



TRIAL REPORT
Cotton · 2023 Season

THIRD-PARTY REPLICATED FIELD TRIAL

More cotton from the same field. Same fiber grade.

An independent evaluation of AgriTec crop nutrition programs in upland cotton, conducted by Agricenter International in Memphis, Tennessee — randomized, replicated and statistically significant.

+81 lb/A

lint over the standard-rate program

P = .013

significant at 95% confidence

Grade held

no fiber-quality trade-off

Pushing Nitromaxx to 25 gal/A grew **significantly more cotton** — and the fiber held its grade.

In a replicated, third-party trial at Agricenter International, three AgriTec foliar-and-soil programs were compared on upland cotton. The high-rate Nitromaxx program out-yielded both standard programs in seed cotton and lint — a statistically significant result ($P = .013$) in a trial precise to a 3% coefficient of variation.

+81 lb/A lint

High-rate program vs. the same program at standard rate (1,155 vs. 1,074 lb/A) — a 7.5% gain

+208 lb/A

More seed cotton than the standard-rate program (2,962 vs. 2,754 lb/A)

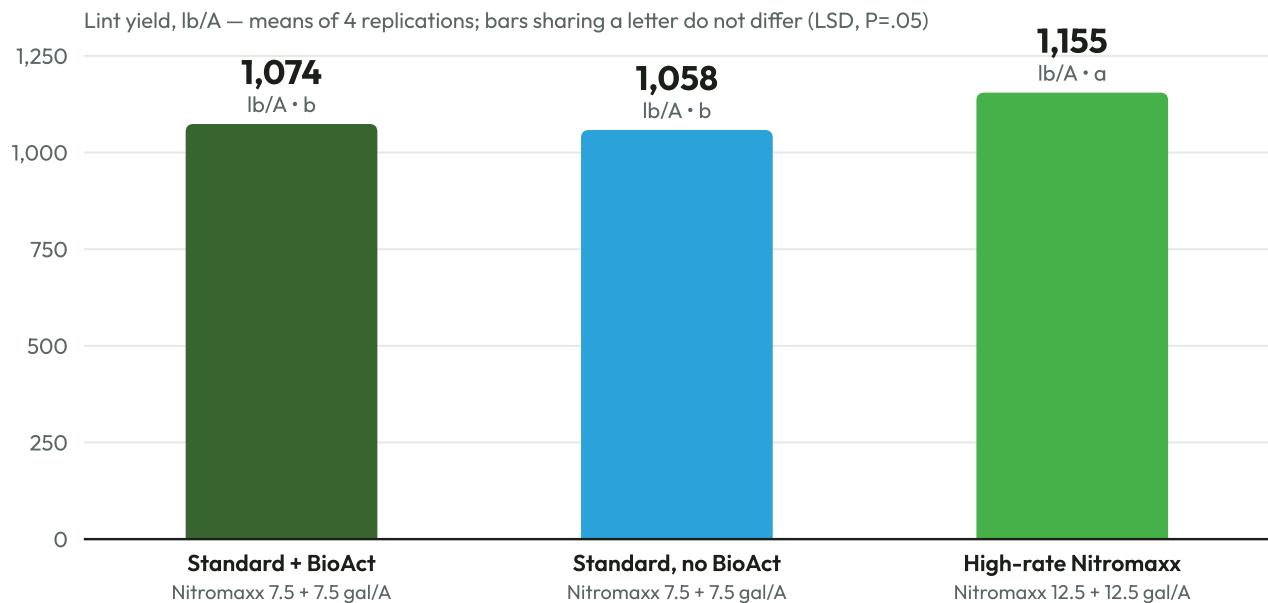
 $P = .013$

Yield separation is statistically significant at the 95% confidence level (LSD)

 4×3

Replications $\times$ treatments, randomized complete block — 12 field plots

Lint yield by program



Source: 2023 Evaluation of AgriTec Products in Cotton, Agricenter International, Memphis TN. Trial ID: 2023 AgriTec Cotton. Ginned lint basis (39% turnout).

An independent station, a uniform field, a fair test.

Agricenter International planted, sprayed, picked and ginned every plot the same way — the only thing that changed between plots was the AgriTec program applied. Plots were randomized in four complete blocks so soil variability couldn't favor any one program.

SITE & CROP

Location	Agricenter International, Memphis, TN (Shelby Co.)
Variety	Deltapine DP 1646 B2XF
Planted	May 26, 2023 · 55,000 seeds/A · 38-in rows
Emerged	June 1, 2023 — excellent seed-bed moisture
Harvested	November 14, 2023 · JD 9930 picker
Tillage	Conventional till

SOIL & DESIGN

Soil	Falaya silt loam · 61.6% silt, 24.6% clay
pH / OM / CEC	7.3 · 1.3% · 6.8 meq/100g
Fertility level	Excellent · good drainage
Design	Randomized complete block, 4 replications
Plots	12 plots · 6 ft × 30 ft · 4 rows each
Spray rig	CO ₂ backpack · 15 gal/A water · 8002 flat fan

The three programs

All three are built on the same foundation — Pro-Cal at pinhead square, split-applied Nitromaxx, and 3-18-18 at first bloom. Program 2 drops BioAct; Program 3 raises Nitromaxx from 15 to 25 total gal/A.

PROGRAM 1 · STANDARD + BIOACT

PRODUCT	RATE	TIMING
Pro-Cal	4 gal/A	A · pinhead square
BioAct	0.5 gal/A	A · pinhead square
Nitromaxx	7.5 gal/A	B · split to soil
Nitromaxx	7.5 gal/A	C · first bloom
3-18-18	6 gal/A	C · first bloom

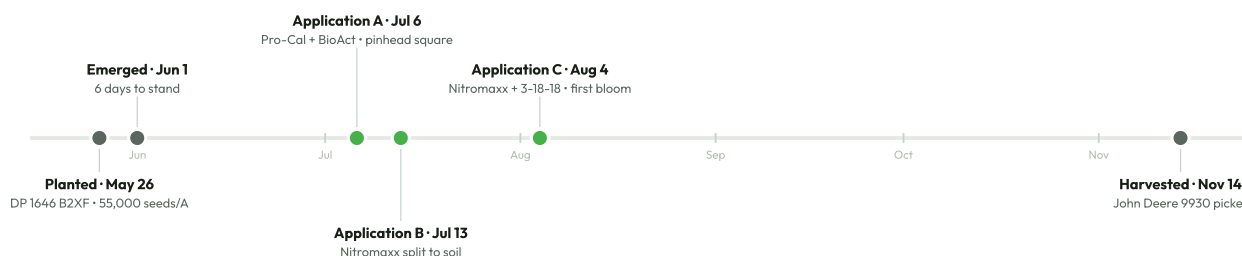
PROGRAM 2 · STANDARD (NO BIOACT)

PRODUCT	RATE	TIMING
Pro-Cal	4 gal/A	A · pinhead square
Nitromaxx	7.5 gal/A	B · split to soil
Nitromaxx	7.5 gal/A	C · first bloom
3-18-18	6 gal/A	C · first bloom

PROGRAM 3 · HIGH-RATE NITROMAXX

PRODUCT	RATE	TIMING
Pro-Cal	4 gal/A	A · pinhead square
BioAct	0.5 gal/A	A · pinhead square
Nitromaxx	12.5 gal/A	B · split to soil
Nitromaxx	12.5 gal/A	C · first bloom
3-18-18	6 gal/A	C · first bloom

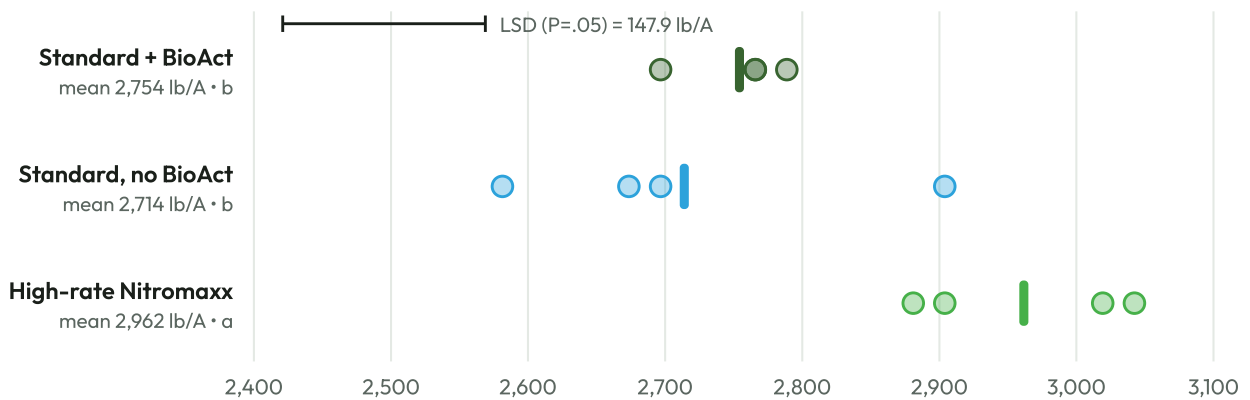
2023 season timeline



The high-rate program separated from the pack.

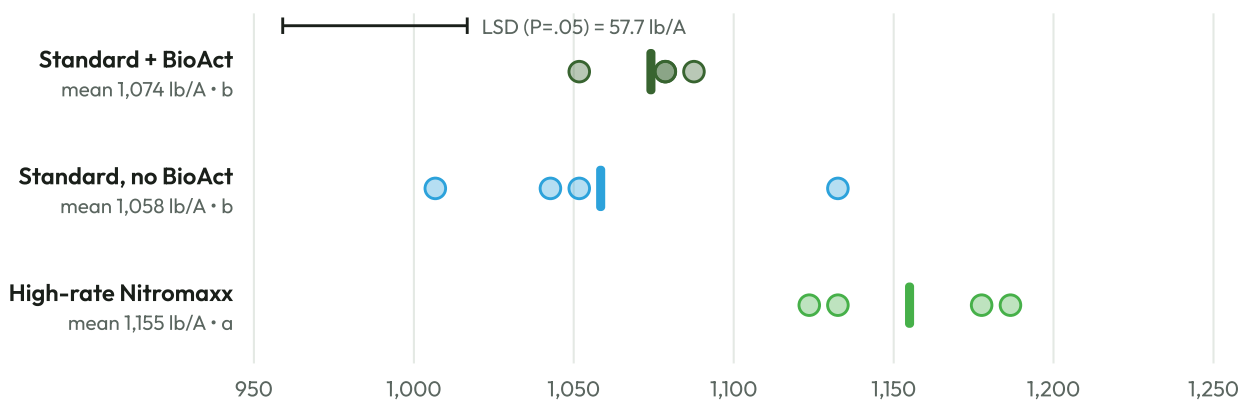
Each open circle below is one field plot; the solid bar is the program mean. In both seed cotton and lint, Program 3 finished ahead of the standard programs by more than the least significant difference — the gap is bigger than field noise can explain. Programs sharing a letter do not differ statistically.

Seed cotton yield (lb/A) — picked Nov 14, 2023



Treatment effect P = .013 · CV 3.0% · means of 4 replications

Lint yield (lb/A) — ginned at 39% turnout



Treatment effect P = .013 · CV 3.0% · means of 4 replications

Same stand, more cotton. Plant populations were statistically identical across programs (52,960–53,762 plants/A at emergence; P = .87) — so the yield gap came from what the crop was fed, not from how many plants were in the row. And because Programs 1 and 3 are identical apart from the Nitromaxx rate, the +81 lb/A of lint is a clean read on rate response. Adding BioAct alone (Program 1 vs. 2) did not measurably change yield in this trial.

More pounds didn't cost a point of grade.

Pushing yield can dilute fiber quality — it didn't here. HVI classing of lint samples (Feb 2024) found no statistical differences between programs on any of the five fiber properties measured.

FIBER PROPERTY	PROG 1 · STD + BIOACT	PROG 2 · STD	PROG 3 · HIGH-RATE	STATISTICAL DIFFERENCE
Fiber length (in)	1.173	1.172	1.180	No difference (NS)
Fiber strength (g/tex)	28.15	28.33	29.53	No difference (NS)
Micronaire (—)	4.25	4.59	4.40	No difference (NS)
Elongation (%)	5.55	5.58	5.58	No difference (NS)
Uniformity (%)	83.95	83.55	83.48	No difference (NS)

Means of 4 replications. NS = not significant at $P=.05$ (LSD). Program 3's fiber was numerically the longest and strongest of the trial.

1

Rate drove the response

Raising split-applied Nitromaxx from 15 to 25 gal/A added 81 lb/A of lint over the identical program at standard rate — a 7.5% gain, significant at $P=.013$.

2

Quality held steady

Length, strength, micronaire, elongation and uniformity were statistically unchanged — the extra pounds came without a discount at the gin.

3

The trial was tight

A 3% CV, uniform stands, and four randomized blocks mean the yield separation reflects the programs — not field variability.

See what a program built for your field would look like.

Every AgriTec program starts with your soil test — not a sales sheet. Send us a sample and we'll map rates and timing to your ground, the same way this trial was built.

[Request a soil test · agritecint.com](https://agritecint.com)

Methods & source. Data: "2023 Evaluation of AgriTec Products in Cotton," Agricenter International, Memphis TN; Study Director Dr. K. Bruce Kirksey; ARM 2024.4 site description, assessment data and AOV means tables (Trial ID: 2023 AgriTec Cotton). Randomized complete block, 4 replications, 3 treatments, 6×30-ft four-row plots on Falaya silt loam. Applications broadcast in 15 gal/A water via CO₂ backpack sprayer. Seed cotton hand-weighed per plot Nov 14, 2023; lint basis calculated at 39% gin turnout; fiber properties by HVI classing Feb 7, 2024. Yield significance: treatment $P(F)=.0132$; LSD ($P=.05$) = 57.7 lb/A lint; CV = 3.04%. Stand, fiber and quality parameters not significant ($P>.22$). Mean separation by LSD, $P=.05$. Report prepared July 2026 by AgriTec International.