Team Cropsmith
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There is a need for Better N management:

~95 million corn acres in US.
- Ave lbs per acre ~**150 lbs per acre** @ $.55
- 14.2 billion pounds of N
- $7.8 billion Cost of Nitrogen Each Year
- One estimate of Environmental Damage From Nitrogen $210 billion per year (**$81-441 B/YR**) 

(Sabota et al 2014)
Team Cropsmith’s Secret Weapons

- TerraMax’s Biological Nitrogen Fixers
- Proximus by Acta-gro reactive carbon substances that enhance microbial activity
- Illinois Soil Nitrogen Test – measure potential nitrogen mineralization of soils
- 4R management
Salt Creek Farmer City Illinois
Corn and Nitrogen Rich Soils

Where Corn is Grown

Organic Matter
Hypoxic Zone
Cost of Nitrogen lost to Environment

- Environmental Cost
  - DJ Sobota et al 2014
  - Freshwater $4.21 per lb N of loss
  - Costal $5.63 per lb N lost to environment
  - 15 lbs of N lost per acre per year.

- $147 per corn acre per year
- $13.9 billion dollars
Partial Nitrogen Cycle

Figure 11.07. Nitrogen reactions in the soil.
ISNT Values

Map Type: 2001 ISNT Map

Legend

Becks_SI74_ISNT

Value_Max

- 202
- 218
- 227
- 232
- 235
- 240
- 249
- 265
- 294
ISNT Nitrogen Recommendations

Client: Beck's Hybrids
Field: South of I-74
Map Type: 2007 Nitrogen Recommendation Map

Legend
Becks_SI74_Nrec
Nrec
115
145
180

180 lbs N
115 lbs N
Using a **typical N response curve** and prices of $3.50 Corn and $.55 N This is how over and under applications cost you money.
Team Cropsmith’s Plan

- Sample to determine potential N from soil
- Apply TerraMax’s BNF at Planting
- Create variable rate application map using ISNT
- Measure soil nitrate in-season before N app.
- Side-dress N fertilizer with Acta-gro’s Proximus
- Apply nitrogen before maximum need.
Variable Rate Recommendation Base on Illinois Soil Nitrogen Test

Ave N Rate 166 lbs/Acre
From 150-210 lbs N/Acre
What will Change if we win?

- Investment in expanding our solution to more farmers.
- Collaboration with other competitors
- Continue to research new and innovative technology to make nutrient use more efficient
Thanks to Tulane and other finalists
Questions?