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See *Simon v. Demuth*, No. A25-0066 (Minn. Jan. 24, 2025) (consolidated with *Hortman et al. v. Demuth et al.*, No. A25-0068) .

Agricultural Research, Education, Extension & Tech Transfer

AGREETT

Minnesota House Agriculture Finance and Policy Committee
January 22, 2025



UNIVERSITY OF MINNESOTA
Driven to DiscoverSM

Background

AGREETT: Mn. Stat. 2015 Supplement Section 41A.14, Amended 2016

Purpose:

Support agricultural productivity growth through research, education and extension through long-term base funding.

Priorities:

“Human infrastructure” to lead research, teaching & extension activities

Rapid response to ag issues like plant and animal diseases and pests

Long-term investment in Minnesota

AGREETT is to provide investments that will efficiently achieve “**long-term agricultural productivity increases**” through improved infrastructure, vision and accountability. Grants shall provide for “**long-term base funding**” that allows the research grantee to continue the research to its practical conclusion.

Crop & Livestock Genetics

for Productivity and Improved Traits for Animal Traits

Microbial Science Research

for Soil, Plant, Human and Animal Nutrition and Productivity

Advancing Soil Fertility and Water Quality & Availability

through Managed Crops and Forestry

Decision Agriculture

aligning Measurement Technologies, Information Technologies and Economics for Improved Management

Nutrient Recycling and Management

for Improved Utilization and Resource Efficiency

Agro-Ecological Innovation

in Managed Crops to Improve Biodiversity

Technology Stewardship

of Pest and Disease Resistance and Adaption to Climate Change

Sustaining growth in agricultural productivity

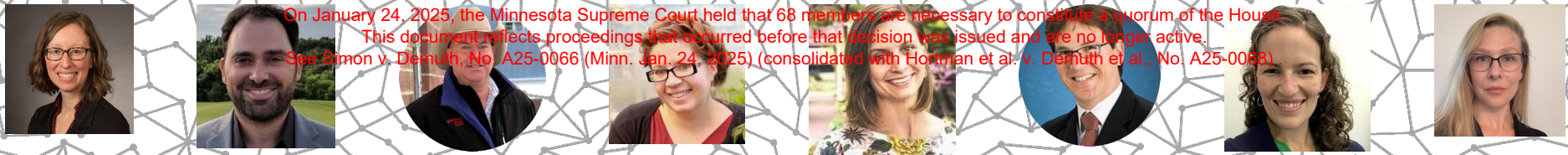
AGREETT investments

- Capacity Funds - “Human Infrastructure” → Faculty/Educators
- Rapid Response Funds
- Avian Influenza Research
- FY24 additions:
 - o Forever Green Initiative
 - o Deep Winter Greenhouse Program
 - o MN Tribal representative by MIAC

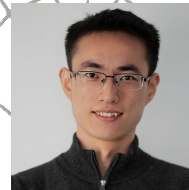
AGREETT priorities are guided by an advisory panel with representatives from:

- Mn State
- MN Farm Bureau
- MN Farmers Union
- 14 Statewide Ag Commodity Councils
- Forest Products Organizations
- Organic & Sustainable Ag Industries
- Environment & Natural Resource Conservation Organizations

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AGRETT Faculty



Faculty and Educators across priority areas

35 experts in CFANS, CVM and Extension

21 CFANS faculty

of those, there are

7 Joint Extension/CFANS Faculty

5 CVM faculty

of those, there are

2 Extension/CVM Faculty

9 Extension educators

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Leveraging AGREETT's impact.

Direct ROI = \$1.6 Grant to \$1 AGREETT

Since 2016, AGREETT hires have been PI on
364 sponsored awards, bringing in a grand
total of **\$80,183,393 in grant funding.**

In FY24 and FY25 (thus far), AGREETT hires have
been awarded **\$21,863,051 in grants.**

The State of Minnesota has invested \$39,000,000 in
AGREETT.

Evidence-Based Livestock Management
Remote Sensing for Ag Sustainability
Microbial Eco-Epidemiology
Chronic Wasting Disease
Vegetable Production Support
Nutrient Use Efficiency
Avian Reproductive Biology
Airborne Pathogen Detection
Potato Genomics & Diversity
Good Agricultural Practices (GAPs)
Diagnostic Tools for Tick-Borne Diseases
Fruit Grower Outreach Pathogens
Quality Assurance Certifications
Remote Sensing in Forest Inventory
Dairy-derived ingredients
Livestock Health Optimization
Lidar and Hyperspectral Data
Antimicrobial Resistance
Farm-Level Gas Emissions
Microbiome Composition & Function
Climate Change Adaptation
Insect-Parasite Interactions
Water Quality
Soil-Borne Fungi
Turfgrass Extension
80-Spread Diseases
Swine Biosecurity
Cultivated Wild Rice Variety Development
Beef cattle nutrition & management
Metabolic Physiology of Dairy Cattle
Agricultural Business Management
Pesticide Safety Education
Precision Nutrient Management
PRRS Virus Evolution
Personal Modeling & Machine Learning in Ag
On-Farm Food Safety Education
Perennial Grain Crops
Sustainable Feed Ingredients
Manure Management
Integrated Crop & Weed Management
Nursery Crop Development

Impacts: Responding to MN's emerging challenges

AGREETT faculty utilize funds from the **Rapid Agricultural Response Fund** to respond to urgent issues and challenges facing Minnesota's agricultural and natural resource industries

- Recently completed projects
 - Greenhouse gas sampling approaches for MN livestock farms
 - The role of the immune system in prolonging fertility in turkey breeders
 - Developing best practices for detection & decontamination of CWD prions
- Recently started projects
 - Genetic selection for reducing greenhouse gas emissions of dairy cattle
 - Managing herbicide-resistant weeds using cover crops
 - Assessing the state of soils on Minnesota's emerging vegetable farms
 - Innovations in weed management strategies for cultivated wild rice production

Impacts: Leveraging artificial intelligence

- **2 AGREETT faculty members** are leaders in UMN's **AI-CLIMATE** effort
- Goal: To advance foundational artificial intelligence (AI) by incorporating knowledge from agriculture and forestry sciences and developing transformative approaches for using ag and forestry practices to adapt and mitigate climate effects while improving rural economies



Impacts: Improving animal health across industries

- Kahina Boukherroub studies **poultry reproduction** and how the immune system affects fertility in turkey breeder hens
- Kim Vanderwaal investigates how **PRRS virus** evolves to better understand how the pathogen emerges and spreads among swine populations
- Dianne DeWitte provides **quality assurance certifications & biosecurity education** to swine producers and youth exhibitors to prevent disease transmission
- Erin Cortus improves sustainability in livestock facilities by investigating ways to **reduce emissions and improve ventilation** at barns

Impacts: Providing critical leadership

- **Dairy industry competitiveness:** Jay Amamacharla is the Director of Midwest Dairy Foods Research Center
- **Emerging & culturally significant crops:** Natalie Hoidal advises research projects led by The Village Agricultural Cooperative to support local growth of culturally relevant crops and serves as project manager on an effort that has identifying medicinal herbs that are significant among the Hmong community

Forever Green Initiative

Forever
Green



Develop and deploy novel **winter-annual and perennial cash crops** to enhance existing cropping systems



Improve soil and water quality by protecting cropland with “continuous living cover”



Build food/feed/fuel markets to drive widespread adoption and create business development opportunities



Foster economic vitality for **farmers and rural communities**

AGREETT Support Is Crucial

- Provides **stable, long-term funding for 6 key FGI positions**
- Retains world-class crop breeding scientists to **drive consistent crop improvements for Minnesota farmers**
- Ensures management capacity to **oversee R&D, commercialization, strategy, personnel, fundraising, and fiscal management**

Prabin Bajgain	Breeder, Kernza® and other perennial grains	11 yrs w/ FGI
Julia Zhang	Breeder, pennycress	3 yrs
Steven Mulkey	Breeder, winter hardy and spring pea	5 yrs
Lois Braun	Breeder, hazelnuts	23 yrs
Colin Cureton	Director, Commercialization, Adoption and Scaling	6 yrs
Mitch Hunter	Co-Director, Forever Green Initiative	2.5 yrs

2024 AGREETT-Funded Accomplishments



- **Leadership transition** following the untimely passing of Dr. Don Wyse, Co-Director
 - Dr. Mitch Hunter (AGREETT-funded) was promoted to Co-Director
- **Leveraged AGREETT funds 17X** from federal, state, and philanthropic sources
 - AGREETT provides \$802,000 per year
 - AGREETT-funded FGI personnel secured over \$13,600,000 in new grants in 2024
- **Breeding and crop development**
 - 2nd Kernza® variety approved for limited release in 2025; more candidates in pipeline
 - Significant progress on perennial rye, pennycress, hazelnuts, and winter pea
- **Crop commercialization, adoption and scaling**
 - Enrollment in the EECO Program (farmer support and de-risking) reached 3,000 acres
 - Incubated new programs tailored to startups, small businesses, and large businesses

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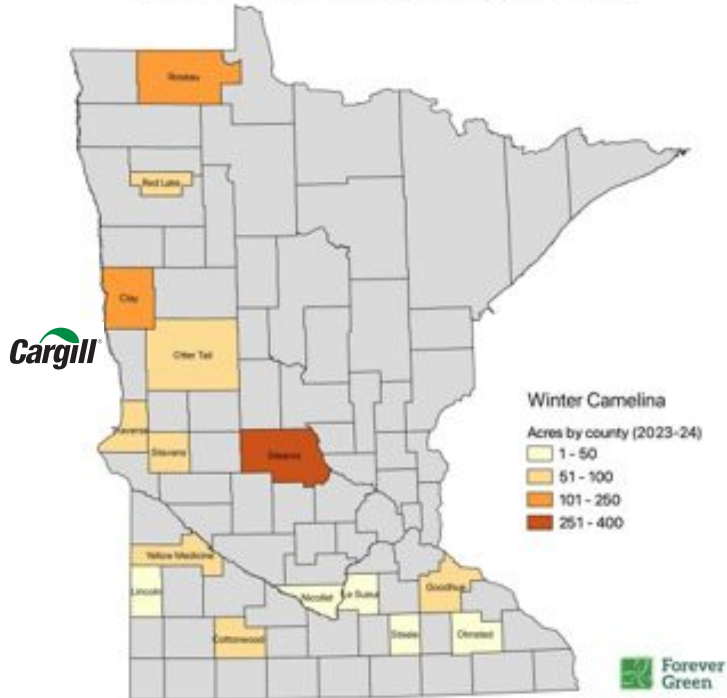
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Winter Camelina for SAF and More!

Forever
Green

Winter Camelina Acres By County ('23-24)



>2,000 acres in MN and ND

2024 Highlights

- 2,000+ acre pilot with Cargill completed
- Delta's 'sustainable fuel' demonstration flight
- \$10M award from Department of Energy

First 'sustainable fuel' flight takes off at MSP, represents possible future for air travel



2025 Work Plan

- Continue breeding and agronomy research
- Expand on-farm piloting
- Advance crop insurance options
- Chart the path to 1M acres



UNIVERSITY OF MINNESOTA EXTENSION

Driven to Discover™

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Farm Safety & Health Programming



Signature Programs



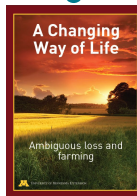
Youth Tractor & Farm Safety Training

Our flagship program, training youth aged 14+ in safe tractor operation and other farm safety topics; the program also offers DOL certification. 40-50 youth trained each year. Farm Safety Day Camps reach youth aged under 14 years old.



UMN/ND SU Extension Joint Programs

UMN partners with ND SU on joint efforts including a webinar series, the grant-funded Aging on the Farm project, and professional development for staff. This partnership is particularly beneficial for Red River Valley farmers.



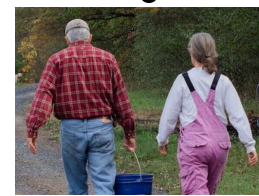
Ambiguous loss & farming curriculum

A workbook and curriculum developed to help farm families work through the stress of loss and grief in their unique context. A signature program of the Farm and Ranch Stress Assistance Network (USDA), with 100 facilitators trained.



The Moos Room Podcast

Hosted by members of the UMN Extension Beef and Dairy Teams, The Moos Room discusses relevant topics to help beef and dairy producers be more successful. The podcast is used to share safety and health messages year round, with at least one episode per month covering these topics.



Farm Couple programs

A collaboration with Minnesota Dairy Initiative and the MN Department of Ag, this program provides weekend retreats and nights out for farm couples to work on communication and other relationship skills. This program serves 30-50 farm couples per year.



Key audiences



Farmers

Rural youth

Ag professionals



Why is farm safety an important topic for Extension?

Presence

We are a trusted presence in communities that desire this information.



Audience

Many of our audiences are also the intended audience for safety education.



Youth

Extension is engaged with youth across the state-our future safety champions!



Demand

Safety and health on the farm has become a popular topic.



The law

Some of our safety trainings are mandated by state statute.



Farm Safety Partners

1.

UMN Extension

Educational resources,
classes and events

2.

MN Dept of Ag

Cost share programs,
Convene Farm Safety
Working Group

3.

UMASH

Educational resources,
classes and events

4.

AgrAbility

Resources for farm
accessibility, veterans

5.

USDA-NIFA

Applied research and
grant funding

6.

US Ag Centers

NIOSH-funded ag
safety and health
centers

