

Can We Reduce N Rates to Corn & Improve ROI?

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Why Participate?

My Motivation:

- Research & Development
- Small Operation
- My Dad
- Water Quality

Hypothesis

Yield will be the same for:
150 N units vs 170 N units



Trial Design

The diagram illustrates a trial design with 8 strips, alternating between Typical and Reduced treatments, across 4 replicates. The strips are arranged in a grid with 2 rows and 8 columns. The top row contains the treatment names (Typical or Reduced) and the bottom row contains the strip identifiers (STRIP 1 to STRIP 8). The replicates are indicated by the number of strips in each row: REP 1 (2 strips), REP 2 (2 strips), REP 3 (2 strips), and REP 4 (2 strips).

Typical	Reduced	Reduced	Typical	Reduced	Typical	Typical	Reduced
STRIP 1	STRIP 2	STRIP 3	STRIP 4	STRIP 5	STRIP 6	STRIP 7	STRIP 8
REP 1		REP 2		REP 3		REP 4	

Management Plan

	TYPICAL	REDUCED
NH3 Strips App Date	4/11/2023	4/11/2023
N Units	80	80
Planting Date – Pioneer 1185 – 34K	5/3/2023	5/3/2023
UAN 28 App W/Coulter Date	6/5/2023	6/5/2023
N Units	50	30
Urea Topdress App	6/22/2023	6/22/2023
N Units	40	40





Results – Yield Comparison

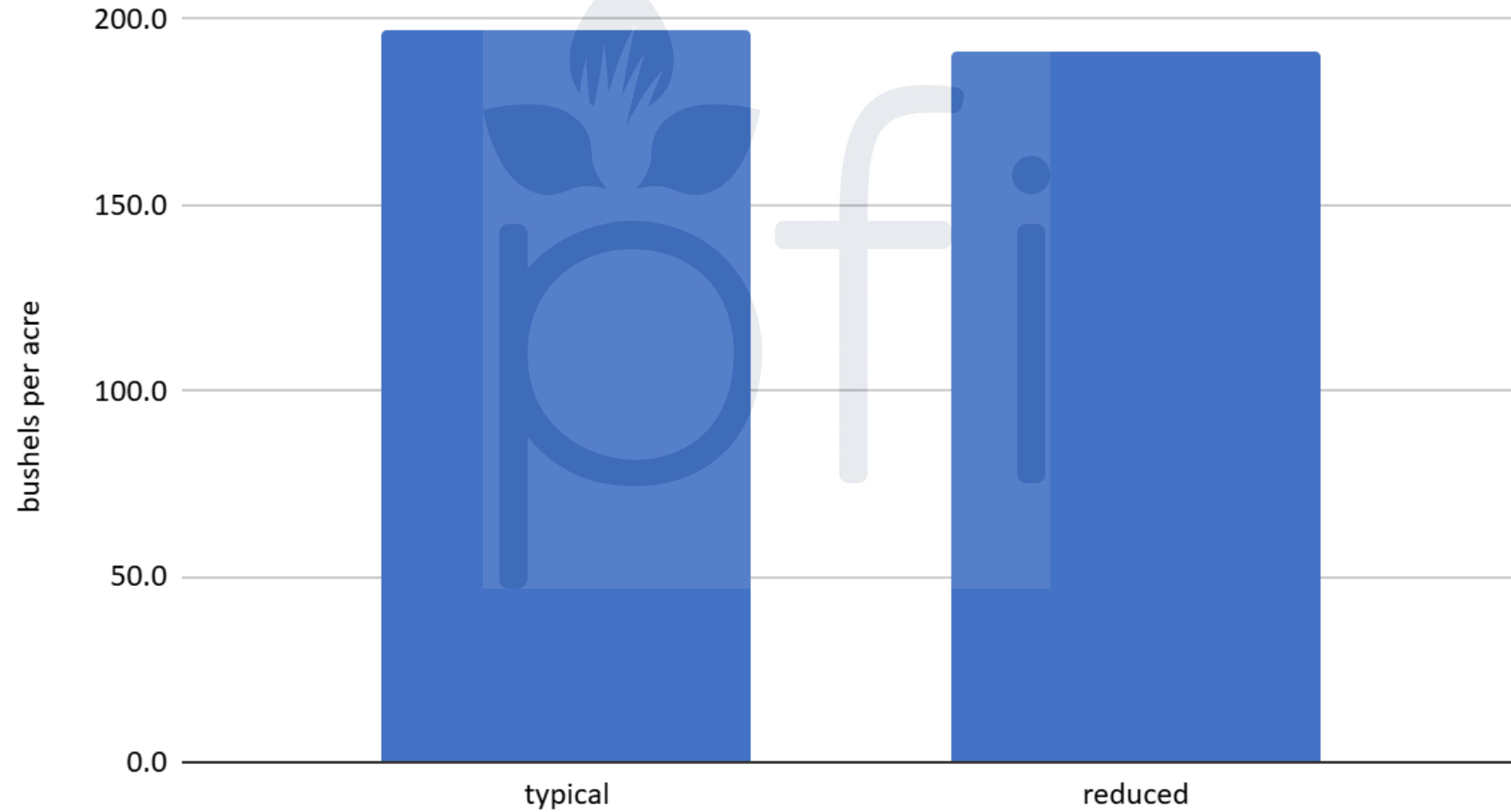
TREATMENT	TOTAL N RATE (UNITS N/AC)	REP	YIELD (15.5% MOISTURE)
Typical	170	1	191.3
Typical	170	2	195.1
Typical	170	3	200.1
Typical	170	4	201.4
Reduced	150	1	--
Reduced	150	2	191.4
Reduced	150	3	185.9
Reduced	150	4	196.6

Results - Averages

Mean (Typical)	197.0
Mean (Reduced)	191.3
Difference	5.7
LSD (0.05)	13.4
Sig. Diff?	No

Results - Typical vs Reduced

Corn yields statistically similar between typical and reduced N rates



Results – Budget

	TYPICAL	REDUCED
UAN28 N Units	50	30
UAN28 Price (\$/lb N)	\$0.97	\$0.97
UAN 28 cost (\$/ac)	\$48.50	\$29.10
Corn yield (bu/ac)	194.5	194.5
Corn price (\$/bu)	\$4.55	\$4.55
Gross returns (\$/ac)	\$884.98	\$884.98
Net Returns (\$/ac)	\$836.48	\$855.88
Savings from reduced rate (\$/ac)		\$19.40



A Farmer's Next Steps

- Test 160 N vs 150 N
- Utilize Cover Crops



My Next Steps

- "Retiring"
- Continued Involvement

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