

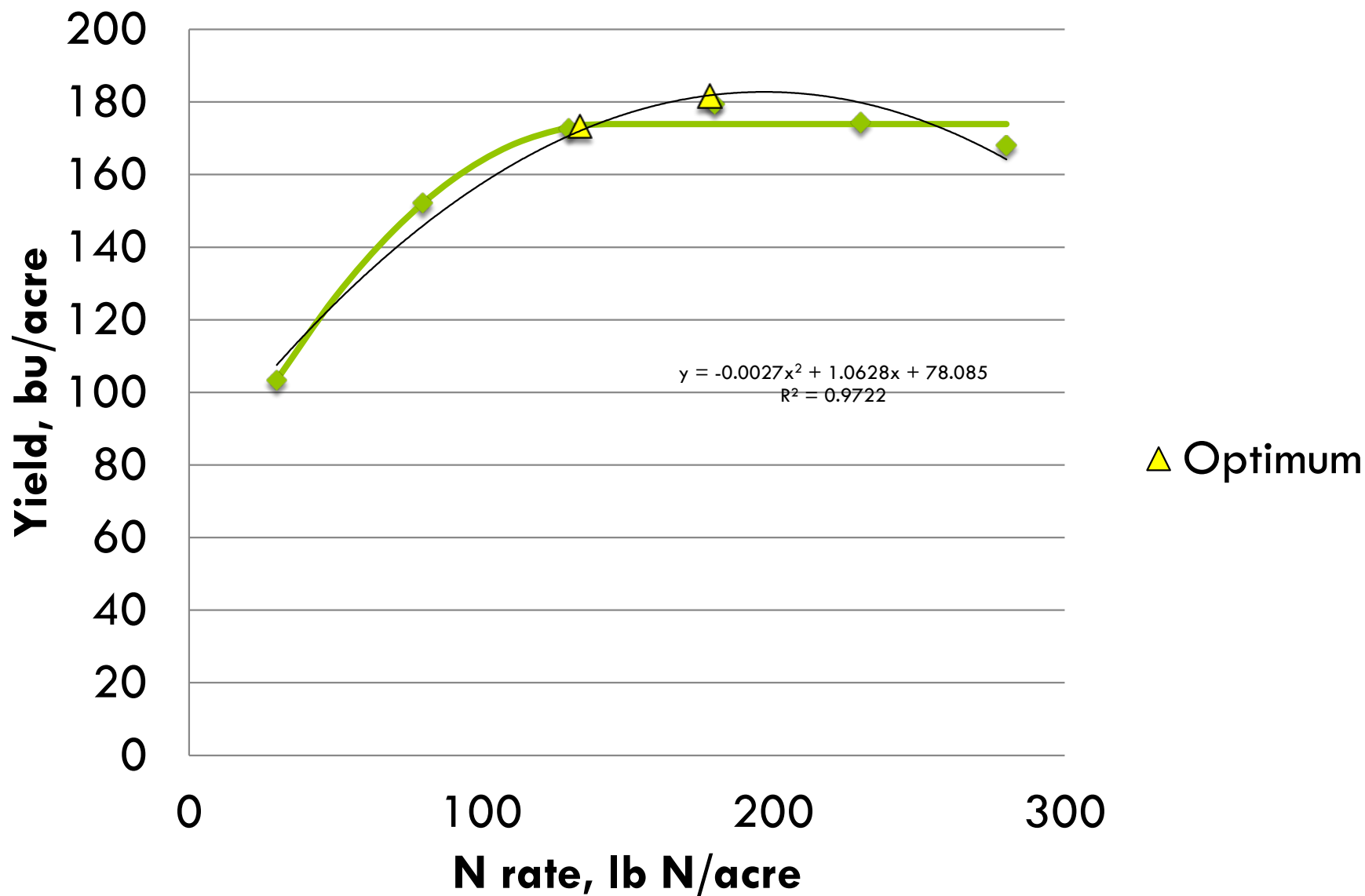


**Illinois Fertilizer &
Chemical Association**
Supply • Service • Stewardship

Est. 1965



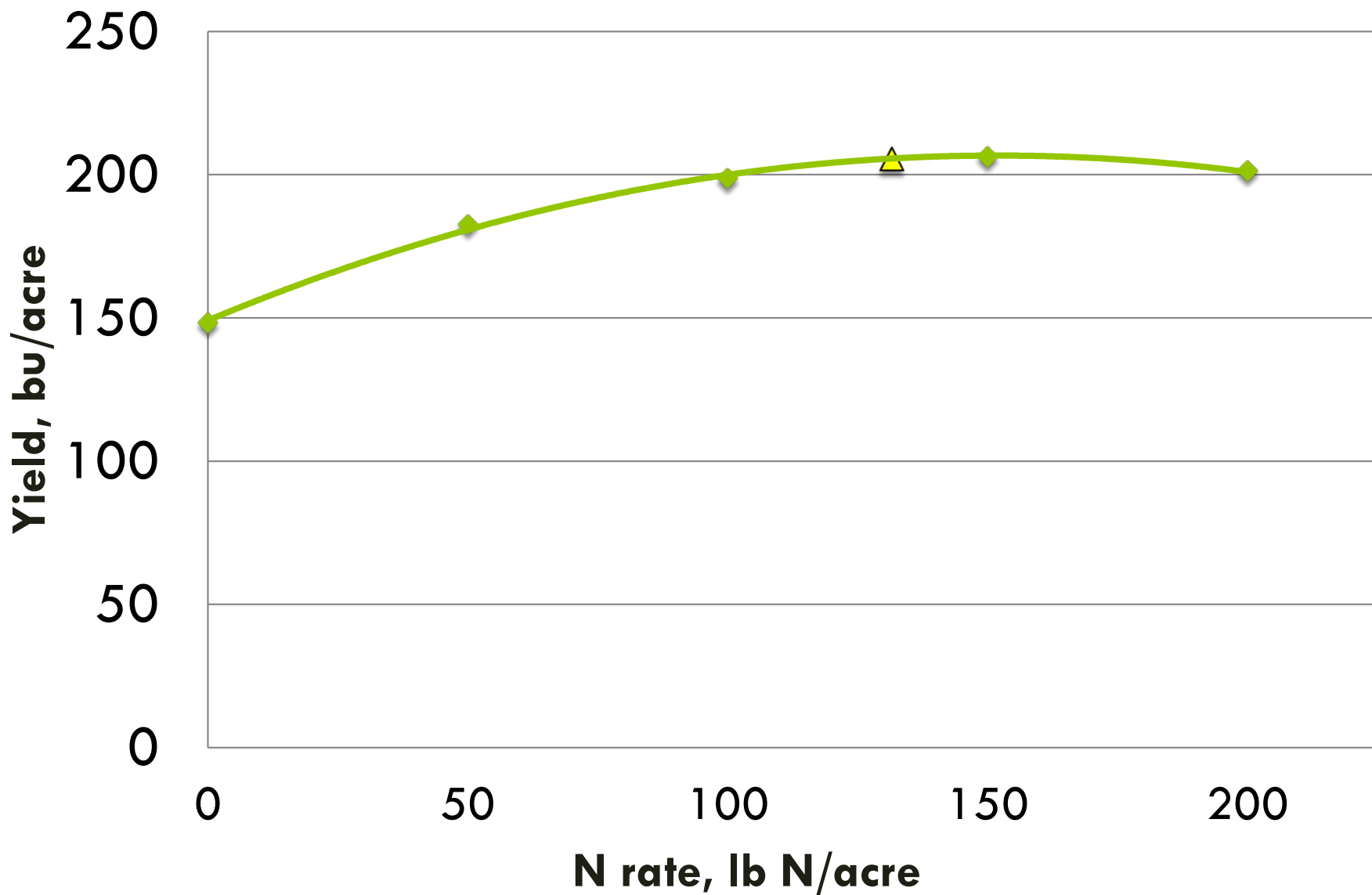
Crawford County Corn-Corn 2016



N RATE CALCULATOR BASED ON LAKE SPRINGFIELD WATERSHED DATA 2014-16

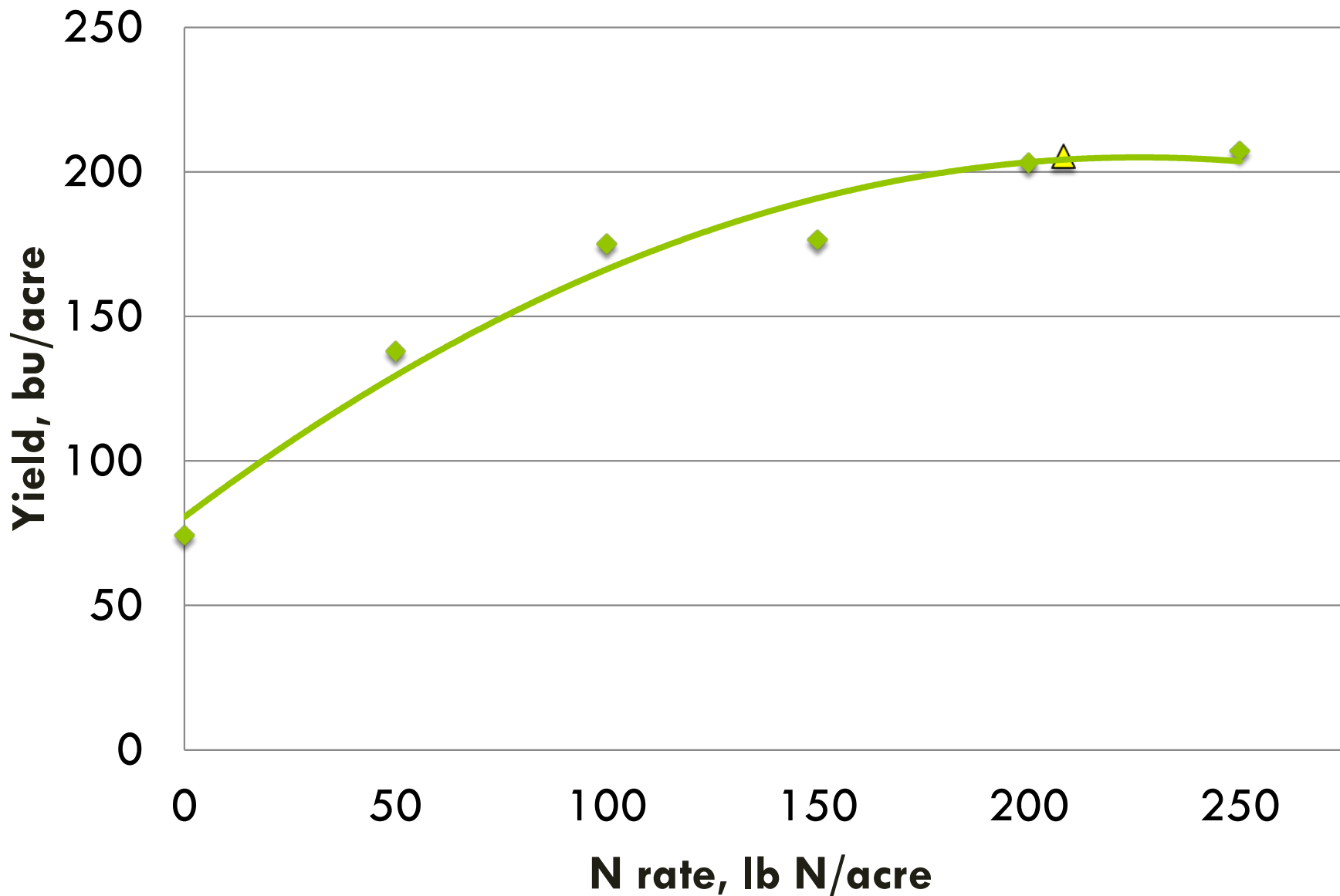
Sangamon County Soy-Corn 2016

▲ Optimum



Sangamon County Corn-Corn 2016

▲ Optimum



Lake Springfield Watershed calculator results

Used N price of \$0.375/lb N and corn price of \$3.75/bu; ratio = 0.1

Corn Nitrogen Rate Calculator

Finding the Maximum Return To N and Most Profitable N Rate
A Regional (Corn Belt) Approach to Nitrogen Rate Guidelines

	SC	CC	
Maximum Return to N (MRTN) Rate:	165	207	lb N/acre
Profitable N Rate Range:	152 - 178	197 - 224	lb N/acre
Net Return to N at MRTN Rate:	\$270.78	\$308.03	\$/acre
Nitrogen Cost at MRTN Rate:	\$61.88	\$77.63	\$/acre
Percent of Maximum Yield at MRTN Rate:	98%	98%	



Central Illinois Calculator Results

214 S-C sites; 155 C-C sites

Using N price of \$0.375/lb N and corn price of \$3.75/bu; ratio = 0.1

Corn Nitrogen Rate Calculator

Finding the Maximum Return To N and Most Profitable N Rate
A Regional (Corn Belt) Approach to Nitrogen Rate Guidelines

	SC	CC	
Maximum Return to N (MRTN) Rate:	175	200	lb N/acre
Profitable N Rate Range:	160 - 189	189 - 215	lb N/acre
Net Return to N at MRTN Rate:	\$275.50	\$346.83	\$/acre
Nitrogen Cost at MRTN Rate:	\$65.63	\$75.00	\$/acre
Percent of Maximum Yield at MRTN Rate:	98%	99%	



Comparing Lake Springfield and central IL N rate calculator results

- Corn following soybean:
 - The MRTN N rate for the LSW calculator (22 sites) is 165 lb N/acre
 - For the Central Illinois calculator (214 sites) the MRTN is 175 lb N/acre, 10 lb more than the LSW rate
- Corn following corn:
 - The MRTN N rate for the LSW calculator (11 sites) is 207 lb N/acre
 - For the Central Illinois calculator (155 sites) the MRTN is 200 lb N/acre, 7 lb less than the LSW rate
- MRTN rates are surprisingly similar, given the limited number of sites in the LSW calculator and the wet year of 2015, when optimum N rates for C-C were high



The MRTN N Rate Calculator

10

- Uses all recent data (combined) to predict “best” fertilizer N rates for corn
- Converts yield responses to economic return responses, based on current prices
- Includes “most profitable ranges” usually ± 15 lb or so of N
- Provides a “guideline” more than a recommendation”
- Is seldom exact for a given field, but we know of no other N rate “guess” likely to be better



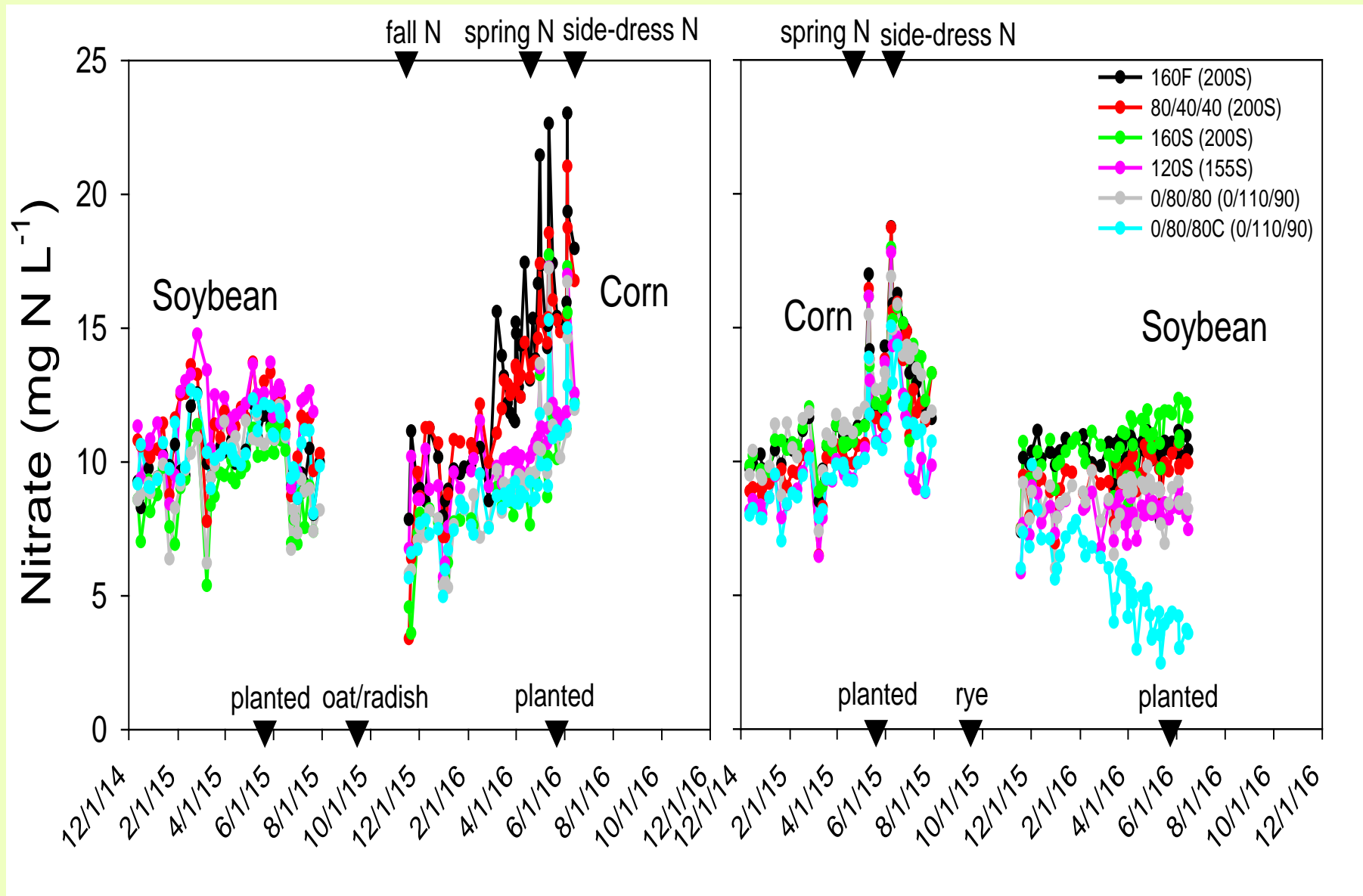
USING MRTN AND N RATE STUDIES HELPS U
COME UP WITH:

- RELIABLE
- RESPONSIBLE
- DEFENSIBLE

NITROGEN RECOMMENDATIONS

Tile Nitrate Concentrations Averaged across Treatments

(from 12/12/14 to 6/15/16)



130 200 100 250 50 0 150

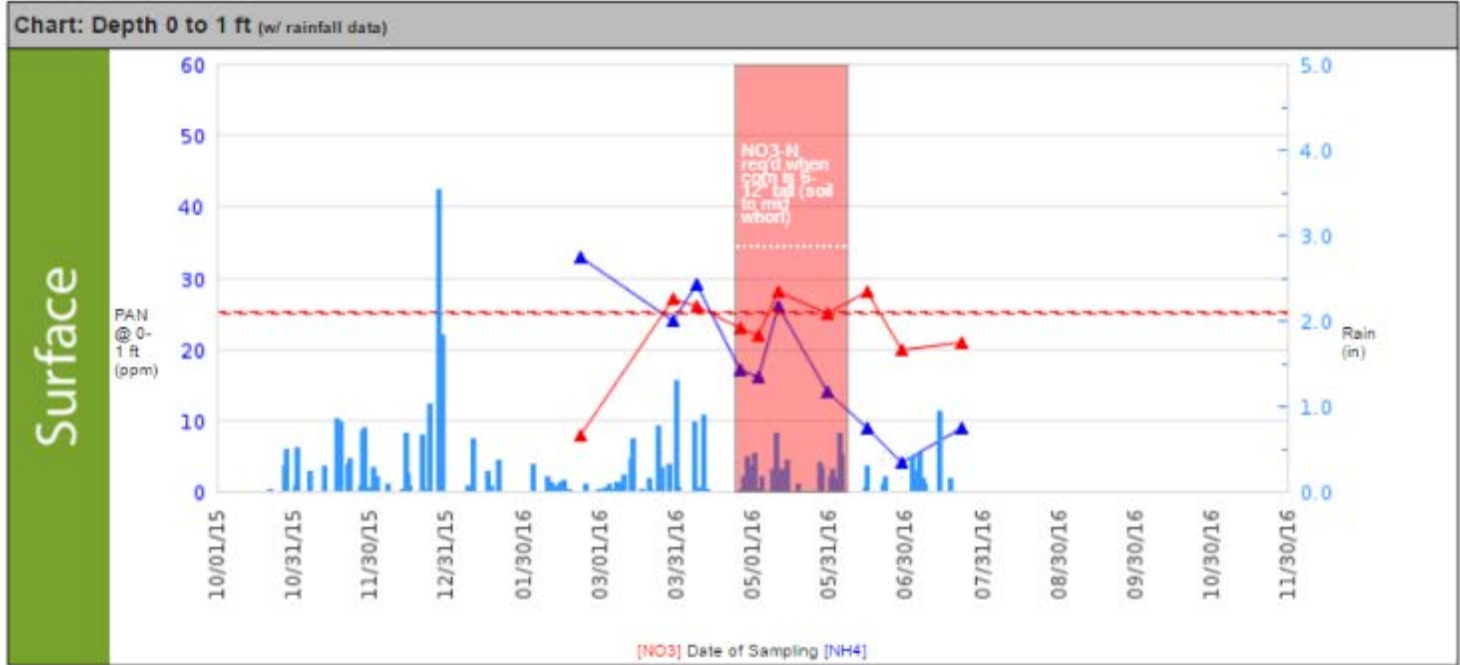
173# N 246bu/

190 160 310 110 260 60 210

NO COVER CROP

11/10/2015
45 lbs N DAP

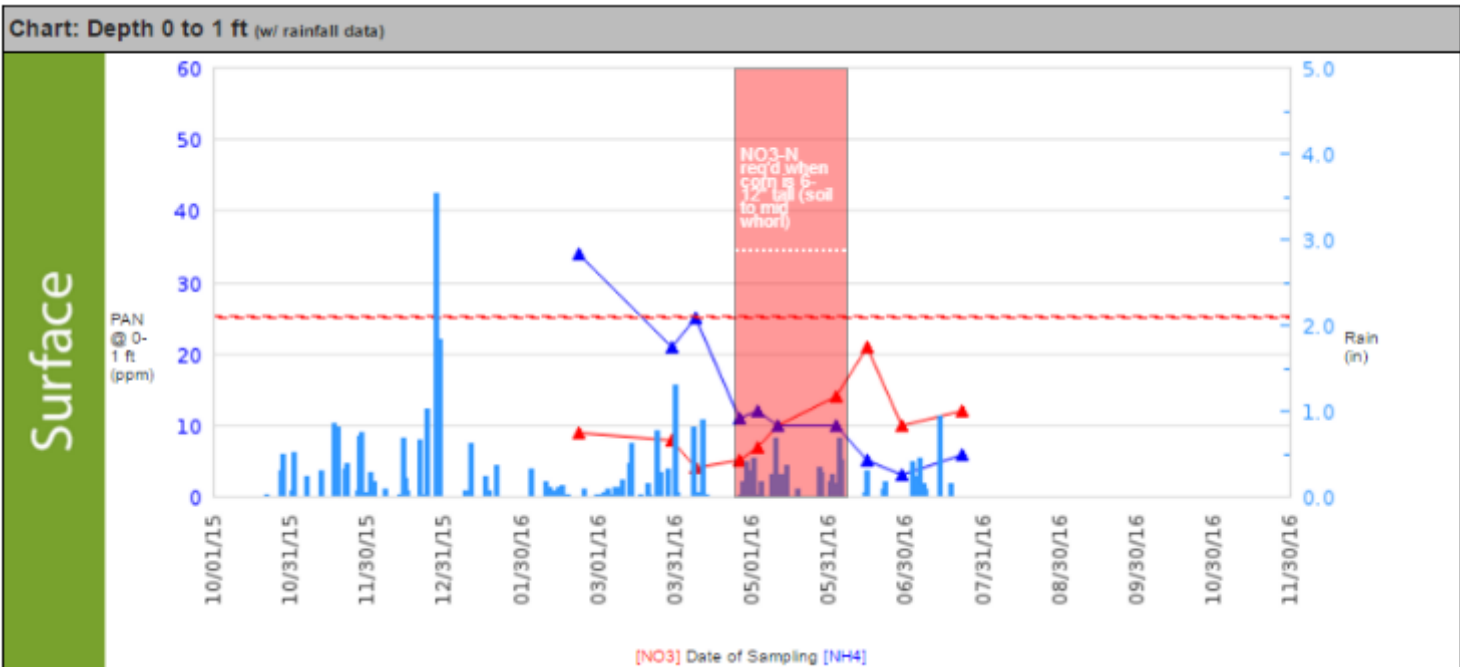
11/15/2015
175 lbs N AA
N-Serve



COVER CROP

11/10/2015
45 lbs N DAP

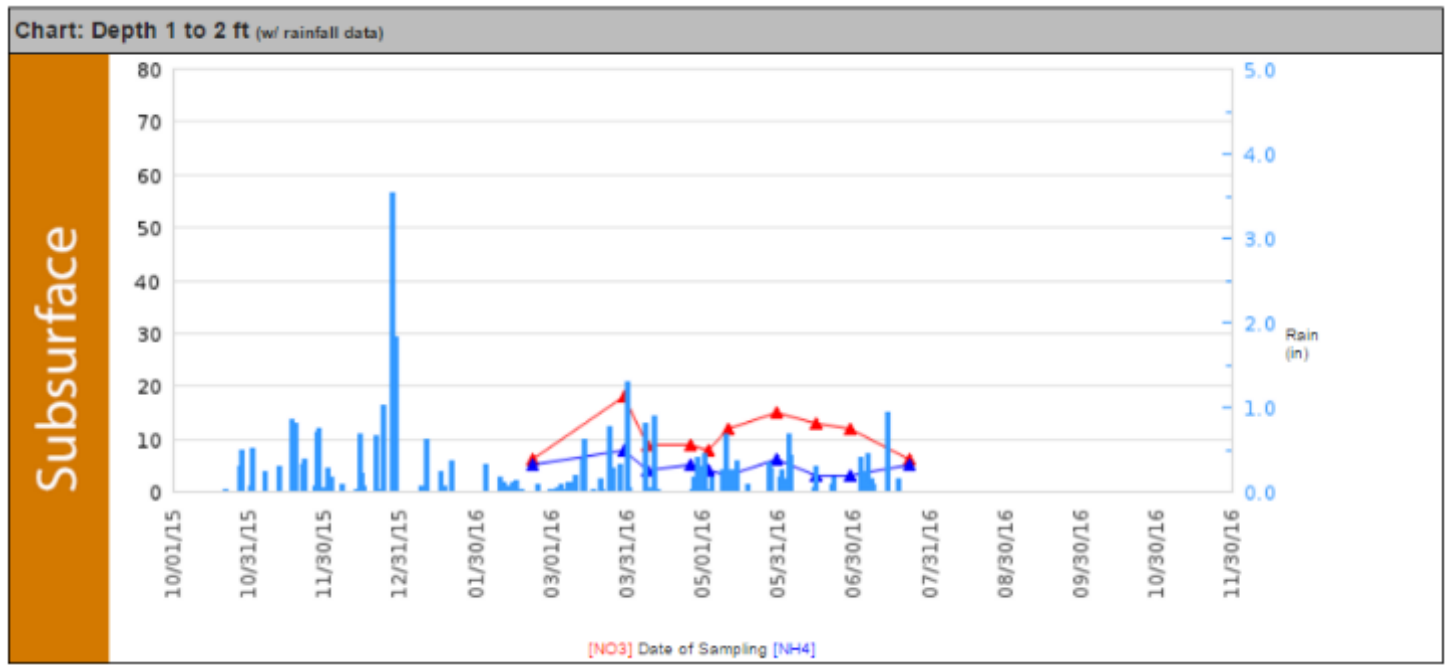
11/15/2015
175 lbs N AA
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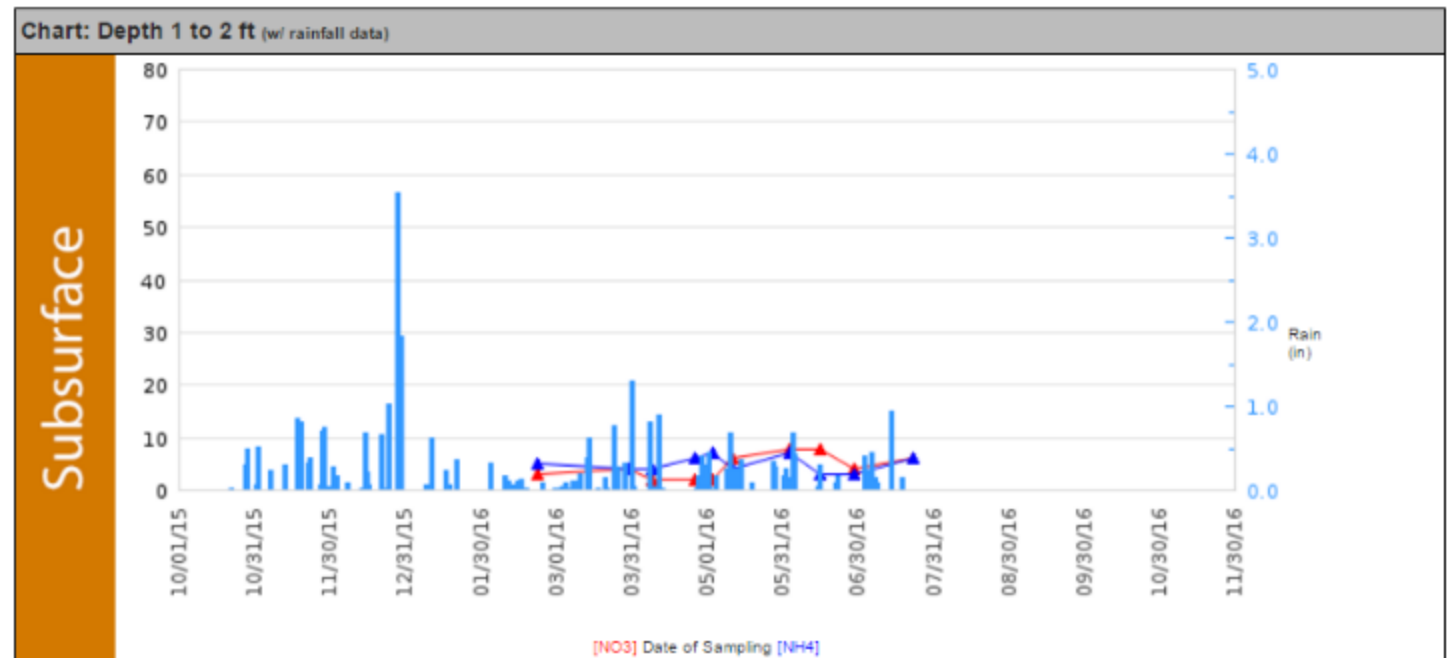
11/15/2015
175 lbs N AA
N-Serve



COVER CROP

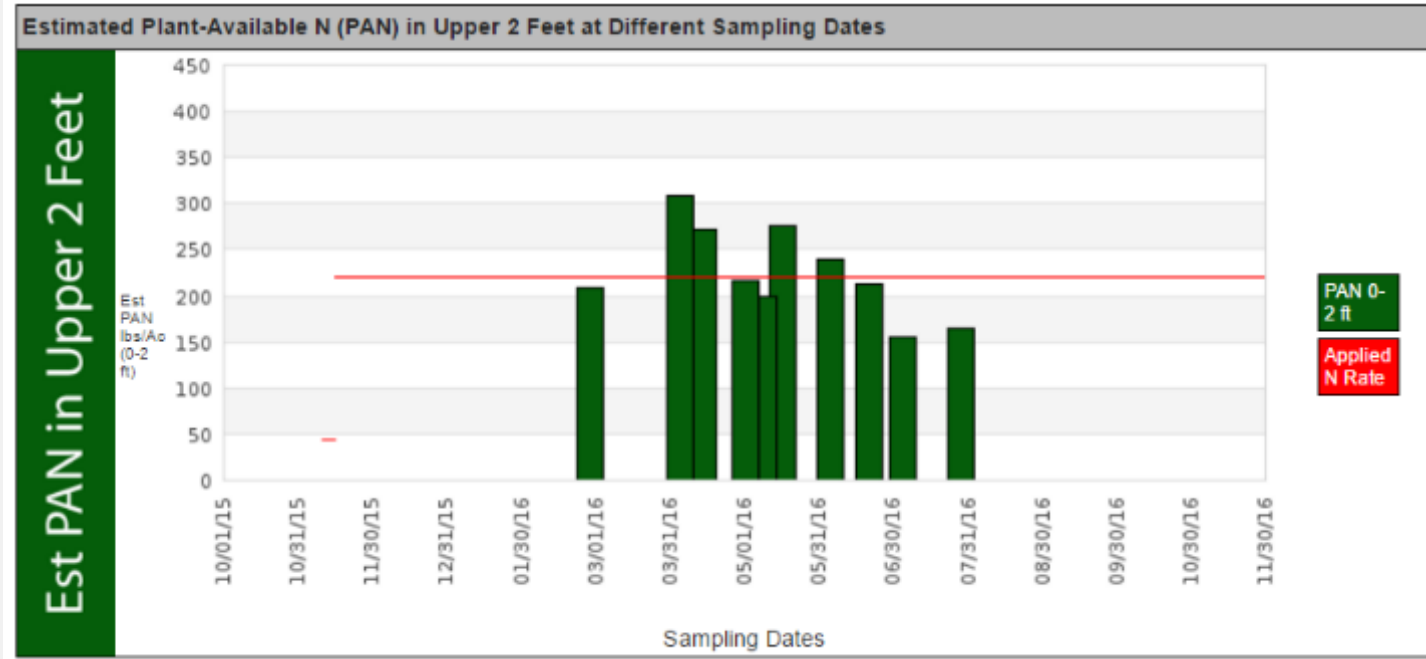
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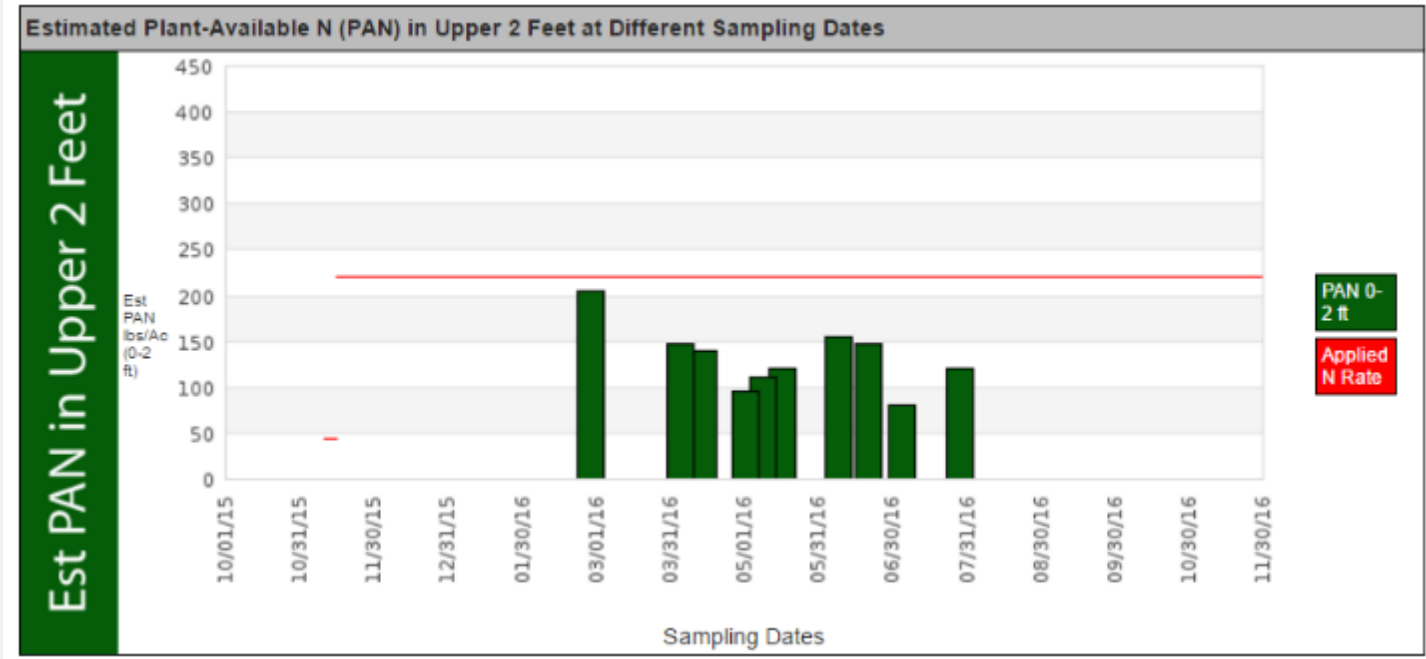
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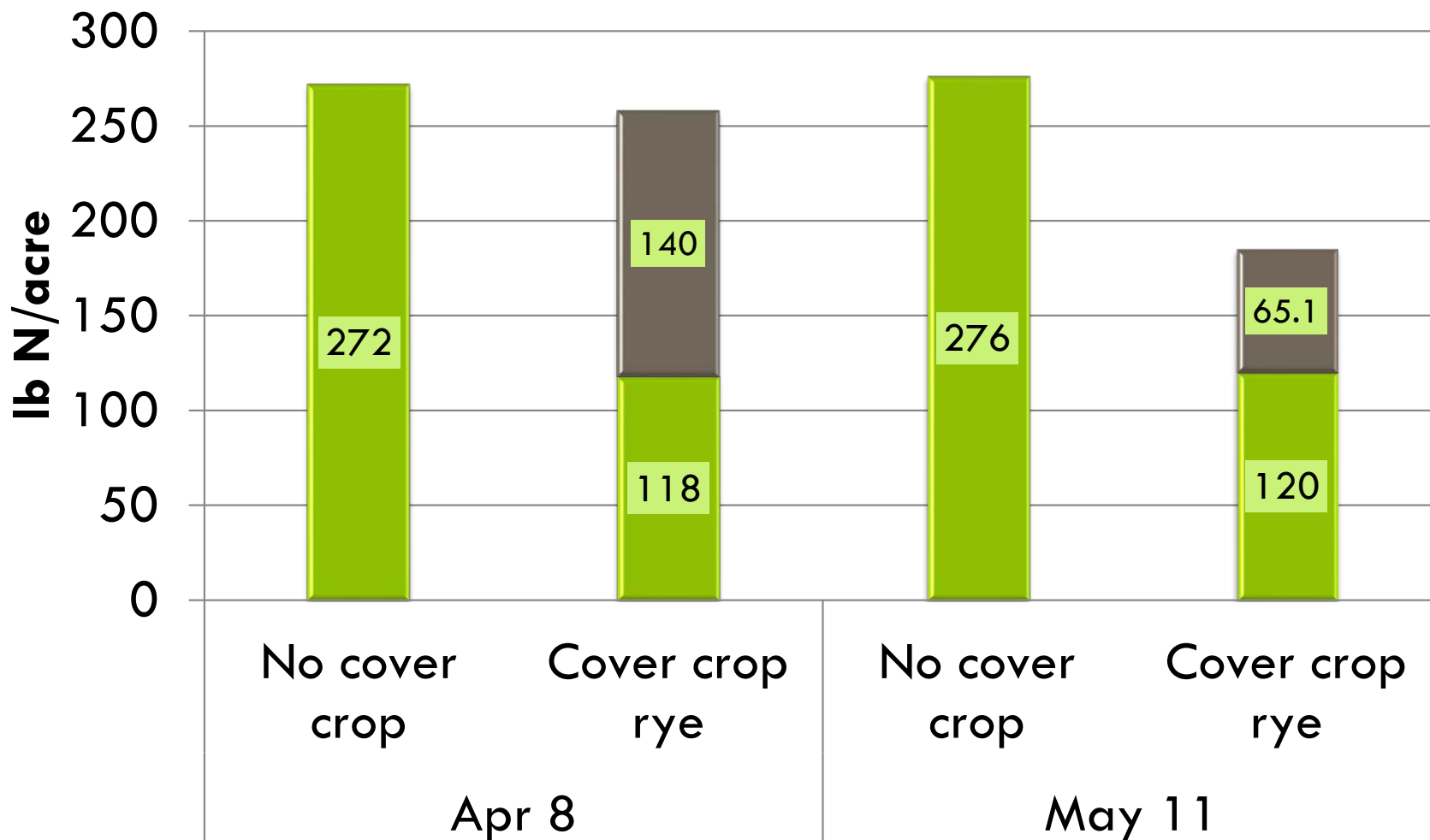
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175 lbs N AA
N-Serve



Macon County site, 2016

175 N as NH_3 + 45 lb N as DAP fall 2015

■ In soil ■ In cover crop









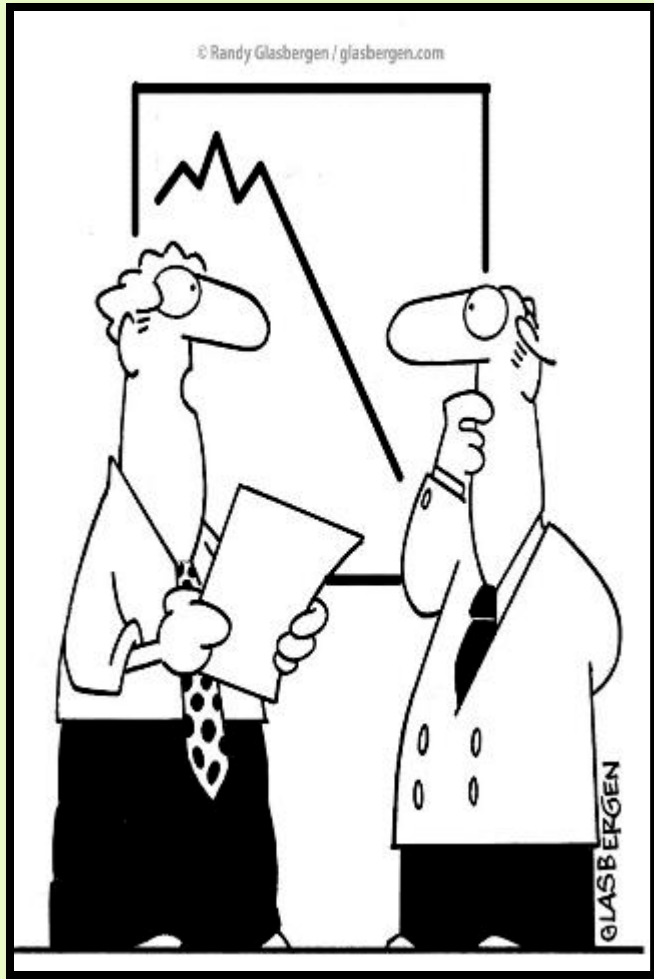
INLRS: The Easy Buttons

Includes Many of the 4Rs:

- Maximum Return To Nitrogen Calculator
- Use of Nitrification Inhibitors
- Fall BMPs
- Split Application of Nitrogen



Other Recommendations: Wetlands, Bioreactors on Field Tiles, Cover Crops, Growing Perennial Crops



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"We're seeing a significant drop in customer complaints since we stopped answering our phones."