



2022 SOYBEAN TRIAL REPORT

Independent replicated field trial · Agricenter International



2022 REPLICATED FIELD TRIAL · SOYBEAN

Feed the crop. Prove it in the field.

Calcium-based foliar programs added up to 9.7 bu/ac over the untreated check in an independent trial at Agricenter International — Memphis, Tennessee.

Agricenter International
Memphis, TN · Shelby County

5 programs × 4 reps
Randomized complete block

Full season
Planted Jun 6 · Harvested Nov 14



Calcium-based foliar programs added up to 9.7 bu/ac in an independent soybean trial

Third-party trial conducted by Agricenter International, Memphis, Tennessee. Randomized complete block, four replications, harvested for yield November 2022.

Agricenter International
Memphis, TN · Shelby Co.

AG48X7 · 140k seeds/ac
Planted 6/6 · 30" rows

5 treatments × 4 reps
20 plots · 10 × 30 ft

Silt loam · pH 6.1
1.9% OM · CEC 7.1

Harvested 11/14
Yield at 13% moisture

+9.7 bu/ac

Full program vs. untreated check (73.2 vs. 63.5 bu/ac)

+15%

Yield increase from the top program

P = .015

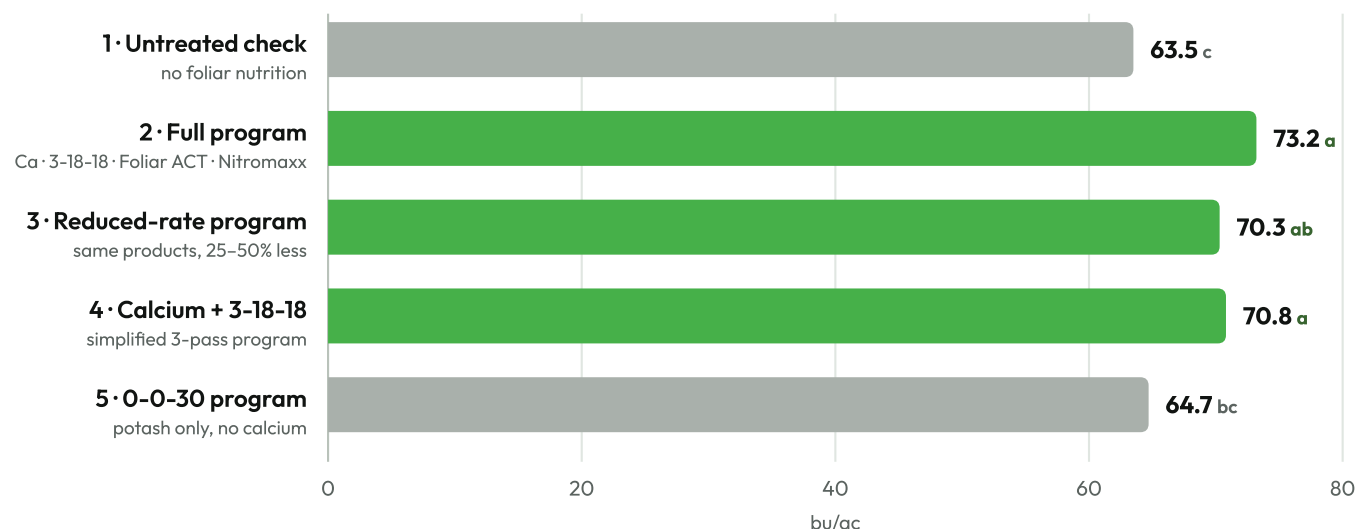
Treatment effect on yield is statistically significant (AOV)

3 of 3

Calcium-based programs that out-yielded the check

Grain yield by treatment

bu/ac at 13% moisture · bars sharing a letter do not differ (LSD, P=.05; LSD = 5.9 bu)



Source: 2022 AgriTec International Soybean trial, Agricenter International · ARM 2023.0 AOV means table · CV 5.6%.

Calcium was the common thread

All three programs that led with 4 gal/ac Calcium at planting finished in the top statistical group (a / ab).

Potash alone didn't separate

The 0-0-30 program without calcium (+1.2 bu) was not statistically different from the untreated check.

Equal stands — real yield gain

Stand counts were statistically identical (~116–119k plants/ac), so the response wasn't a population effect.

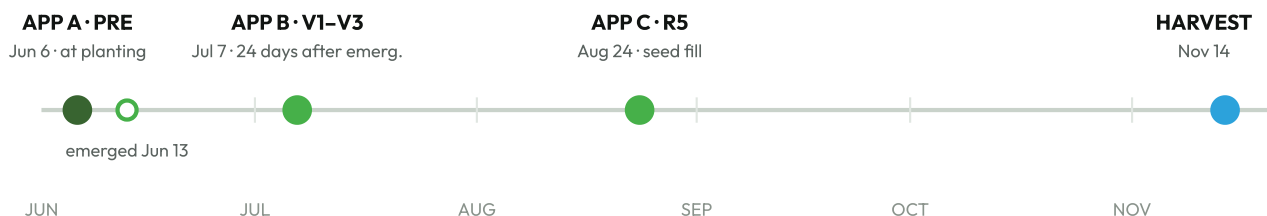


SPRAY & SEEDING PLAN

Three passes, timed to the crop — not the calendar

Every treated program used the same three application windows: a PRE pass at planting to feed the soil profile, a V1–V3 pass to drive early vegetative growth, and an R5 pass to support seed fill. What changed between treatments was the product lineup and rate.

2022 season application timeline



Treatment	App A — PRE (Jun 6)	App B — V1–V3 (Jul 7)	App C — R5 (Aug 24)	Total gal/ac	Yield bu/ac
1 · Untreated check	—	—	—	0	63.5 c
2 · Full program	Calcium 4 gal/ac 3-18-18 4 gal/ac	3-18-18 4 gal/ac Foliar ACT 0.5 gal/ac	Nitromaxx 2 gal/ac	14.5	73.2 a
3 · Full program, reduced rates	Calcium 4 gal/ac 3-18-18 3 gal/ac	3-18-18 3 gal/ac Foliar ACT 0.25 gal/ac	3-18-18 3 gal/ac	13.25	70.3 ab
4 · Calcium + 3-18-18	Calcium 4 gal/ac	3-18-18 3 gal/ac	3-18-18 3 gal/ac	10	70.8 a
5 · 0-0-30 based (no calcium)	0-0-30 3 gal/ac	3-18-18 2 gal/ac	3-18-18 3 gal/ac	8	64.7 bc

All products are AgriTec liquid formulations. Yields share-a-letter = no statistical difference (LSD, P=.05). Note treatment 4: just 10 gal/ac of product across the season returned +7.3 bu/ac.

How every pass went on

15 gal/ac spray volume

Water carrier

CO₂ backpack sprayer · 30 PSI

8002 flat-fan nozzles

20" nozzle spacing · 2 per row

6 ft boom at 19"

3 mph ground speed

100% coverage



WHERE & HOW

A real Mid-South field, run to research standards

The trial ran on the 2022 Helena Field at Agricenter International in Memphis — a conventionally tilled silt loam typical of Mid-South soybean ground. A randomized complete block design with four replications keeps field variability from masquerading as a treatment effect.

Trial design

Design	Randomized Complete Block
Replications	4 (20 plots total)
Plot size	10 × 30 ft · 4 rows @ 30"
Variety	Asgrow AG48X7
Planting	Jun 6 · 140,000 seeds/ac · 1" deep
Emergence	Jun 13 (7 days)
Harvest	Nov 14 · Almaco plot combine, 5 × 30 ft strip
Yield basis	Bushels/ac corrected to 13% moisture

Soil — 2022 Helena Field

Series	Waverly / Falaya · silt loam
pH	6.1
Organic matter	1.9%
CEC	7.1 meq/100g
Fertility level	Excellent · drainage good

Texture



Conditions at each application

Recorded at the start of each pass — all three went on in workable weather with good spray conditions

	App A · PRE	App B · V1-V3	App C · R5
Date	Jun 6, 2022	Jul 7, 2022	Aug 24, 2022
Crop stage (BBCH)	00 · at planting	12 · V1-V3	60 · R5 seed fill
Days after emergence	-7	24	72
Air temperature	90 °F	99 °F	88 °F
Relative humidity	52%	34%	41%
Wind	3 mph SW	3 mph S	2 mph S
Soil temp / moisture	73 °F · good	83 °F · fair	84 °F · good

Why the design matters

Each program appears once in every one of the four field blocks, and plot positions were randomized within each block. Yield differences are then tested against the field's own natural variability (CV 5.6%) — the same standard used in university and registration trials. Only differences larger than the LSD (5.9 bu/ac) are called real.

Trial record

Trial ID	2022 AgriTec Soybean
Software	ARM 2023.0
Status	Established · harvested
Location	Memphis, TN 38120

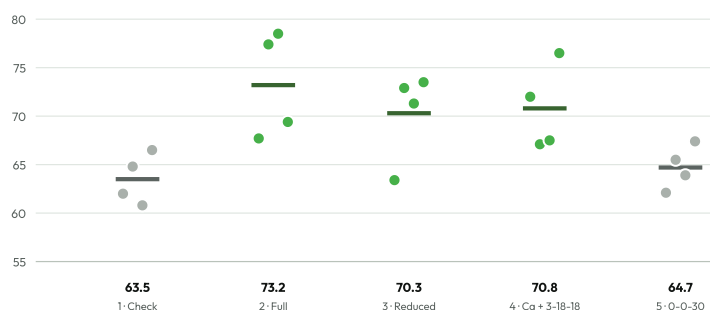


ASSESSMENT DATA

The response held up across replications

Plot-level yields — all 20 plots

dots = individual plots · bar = treatment mean · bu/ac at 13% moisture



Stands were equal

plants/ac at 14 days after emergence — no statistical difference



Treatment P(F) = 0.82 — not significant

What the gain is worth

Program	\$10/bu	\$12/bu	\$14/bu
Trt 2 · +9.7 bu	\$97	\$116	\$136
Trt 4 · +7.3 bu	\$73	\$88	\$102

Gross value per acre before product cost, at example bean prices.

All measurements — treatment means

Means followed by the same letter do not significantly differ (LSD, P=.05). Test weight, moisture and stand showed no treatment effect.

Treatment	Stand plants/ac	Moisture %	Weight lb/plot	Test wt. lb/bu	Yield bu/ac	vs. check
1 · Untreated check	116,351	13.06	13.13 c	60.5	63.5 c	—
2 · Full program	118,071	13.10	15.15 a	60.8	73.2 a	+9.7
3 · Reduced-rate program	118,071	13.07	14.53 ab	60.5	70.3 ab	+6.8
4 · Calcium + 3-18-18	117,497	13.08	14.63 a	60.6	70.8 a	+7.3
5 · 0-0-30 based	119,217	13.11	13.38 bc	60.1	64.7 bc	+1.2
LSD (P=.05) · CV · Treatment	5,189 · 2.9% ·	0.17 · 0.9% ·	1.21 · 5.6% ·	0.96 · 1.0% ·	5.86 · 5.6% ·	
P(F)	0.82	0.97	0.015	0.64	0.015	

See what a calcium-first program does on your ground.

Start with a soil analysis — we'll build the program from your numbers, the same way this trial was built.

agritecint.com/soil-analysis