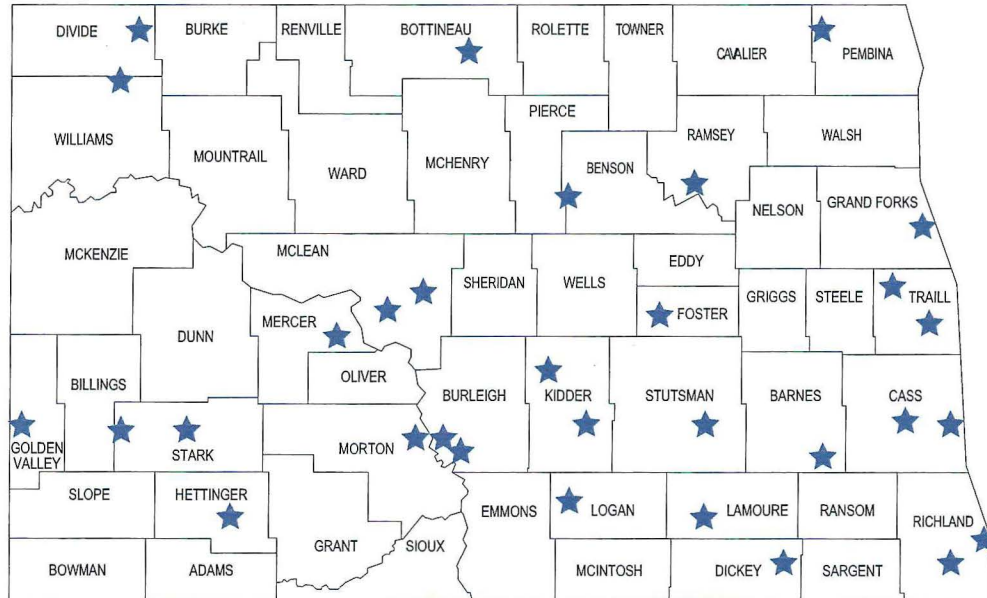


BETTY SCHNEIDER  
Administration



# PROJECT MAP

Between December 2018 and December 2020, APUC funded 57 projects in 31 North Dakota communities, totaling over \$2.6 million in grants and sponsorships.



APUC is a program within the North Dakota Department of Agriculture.

- Beach - Golden Valley Ingredients
- Beach - Ringside LLC
- Belfield - 701 Meats, LLC
- Bismarck - BisMan Community Food Cooperative
- Bismarck - Black Bison Organics, LLC
- Bismarck - Invigoils LLC
- Bismarck - Gideons Brewing Company Inc.
- Bismarck - NASDA
- Bismarck - North Dakota FFA Foundation
- Bottineau - Dakota College at Bottineau
- Carrington - Healthy Oilseeds
- Carrington - Cows and Co Creamery
- Carrington - NDSU Carrington Research Extension Center
- Casselton - Bueche LLC
- Casselton - Identity Ag Processing LLC
- Casselton - Minn Dak Market
- Devils Lake - Engstrom Bean & Seed
- Devils Lake - Summers Manufacturing Co LLC
- Dickinson - Baker Boy Bake Shop, Inc.
- Edgeley - Tim Moch/Meat Plant
- Esmond - gardendwellers FARM
- Esmond - gardendwellers RANCH
- Fargo - NDSU Dept. of Plant Sciences (4)
- Fargo - NDSU Dept. of Microbiological Sciences
- Fargo - NDSU Dept. of Coatings and Polymeric Materials
- Fargo - Prairie Products LLC
- Fargo - NDSU (2)
- Grand Forks - Three Farm Daughters LLLP
- Grand Forks - Minn-Dak Growers Ltd.
- Grand Forks - UND
- Grand Forks - UND Odegard School of Aerospace Sciences
- Hankinson - Hankinson Renewable Energy LLC
- Hatton - 4 Family Farms Alliance, LLC
- Hazen - J & J Hazen Meats, Inc.
- Hillsboro - Total Ag Industries Inc.
- Jamestown - North Dakota Farmers Union
- Lincoln - Two Track Malting, LLC
- Mandan - Cloverdale Foods Company (2)
- Mott - South 40 Farms LLC
- Napoleon - Bitz 4 Solutions
- Nome - Shepherd Industries
- Noonan - Hygge Hills
- Oakes - Dyna-Flo Pump Co.
- Oakes - Quandt Farm
- Tappen - Rapha Global Corporation
- Turtle Lake - McLean-Sheridan County Rural Water District
- Tuttle - Tuttle Community Development Corporation
- Underwood - Houweling's Tomatoes
- Underwood - Blue Flint Ethanol LLC
- Wahpeton - WCCO Belting Inc.
- Walhalla - Food First LLC
- Wildrose - In the Potter's Hand Inc.

# BASIC & APPLIED RESEARCH



*The UND-Bee Innovative team*

Basic & Applied Research Grants assist in research for processing agricultural products and byproducts in North Dakota. These grants cannot be aimed at business expansion or creation without regard to agricultural products, must not include research that cannot reasonably be expected to result in a marketable product, or cannot have been duplicated by other research efforts.

## **MAXIMIZING HONEYBEE POLLINATION TO INCREASE SUNFLOWER OIL YIELD AND OIL QUALITY**

UND - Odegard School of Aerospace Sciences  
Paul Snyder, Grand Forks

Grant Amount: \$59,113  
Total Budget: \$77,907

Australian technology startup Bee Innovative and the University of North Dakota (UND) are partnering to unlock an entirely new market for agricultural drones in the United States by combining Bee Innovative's extensive experience in tracking honeybees in real time for precision pollination in Australia with UND's global leadership in unmanned aircraft systems (UAS). Agriculture and honey production are important parts of North Dakota's economy, of which UND, as the state's flagship university, is a big driver through research and technology innovation. "As we grapple with global challenges around food

security and doing more with less, any innovation that delivers increased certainty, predictability and outputs for farmers is a welcome innovation." "We're excited to work with UND to leverage their experience in unmanned autonomous vehicles to enhance our current BeeDar capability and make this solution a reality for the local and global agriculture market."

## **SEMI-MECHANIZATION OF EARLY-SEASON VINEYARD MANAGEMENT**

NDSU Department of Plant Sciences  
Harlene Hatterman-Valenti, Fargo

Grant Amount: \$23,550  
Total Budget: \$29,438

Grant funding will be utilized to obtain, evaluate, and disseminate findings regarding the application of mechanized and semi-mechanized tools for new and expanding regional grape

growing operations. Evaluation of traditional and powered grapevine pruners and training tools will enable comparison and isolation of tools that can empower farmer decision making for best use of resources. Demonstrations to farmers will be conducted to disperse knowledge of safe and precise handling of tools, strengthening regional vineyard owners' capacity to manage and train a new, more efficient workforce, capable of maintaining greater acreage with fewer labor hours leading to more fruit production with less expenditures.

### **TESTING OF TWO NOVEL ANTI-MICROBIALS ON MEAT**

NDSU Department of Microbiological Sciences  
Birgit Pruess, Fargo

Grant Amount: \$45,765  
Total Budget: \$57,756

The proposal's main goal is to bring a submitted patent closer to commercialization by testing two novel antimicrobials (AM) on chicken. Previous research has established that both AM reduce live counts of spoilage and pathogenic bacteria when the AM are mixed with ground beef. The proposed research uses the AM as processing aid instead of treatment. The project will inoculate chicken breasts with specific levels of Salmonella or Campylobacter in PBS suspension. Contaminated meat will consecutively be treated with one of the AM by dipping into a water bath containing a 1% solution of the AM. The meat will be stored at 7 degrees C for a maximum of 3 days. Live counts of Salmonella and Campylobacter will be determined on selective agar plates. In addition, the project will determine live counts of several spoilage bacteria that are commonly associated with chicken. The research will broaden the range of applications that our AM are effective in.

### **SCALING UP SOY-BASED MONOMERS SYNTHESIS FOR COMMERCIAL ACCEPTANCE**

NDSU Department of Coatings and Polymeric Materials  
Andriy Voronov, Fargo

Grant Amount: \$56,493  
Total Budget: \$70,616

This project is based on the already obtained and published experimental results that demonstrated strong commercial promise of technology entitled Biobased Acrylic Monomers developed and patented at the Coatings and Polymeric Materials Department of North Dakota State University (NDSU). The goal of this project is to scale up synthesis of soybean oil-based acrylic monomer (SBM) to enable larger products volume and extensive further testing of latexes from SBM at industrial partner facilities. The projects main objective is to demonstrate feasibility of SBM synthetic process to produce monomers in larger volume (10 - 100 gallons). Before scaling up, synthetic reaction parameters and process characteristics need to be optimized in terms of monomer quality and reaction control with a main target of introducing these new materials to the market. The long term goal of this study is to replace petroleum-based monomers in polymer latexes with monomers based on soybean oil, at a price point that is comparable, and with the same equipment and processes, and with identical or better performance of the end product.

### **EXAMINATION OF 10 PHOTOPERIOD AND 2 AUTOFLOWER HEMP CBD CULTIVARS**

Dakota College at Bottineau  
Keith Knudson, Bottineau

Grant Amount: \$37,553  
Total Budget: \$46,941

The grant funds will be used to set up an applied research project to identify and develop varieties

of industrial CBD hemp cultivars that will perform well under North Dakota climate including *controlled environmental conditions*. The grant fund will be utilized to purchase industrial hemp cultivars, set up experimental plots, providing internships to students for conducting applied research, materials and supplies for conducting experimental trials and extraction of CBD, and hosting field days and workshop for producers to demonstrate good agricultural practices and hemp production in outdoor field as well as an environmentally controlled agricultural environment.

**A NEW HIGH VALUE MARKET FOR PLANT-BASED PRODUCTS FOR HEALTH AND ANTICANCER THERAPY**

NDSU  
Kalpana Katti, Fargo

Grant Amount: \$55,540  
Total Budget: \$80,553

The goal of the proposed research is to develop health target high value crops for North Dakota by evaluating the nutritional and anticancer properties of compounds from the extracts of oregano and related high phenolic crop, targeting effectiveness in treating prostate and breast cancer at the bone sites, which are considered terminal stage for these cancers. The research will combine the expertise of the Katti and Shetty groups to study the efficacy of the extracts from oregano and related high phenolic crops using the bone mimetic cancer testbeds with four cancer cell lines, highly metastatic and low metastatic prostate and breast cancer. Parallel studies will also be conducted to evaluate the effect of the natural extracts on healthy bone cells and bone regeneration. The ultimate goal of this research is to identify new uses and add value for oregano and related high phenolic crop grown in North Dakota, create health targeted high value markets for the products through discovery

and dissemination of the research to business, scientific communities and the public, build *partnerships with local farmers*, initiate patents and advance spin-off companies for job creation. The proposed research has a strong potential to increase employment in North Dakota, improve the health targeted markets through added value, develop new manufacturing capability in the agriculture sector in the state at the nexus of food, nutrition and medicine.

**BIO-BASED INNOVATIONS FOR COMMERCIALIZATION FROM CHICKPEAS**

NDSU Department of Plant Sciences  
Kalidas Shetty, Fargo

Grant Amount: \$44,902  
Total Budget: \$56,128

To advance bio-based innovation for commercialization of high value ingredients from ND chickpeas to support pulse growers, local food and nutrition industry and to provide NCD-linked health benefits to consumers of ND. To achieve this broad objective, initially we will screen North Dakota grown desi and Kabuli chickpea cultivars with high protein and high human health relevant bioactive content and will further target them as high value nutraceuticals and health ingredients by better defining their NCD-linked health benefits. Additionally, we will advance bio-based innovations such as pre-harvest foliar elicitation strategy with natural bioprocessed elicitors and post-harvest processing strategy to enhance such NCD-linked health benefits in targeted novel health targeted ingredients which will be derived from high value North Dakota chickpea. Furthermore, we will also advance commercialization efforts for high value chickpea-based ingredients by using NDSU driven new spin-off, research kitchen initiative and a potential collaboration with local food, nutrition, and health industries such as Sanford Profile. This proposed APUC grant initiative will

help to develop new health targeted functional ingredients from North Dakota chickpea and other legumes and will provide clear path for potential commercialization efforts for such high value agricultural products. Overall, development of such high value ingredients and advancement of its commercialization will contribute to the growth and long term stability of North Dakota economy.

### **OPTIMIZING INTERCROPPING PRACTICES FOR THE PRODUCTION, PRESERVATION, AND UTILIZATION OF SILAGE FEED**

NDSU Carrington Research Extension Center  
Bryan Neville, Carrington

Grant Amount: \$48,332  
Total Budget: \$60,415

The Carrington Research Extension Center researched three project objectives. 1) Maximize forage productivity of intercropped corn/legumes for the production of silage as livestock feed. 2) Determine the impacts of silage inoculant use on pH, nutrient content, and fermentation characteristics of intercropped corn/legume silages. 3) Compare feeding value of intercropped corn/legume silages to corn silage for backgrounding rations for beef heifers. In 2019, the corn production was much better previous research. It was believed that this would lead to better intercropping performance. However, field pea inclusion had a large negative impact on corn biomass production. The corn plants were shorter for much of the year which had cascade effects. First, the stunted corn did not yield well, but it also created more lanes for sunlight which created a more robust field pea crop. This was further compounded by heavy lodging and most field peas were not harvestable with silage chopping equipment. It is estimated that only 25% of the field pea biomass was harvested. It is possible that the unharvested field pea residue may have offset the loss in

forage production corn. Soybean production had minimal impacts on corn yield, however the corn was too robust in the mix. This resulted in a poor environment for soybeans to contribute much seed production. The best advantage with soybeans was a 5% increase in tons/acre fresh weight at the 145,200 soybean seeding rate compared to corn alone.

### **THE EFFECTS OF FEEDING HEMPSEED CAKE ON RUMINAL FERMENTATION AND SITE DIGESTION IN CATTLE**

NDSU  
Kendall Swanson, Fargo

Grant Amount: \$63,600  
Total Budget: \$79,500

This project is designed to determine the feeding value of hempseed cake in finishing cattle diets. Specifically, in situ and in vitro ruminal digestibility experiments will be used to examine the ruminal protein degradability of hempseed meal as compared to other common protein sources used for cattle finishing diets using in situ and in vitro digestion approaches, 2) influence of hempseed meal supplementation on ruminal fermentation, nitrogen balance, and site of digestion in cattle, and 3) preliminary economic analysis and value discovery of hempseed cake as a protein supplement for cattle fed finishing diet.

### **VALORIZATION OF BREWERS' SPENT GRAIN USING SIMULTANEOUS CO-FERMENTATION TO ENHANCE NUTRITIONAL VALUE**

NDSU Department of Plant Sciences  
Paul Schwarz, Fargo

Grant Amount: \$35,090  
Total Budget: \$43,862.50

The microbial fermentation of brewers' spent grains is an environmentally friendly and

economical operating process. which benefits the sustainability of barley growing in ND. The utilization of brewers' spent grains as livestock feed is limited (with an addition of less than 5% in the total feed) because of the non-digestive fibers and proteins. The current project is designed to use the microbial fermentation to break down the crude fiber and protein of BSG into sugars, peptides, amino acids, fatty acids, and prebiotics conducive to the digestion of livestock. The operating process is to be conducted under the air condition, which prepares for a large-scale implementation in practice. The solid state fermentation does not produce waste water. The process is relatively costless because of the convenient operation, inexpensive microbial strains, and no waste production. In addition, the process saves energy costs because the moisture content of BSG is expected to dramatically decrease with the heat produced during the microbial fermentation. The nutritional value of fermented BSG would be significantly increased, compared to the untreated BSG. The shelf life of fermented BSG would be longer due to the inhibition of spoilage microbes by beneficial fungus and bacteria applied in the fermentation process. The improvement of nutrients of fermented BSG would potentially enlarge the utilization of BSG as feed, which would reimburse the malting barley growers and promote the sustainability of barley growing.

### **EVALUATION OF SMALL-SCALE VEGETABLE PLANTING TECHNOLOGIES AND TECHNIQUES**

NDSU Department of Plant Sciences  
Chiwon Lee, Fargo

Grant Amount: \$17,517  
Total Budget: \$21,896.25

With the increase of small-scale vegetable production in North Dakota, new and veteran producers continually face the daunting task of

optimizing resources, labor and time. Planting and seed starting are the most crucial and time-consuming aspects of vegetable production. The utilization of commercial seeders provides the opportunity for decreased time and money expenditure, while improving accuracy and adaptability in direct sowing of small seeded high value crops. Utilization of a stale seedbed technique provides the benefit of non-chemical weed suppression, while also reducing need for tillage. Multiple commercial seeders developed for small scale farm operations will be evaluated for time-saving capacity and precision while planting high value small-seeded vegetable crops. A stale seed bed technique and conventional tillage will be used to evaluate weed suppression. Hand and vacuum seeders for indoor seed starting and greenhouse operations will be evaluated for cost and time effectiveness. Vegetable seed used in this project will be diverse and of economic importance to North Dakota producers. This project will address problems faced by short season North Dakota vegetable producers, while showcasing new tillage strategies to improve upon cultural practices. Through evaluation of new technologies, this project will identify where labor costs can be streamlined, enabling producers to invest more time and money into other aspects of their operation. Furthermore, findings will be communicated to stakeholders through grower meetings, field days and extension demonstrations.

### **EARLY IDENTIFICATION OF SOYBEAN CYST NEMATODE DISEASE**

University of North Dakota  
Prakash Ranganathan, Grand Forks

Grant Amount: \$62,800  
Total Budget: \$78,500

Soybean Cyst Nematode (SCN) disease is a leading use of yield loss in North America

soybean farms. It is often difficult to identify the exact symptoms of-SCN. Common below ground symptoms (BGS) include root stunting, discoloration, and fewer nodules in the root. The above ground symptoms (AGS), include less biomass, stunting and early yellowing or browning of leaves. While we understand that SCN Infected soybeans can lose up to 25-30% of their yield before beginning to turn yellow and a number of other diseases also cause yellowing of leaves, the purpose of this study has two fold goals:

Goal 1: To find out whether there are early, subtle signs that SCN infection has occurred before visibly detectable early yellowing by relating large suites of multiple types of remote sensor data to soybean growth conditions.

Goal 2: To find out whether there exists a relationship for early yellowing to SCN disease and mapping exact environmental conditions such as soil moisture and canopy assessment across all seasons. Currently, there is very limited research that integrates both aerial and ground data measurements to map the geo location of this SCN disease that captures variation in plant health, early yellowing and soil health across all seasons, as there is a lack of high fidelity big data in this area. The anticipated outcome of the project will result in a software and remote sensing hardware package that can be used to accurately detect the GPS locations of SCN infested areas in two ND soybean farms.

### **GWAS AND TRANSCRIPTOME ANALYSIS**

Minn-Dak Growers Ltd.

Mala Ganiger, Grand Forks

Grant Amount: \$100,000  
Total Budget: \$125,000

The possible outcome of accelerated aging treatments will be to identify the environmental conditions stimulating the darkening of seed coat color in a reasonable time frame. This information

is essential for the phenotypic evaluation of seed coat color browning in buckwheat breeding program and for commercial seed coat color evaluations at MDGL. Indirectly, the optimum storage conditions necessary for retaining the green seed coat color will be revealed. The GWAS study of common buckwheat accessions which will be the first report in relation to the seed coat color of common buckwheat should allow us to identify the gene/s controlling the seed coat color trait in buckwheat. Finally, the mechanism of gene expression at the molecular level with RNA-seq information will provide the comprehensive information of the genes involved in seed coat color development through differential gene expression study. This will help to develop the buckwheat varieties with darker green seed coat color resulting in the increase in acreage for production to meet the customer demand and having higher sales price for. This will create more job opportunities for both buckwheat farmers and buckwheat mill workers improving the overall economy of North Dakota. Moreover, this project will enforce the building and expanding the R&D department of MDGL further creating more job opportunities in buckwheat research field proving it to be more potential for economic growth in different areas such as buckwheat research.

### **INVIGOILS, LLC**

Larry White, Bismarck

Grant Amount: \$49,416  
Total Budget: \$108,116

Invigoils will source regional identity preserved oilseed commodities for cold press processing for a commercial market of both human and animal consumption. Oilseeds under consideration are mainly safflower, sunflower, canola, flax and hemp. Additional oilseeds may be crushed for additional markets as the demand may warrant. Toll processing may be used when we have extra capacity.

# FARM DIVERSIFICATION



*Progress on Cows & Co. Creamery*

Farm Diversification Grants give priority to projects dealing with the diversification of a family farm to non-traditional crops, livestock, or on-farm, value-added processing of agricultural commodities. Traditional crops and livestock are generally defined as those that the North Dakota Agricultural Statistics Service maintains statistics on. The project must have the potential to create additional income for the farm unit.

## **COWS AND CO CREAMERY**

Cows and Co. Creamery  
Maartje Murphy, Carrington

Grant Amount:       \$148,000  
Total Budget:        \$670,000

Cows and Co. Creamery is a micro-creamery located near Carrington, ND. They produce artisan dairy products using milk from their family farm. Currently they are producing Gelato and are looking to develop lines of artisan cheeses with authentic “old-world” production. The vision for the creamery is to have an on-farm location that would serve as a creamery and an agri-destination.

## **701 MEATS, LLC**

701 Meats, LLC  
Roy Krivoruchka, Belfield

Grant Amount:       \$97,650  
Total Budget:        \$128,650

The project established a meat processing facility in southwest North Dakota. The facility will start out as a custom exempt facility with plans to expand into a state inspected facility. APUC provided funding for the refrigeration system for the meat processing facility. The facility processes North Dakota meat products such as steaks, roasts, burger, sausages, bacon, hams and more. This facility provides local producers with a place to process their animals as well as providing consumers with a place to obtain locally raised meat products.



## LAKESIDE MEATS BUSINESS OPENING PLAN

4 Family Farms Alliance, LLC  
John Jacobson, Hatton

Grant Amount: \$75,000  
Total Budget: \$93,750

An existing meat processing facility has been acquired by 4 Family Farms Alliance, LLC, and the business name will be "Lakeside Meats."

Lakeside Meats intends to provide:

- a) fee-based meat processing services to livestock producers (custom-exempt);
- b) retail and wholesale sales of unprocessed product(s) (state inspected); and
- c) manufacturing/processing of meat products for retail and wholesale sales.

One factor that differentiates Lakeside Meats from its competitors involves the fact that all four owner families are personally in the livestock business, employ best management practices on their respective farms and ranches, provide care for their animals at a level that is unmatched, and remain committed to raising an exceptional product that is safe, affordable, fresh and delicious. Lakeside Meats is located at 307 College Dr S in Devils Lake, ND, in the heart of the business community of Devils Lake.

## QUANDT BARN

Quandt Farm  
Justin & Stephanie Quandt, Oakes

Grant Amount: \$20,500  
Total Budget: \$25,625

This project includes provisions for a 4,800 head finisher swine farm. The facility will consist of one (1) 338.0'x 122.2' finisher barn. The finisher barn will house a total of 4,800 finisher pigs. The barn will be on slatted concrete floors over an 8' deep pit, which will fully contain the manure and waste water to ensure the protection of ground water

and other vital natural resources. All buildings are totally roofed and all extraneous drainage will be drained away from the building and diverted around the site into engineer-designed containment. The hogs will arrive weighing approximately 30 lbs and will be fed using grain from our family farms as well as from other entities. The manure that is collected from the facility will be used to enrich the soil of our fields and those of our neighbors while cutting back on our dependency on chemical fertilizer. This finisher barn will help sustain our family farming operations for future generations. We have been working closely with our engineer to assure adherence to the environmental laws of our state, the health of our animals, and to being good and ethical neighbors.



*Processing equipment at Food First LLC*

Marketing & Utilization Grants provide necessary assistance to the research and marketing needs of the state by developing new uses for agricultural products and by-products, and by seeking efficient systems for processing and marketing these products. These grants are also used to promote efforts that increase productivity, provide added value to agricultural products, stimulate and foster agricultural diversification and encourage processing innovations.

## **FOOD FIRST MARKETING OF PROBIOTEIN BARS**

Food First LLC  
Rob Thornberg, Walhalla

Grant Amount:       \$34,000  
Total Budget:        \$42,500

Now that our prebiotic fiber product -- ProBiotein -- and MicroBiome Bars, for good gut health, are available to large regional retailers from a national distributor, we want to be sure the customers of these retailers are aware our products are in their stores. Food First LLC of Walhalla, ND, has initial sales and commitments from 740 stores (340 Sprouts Farmers Markets and 400 Associated Food Stores). These two retail chains have established customer contact via social media and they also conduct in-store sampling for new products. The focus will be on reaching those customers with social-media-

based advertising, in-store demonstrations and signage. Building brand awareness is the effort and securing the all-important reorders is the goal.

## **HOUWELING'S DAKOTAH**

Houweling's Tomatoes  
Casey Houweling, Underwood

Grant Amount:        \$136,000  
Total Budget:         \$169,000

Houweling's Dakota is conducting a feasibility study and performing market research on the potential to develop a greenhouse industry in North Dakota. The goal is to understand the local, state, and national demands of the tomato market and create a strategic plan to implement the findings. This project could allow options for more locally grown produce while continuing

to develop North Dakota's agriculture industry in a socially responsible and environmentally sustainable way.

**TUTTLE FRESH ARTISAN PASTA WITH LOCAL GROWN VEGETABLES AND SAUCES**

Tuttle Community Development Corporation  
Eli Hartje, Tuttle

Grant Amount: \$37,013  
Total Budget: \$66,543

This project aims to develop fresh pasta and/or wet products using North Dakota semolina, vegetables, eggs, and dairy products from area farmers.

**COJACK SNACK AND PACK MARKETING KICKOFF**

Engstrom Bean & Seed  
Gene Hepper, Devils Lake

Grant Amount: \$105,425  
Total Budget: \$133,900

CoJACK is a start up packaging and snack food company offering puffed edible beans, roasted soy nuts, and pumpkin seeds. The project aims to place CoJack snack in front of the biggest buyers for retail stores across the nation. The grant will make it possible to promote identity preserved natural products to a large buying group. The project will not only be promoting the CoJACK brand but also be a large test market for several new products just being researched. The project will assist CoJack's marketing team build relationships with industry people that will help them grow and contribute to its success for many years to come.

**DEEP WINTER GREENHOUSE EDUCATION AND FERTILIZER DEMO SITE**

Black Bison Organics, LLC  
Derek Lowstuter, Bismarck

Grant Amount: \$49,000  
Total Budget: \$93,000

This project will construct an education and demonstration facility to: (1) showcase the use and effectiveness of Black Bison Organics fertilizers year-round; (2) demonstrate the use of a deep winter greenhouse to allow winter crop production without expensive supplemental heating; and (3) create a regional agroforestry and permaculture training hub. The project will be composed of a "net-zero" greenhouse that allows year-round crop production. The greenhouse will be attached to an annex building to host educational events, for fertilizer storage, and to house the greenhouse utilities. Both buildings will be constructed using the innovative Nordic Steel building system, based out of Mandan, ND; thereby demonstrating the use and effectiveness of two local products. Black Bison Organics fertilizer's main ingredients are ND-sourced flax seed meal and leonardite - instead of relying on inferior, out-of-state ingredients. By greatly extending, or even eliminating, the growing season in North Dakota, the proposed project will allow the business to showcase crop quality and yields impossible or uneconomical to achieve without an energy-intensive traditional greenhouse.

**DEALER EXPANSION OF DYNA-FLO PUMPS**

Dyna-Flo Pump Co.  
Dana Rosendahl, Oakes

Grant Amount: \$78,750  
Total Budget: \$179,250

Dyna-Flo pump co will be traveling the US pushing their Dyna-Flo irrigation and flood control pumps. The goal is to establish a solid dealer network and to create a chain of dealers to

display their pump. Funding for this project will assist in creating name recognition and help gain a dealer network to market the Dyna-Flo pump.

### **GOLDEN VALLEY INGREDIENTS MARKET EXPANSION**

Golden Valley Ingredients  
Seth Novak, Beach

Grant Amount: \$78,750  
Total Budget: \$187,500

The projects seeks to build global brand recognition for Golden Valley Ingredients and scale the processing facility to a new level with the creation of a marketing campaign. By creating an effective marketing campaign, Golden Valley Ingredients hopes to leverage their processing capabilities to create a positive economic impact in a disadvantaged area of the state and invest back into North Dakota.

### **NOME SCHOOLHOUSE**

Shepherd Industries  
Chris Armbrust, Nome

Grant Amount: \$10,000  
Total Budget: \$257,800

Dakota Fiber Mill and Bear Creek Felting have partnered together to start Shepherd Industries. Together they purchased the Nome Schoolhouse for their fiber mill, education, and event center. The Nome Schoolhouse serves as a mecca for makers everywhere. They will bring folks from all over the world to North Dakota offering North Dakota products, produced with North Dakota raised, processed and produced fiber all over the world on the wholesale market. They have already been contracted by scheels to carry alpaca insoles in all their stores. Funding for this project will go towards advertising from printed materials to social media.

### **MARKETING FOR GIDEON'S BREWING**

Gideon's Brewing Company  
David Duma, Bismarck

Grant Amount: \$4,000  
Total Budget: \$27,062

Gideon's Brewing is develop a new website, advertise on the radio and offer more products to sell at local trade shows in order to increase our sales volumes and the amount of North Dakota malt we purchase.

### **FEASIBILITY OF A MULTI-SPECIES ABATTOIR AND PROCESSOR IN EDGELEY, ND**

Tim Moch, Edgeley

Grant Amount: \$30,000  
Total Budget: \$73,600

A steering committee of livestock producers and local businessmen in the Edgeley, ND area intend to conduct a feasibility study to provide verification of supply and market projections, determine the best location, determine layout and equipment needs and provide size, cost and cash flow projections to determine financial viability of a new meat plant in Edgeley.

### **TWO TRACK MALTING**

Two Track Malting, LLC  
Jared Stober, Lincoln

Grant Amount: \$41,000  
Total Budget: \$116,263.50

Two Track Malting is a craft malting company located in Lincoln, ND producing craft malt for craft brewers across the country. Two Track Malting specializes in producing high quality small batch craft malt which can be traced down to the exact field it was grown on and the farmer who grew it. They provide this information on

each bag through a unique scan code which the brewer can scan to pull up brewing specifications along with the field and farmer information. Two Track Malting has shipped malt to 104 breweries in 25 states across the United States. In 2020, Two Track Malting's goal is to launch a marketing campaign targeting craft brewers to increase our customer base. In the US there are 7,346 breweries with 1,367 breweries located in 11 states in our region. APUC funds will be used to build awareness for our products and create demand for our North Dakota grown craft malt.

**PRAIRIE PRODUCTS COLD ETHANOL HEMP EXTRACT MARKET AND PROMOTIONS PROJECT**

Prairie Products LLC  
Rose Veronica Michael, Fargo

Grant Amount: \$5,000  
Total Budget: \$177,000

The US hemp derived CBD market is expected to reach \$23.7 billion by 2023. Prairie Products' (PP) primary aim is to capitalize on this burgeoning market for the benefit of North Dakota growers as well as its own extraction business. Prairie Products seeks APUC funding for market research on raw CBD products and to gain better access to existing financial opportunities in these markets. Funds will be used to attend industry conferences and meetings, collect and analyze market data, and to explore all current and emerging CBD crude market trends and product demands. In addition, it would afford Prairie Products the opportunity to develop and implement a marketing plan that increases economic opportunity for all local businesses in our hemp to crude and beyond supply chain. It would also enable us build out a strong, profitable sales network and the infrastructure to consistently sell hemp products in the marketplace. Lastly, grant funding will also help us refine our marketing strategy and product

profile, our pricing, packaging and distribution strategies. We know this additional financial support will not only help us better identify and connect with our clients' product needs, but it will position us for ongoing success by developing a sustainable sales network, excellent account management of existing clients and a marketing brand that is known as reputable and reliable.

**WEBSITE DESIGN AND MARKETING CAMPAIGN WITH REDESIGN OF MANUFACTURING**

In the Potter's Hand Inc.  
Amy Shaw, Wildrose

Grant Amount: \$35,000  
Total Budget: \$82,008

In the Potter's Hand Inc. intends to redesign its website to properly reflect our current lines of gluten-free specialty skin care and beauty products. The updated website would be eye-appealing and user friendly to search for specific products and ingredients. We will increase marketing efforts by targeting consumers using Google Adwords, Facebook, and through influencer's within our industry. IPH sees the need to restructure our manufacturing process to streamline within our facility. We have an opportunity to significantly grow the business and need to be prepared to increase production efficiently. IPH is also needing to protect our brand name and product lines with trademarking of these items.

**THREE FARM DAUGHTERS LLLP**

Three Farm Daughters LLLP  
Molli Ficocello, Grand Forks

Grant Amount: \$68,800  
Total Budget: \$570,000

Three Farm Daughters is a majority female

owned business based in Grand Forks, ND, with the mission to produce and deliver high fiber resistant starch and reduced gluten food products in a variety of forms with outstanding quality and taste. Three Farm Daughters looks to fulfill the consumer driven need for healthier food options and truly believes in providing a “better for you” food product for consumers. Their current product line plans include nutrient rich reduced gluten flour and cookies and high fiber resistant starch crackers and pasta; however, Three Farm Daughters does not plan to stop there. Products will be available for purchase soon!

**BISMAN COMMUNITY FOOD CO-OP  
MARKETING SUPPORT**

BisMan Community Food Cooperative  
Beth Kaylor, Bismarck

Grant Amount: \$32,000  
Total Budget: \$65,000

The BisMan Community Food Cooperative (BCFC) is a full service grocery store providing local & natural foods. The BCFC is a valuable retail partner to local food producers in North Dakota. The APUC grant supports marketing efforts and local producers video profiles to attract more consumers to the BCFC.

**RINGSIDE**

Ringside LLC  
Levi Hall, Beach

Grant Amount: \$25,000  
Total Budget: \$125,000

Ringside, LLC is has created an app (“Ringside - Livestock”) that will be used to track and promote livestock as they show and sell across the United States. The app will create a new channel for North Dakotans, and people across the country,

to market their cattle producers will be able to be more precise with their advertising and marketing budgets and therefore will see increased revenues on their operations. Ringside was available for download January of 2020. After a wildly successful launch at the National Western Stock Show in Denver, CO in January, Ringside received excellent response from users across the US and into Canada.

**CONSUMER ED-EWE-CATION**

gardendwellers RANCH  
Adam Mawby, Esmond

Grant Amount: \$3,223  
Total Budget: \$4,986

gardendwellers RANCH will be attending multiple farmers markets across the northern portion of North Dakota, reaching Grand Forks, Devils Lake, Rugby and Minot, to promote the consumption of local lamb meat Focusing on providing information and education, about the health, economic and environmental benefits of consuming sheep meat, to direct consumers and retail professionals. Sample kits containing recipes, seasonings, and one pound local ground lamb meat and self addressed comment card in a reusable market bag will be given to interested consumers for home sampling. gardendwellers RANCH will also be providing the meat source for the entree serving at an annual Farm to Table dinner held in central North Dakota. Representation will also be present to speak about the benefits of consuming lamb. Open house events will also be held at gardendwellers RANCH to provide as transparent of a business as possible. Inviting people out to visit the farm, enjoy a freshly prepared sample of lamb, and see how the animals are raised all to promote the benefits of eating locally sourced lamb and sheep for meat.

## **MARKETING IMPLEMENTATION**

Rapha Global Corporation  
Lon Cummings, Tappen

Grant Amount: \$10,500  
Total Budget: \$105,319.75

Rapha Global Corporation will implement the marketing plan developed by NDSU in collaboration with funding provided by APUC and Rapha Global to sell Rapha's Flax Hull Lignans and their other innovative flaxseed nutritional products. This will include activities such as website development and improvements, social media marketing through Facebook, Twitter, and Instagram, advertising campaigns on Google, LinkedIn and Amazon, as well as a comprehensive email marketing and re-targeting plan designed to follow up with and retain the valuable customers gained from the various marketing platforms.

## **MARKETING THAW-AND-SERVE DONUTS**

Baker Boy Bake Shop, Inc.  
Guy Moos, Dickinson

Grant Amount: \$55,650  
Total Budget: \$194,500

Over the past two years, Baker Boy has invested countless time and resources, and millions of dollars into the manufacturing of donuts. This investment led to the creation of Magic Ring Filled Donuts-ring donuts with filling in every bite. Recently, these advances has allowed Baker Boy the ability to launch a new line of Thaw-and-Serve Fully Finished Donuts. APUC provided funding to support marketing and trade show assistance to launch the new product line. Funding supported efforts to reach the objective of creating higher awareness for both the Baker Boy brand and the Thaw-and-Serve fully finished donut brand line. The new product line was introduced at the National Association of Convenience Stores in

Atlanta, Georgia.

## **QUEBITZ - A LIVESTOCK LOGISTICS APP**

Bitz 4 Solutions  
James Philip Bitz, Napoleon

Grant Amount: \$26,250  
Total Budget: \$370,000

The transportation of livestock continues to have issues with timely movement of livestock. Gaps in communication between sending, transporting, and receiving livestock cause financial loss for transporters and producers in the industry. With a few exceptions, most cattle in North Dakota have to be hauled 500 miles or more for processing. Bitz 4 Solutions has developed an app (QueBitz) for real time pick-up and deliveries of cattle. The platform will connect beef producers, transporters, and processors for real time information on pickups, drop offs, and driver availability. QueBitz is now available in the App Store and Google play where it can be downloaded for use.

## **BLUE FLINT RE-POWER ENGINEERING**

Blue Flint Ethanol LLC  
Jeff Zueger, Underwood

Grant Amount: \$155,000  
Total Budget: \$1,758,400

Blue Flint Ethanol is a low carbon renewable fuel producer that is reliant on Great River Energy's Coal Creek Station for steam to run the bio-refinery. Great River Energy has announced it does not plan to operate Coal Creek beyond 2022. To continue to operate, Blue Flint will likely need to install a boiler to replace the lost steam supply. Carbon intensity of the ethanol produced is a critical consideration for long term viability of an ethanol plant. Therefore, we are evaluating a boiler and handling system that would use

biomass in the form of wheat straw and/or corn stover as an alternative to natural gas based system. This project will gather feasibility level engineering surrounding the biomass option and allow Blue Flint to select a technology. A second phase of the project will complete detailed engineering and design on the selected technology.

### **SITE DESIGN SERVICES**

Identity Ag Processing LLC  
Robert Sinner, Casselton

Grant Amount: \$17,850  
Total Budget: \$23,550

Identity Ag Processing, LLC (IAP) is a state-of-the-art processing facility that was established in 2004 for the purpose of cleaning, sizing, packaging and shipping contracted North Dakota grown food grade commodities arranged by SB&B Foods, Inc. with headquarters in Casselton, North Dakota. Since the completion of IAP, SB&B Foods, Inc. has grown continually to now a large global market presence with North Dakota grown products. North Dakota producers have not only benefitted with increased profits for their efforts, but also have gained worldwide recognition and reputation for the consistent high quality they produce year after year. More and more, global food companies are contacting SB&B Foods, Inc. for additional quantities produced in North Dakota. This project is to hire professional services to do a civil site design that includes a topographic survey, geotechnical investigation, geometric layout for roadway, site drainage, roadwork makeup and design, and erosion control. When completed, Identity Ag Processing intends secure a contractor for the infrastructure improvements and work. This total project will not only immediately impact our plant efficiency, but more importantly will allow for increased plant capacity and customer confidence for expanded business that will directly and positively benefit

ND producers.

### **DEVELOPMENT OF A NORTH DAKOTA BEEF SLAUGHTER AND PROCESSING FACILITY**

North Dakota Farmers Union  
Mark Watne, Jamestown

Grant Amount: \$27,500  
Total Budget: \$75,000

A feasibility study to determine the possibility of a medium scale, regional, USDA-inspected cattle slaughter and processing facility, with an adjacent rendering facility with the capabilities of receiving rendering from other customers. The project will include a market analysis, processing and business plan, supply plan, management plan, and financial plan.

### **SOUTH 40 BEEF**

South 40 Farms LLC  
John Roswech, Mott

Grant Amount: \$7,275  
Total Budget: \$14,550

South 40 Beef is committed to providing your family with ethically harvested, high quality, angus beef. Our family is building a beef processing plant in Mott, ND that will do the following:

- Sell and market USDA inspected beef direct to consumers that live outside of the Dakotas that reside in east and west coast.

Export ND Beef

- State inspected beef to consumers in the Dakotas
- State inspected custom butchering
- Sell to big box retailers such as Costco and Walmart

South 40 Beef is committed to providing your family with ethically harvested, high quality, angus beef.



## **MARKETING PLAN - BUECHE LLC**

Bueche LLC  
Shannon Bueche, Casselton

Grant Amount: \$8,193  
Total Budget: \$10,241.25

The Marketing Plan Project for Bueche LLC will develop and implement a marketing plan for our artisan herbal products. The marketing plan will include development of an eCommerce website, design and creation of a company logo and product-specific logos, bar-coded product label design and printing, electronic and printed marketing materials, marketing strategies for social media and Google advertising, as well as custom signage for sales locations and vehicles. The products are created from organic herbs, berries and other botanicals grown on a North Dakota farm. This project will highlight the traditional and non-traditional crops we are currently growing, and the unique products we create from them. By developing and utilizing a robust marketing plan, consumers will have access to education about the benefits of these plants, how they're used for health and wellness, and availability to purchase North Dakota made products created with them. It will also help to establish North Dakota as a place where beneficial herbs can be grown successfully, both on a family garden scale, and on a scale large enough to accommodate retail and wholesale markets.

## **EXPANSION OF HILL TOP MEATS IN HAZEN**

J & J Hazen Meats, Inc.  
Justin Hill, Hazen

Grant Amount: \$29,525  
Total Budget: \$36,906.25

Hill Top Meats is an existing USDA inspected meat processing plant located in Hazen, North Dakota. The company is intending to build a

new facility to increase its inspected processing capacity from 15 head per week to 30-60 head per week. The new plant will be located along Highway 200 between Beulah and Hazen. The existing plant will remain in operation to serve the region's custom and wild game processing needs.

## **MINN DAK MARKET HOLIDAY PROMOTION**

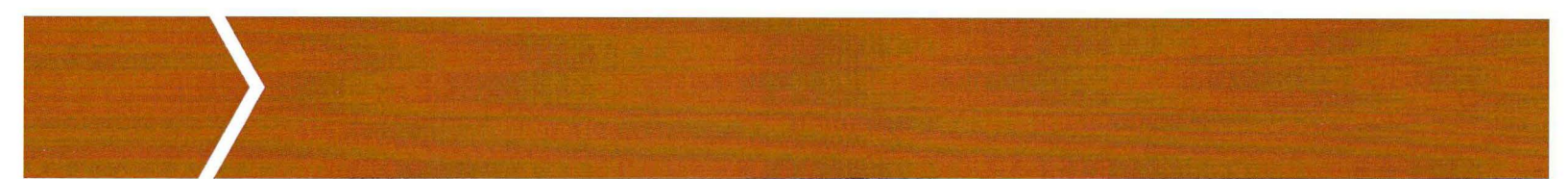
Minn Dak Market  
Greg Kempel, Casselton

Grant Amount: \$15,000  
Total Budget: \$18,750

Minn Dak Market proudly promotes and sells locally made products including Pride of Dakota products at its local storefront located in the West Acres mall in Fargo. They also sell via their website [www.minndakmarket.com](http://www.minndakmarket.com). This year, with the pandemic creating cancellations of trade shows such as two of the Pride of Dakota shows and the concern that the other shows may be less in attendance, sales etc. several Pride of Dakota vendors have reached out to see if they could increase their marketing to try and increase holiday sales. In 2019, 30,000 catalogs were printed and mailed out 5,500 of them to current/potential customers throughout the midwest, Florida, Texas, Arizona, and California (former residents). This year by increasing this as well as more advertising in the area will lead to additional sales for these Pride of Dakota companies from Flasher to Burlington to Devils Lake to Esmond to Valley City etc.

In addition to additional catalogs and mailing, an aggressive marketing campaign online with radio presence will help increase sales.

Since opening the store full time on May 15, 2019, Minn Dak Market has seen steady growth. Holiday sales continue to grow. In 2019, a pop up store was used in the Dakota Square Mall for the



holidays from October through January. We are researching opportunities currently in Kirkwood Mall in Bismarck as well as the Dakota Square Mall in Minot to continue to grow the brand of providing local residents access to locally made products.

# NATURE-BASED TOURISM



Nature-Based AgriTourism Grants are for enterprises which seek to attract visitors to a working farm or ranch, or any agricultural, horticultural or agribusiness operation to enjoy, be educated or be involved in activities. Eligible projects include but are not limited to farm or ranch tours, hands-on chores, self-harvesting of produce, hunting operations, fishing operations located on applicants' land, bird watching, trail rides and corn mazes.

## **HYGGE HILLS TRAIN**

Hygge Hills  
Lucy Frandsen, Noonan

Grant Amount: \$20,000  
Total Budget: \$27,350

Hygge Hills is working towards enhancing and growing their events by adding a train feature. This train will be pulled behind a compact tractor. It will be similar to an old steam train, with two cars each comfortably holding six adults. This train will be used mainly at our annual fall pumpkin patch. The train will follow a decorated pathway, through a seasonally decorated 160' tunnel, providing our guests an enjoyable time by sitting back, relaxing and enjoying the beautiful country scenery. This train will not be used on a track, so it will be available for use at parades, fairs, the Divide County Threshing Bee and other area events.

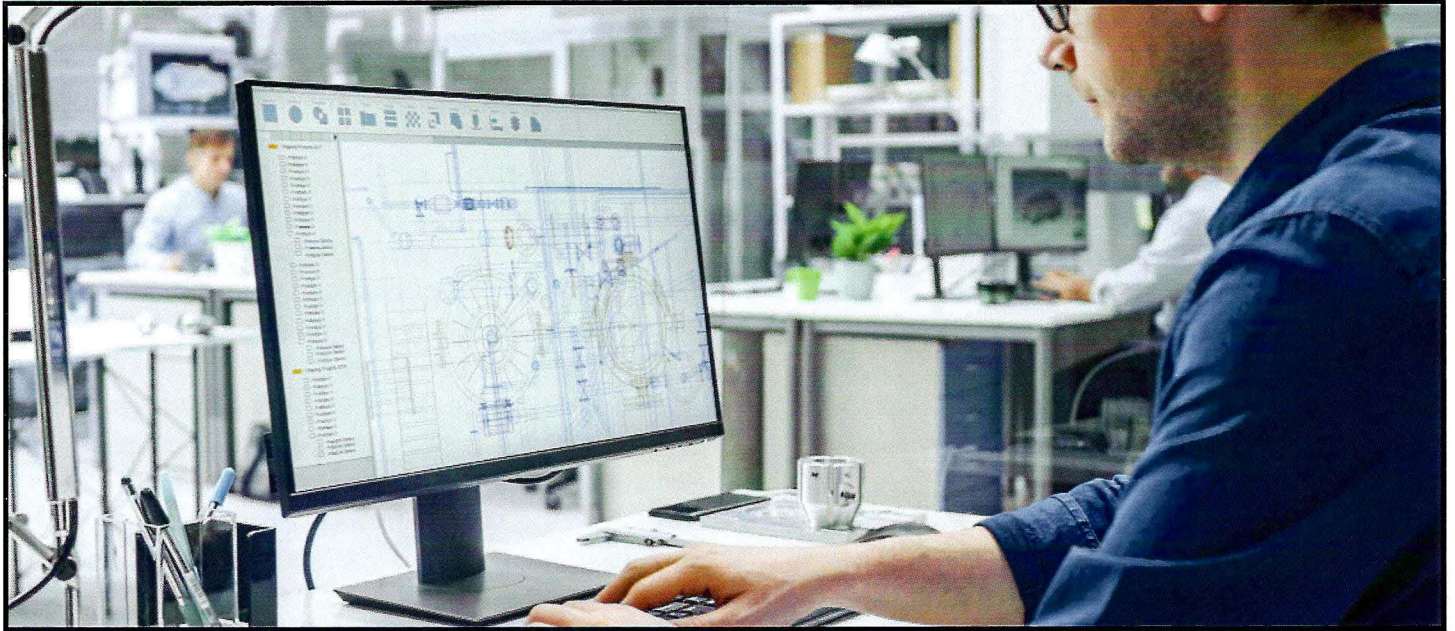
## **AGRITOURISM EXPANSION THROUGH VALUE ADDED NICHE MARKET CROP PRODUCTION**

gardendwellers FARM  
Holly Mawby, Esmond

Grant Amount: \$7,093  
Total Budget: \$8,786

gardendwellers FARM will use APUC funds to begin processing and packaging of freeze-dried herbs to provide an easily packed and carried product available throughout the year to market to its agri-tourism visitors. This expansion will allow gardendwellers FARM to produce a product with a very long shelf life and a broader product line that appeals to visitors to the farm and to North Dakota. The freeze-dried herbs and herb blends will capitalize on the 'Be Legendary' branding as well as the gardendwellers FARM branding to appeal to consumers demand for local ingredients and products.

# PROTOTYPE & TECHNOLOGY



APUC provides grants in two areas of agricultural innovations: Prototype Development & Technology Grants. A huge array of equipment can be useful in conducting business in rural living and agricultural economics. Prototype Grants are restricted to inventions improving the operations of food processing equipment and agricultural equipment. Technology Grants are to encourage innovation and APUC maintains a broad view of technology, such as hardware, software, devices or processes. Biotechnology will be considered as long as those advances improve agricultural product utilization such as food, feeds, fuels and fiber.

## **VRT RENEGADE MARKET ACCELERATION**

Summers Manufacturing Co Inc  
Bruce Johnson, Devils Lake

Grant Amount:       \$26,250  
Total Budget:        \$272,020

This project is aimed to help Summers Manufacturing accelerate the growth of a very exciting break through innovation in farm equipment which enables variable rate tillage. The acceleration of this market adoption will help promote the practice and will help Summers Manufacturing return to a growth mode as a North Dakota company producing innovative equipment to help agricultural producers be more efficient.

## **BACON YIELD IMPROVEMENT PROCESS**

Cloverdale Foods Company  
Justin Brotzler, Mandan

Grant Amount:       \$105,000  
Total Budget:        \$329,869.52

This is a three-phase project intended to increase bacon yield utilizing existing resources and constraints and develop new design of bacon comb hanger to increase yield, decrease waste, and produce a more consistent quality product. Additionally, a new design for system trolleys will be developed to increase capacity, efficiency, and quality. Cloverdale will invest in developing a process that is the most effective for chilling during the cooking and cooling process that will quickly, evenly, and consistently cool to ensure food safety and quality subsequent processing.

### **BACON YIELD IMPROVEMENT PROCESS, PHASE III**

Cloverdale Foods Company  
Justin Brotzler, Mandan

Grant Amount: \$34,767  
Total Budget: \$265,158.92

Cloverdale would like to increase their bacon production yield utilizing existing space, design and patent bacon specific tools, and expand capabilities within the existing facility.

### **PATENT-PENDING BELTING TECHNOLOGY**

WCCO Belting Inc  
Jean Voorhees, Wahpeton

Grant Amount: \$41,475  
Total Budget: \$65,454

WCCO is developing a new type of rubber product primarily used on equipment that harvests potatoes, sugar beets, onions, and other root vegetables. If the prototype is successful, it will be promoted to both domestic and international equipment manufacturers. The growth will increase North Dakota exports and create high-paying local manufacturing jobs.

### **LEAF AND BUD STRIPPER (STRIP IT GOOD)**

Total Ag Industries Inc.  
Pat Muller, Hillsboro

Grant Amount: \$26,250  
Total Budget: \$49,150

This project seeks to develop a prototype of a new harvesting equipment for high-CBD hemp, the leaves of which are pressed for CBD oil. Grant funds will be used for the engineering, research and development and manufacturing of the prototype for the leaf and bud stripper. Although the CBD oil industry continues to grow, the

current harvesting technique is a multi-step, labor intensive process that requires a great deal of both time and warehouse space. This prototype merges those separate steps into one as farmers prepare hemp leaves for CBD oil production. Merging these steps provides numerous benefits to these hemp farmers including: 1) the need for a single, lower-priced harvesting machine 2) increased harvesting efficiency of at least 25% 3) elimination of the need for warehouse space 4) faster drying because you are only drying the leaves, not the entire plant 5) a purer superior product because the stems and other impurities are left in the field. Although the prototype will be built to harvest one row, the machine will be built so that additional row units can easily be added.



## **IMPROVEMENT PROJECT FOR EFFICIENCY AND PRODUCTION INCREASE**

Hankinson Renewable Energy LLC  
Dodi Matti, Hankinson

Grant Amount: \$52,500  
Total Budget: \$3,242,569

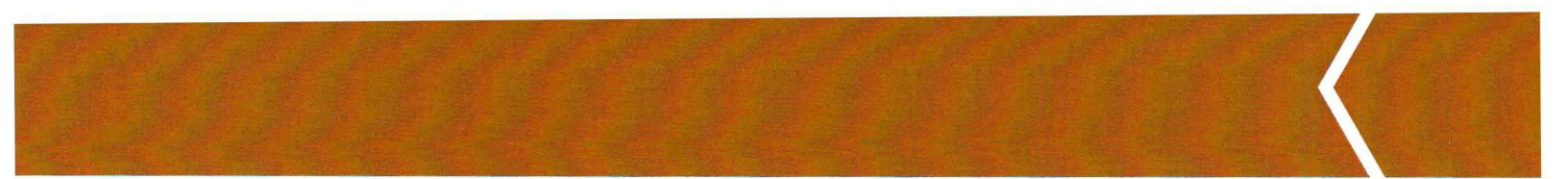
Hankinson Renewable Energy (HRE) is planning an improvement project to its current plant located in Hankinson, ND. This improvement will involve the installation of stack heat recovery equipment that will improve plant efficiencies and increase ethanol production by an estimated 10 MMGY. The \$3.2 million project would allow HRE to improve operations; reduce natural gas and make-up water usage per gallon of ethanol; and resolve current production limitations, allowing the plant to operate at greater capacity and increase ethanol production by 10 MMGY.

## **NUTRITIONAL ASSESSMENT OF HEMP BYPRODUCTS FOR INCLUSION IN ANIMAL FEED**

Healthy Oilseeds, LLC  
Roger Gussiass, Carrington

Grant Amount: \$62,890.50  
Total Budget: \$88,727.20

The grant funds will be used to complete the necessary research and analytical science needed to define the nutritional content, phyto-remediation properties, and anti-nutritive composition of hemp seed byproducts. This analysis is the first step in satisfying American Feed Control Officials (AAFCO) and FDA-CVM (Center for Veterinary Medicine) Nutritional reporting and safety evaluations for any new ingredient including hemp and its byproducts. The FDA-CVM requires that each ingredient (byproduct) be rigorously tested to determine its nutritional composition and to identify pesticides, heavy metals, vitamins, mineral, or anti-nutritives that may prevent its use as animal feed and which must be considered by the feed formulator for the target animal, its production category and the intended use. To prove the consistency of the ingredients composition; we must use American grown and processed hemp byproducts and provide 5-7 Certificates of Analysis, from a certified lab, using approved methods and equipment, for each ingredient. Maintaining the consistency of labs conducting the analysis



for each of the samples creates legitimacy of the results and allows for more confidence in the statistical analysis and interpretation of the nutritional composition. All six ingredients (oil, meal/cake, hulls, screenings, filtrate, and pulp) will have five samples submitted to Eurofins food.

### **WATER SERVICE TO BLUE FLINT ETHANOL**

McLean-Sheridan County Rural Water District  
Ann Oberg, Turtle Lake

Grant Amount:       \$54,240  
Total Budget:        \$71,190

The Blue Flint Ethanol Plant (BFEP) northwest of Washburn receives water supply and wastewater disposal services through from the Coal Creek Power Plant (CCPP) through a cooperative agreement with Great River Energy (GRE). As GRE looks to potentially close the CCPP, BFEP is exploring economical options to replace its current process water supply and wastewater disposal methods. The proposed project would replace the water supply and wastewater disposal services from CCPP with services from the City of Washburn through the McLean Sheridan Rural Water District (MSRWD). The BFEP would need up to 750,000 gallons a day (gpd) in water for the production of ethanol. The process would also produce up to 75,000 gpd of wastewater proposed to be disposed of through the Washburn wastewater lagoons.

# SPONSORSHIPS

## **ND FFA FOUNDATION, INC. (2018)**

North Dakota FFA Foundation  
Tamra Maddock, Bismarck

Grant Amount:       \$300  
Total Budget:       \$300

The ND FFA Foundation supports leadership opportunities and activities of its 4,500 members in the state. This sponsorship is in support of the ND State FFA Convention. Members will compete in more than 40 different career development and other award areas for the chance to represent ND at the National FFA Convention.

## **NASDA ANNUAL MEETING (2020)**

National Association of State Departments of  
Agriculture, Bismarck

Grant Amount:       \$5,000  
Total Budget:       \$5,000

The NASDA Annual Meeting grows and enhances agriculture by forging partnerships and creating consensus to achieve sound policy outcomes between state departments of agriculture, the federal government, and stakeholders. Funding was utilized to assist in developing and administering an online platform for the meeting. In return, APUC received an opportunity to network with commissioners, secretaries and directors of agriculture, to discuss important issues relative to its mission.



# FUNDING SOURCES

APUC's appropriation for the 2019-2021 biennium totaled \$4,075,622.30 and was provided from the following sources:

- \$2,000,000 from Bank of North Dakota
- \$570,930.59 from the North Dakota Mill and Elevator
- At the beginning of the biennium, an additional \$1,504,691.71 authorized as carry-over authority from the previous biennium.
- No funding was appropriated directly from the state general fund.

Financials as of October 31, 2020

Total Operating Expenditures	\$27,955.96
Total Grant Expenditures	\$1,220,161.67
Grant Commitments	\$776,928.00
Remaining Appropriation	\$2,014,318.14

*\*Includes current plus carry-over commitments*

**NORTH DAKOTA DEPARTMENT OF AGRICULTURE**  
**Agriculture Products Utilization Commission**

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