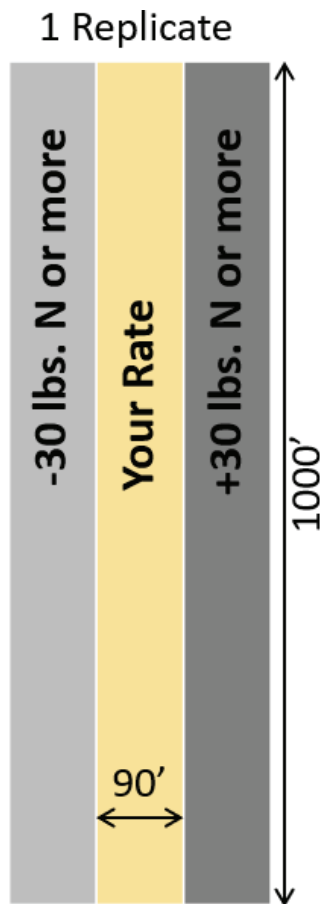


COST/BENEFIT OF NITROGEN FERTILIZER STRIP TRIALS

Many of our N strip trials have documented farmer rate was below optimum

OBJECTIVE

Document the cost of lost yield from a nitrogen strip trial.



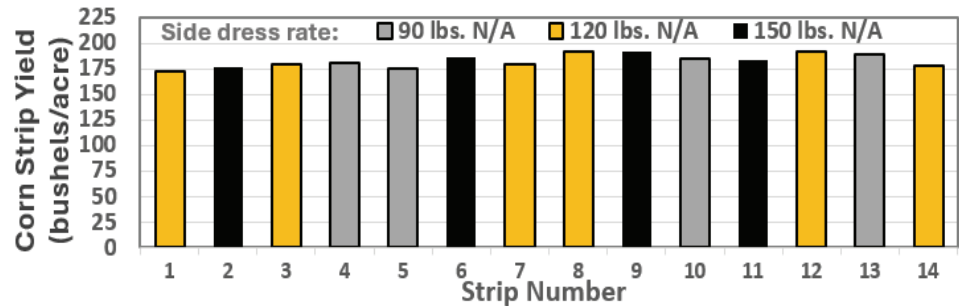
EXAMPLE STUDY DESIGN

Trial size:

- Applicator width 90 feet.
- Strip length 1000 feet.
- Strip size two acres.
- 3 treatments X 5 replicates = 15 strips cover 30 Acres.

CASE 1: YOUR RATE IS ABOVE OPTIMUM.

Side-dress nitrogen applied as urea. 50 lbs. N/A applied a planting.

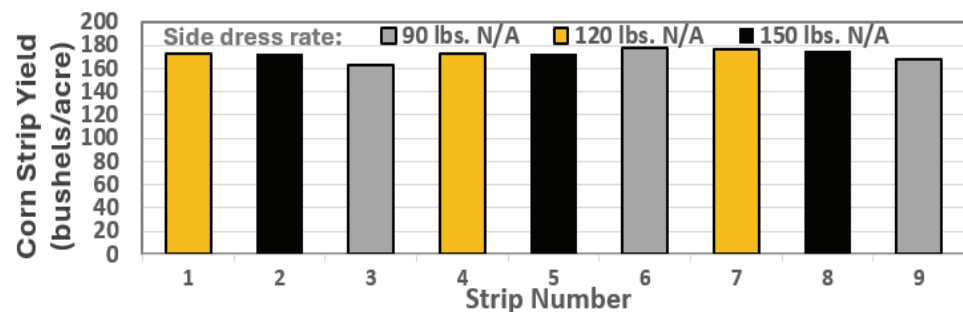


Sidedress Delta	Yld (bu/A)	Delta (bu/A)
-30 lbs. N/A	183	+1
Your Rate	182	-
+ 30 lbs. N/A	184	+2

➔ N greater than optimum: No clear response to N.

CASE 2: YOUR RATE IS OPTIMUM.

Side-dress nitrogen applied as urea. 50 lbs. N/A applied a planting.



Sidedress Delta	Yld (bu/A)	Delta (bu/A)
-30 lbs. N/A	168	-6
Your Rate	174	-
+ 30 lbs. N/A	174	0

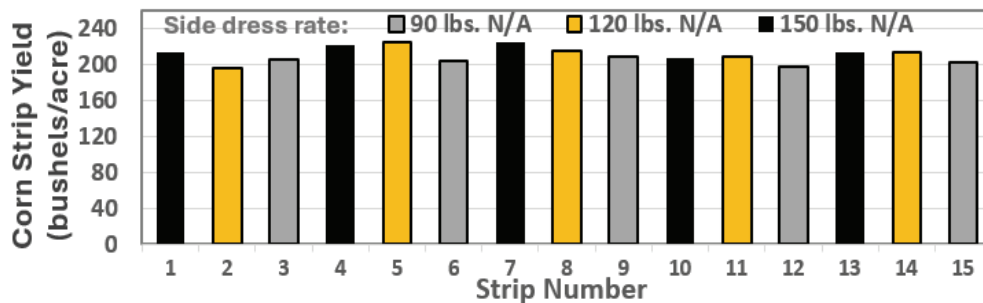
➔ N near optimum: Lose yield on low N rate.

Nitrogen Trials supported by Missouri Soybean Merchandising Council, Missouri Corn Grower Association and their Checkoff, and Missouri Fertilizer Board



CASE 3: YOUR RATE IS BELOW OPTIMUM.

Side-dress nitrogen applied as urea. 50 lbs. N/A applied a planting.



Sidedress Delta	Yld (bu/A)	Delta (bu/A)
-30 lbs. N/A	204	-8
Your Rate	212	-
+30 lbs. N/A	216	+4

➔ N below optimum: Yield increases at every rate.

HOW MUCH DOES KNOWLEDGE ABOUT YOUR N RATES COST?

Case : Your N rate	Net Yield Loss	Cost of a 30-acre trial	
		Corn \$5/B	Corn \$7/B
Above optimum (1)	~0	0	0
Near optimum (2)	$(0+0-6)/3 = -2$	\$300	\$420
Below optimum (3)	$(-8+0+4)/3 = -4$	\$600	\$840

- Case 1: Your rate above optimum - yield not affected by N rate so no cost to trial.
- Case 2: You are near optimum - Some lost yield in low-N strips (the cost of knowledge)
- Case 3: You are below optimum - significant money lost on the low N strips – but it documents you were losing \$20 to \$30 per acre on the rest of your field!
- Extra cost of fertilizer always equals 0 because higher rate is offset by lower rate strip.

OTHER GOOD OPTIONS:

- High N strips at planting to highlight N need at side dress.
- A plus N trial – costs some extra fertilizer but tests if your rate is too low.
- Recommend tracking N response over multiple years to understand to year-to-year variability.