

The National Corn-to-Ethanol Research Center



The **C**enter of **E**xcellence for **E**thanol **R**esearch
CEER

NCERC History

- 1992: Trade association suggestion of a Ethanol Research Pilot Plant.
- 1996: Original business plan was developed.
- 1997: Federal funding obtained through the 1997 Farm Bill, Research Title.
- 1997: Matching funds contributed by the Illinois Department of Commerce and Economic Opportunity.
- 2001: Updated business plan and ground was broken.

NCERC History

- 2003: National Corn-to-Ethanol Research Center (NCERC) opened its doors.
- Serve a variety of clients as a place for:
 - Third party validation.
 - Commercial testing.
- Trials that are conducted at NCERC result in commercialization decisions by domestic and international companies.
- The need for NCERC has been demonstrated.

National Corn-to-Ethanol Research Center (NCERC)



MISSION of NCERC: “To facilitate the commercialization of new technologies for producing fuel ethanol more effectively.”



NCERC works with industry, academia, government, trade associations & farmers to determine the best methods of converting Corn and other feedstocks into ETHANOL.

National Corn-to-Ethanol Research Center

- Unique Characteristics of NCERC.
 - Expertise of Staff:
 - Analytical Chemists.
 - Biologists.
 - Chemical Engineers.
 - Commodity and Feedstock Specialists.
 - Control Systems Specialists.
 - Fermentation Specialists.
 - Grant Writers.
 - Internship Program Managers.
 - Workforce Trainers and Educators.
 - “The Biofuels Workforce of Tomorrow.”

National Corn-to-Ethanol Research Center

- Unique Characteristics of NCERC.
 - Only facility in the world to house under one roof:
 - Analytical Laboratory.
 - Fermentation Research Laboratory.
 - Pilot Scale: Dry-Grind and Wet Mill.
 - Workforce Development Training.



ANALYTICAL LABORATORY



- QC laboratory for pilot plant and ethanol industry.
- Utilizes state-of-the-art equipment (LC/MS/MS).
- Offers commercial services to many segments of agriculture industry (e.g. grain, feed, export, petfood).
- Analytical method development capabilities.
- Provide laboratory set-up services for agriculture industry.

FERMENTATION LABORATORY



- Research laboratory for pilot plant and ethanol industry.
- Flask scale fermentation available in 250mL, 1L, and 5L.
- Simulate feedstock-to-ethanol process to determine ethanol yield and co-product composition.
- Ability to test alternative feedstocks to determine ethanol yield.

PILOT PLANT: Dry Grind and Wet Mill



- Is flexible and capable of operating with a variety of processes and feedstocks.
- Performs near-term industrial research.



- Training center for current and future personnel in biofuels industry.
- Produces robust and accurate data.



Workforce Development Program

- NCERC is training the biofuels workforce of tomorrow -

- Staff of educators, consultants and instructors have more than 150 years of experience.
- Content responds to needs of:
 - Industry
 - Academia
 - Government
 - Trade associations
- Only facility in the world to have classroom training and plant training on-site.



Needs of Biofuels Industry & Ability of NCERC to Meet Needs

- Perspective of Ethanol Plant Managers:
 - Need qualified people to fill position requirements.
 - Each 100 million gallon plant requires 50 employees.
 - With 80 plants under construction, 3000-4000 qualified applicants are needed.



Needs of Biofuels Industry & Ability of NCERC to Meet Needs

- Perspective of DDGS Industry:
 - Testing of DDGS.
 - Utilize “Suggested” Official Test Methods (AFIA / NCGA / RFA)
 - Mycotoxins: “Truck Side Rapid Tests” (USDA and Industry Collaboration)

Needs of Biofuels Industry & Ability of NCERC to Meet Needs

- Consistency of DDGS.
 - Old plant technology vs. new plant technology.
 - Golden color vs. carmalized color.
 - Working with Livestock Industry.



National Corn-to-Ethanol Research Center

- NCERC is here to conduct research, validation and commercial testing of near term technologies!

