

Crop Production Clinics

N EXTENSION



Leadership Team:

Chuck Burr, Daran Rudnick, Matt Stockton,
Cody Creech, Jessica Groskopf, Robert Tigner, & Jason Warren

Management Team:

Tsz Him Lo, Turner Dorr, Hope Nakabuye, Abia Katimbo,
Jared Daily, Jacob Nickel, & Krystle Rhoades

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Competition Overview

Real-time decisions are logged on TAPS.unl.edu

Location:

- North Platte, NE

Simulated Farm Size:

- Sprinkler Corn: 3,000 acres
- Sprinkler Sorghum: 1,000 acres
- SDI Corn: 1,000 acres *equipment compliment represents 3,000 acres*

Management Decisions:

- Insurance Coverage
- Hybrid and Seeding Rate
- Nitrogen Management
- Irrigation Management
- Marketing

The screenshot shows a web form with the following fields and options:

- Pre-Plant:** A text input field with a range of (0 to 180 lb/ac).
- Side-Dress (V4-V6):** A text input field with a range of (0 to 180 lb/ac).
- Fertigation-V9:** A dropdown menu with the option "- None -" and a range of (0 to 30 lb/ac).
- Fertigation-V12:** A dropdown menu with the option "- None -" and a range of (0 to 30 lb/ac).
- Fertigation-VT/R1:** A dropdown menu with the option "- None -" and a range of (0 to 30 lb/ac).
- Fertigation-R2:** A dropdown menu with the option "- None -" and a range of (0 to 30 lb/ac).

At the bottom of the form is a red **SUBMIT** button. Below the form is a navigation bar with four icons: Menu, Search, Daran, and Email Us.

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Ex. Irrigation Scheduling

- Irrigation System Operated:
 - Monday & Thursday
- Irrigation Depths:
 - 0 to 1.0 inches per event
- Cost:
 - Fixed cost per acre-inch
- Decisions:
 - The participants have until 10 AM on the irrigation days to note whether they would like to irrigate using the competition website (www.TAPS.unl.edu).
 - If participants fail to indicate their intent to irrigate by 10 AM, no irrigation water will be applied on that irrigation day.
 - Irrigation scheduling can be made approximately 2 weeks in advance using the competition website.



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Timeline: Management Decisions

- | | |
|--|--|
| • Insurance selection: | March 20 th |
| • Pre-plant nitrogen amount (lbs/acre): | April 10 th |
| • Hybrid selection and seed delivery: | April 10 th |
| • Seeding rate: | April 10 th |
| • Side-dress nitrogen amount (lbs/acre): | According to crop progress |
| • Fertigation options available | |
| • Corn: V9, V12, VT/R1, & R2 | According to crop progress |
| • Sorghum: Stage 2, 3, 4, and 5 | |
| • Irrigation Management | Planting to Harvest |
| • Marketing of Grain | March 1 st to Nov. 30 th |

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Thank You Partners & Sponsors!

Financial Institutions



Seed Companies



Agricultural Industry



Commodity Boards & Regulatory Agencies



Non-Profit Entities



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Conceptual Underpinnings

There are three conceptual components for the TAPS program, which focus on creating self-motivation, self-reliance in learning, and adaptive management capability of associates (participants).

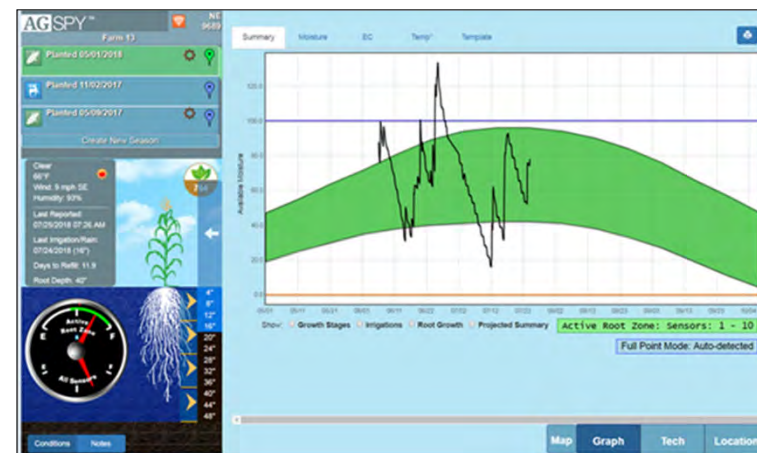
Competition



Peer-to-Peer



Experiential



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Peer to Peer Networking

- Through Events & Activities
- Interaction with other producers
- Connecting with industry leaders
- Sharing information



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Awards

1. Most Economically Profitable

Amount = \$2,000

2. Highest Input Use Efficiency –

Water × Nitrogen Intensification Performance Index (WNIPI)

Amount = \$1,000

$$WNIPI = \frac{\left(\frac{Y_{Farm}}{Y_{Control}} - 1\right)}{\left(1 + \frac{I_{Farm}}{ET_{Control}}\right) \times \left(1 + \frac{N_{Farm}}{ANU_{Control}}\right)}$$



3. Greatest Grain Yield

Amount = \$500 × (Percent of Most Profitable Farm)

Example: Farm 1 has highest yield, but only profited 78% of the most profitable farm.

$$\$500 \times 0.78 = \$390$$

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2020 Participants



Riley Wittfogel, Reid Beranek, Byesen Mach, Seward, NE
 Brian Frank, Hawtorn, CO
 Phillip Burkhalter, Johnson Lake, NE



Langemeier Brothers, Fremont, NE
 Bryant Knoezer, Elwood, NE
 Dirk Charlson, Hastings, NE
 UNL Doctor of Plant Health, Lincoln, NE



Mark Reiman, Galesburg, NE
 Tyler Washahn, Beatrice, NE
 Big Cob Bin Busters, Seward, NE
 David Beck, Elwood, NE



Tri-Basin Water Watchers, Holdrege, NE
 Rattlesnake Boys, Wood River, NE
 Lorn Dizmag, Moorfield, NE



Todd Downer, Bartley, NE
 Tracy Zink, Indianola, NE
 Tom Carpenter, Bartley, NE
 Chad Dane, Clay Center, NE



Marc Rasmussen, Cambridge, NE
 Ron Robison, Alma, NE
 Brian Ballou, Wilsonville, NE
 Klint Stewart, Columbus, NE



Scott Jewett, Holdrege, NE
 Paul Hoyt, Colverton, NE



Brent Shaw, Crawford, NE
 Jeanne Falk Jones, Lucas Haeg, Colby, KS
 Pete Miller, Lodgepole, NE
 Kip Frates, Madril, NE
 Kurt & Kent Brauer, Sidney, NE



Rob Rushman, Dabbs, NE
 Cole Simmons, Beatrice, NE
 Blake Mackey, Sidney, NE
 Roland Rushman, Sidney, NE
 Scott Easterly, Tony Walker, Sidney, NE



Central Community College, Hastings, NE



Luke Olson, McCook, NE
 Brandon Andrews, Cambridge, NE
 Ian DeWeal, St. Francis, KS
 NCTA, Curtis, NE



Murdoch Group, Oxford, NE
 Stuart & Wayne Anderson, Minden, NE
 Mark McConnell, Paxton, NE
 Bill Struckmeyer, Chris Meyer, Tyson Narjes, Sidney, NE



Dean Krull, Grand Island, NE
 Perkins Group, Grant, NE
 Jeff Landen, Tony Marquardt, Ben Lams, Alma, NE
 Dep't of Natural Resources, Lincoln, NE



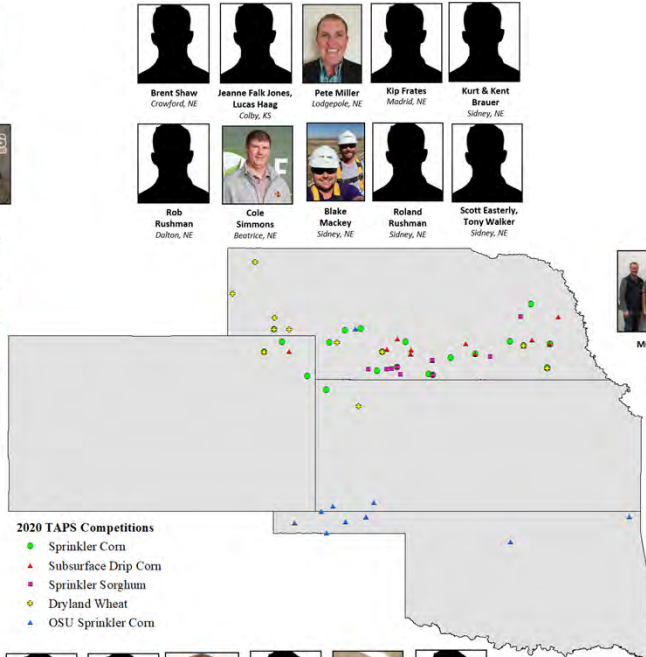
Nathan Mueller, Beatrice, NE
 Trent Mastny, Clarkson, NE
 Colin Wetovick, Chase Dugan, Casard, NE
 Jenny Rees, Stuart Spader, Ron Makovicka, Jerry Stahr, York, NE



Nebraska Farmer, Lincoln, NE
 Northeastern Jr. College, Sterling, CO
 Dusty & Roli McCormick, Crook, CO
 Rynne McDaniel, Curtis, NE



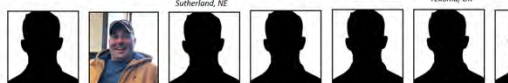
Fontanelle Hybrids, Hershey, NE
 Nate Midcap, Steven Meakins, Wray, CO



- 2020 TAPS Competitions
- Sprinkler Corn
 - ▲ Subsurface Drip Corn
 - Sprinkler Sorghum
 - ◆ Dryland Wheat
 - ▲ OSU Sprinkler Corn



Brett Reiss, Kismet, KS
 Harrison Key, Rolla, KS
 Roric Paulman, Sutherland, NE
 Pat Long, Optima, OK
 Darren Buck, Elkhart, KS
 Jarred McDaniel, Tecoma, OK



Russell Isaacs, Turpin, OK
 Jason Becker, Turpin, OK
 Matt Steinert, Covington, OK
 Wes Woolmen, Boise City, OK
 Clinton Oylar, Turpin, OK
 Fred Fischer, Optima, OK
 Brent Rendall, Miami, OK

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2019 New Contestants reasons for competing

“A different perspective.” ~Lorn Dizmang~

“Interested in seeing how everyone has different philosophies in growing crops. I thought it would be interesting in how I could compete with having a slightly different background compared to many in the competition.” ~Brian Frank~

“Seeing if reducing fertilizer and irrigation water reduces yield. How far can we reduce these inputs and yield the same.” ~Curtis Scheele~

“TAPS has afforded me an opportunity to be a “farmer” in every sense of the word except for actually writing out the checks.” ~Cole Simmons~

“Meet people, see how different ideas effect yields and profits as well as contributing some ideas and experience.” ~Donald Bloss~

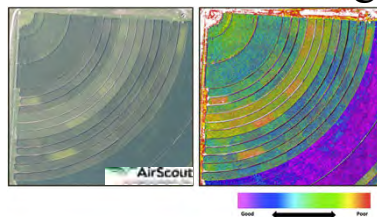
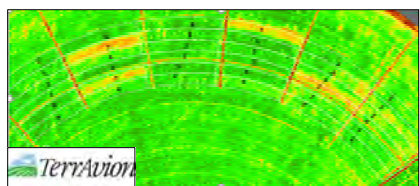
“I love it because it is an experiment where there are so many choices that nobody is going to end up doing it the same way.” ~Mark Reiman~

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Technology and Services Provided

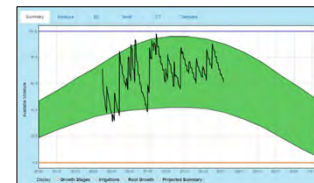
Imagery



Weather Conditions



Soil Water Monitoring



Plant Sensing



Soil & Plant Sampling



Scouting



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Corn: July 13th, 2018 – Tassel (VT)/Silking (R1)



Corn Farm 1



Corn Farm 2



Corn Farm 3



Corn Farm 4



Corn Farm 5



Corn Farm 6



Corn Farm 7



Corn Farm 8



Corn Farm 9



Corn Farm 10



Corn Farm 11



Corn Farm 12



Corn Farm 13



Corn Farm 14



Corn Farm 15



Corn Farm 16



Corn Farm 17



Corn Farm 18



Corn Farm 19



Corn Farm 20

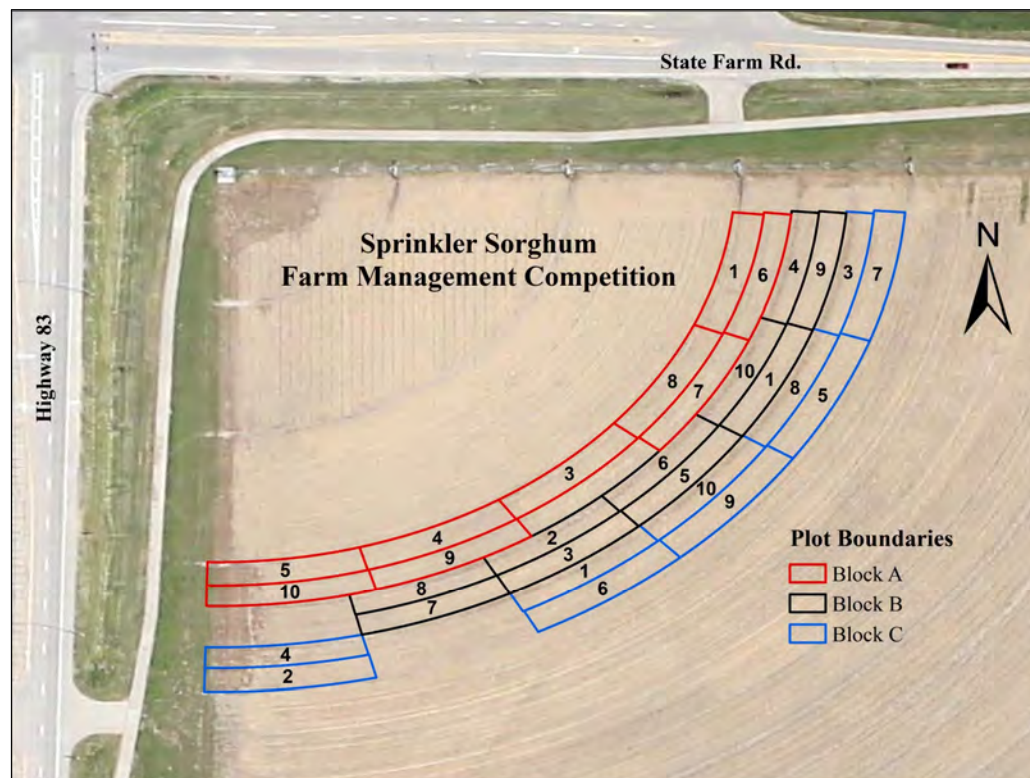
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Sprinkler Sorghum Field Description

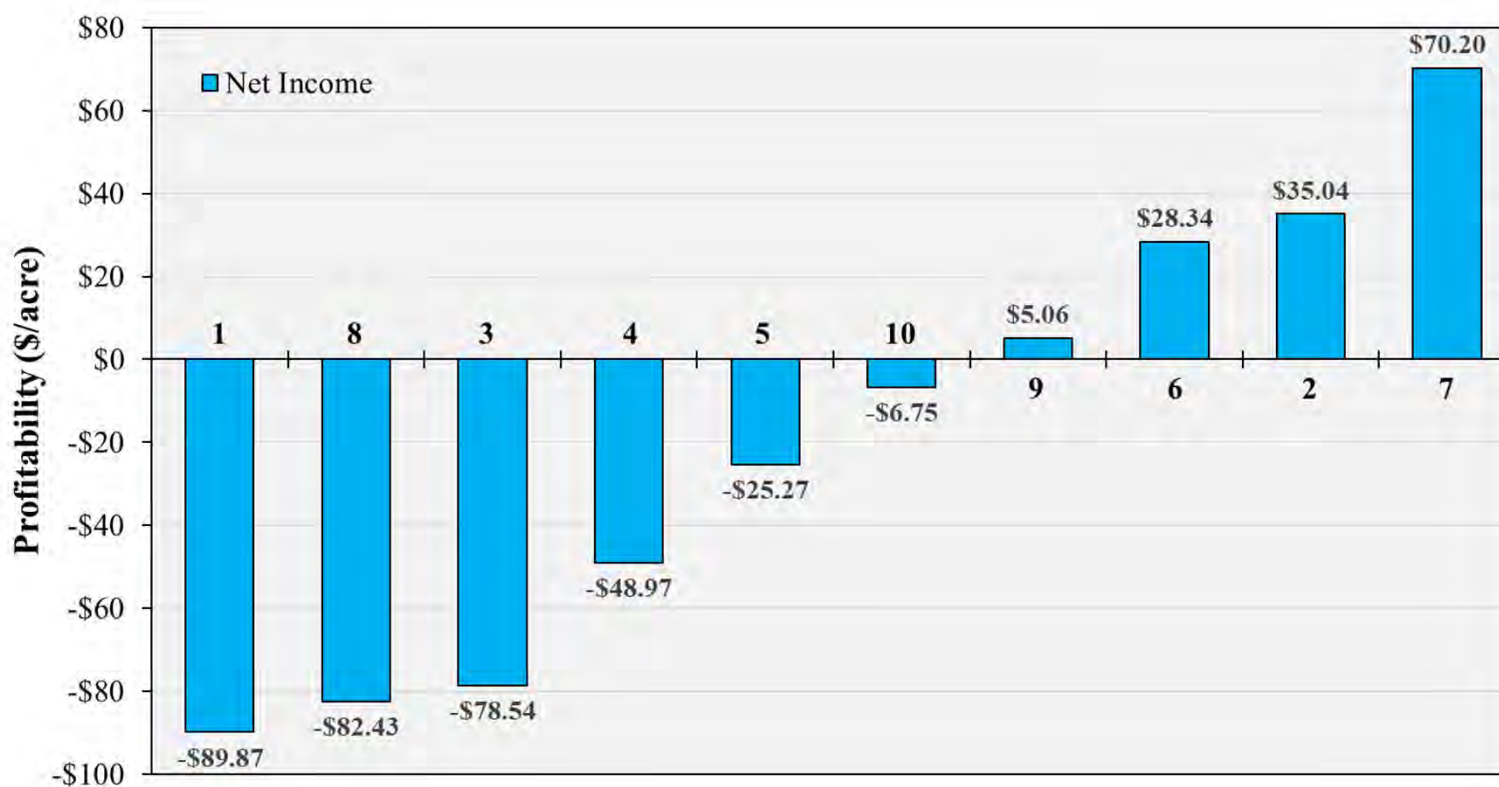
10 Farms

Tracy Zink
Ron Robinson
Klint Stewart
Brian Ballou
Mike Baker
UNL Educators
Slater Chandler
Dan Kuhlmann
Don Bloss
Todd Downer



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Sorghum: Profitability



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2019 Competitions

Contact Krystle Rhoades at
Krystle.Rhoades@unl.edu



Subsurface Drip Irrigation



Are you an expert manager of SDI,
just considering SDI for your farm,
or interested to know what it's
like to manage SDI?

The image shows a green tractor pulling a subsurface drip irrigation system in a field. The system consists of a long metal frame with multiple rows of blue and white drip emitters. A person is standing on the right side of the frame, possibly inspecting the equipment. The background shows a clear blue sky and a line of trees.

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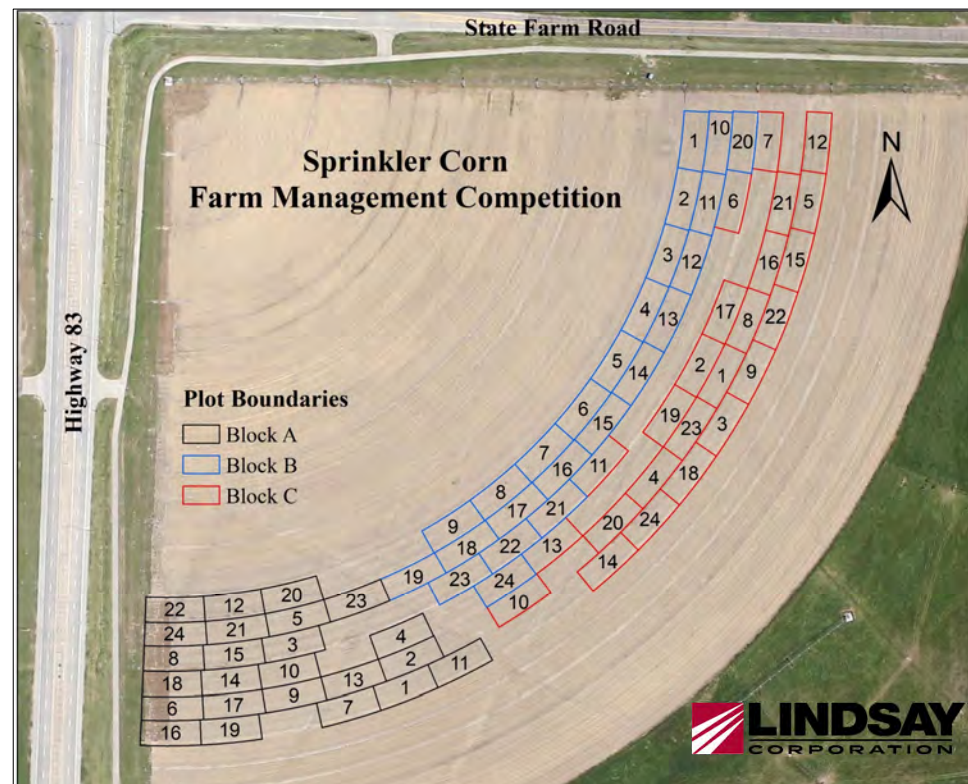
Sprinkler Corn Field Description

24 Farms

Tim Franklin
Gerald Franklin
Janet Bear
Cory Gilbert
Barrett Duell
Jeanne Falk Jones
Bruce Young
Jim Kemling
Ron Hagan
Shawn Turner
Troy Kemling
Rick Salsman
Curt Richmond
Bill Richmond
Brent Gloy
Ted Tietjen
Matt Long
Bob Wiseman
Travis Edeal
Jay Elfeldt
Chris Anderson
NJC - Andy Barlett
Joel Schneekloth

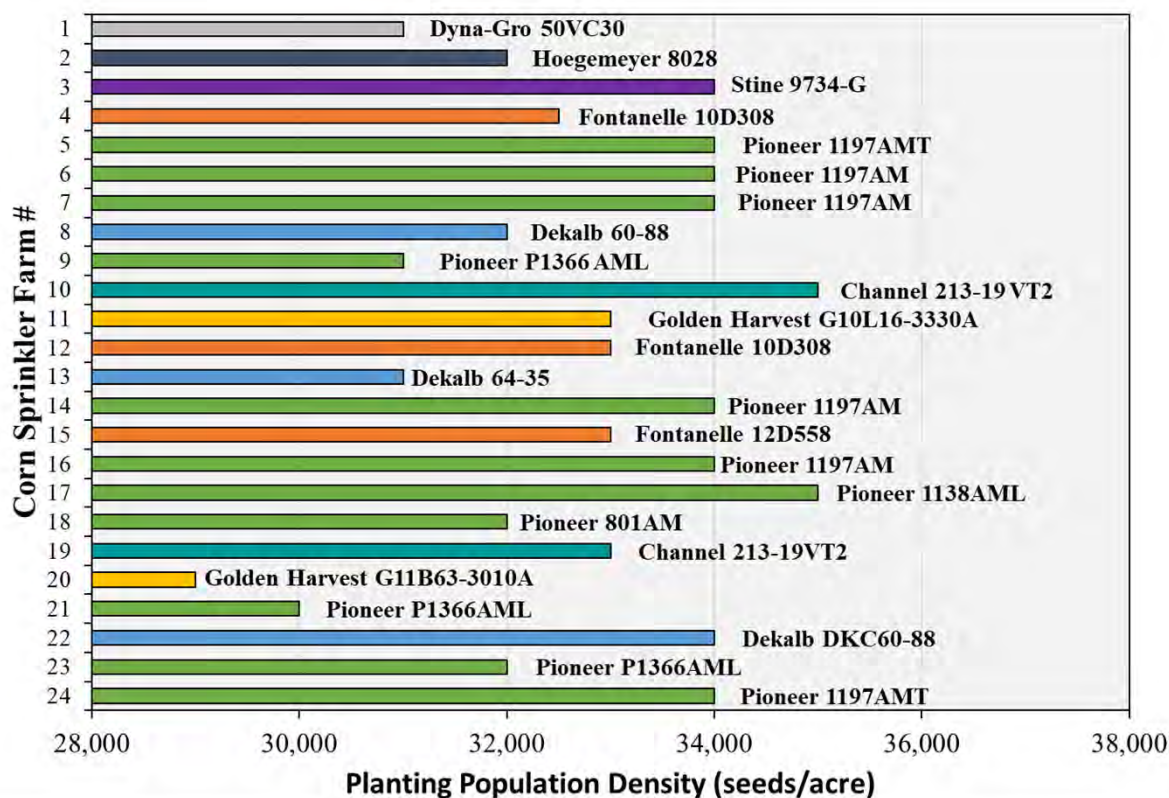
UNL Educators
Craig Langemeier
Ryan Langemeier
Andy Langemeier
Jordan Bergquist
Joe Haas
Eric Gustafson
Marlin Murdoch
Marcus Thomsen
Jordan Brown
Ian De Waal
Chase Dugan
Colin Wetovic
Bill Struckmeyer
Ben Bamhart
Chris Meyer
Colby Brauer
Tyson Narjes
Tim Schmeeckle
NCTA- Brad Ramsdale
Jason Pohlmann
Kyle Spilker
Brandon Beethe

Ryan McDaniel
Jeremy Siems
Kyle Wollenburg
Scott Theis
Paul Hay
Tim Graff
Rodney Wiese
Ron Mackovica
Jerry Stahr
Jenny Rees
Stuart Spadar
Randy Prior
Tyler Weishahn
Wes Cammack
Brian Stahr
Jason Perdue
Brad Mackovica
Mike Thompson
Philip Paitz
Beth Eckles
Margeaux Carter
Kris Reed
Kent Zimmerman
Dane Pauley
Jeremy Gehle
Kim Menke



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Sprinkler Corn: Hybrid Selection & Seeding Rate



15 Hybrids

- Company shown by color

Population:

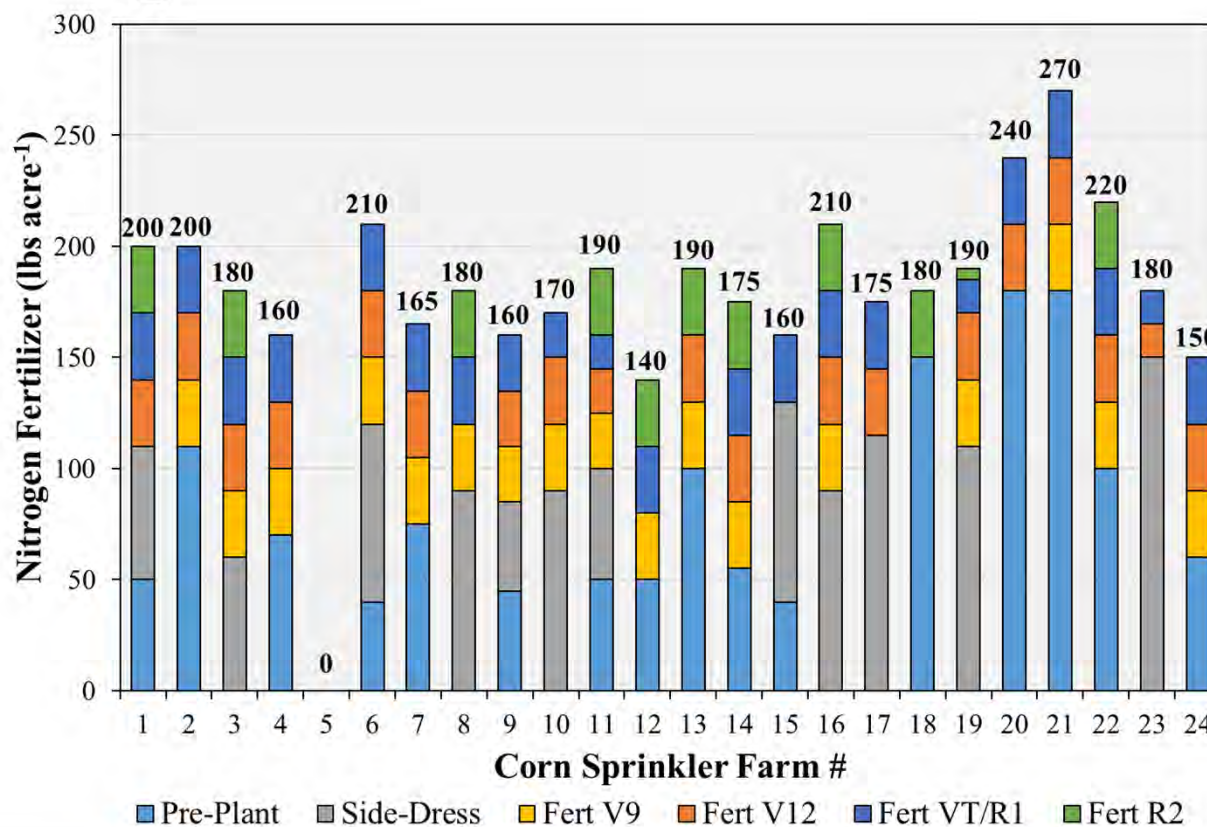
- Min: 29,000
- Avg: 32,771
- Max: 35,000

Cost per Acre:

- Min: \$77
- Avg: \$100
- Max: \$118

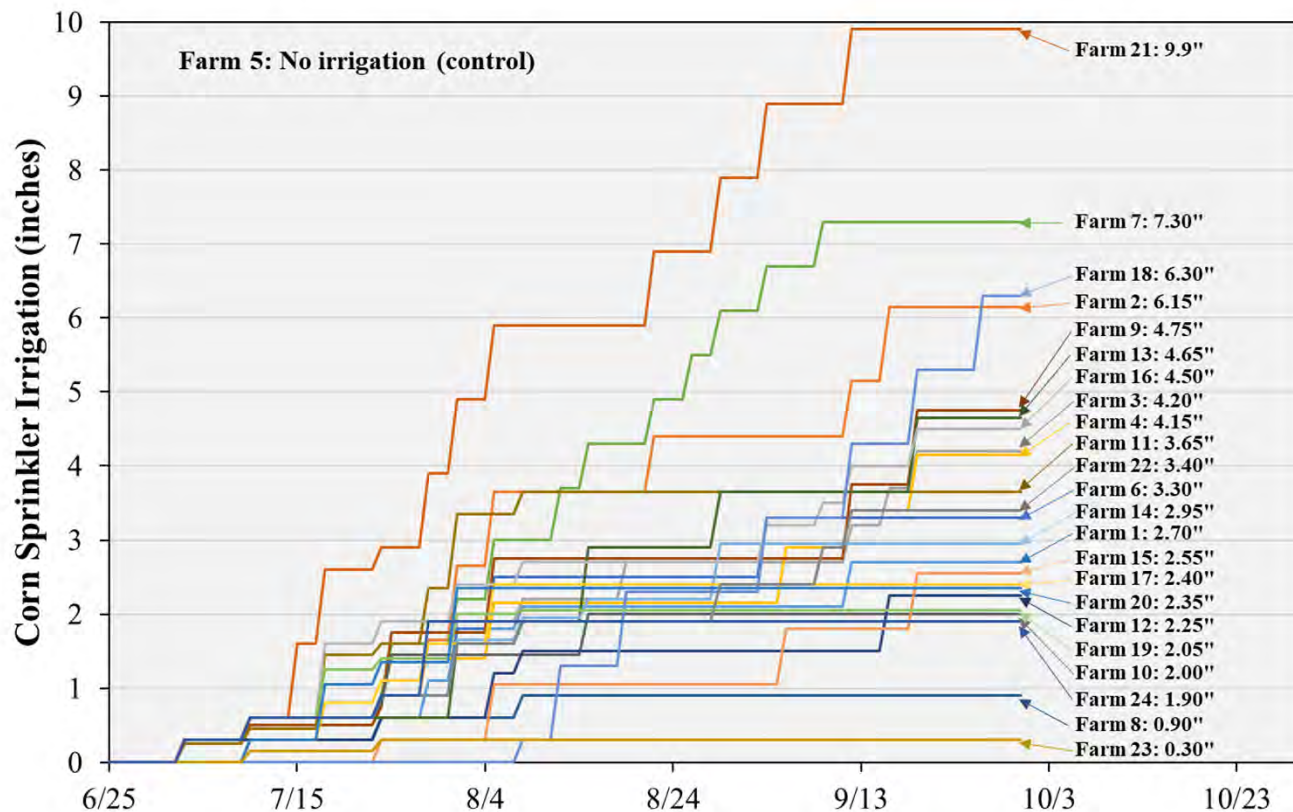
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Sprinkler Corn: Nitrogen Fertilizer



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Sprinkler Corn: Irrigation

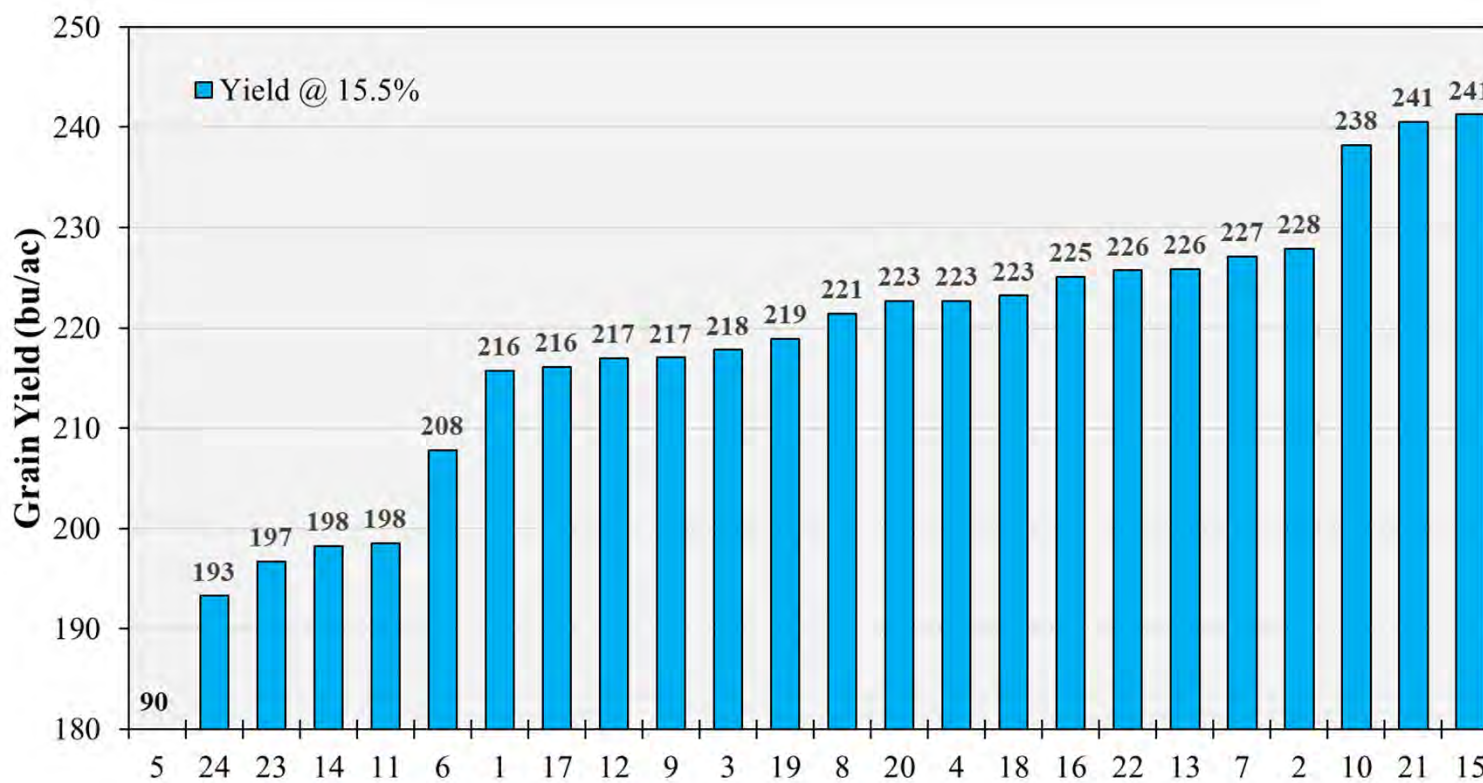


Irrigation:

- Min: 0.30"
- Median: 3.30"
- Avg: 3.68"
- Max: 9.90"

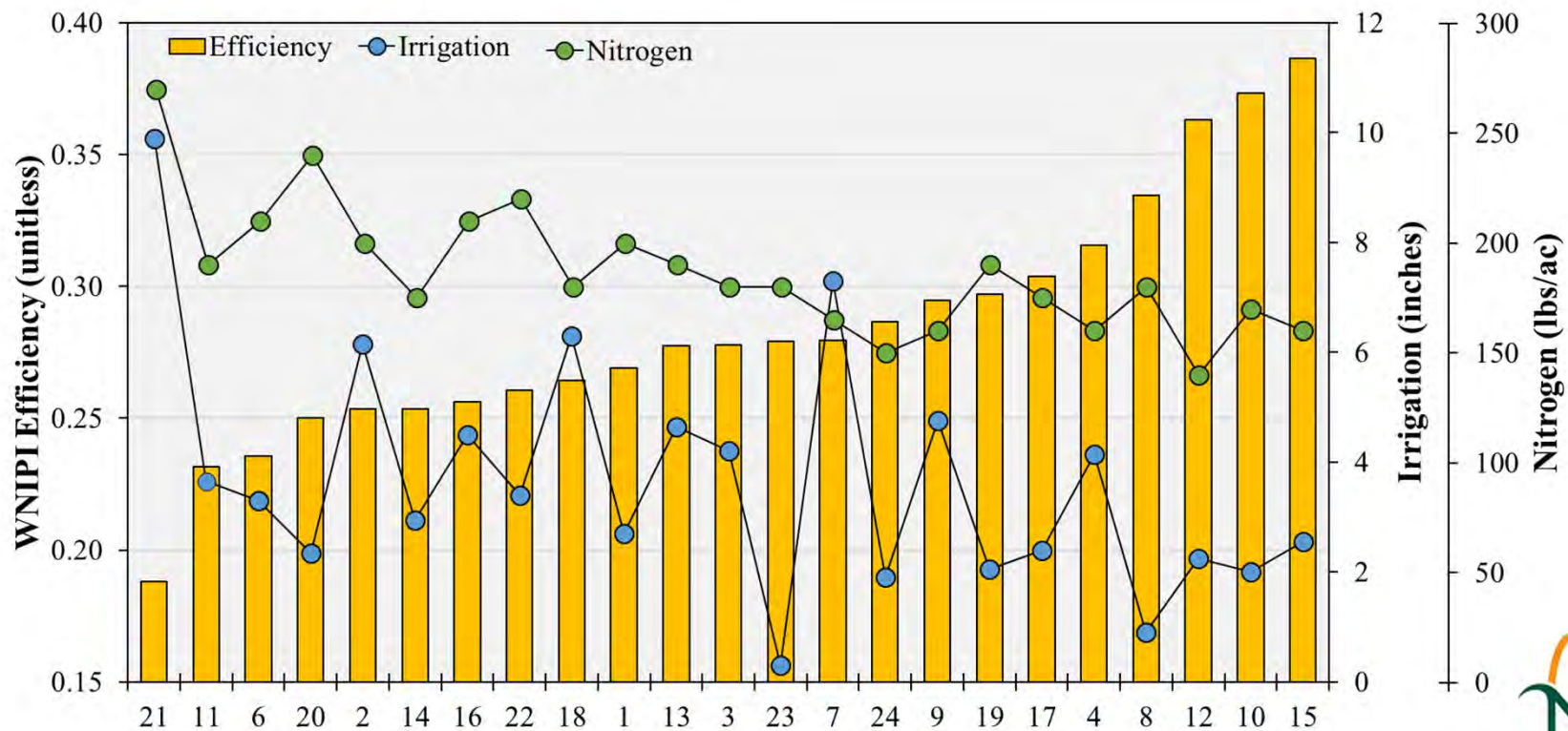
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Sprinkler Corn: Yield



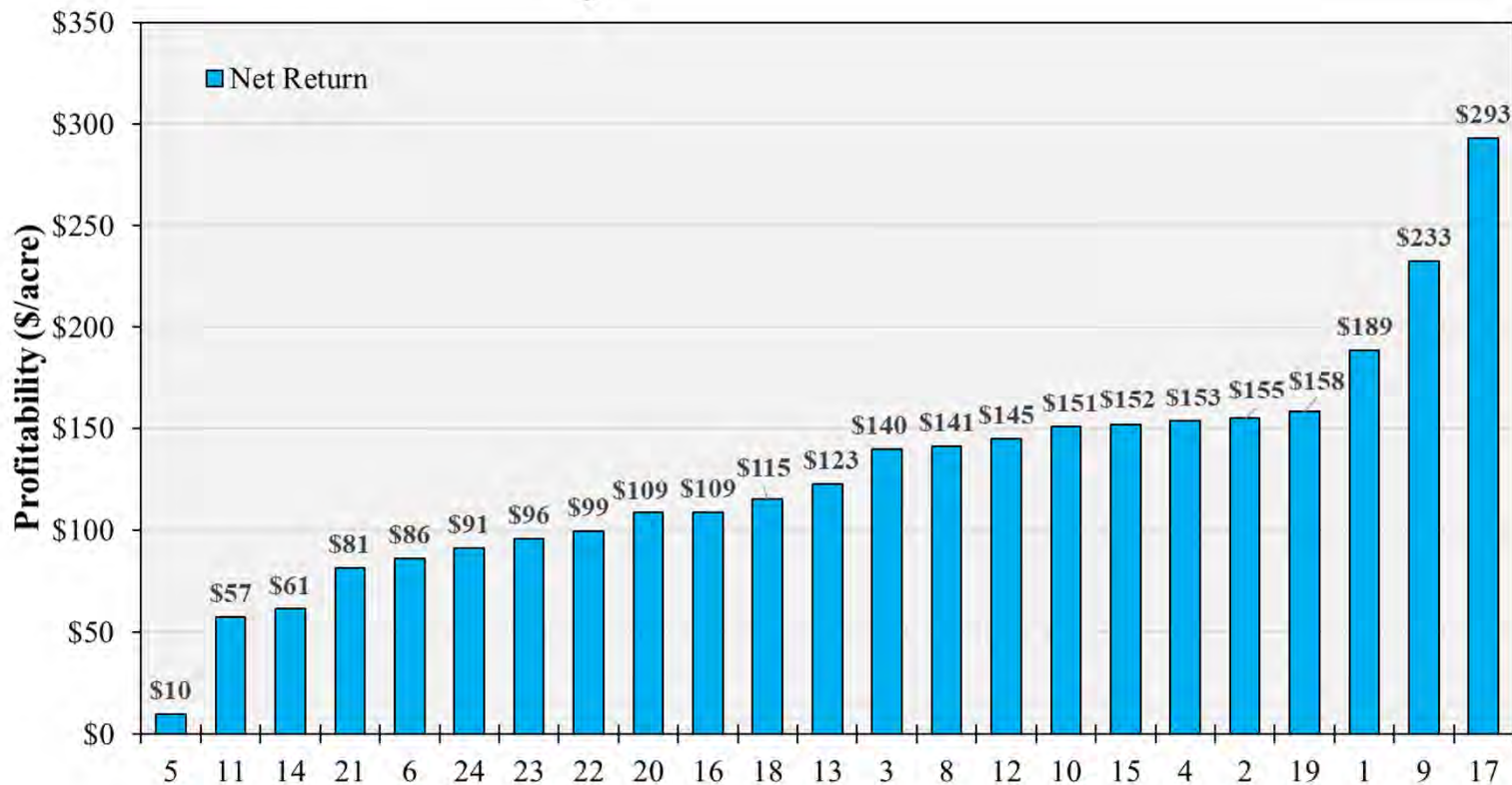
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Sprinkler Corn: Efficiency



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Sprinkler Corn: Profitability



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**Sprinkler Corn Competition
Award Winners**



Highest Grain Yield: Fontanelle Hybrids[®] Team

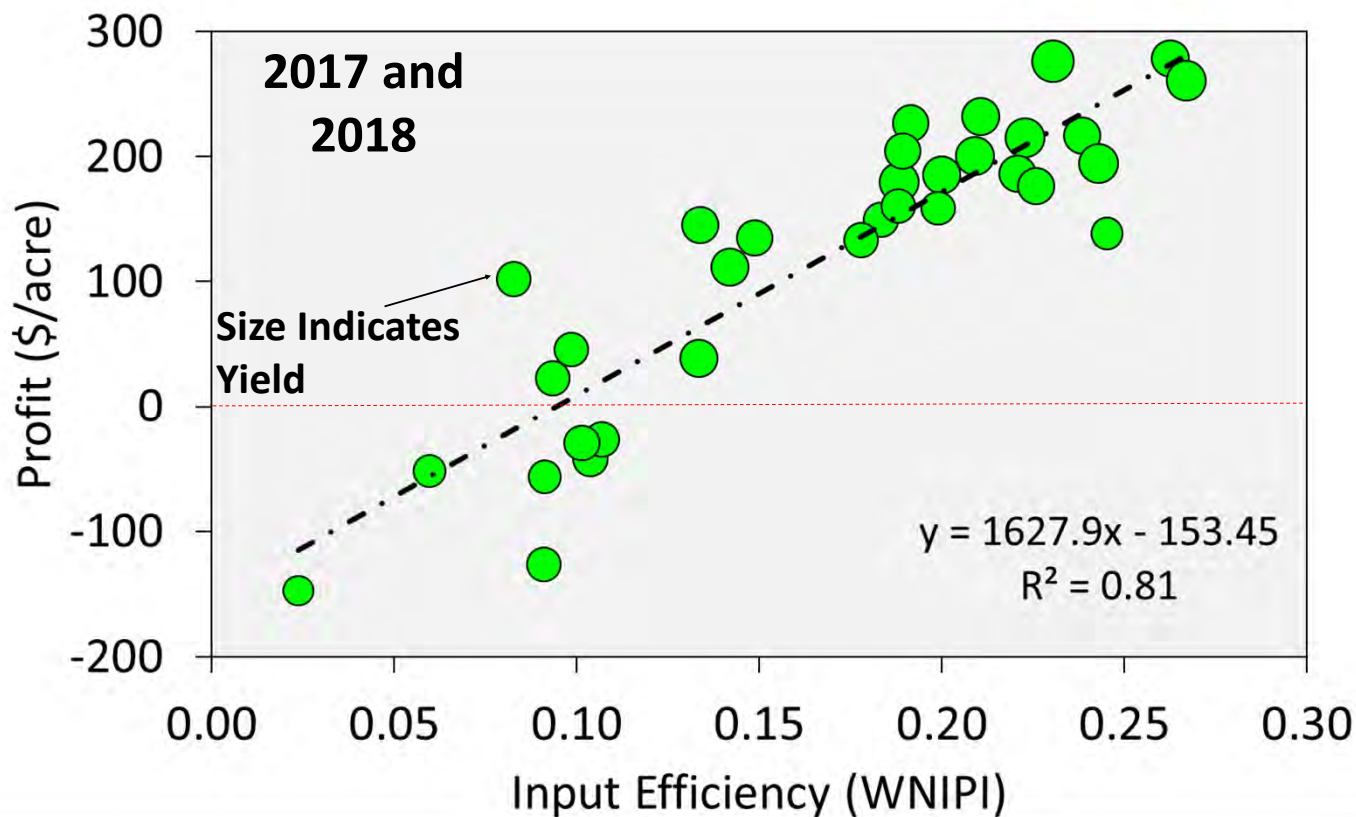
Highest Input Efficiency: Fontanelle Hybrids[®] Team

Most Profitable: Perkins Group



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Input Efficiency versus Profit



2019 Participant Survey Results

- 42 of the 46 competition teams were surveyed.
- Responding participants reported that the top three reasons they joined TAPS was:
 - 1) to learn from others (89%)
 - 2) test new technology and strategies (77%)
 - 3) benchmark their abilities relative to peers (28%)
- 83% of participants said they have been asked or have talked about TAPS with an average of 12.5 individuals (friends, neighbors, etc.).

2019 Participant Survey Results

- Overall summary of six decisions:
 - 100% of the respondents have changed the way they think about one or more tools, methods, or technologies
 - 60% of the respondents are beginning to adopt one or more new tools/methods/technologies on the farm or for their recommendations to growers.

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2019 Participant Survey Results

- My first year in TAPS I used 240lbs of nitrogen. I thought I would be on the low end of nitrogen to find out I applied the second most with a yield in the middle. On my own farm, I used 220lbs with 215bu/acre yield in 2019. The winner of TAPS in 2019 won with 180lbs. I decided to try it on my farm. In 2020 I applied 180lbs with 228bu/acre. The TAPS program is an excellent learning opportunity. We get to see what works for others and get a chance to try out some new ag tech through the program which is FREE! I plan to participate for many years as I will learn something each year. – Ryne McDaniel

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2019 Participant Survey Results

I originally considered TAPS a way to test production theories and improve yields ...which it is. However! When I embraced the mission of TAPS, "evolving profitability and input-use efficiency," I had a complete "Ah-Ha!" experience with how to keep all the dots connected in today's volatile farming environment. Thanks to TAPS, our cost of production and marketing plans are intimately connected and work hand-in-hand with constant reviews and immediate updates with any cost increase or grain contract. I am now watching the markets one and two years out, utilize different marketing tools that I've gained confidence with through TAPS, utilize on-farm storage in a more efficient and profitable manner, and I sleep a tad bit better! - Tracy Zink

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Staying Connected

- Digital Newsletter (<https://taps.unl.edu/newsletter>)
 - Method of sharing news, upcoming events, etc. with contestants & supporters
- Tips from TAPS
 - Written articles analyzing 2018 data of each decision
- Field Tours/Workshops/Banquet
- Summer Intern visit from Tufts University student
 - Focus on producer interviews & video production
 - In coordination with *Ogallala Water Coordinated Agriculture Project*
- Case Studies
 - Focus on each management decision
- Participant Interviews
- Articles (e.g., Nebraska Farmer, CropWatch)
- Social Media (e.g., Twitter, Facebook)

Tips from **TAPS**



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