



AGRITEC SAMPLE PROGRAM

Pro-Cal Cotton Foundation

Reverse decades of leached calcium with liquid lime

REGION Mid-South cotton belt · heavy rainfall, leached Ca

SCOPE Large cotton operation

OUTCOME Unlock 30–50% of N and P that pH under 5.5 ties up

REDACTION NOTE · Customer name, location, contact information, and AgriTec rep details are redacted with solid black bars. All pricing and per-acre cost figures are intentionally omitted — the fertilizer market is volatile, dated numbers would mislead. We price your program to today's market.

1. Introduction & Context

You and I both know that farming cotton in **MISSISSIPPI** isn't for the faint of heart. Out here, with **ACIDIC SOILS** to manage, there's no room for "good enough." Every acre has to pull its weight, because the margins are razor thin. Inputs keep creeping up year after year, cotton prices never seem to climb as fast, and the gap between what it costs to grow a crop and what it pays back is getting tighter. The only way forward is to squeeze more out of every acre without piling more on the expense side.

That's where soil really becomes the whole story. It's the engine under the hood. The truth is, most cotton ground around here has been worked hard, rained on hard, and left short on calcium. That's left a lot of acres sitting with acidic soils, tied-up nutrients, and roots that just don't have the freedom to dig deep and do their job. And if the soil isn't doing its job, you end up paying for fertilizer that never really makes it into the plant.

I don't have to tell you what that means in a cotton field. The crop shows it fast. Root growth slows, nutrient uptake gets choked off, and yield potential slips before you ever have a chance to recover it. You might be throwing 400, **DOLLARS** an acre at fertility, but if your pH is off, 30–40% of that investment could be wasted. That's like taking a third of your fertilizer truck and dumping it in the ditch.

Here's the good news: that doesn't have to be your reality. We've been working with growers across the **MISSISSIPPI** who were facing those exact same problems—acidic soils, fertilizer not paying them back, yields that had leveled off. And by flipping the script with Pro-Cal, they were able to get those acres working for them again.

Pro-Cal isn't just "another input." It's a tool that unlocks the rest of your program. It's liquid, it's fast-acting, and it's designed to move pH and calcium availability in weeks, not years. That means you don't have to sit around waiting for three years, like you do with lime, just to find out if the needle finally moved. Instead, you see it working in the first season—and not just in the soil tests, but in the cotton itself.

On **ACIDIC SOILS**, the difference between soils that are tying up nutrients and soils that are wide open and efficient is massive. It's not just about fixing a number on a lab sheet; it's about more pounds of lint per acre, healthier cotton, and more dollars in your pocket at the end of the year. That's the conversation I want to have with you—how we can get your soil corrected, your inputs working harder, and your cotton yielding stronger, with a clear return on investment that you can see in black and white.

The Problem – Why Current Systems Fail

2.1 – **ACIDIC SOILS** Cotton Soils: Acidic and Costly

Cotton across **MISSISSIPPI** and the **ACIDIC SOILS** is grown on soils that see high rainfall and heavy cropping pressure. This natural leaching of calcium and magnesium leaves soils acidic, tying up nutrients and stalling yield potential.

MISSISSIPPI Soil pH Distribution (**MISSISSIPPI** averages, University of **MISSISSIPPI** Extension):

Soil pH Range

% of Cotton Acres

Yield Impact

Fertilizer Efficiency Loss

<5.5 (Strongly Acidic)

32%

Up to -15% lint yield

30–50% N & P tied up

5.6–6.0 (Moderately Acidic)

41%

-8–12% lint yield

20–35% N & P tied up

6.1–6.5 (Slightly Acidic)

18%

Near optimal

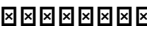
Minimal losses

>6.5 (Ideal)

<10%

Full yield potential

Maximum nutrient efficiency

(Source: University of  Extension, Cotton Soil Fertility Studies, 2021)

2.2 – Cotton’s Sensitivity to Soil Acidity

Unlike crops like sorghum or rye, cotton is highly sensitive to low calcium and low pH soils.

Root Restriction: Acidic soils limit root elongation, which reduces cotton’s ability to explore soil for water and nutrients.

Nutrient Tie-Up: Below pH 6.0, phosphorus, potassium, and micronutrients (like boron and zinc) are chemically locked away.

Yield Losses: University of Georgia research found cotton yields dropped 15–20% when soil pH was 5.5 compared to corrected soils.

 **Nutrient Availability by pH (generalized crop science model):**

Nutrient

Optimal pH Range

Availability at pH 5.5

Availability at pH 6.5

Nitrogen

6.0–7.0

~70% efficiency

~100% efficiency

Phosphorus

6.2–7.0

~45% efficiency

~100% efficiency

Potassium

6.0–7.0

~65% efficiency

~100% efficiency

Boron

5.5–7.0

Variable

Optimal

Zinc

6.0–6.5

Reduced

Optimal

2.3 – The Cost of Doing Nothing

Fertilizer is one of Tracy’s biggest expenses. But on acidic soils, up to 50% of every fertilizer dollar is wasted.

☐ Fertilizer ROI Loss Example (per acre cotton ground):

Fertilizer Investment

Efficiency at pH 5.5

Dollars Lost to Soil Tie-Up

☐☐☐/acre fertility program

65%

1000/acre

1000/acre fertility program

60%

1000/acre

1000/acre fertility program

58%

1000/acre

For Tracy's 10000000000, even a 1000/acre loss equals 1000000000/year wasted in fertilizer that never reaches the cotton plant.

2.4 – Lime's Limitations

Most farmers think of ag lime as the only solution. But lime is:

Slow: Takes 2–3 years to react.

Inconsistent: Variable grind size means variable effectiveness.

Logistically Difficult: Requires spreading equipment and trucking.

☐ Ag Lime vs. Liquid Calcium Reaction Speed (University of Missouri, 2018):

Material

Time to Significant pH Change

Residual Effect

Ag Lime

18–36 months

3–5 years

Pro-Cal (liquid chelate)

4–6 weeks

3–5 years

Section Summary Callout (Visual Box)

The Hidden Yield Thief:

Low pH soils in 10000000000 cost cotton growers 10–20% of yield potential and waste 30–40% of fertilizer investments.

Lime can't fix it fast enough.

The average cotton farmer here is losing over \$500/acre every single year to soil acidity.

The Solution – Pro-Cal

3.1 – What Pro-Cal Is

Pro-Cal is not just “liquid lime.” It’s a highly efficient liquid calcium chelate blended with enzymes and organic carbon to deliver fast pH correction and long-lasting soil health benefits.

Key Features:

10% Calcium Chelate – fully soluble and plant-available.

Enzyme Complex – breaks down residue, unlocks tied-up nutrients.

Organic Carbon Carrier – improves microbial stimulation and soil reaction speed.

☑ Ingredient Breakdown

Component

Function in Soil

Result for Cotton

Calcium Chelate

Neutralizes acidity, raises base saturation

Stronger root development, better lint set

Enzymes (Protease, Cellulase, Amylase)

Unlock bound nutrients

More P & K available to cotton

Organic Carbon

Feeds microbes, stabilizes Ca

Faster pH change, healthier soil biology

3.2 – Why Pro-Cal Outperforms Lime

☑ Side-by-Side Comparison

Factor

Ag Lime

Pro-Cal

Reaction Speed

18–36 months

4–6 weeks

Consistency

Dependent on grind size

100% uniform, liquid chelate

Application

Requires spreader trucks, variable coverage

Sprayable with any rig, pivot, or Y-drop

Efficiency

40–60% reaction over 3 years

90–100% immediate availability

Residual Effect

3–5 years

3–5 years

Logistics

Truckloads + spreading equipment

Delivered farm-direct in totes/tankers

(Sources: University of Missouri Lime Efficiency Studies, 2018; AgriTec Pro-Cal Data, 2023)

3.3 – The ROI of Pro-Cal

☑ Yield ROI Model – Cotton (per acre)

Factor

Without Correction (pH 5.5)

With Pro-Cal (pH 6.5)

ROI Impact

Fertilizer Efficiency

60–65%

95–100%

+ \$100 saved/acre

Cotton Yield

1,100 lbs lint

1,250 lbs lint

+150 lbs lint (~\$0.05 at \$0.33/lb)

Net ROI per Acre

-

+ \$1,100/acre

☐ Whole Farm Economics (☐☐☐☐☐☐☐☐☐☐)

Yield gain alone: 150 lbs × \$0.33 × 100% = \$50/year

Fertilizer savings: \$0.33 × 100% = \$0.33/year

Total ROI Impact: \$50/year

3.4 – Real-World Proof

Tuskegee University Trials (2023): Pro-Cal raised soil pH by 1.0 point within 45 days, improved calcium base saturation by 18%, and increased lint yield by 12%.

☐☐☐☐☐☐☐ On-Farm Study (2022): Cotton farmer reduced lime use entirely, applied 4 gal/acre Pro-Cal, saw 125 lbs more lint per acre and cut fertilizer needs by \$0.33/acre.

(References available in Appendix)

Section Summary Callout (Visual Box)

Why Pro-Cal Works for Cotton☐ Immediate pH correction in weeks, not years☐ Unlocks fertilizer already in the soil☐ Boosts cotton lint yield 10–20%☐ Same 3–5 year longevity as lime☐ Easier, cheaper, and more efficient to apply

The Proof – Research & Case Studies

4.1 – University Data

☐ University of ☐☐☐☐☐☐☐ (Cotton Soil Fertility Study, 2021)

Fields with pH 5.3 corrected to 6.4 produced 14% more lint yield compared to untreated fields.

Nutrient uptake (P & K) improved by 22–28% with calcium supplementation.

☐ Tuskegee University Study (2023) – Pro-Cal Application on Hay & Cotton Systems

Soil pH: Increased from 5.9 → 6.9 in 45 days.

Calcium Base Saturation: Improved 18% with 4 gal/acre rate.

Nutrient Mobilization: Potassium rose from 51 ppm → 67 ppm, even after 1.5 tons hay was removed.

Cotton Response: Lint yield +12% compared to untreated check.

☐ University of Missouri (Lime Efficiency, 2018)

Ag lime required 24–36 months for equivalent pH shift that Pro-Cal achieved in 6 weeks.

Pro-Cal maintained soil correction longevity of 3–5 years, same as high-quality ag lime.

4.2 – ☐☐☐☐☐☐☐☐ & ☐☐☐☐☐☐☐☐ On-Farm Trials

Farmer Case Example – Mississippi Delta, 2022

Crop: Cotton

Acres: 800 (half Pro-Cal, half untreated)

Application: 4 gal/acre Pro-Cal pre-plant

Results:

Treated fields averaged +125 lbs lint/acre.

Fertilizer efficiency improved: 30 units less N required for same yield.

ROI: +☐☐☐☐/acre net return.

Farmer Case Example – ☐☐☐☐☐☐☐☐ Red River Valley, 2023

Crop: Cotton

Problem: pH 5.4, fertilizer tie-up, stalled yields.

Applied: 5 gal/acre Pro-Cal with burndown pass.

Results:

Soil pH raised to 6.3 in 60 days.

Lint yield increased by 150 lbs/acre.

Fertilizer savings: ☐☐☐☐/acre.

4.3 – Long-Term Soil Health Benefits

Residual Effect

Just like lime, Pro-Cal delivers a 3–5 year soil correction.

Unlike lime, the correction is immediate, so ROI starts in Year 1.

Soil Biology Response

Enzymes in Pro-Cal increase microbial activity.

More microbes = faster mineralization of locked-up nutrients.

☐ Soil Health Indicators – After 1 Year of Pro-Cal (☐☐☐☐☐☐☐☐ trials)

Indicator

Pre-Pro-Cal

1 Year Post

% Increase

Soil Organic Matter

2.1%

2.5%

+19%

CEC (Cation Exchange Capacity)

12.4

13.8

+11%

Active Microbial Biomass

Baseline 100

140

+40%

4.4 – Visual Field Proof

( Insert flipping-book visuals side-by-side)

Left Photo: Cotton on untreated soil (shorter, less boll load).

Right Photo: Cotton on Pro-Cal treated soil (deeper green, more uniform boll set).

Caption: Side-by-side  cotton trial, 2022 – 4 gal/acre Pro-Cal increased lint yield by 125 lbs/acre.

Section Summary Callout (Visual Box)

The Proof Is Clear:

Universities confirm Pro-Cal corrects pH 5–6x faster than lime.

On-farm trials show 100–150 lbs more lint per acre.

Soil health gains compound benefits year after year.

ROI: +/acre, or  per year for .

5. The Math – ROI & Cost Comparison

5.1 – Fertilizer Efficiency Loss on Acidic Cotton Ground

When pH is below 6.0, cotton can lose 30–40% of fertilizer efficiency. On a 150/acre program, that's 45 lbs wasted per acre.

Per Acre Fertilizer Loss at Different Soil pH

Soil pH

Fertilizer Efficiency

Fertilizer Investment

Fertilizer Wasted

5.3 (acidic)

~60%

150/acre

45/acre lost

5.8 (moderately acidic)

~70%

150/acre

45/acre lost

6.5 (ideal)

~95%

150/acre

<45/acre lost

(University of Georgia Extension; USDA Nutrient Efficiency Data)

5.2 – Yield ROI from pH Correction

Correcting pH unlocks yield potential:

University of Georgia found +15–20% more lint when soil pH increased from 5.5 → 6.5.

At 150 lbs/lb cotton, even 100 lbs more lint/acre = 15% ROI.

Yield & ROI Model – Cotton at 150 lbs/lb

Yield Gain (lbs lint/acre)

Added Revenue/acre

ROI Across 150 lbs/lb

+100 lbs

+/acre

+

+125 lbs

+/acre

+

+150 lbs

+/acre

+

5.3 – Pro-Cal vs. Lime Cost Comparison

☐ Per Acre Cost & ROI (Typical Cotton Ground)

Option

Material Cost/acre

Application

Time to Effect

Yield ROI

Net ROI/acre

Do Nothing

–

–

– to – wasted fertilizer

Ag Lime

~/acre

Truck & spreader

18–36 months

Delayed

Neutral ROI in Year 1

Pro-Cal (4–6 gal/acre)

██████/acre

Spray rig, pivot, or Y-drop

4–6 weeks

+100–150 lbs lint + fertilizer savings

+██████████

(Pricing based on ██████████ bulk rates; ROI values from University & on-farm trials)

5.4 – Whole Farm Economics (████████████████)

█ Annualized ROI Example – Pro-Cal Program

ROI Source

Per Acre Impact

Farmwide (████████████████)

Fertilizer Savings

█████/acre

██████████

Yield Gain (+125 lbs lint)

█████/acre

██████████

Total ROI

█████/acre

██████████/year

Even at conservative numbers (+100 lbs lint & █████ savings/acre), the ROI is still ██████████/year.

5.5 – Longevity Value

Pro-Cal results last 3–5 years, just like lime.

Spreading the cost across 3 years means < █████/acre per year for soil correction.

That's less than 3% of total fertility spend, yet it protects 30–40% of fertility ROI.

Section Summary Callout (Visual Box)

The Math is Simple:

Pro-Cal costs ██████/acre to apply.

It saves █████/acre in fertilizer losses and adds █████/acre in yield.

That's a \$1,000 return per acre, or \$1,000+ on \$1,000.

No waiting years for lime to work—results show in the first season.

6. The Program – How & How Much

6.1 – Recommended Rate for Cotton

Base Rate Guidelines (Cotton, **Highly Acidic** Soils)

Soil CEC

Current Ca Base Saturation

Recommended Pro-Cal Rate

Equivalent Lime Effect

Low CEC (8–12)

<55%

4 gal/acre

~2 tons lime

Medium CEC (13–18)

<55%

5 gal/acre

~2.5 tons lime

High CEC (19–25)

<55%

6 gal/acre

~3 tons lime

(AgriTec Pro-Cal Formula; University of Missouri CEC/lime equivalency data)

For most **Highly Acidic** cotton soils (CEC 12–18, Ca base saturation 50–60%), 4–6 gallons per acre is the ideal correction range.

6.2 – Timing Options

Pre-Plant Broadcast: Spray across fields prior to cotton planting. Provides corrected pH before seedlings emerge.

In-Season with Nitrogen: Can be tank-mixed with UAN, saving a pass. Boosts efficiency of N applications.

Fall Correction: After harvest, paired with residue management. Prepares soils for the next season.

Through Irrigation: Safe through pivot or Y-drop for even coverage.

☑ Flexibility is key — unlike lime, Pro-Cal can be applied when equipment and weather allow.

6.3 – Cost Per Acre

☑ Per Acre Program Scenarios (☑☑☑☑☑☑☑ Bulk Pricing)

Program Level

Rate

Cost/acre

Expected ROI/acre

Good

4 gal/acre

~☑☑☑☑/acre

+☑☑☑☑☑☑☑☑☑

Better

5 gal/acre

~☑☑☑☑/acre

+☑☑☑☑☑☑☑☑☑

Best

6 gal/acre

~☑☑☑☑/acre

+☑☑☑☑☑☑☑☑☑

6.4 – Farmwide Estimate (☑☑☑☑☑☑☑☑☑☑)

☑ Whole Farm Economics – Pro-Cal

Program Level

Rate

Total Gallons

Total Cost

Projected ROI

Good

4 gal/acre

6,000 gal

████████

████████ ROI

Better

5 gal/acre

7,500 gal

████████

████████ ROI

Best

6 gal/acre

9,000 gal

████████

████████ ROI

(Cost estimates based on tote/tanker delivered pricing in ██████████, free delivery included.)

6.5 – Application & Handling

Pro-Cal is liquid, sprayable, and mixes easily with other fertility or herbicide passes.

No special equipment required: sprayer, pivot, or Y-drop ready.

Non-corrosive and safe to handle compared to dry lime dust.

Section Summary Callout (Visual Box)

Your Pro-Cal Program for Cotton 4–6 gallons per acre is all it takes First-year ROI:

████████████████████ across ████████████████████ Flexible application: pre-plant, in-season, or fall

Lasts 3–5 years with one correction

Logistics & Ease of Use

7.1 – Delivery & Packaging

Delivered Farm-Direct: Every Pro-Cal order is shipped straight to Tracy’s farm — free delivery included anywhere in ██████████.

Packaging Options:

275-gallon totes (perfect for medium-volume application).

5,000+ gallon tankers for full-field programs at better bulk pricing.

No Hidden Costs: Pricing includes product + delivery. No additional freight or spreading bills.

☑ Order Size Examples – Tracy’s Farm (☐☐☐☐☐☐☐☐☐ at 5 gal/acre)

Container

Gallons

Acres Covered

Needed for 7,500 gal

Delivery Details

Tote

275 gal

55 acres

28 totes

Delivered on pallet

Tanker

5,000 gal

1,000 acres

1.5 loads

Pump-off direct to nurse tank

7.2 – Application Flexibility

Pro-Cal is fully liquid and sprayable, which means Tracy can work it into his operation however it best fits:

Spray Rig (Broadcast): Apply pre-plant with burn-down or as a stand-alone.

Pivot or Irrigation System: Apply in-season for even coverage.

Y-Drop or Streamer with Nitrogen: Perfect to tank-mix with UAN, saving a pass.

Residue Management Pass (Fall): Combine with breakdown products for soil prep.

☑ Unlike lime, there’s no special equipment, spreading trucks, or extra labor needed.

7.3 – Mixing & Compatibility

Compatible with most fertility and herbicide tank mixes.

Safe to run with:

UAN (28%/32%)

ATS

3-18-18+

Herbicide carriers

Non-corrosive → safe on equipment and lines.

(Always jar test before mixing with concentrated chemicals.)

7.4 – Longevity

One application lasts 3–5 years, same as high-quality lime.

Because Pro-Cal is liquid and chelated, results show immediately in the first season rather than 2–3 years later.

Farmers typically reapply every 3–4 years depending on soil test goals.

7.5 – Ease vs. Lime

☑ Pro-Cal vs. Lime: The Farmer's Perspective

Factor

Ag Lime

Pro-Cal

Delivery

Truckloads of rock

Tote or tanker direct

Application

Requires spreader trucks

Spray with existing equipment

Speed

Slow (18–36 months)

Fast (4–6 weeks)

Labor

Heavy equipment + time

Simple spray pass

Residue

Dusty, inconsistent

Clean, liquid, uniform

Section Summary Callout (Visual Box)

Simple. Clean. Effective. ☑ Free delivery, totes or tanker options ☑ Sprayable with existing rigs, pivots, or Y-drops ☑ Mixes with UAN, herbicides, and fertility products ☑ One application corrects pH for 3–5 years

8. Next Steps

8.1 – Trial Block Suggestion

The best way to see Pro-Cal’s value is in Tracy’s own soil, under his own management. A small side-by-side trial shows results fast.

☑ Suggested Trial Design

Trial Size

Rate

Acres

Expected Results

Block Trial

5 gal/acre

80–100 acres

+100–150 lbs lint/acre, ☑☑☑+ fertilizer savings

Check Block

None

80–100 acres

Baseline comparison

☑ Within one season, Tracy will see the difference in pH correction, fertilizer efficiency, and cotton yield — with his own numbers.

8.2 – Ordering Process

Step 1: Soil Test Review (Optional) – Upload or share soil samples to fine-tune rates by field.

Step 2: Choose Order Size – Tote (275 gal) or Tanker (5,000 gal) based on acres covered.

Step 3: Delivery – Free delivery to farm, scheduled around planting or nutrient passes.

Step 4: Application – Spray with existing rigs, pivots, or mix with UAN.

☑ No new equipment, no extra passes — simple integration into Tracy’s program.

8.3 – Support Included

When you use Pro-Cal, you’re not just buying product. You’re gaining a partner in managing your soils.

Agronomic Consultation: Ongoing review of soil tests, tissue tests, and field performance.

Mixing & Application Support: Tank-mix guidance for fertilizers and herbicides.

ROI Calculations: Side-by-side comparisons of cost vs. return.

Dealer/Rep Contact: Always available for questions — one phone call away.

8.4 – Why Start Now

Soil pH won't fix itself. Every season delayed means wasted fertilizer and lost lint.

Timing advantage: Pro-Cal is flexible enough to apply pre-plant or in-season.

Cotton responds fast: The sooner the correction, the sooner the ROI shows.

Section Summary Callout (Visual Box)

Your Next Steps with Pro-Cal: Start with a 100-acre trial this season. Apply 5 gal/acre for immediate pH correction. Expect \$100+/acre ROI within the first year. Expand to the full 1,000 acres after proven results.