

2nd Annual ND CONTROLLED ENVIRONMENT AGRICULTURE CONFERENCE

Multipurpose Room, James H. Gymnasium, United Tribes Technical College
Bismarck, ND
August 13, 2025

TIME	TOPIC
8:00 - 8:15 am	Registration and Refreshments
8:15 - 8:30 am	Welcome and Opening Remarks by Dr. Lisa Azure, Vice President of Academic Affairs, United Tribes Technical College, and Dr. Frank Casey, Associate Director of North Dakota Agricultural Experiment Station, NDSU
8:30 - 9:00 am	Keynote Speech "From Energy Burden to Energy Balance: Advancing Carbon-Neutral Indoor Farming" by Dr. Md Shamim Ahamed, University of California, Davis
9:00 - 9:20 am	Regional CEA Research, moderated by Dr. Xinhua Jia, NDSU ABEN "Developing a Digital Twin of Indoor Farms for AI-Driven Optimization of Plant Growth" by Ellery Burton and Dr. Qiang Zhang, University of Manitoba, Canada
9:20 - 9:40 am	"Nutrient Solution Strategies for Sustainable Hydroponic Production" by Dr. Teng Yang, South Dakota State University
9:40 - 10:00 am	"Cost-effective Vertical Garden using IoT" by Dr. James Kim, Research Agricultural Scientist, USDA
10:00 - 10:15 am	Break
10:15 - 11:15 am	Stakeholder Sharing, moderated by Dr. Tom Kalb, NDSU Extension <ul style="list-style-type: none">• Phil Lowe, Co-owner of Lowe's Garden Center, Minot• Mary Podoll, Nursery Manager of Baldwin Greenhouse, Baldwin• Joe Roll, Owner of Innovative Gardens, Mandan• Kara Winkler, Co-owner of Glimpse of the Prairie, Menoken
11:15 - 12:15 pm	Indigenous Communities, moderated by Edwin Kitzes, UTTC <ul style="list-style-type: none">• "Net Zero Greenhouse", Jerral Murray, Land Grant – Farm Operations and Research Coordinator, United Tribes Technical College, North Dakota• "Beginner-Friendly Fungi: Small-Scale Mushroom Growing in Controlled Environments", Amanda Padron, mushroom small scale self-grower• "Growing Inside, Growing Within: Advancing Indigenous-Led Innovation in Controlled Environment Agriculture", Cetain Wanbli Williams, Innovation Manager for the NSF AgTech Engine in North Dakota• Q&A
12:15 - 12:45 pm	Lunch
12:45 - 1:10 pm	"Overview of the USDA-ARS Controlled Environment Agriculture Research Program" by Dr. Joseph E. Munyaneza, National Program Leader - Specialty Crops, USDA, Washington D.C.

Continued



1:10 - 1:30pm	Break
1:30 - 1:50pm	Agency Support, moderated by Dr. Xinhua Jia, NDSU ABEN "Supporting Plant Health in Controlled Environment Agriculture" by Dr. Anna Testen, Research Scientist, USDA ARS, Wooster, Ohio
1:50 - 2:30pm	Agency Support, moderated by Gretchen Dobervich, FARMS <ul style="list-style-type: none">• Jaden Deckert, Urban Conservationist, Burleigh County Soil Conservation District• Casey Olson, Urban Conservationist, Natural Resources Conservation Service (NRCS), Bismarck• Nancy Jensen, Agronomist, NRCS Plant Materials Center, Bismarck
2:30 - 3:30pm	Research Lightning Talks, moderated by Dr. Harlene Hatterman-Valenti, NDSU Plant Sciences <ul style="list-style-type: none">• "Current Status and Future Directions of Controlled Environment Agriculture in North Dakota" by Dr. Xinhua Jia, NDSU ABEN• "A metabolic Approach to Combatting Infectious Diseases on Tomatoes" by Dr. Birgit Pruess, NDSU Microbiology• "The Benefits of Grafting Tomatoes in a High Tunnel" by Dr. Harlene Hatterman-Valenti, NDSU Plant Sciences• "Dronwer: Developing a multiuse platform for greenhouse environments" by Dr. Paulo Flores, NDSU ABEN
POSTER <ul style="list-style-type: none">• "Smart Irrigation in High Tunnel Tomato and Pepper Systems" by Sai Sri Sravya Vishnumolakala (PhD Candidate) and Dr. Xinhua Jia NDSU ABEN• "Monitoring Lettuce Growth in CEA Using Multi-Sensor Hydroponic Systems" by Mahmud Pranto Alam, Farhin Neha Faiza, and Shafit Md. Istiak, Graduate Students, NDSU ABEN• "Development of a Modular Image Monitoring System for Greenhouse Environments" by Cristhian Perdigon, Jithin Jose Mathew, and Dr. Paulo Flores, NDSU ABEN• "A multi-state effort to improve management of tomato brown rugose fruit virus – growers help wanted" by Drs. Paulo Flores and Xinhua Jia, NDSU ABEN• "Evaluating the growth morphology of microgreens in the greenhouse using luminescent quantum-dot (QD) films" by Humeera Tazeen and Dr. Igathinathane Cannayen, NDSU ABEN• "Growing Beyond: An Update from Convirion" by Spencer Brason, Convirion, Manitoba, Canada	
3:30 - 3:45 pm	Break
3:45 - 4:45 pm	Industry Sharing, moderated by Quinn Renfandt, Red River Harvest Coop, Greenhouse Grower <ul style="list-style-type: none">• Nick Phillips (EVP Public Affairs and Real Estate Acquisition - Applied Digital)• Julian Walker (CEO & CoFounder - Druid Agriculture)• Spencer Brason (Convirion/Argus Controls)
4:45- 5:30 pm	Net Zero Greenhouse Tour
5:30 pm	Adjourn

