













95% found their results reliable and trustworthy

75% put their results into practice

\$31 – avg per acre profit increase by putting results into practice

Thompson, L., K. Glewen, R. Elmore, J. Rees, S. Pokal, D. Hitt. (2019). Farmers as Researchers: Indepth Interviews to Discern Participant Motivation and Impact. Agron. J. 111(4):1-11.



























Biological N Fixation

- Soybeans are associated with symbiotic N-fixing bacteria
- Non-symbiotic, N-fixing organisms "fix" N from the atmosphere
- Temperature and moisture dependent (moist soil and warm temperatures produce greater activity)
- Goal is fixing N from atmosphere and making it available to the plant
- Promote opportunity to reduce synthetic N fertilizer















PART 1 ACTIVITY: (15 min)

- 1. Browse the table of contents and find a reports that is of interest to you. **Read** the report and **answer** the questions in PART 1 (5 min)
- 2. Pair & share. Find a partner and tell each other about the report you picked. (5 min)
- 3. Group share. (5 min)



Real Systems 1. Farmers implement the trials and collect the data using their own equipment 2. Protocols fit each farmer (growing conditions/soils, etc.) and address each farmer's specific interest and questions



IDENTIFYING THE QUESTION

Does starter fertilizer increase corn yield?

- 1. Starter fertilizer at planting 5 gal/ac 10-34-0
- 2. Check (no starter fertilizer)

Which starter fertilizer results in greater corn yield?

- 1. 5 gal/ac 10-34-0 starter fertilizer
- 2. 5 gal/ac Conklin Feast
- 3. 5 gal/ac Triple Nickel







33



Splitting the field in half doesn't help us best answer our question. We need a different design.

















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As-applied Data

Utilize the technologies farmers have:

- GPS logging of "as-applied" data
 - Record location, time, and products
 - Planting, chemical
 applications, fertilizers





Analysis Analyze Yield Response to Treatments

- GIS systems (Ag Leader SMS and others) gives us the ability to analyze the data
- Benefit of working with OFR!
 - Easily conduct study & we do analysis



Utilizing Prescriptions SeedingRat 80 110 120 **Design trials** Trials are put in Yield data is that fit each using a prescription collected on-thefarmers' unique and on-the-go using go with yield situation variable rate tech monitors





- 1. What is the optimum nitrogen rate in lower and higher elevation portions of the field?
- 2. Would a variable rate nitrogen strategy by advantageous in this field?















PART 2 ACTIVITY: (15 min)

- Pair up or on your own work through **Part 2** of the handout. (10 min)
- 2. Group share. (5 min)



















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