AgroSource

Cross-Crop Impact Summary

2025





Presented by:

Living Water

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Common Biological Patterns



Overview

Across every crop, climate zone, irrigation system, and soil type analyzed, **one core pattern repeats: Living Water consistently restores the soil's biological engine**, which leads to measurable improvements in plant health, stress resilience, and crop profitability. This happens **without increasing chemical input** or requiring new equipment.

Fungal Network Increase

Perennial crops (pistachios, blueberries) showed **large increases in fungal biomass** and improved **F:B ratios**, shifting soils from "high-input dependent" to **self-feeding systems**.

This improves:

- Water uptake and soil retention
- Phosphorus mobilization
- Stress tolerance (heat, salinity, compaction)

Microbial Carbon Cycles Reactivate

Across all farms, biological carbon and nitrogen pools increased. This means soil life is converting organic matter into usable nutrition, again reducing input demand long-term.

Root Systems Deepen + Stabilize

Tested on over 20 crop varieties nationwide, Living Water delivered uniform results, deeper, denser roots, and improved root-to-soil connectivity in nearly every field.

This is what drives:

- More consistent moisture holding
- Reduced wilt stress
- Faster crop recovery after stress events



Fungi Biomass



Water Uptake



Increased Carbon



Increased Nitrogen



Common Plant Performance Responses



Whether the crop was a grass, tree nut, berry, or cotton boll, the following shifts were consistent:

Attribute	General Change	Functional Outcome
SPAD / Chlorophyll	↑	Stronger photosynthesis + yield
BRIX / Plant Sugars	↑	Better grain fill, fruit quality, flavor
Tissue Nutrient Balance	Rebalanced	Inputs become more effective
Stress Markers	↓	Better crop resilience in heat / salinity / drought

Plants become more efficient engines, requiring less correction and fewer rescue inputs.

Operational & Financial Themes

1. No Additional Inputs Required
   - Results came from **improving nutrient access, not increasing nutrient quantity**.
2. Reduced Input Costs Over Time - Pistachios alone saw ~$75K annual savings primarily from:
   - Reduced gypsum
   - Reduced N usage
   - Lower salinity flush requirements
3. ROI is High and Fast
   - Alfalfa trial ROI: Reported returns up to 60 times the initial investment.
   - Barley recovered from a failed malting contract
   - Cotton stabilized calcium, boron, and boll formation



Farmers **continued, expanded, and repeated** use voluntarily.

The Unifying Theme: Reactivating Soil Intelligence



Across every crop, region, and management system tested, one clear pattern emerged: Living Water consistently reactivates the soil's biological engine, leading to stronger plants, better stress resilience, and increased profitability, all without requiring changes to fertilizer programs, added chemicals, or new equipment.

Rather than feeding the plant directly, Living Water feeds the microbial systems that make nutrients mobile, accessible, and efficiently absorbed. This results in a fundamental shift from external dependency to internal biological function.

Soil as the Driver, Not the Limiter

By increasing fungal biomass, re-balancing microbial communities, and reactivating the carbon and nitrogen cycles, Living Water transforms the soil from a passive medium into an active nutrient processor. The result is deeper, denser roots, improved moisture retention, and higher nutrient-use efficiency across crop types.

These biological changes translate directly into plant performance:

- Higher chlorophyll (SPAD) → better photosynthesis and yield
- Increased BRIX → improved flavor, grain fill, and fruit quality
- Rebalanced tissue nutrients → more efficient input use
- Reduced stress markers → better resilience to heat, drought, and salinity

Plants become more self-sufficient, needing fewer corrective inputs to maintain performance.

Economic Impact Without Added Inputs

Across multiple crops, farms achieved meaningful reductions in input costs, such as saving approximately $75,000 annually on pistachio production while realizing strong, measurable ROI across the board. Alfalfa demonstrated exceptional profitability, barley recovered a previously failing contract, and cotton exhibited enhanced calcium and boron efficiency.

Farmers didn't need to be convinced; they chose to continue and expand use based on results.
From High-Input to Self-Sustaining Systems

At its core, **Living Water helps the soil remember how to function as a living system**. Instead of relying on constant external feeding, the soil becomes a self-sustaining engine, improving yield, resilience, and long-term input efficiency.

It's not just a product, it's a shift in how agriculture works. From high-input dependency to biologically intelligent farming, Living Water restores the system nature designed: one where healthy soil feeds healthy plants and healthy plants feed farm profitability.

Living Water Crop Impact Summary



Idaho Barley (Malting Contract Recovery)

Crop: Barley (Malting grade)
Issue: Chemical stress from herbicide + growth regulator misapplication
Location: Idaho
Delivery Method: Living Water program injected through irrigation



Measured Soil & Plant Response:

- Root Depth: 4–7" → ~9"
- SPAD (Chlorophyll): 32 → 57+
- BRIX (Plant Sugars): 4 → 17
- SAP EC: 13.2 → ~14 (stabilized)

Outcomes:

- The crop recovered, exceeded untreated fields, and met malting specifications.
- Grower is expanding Living Water use across the entire acreage.

Key Takeaway:

- Living Water reversed stress damage and improved grain-fill quality, raising market value

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California Pistachios (Soil Regeneration + Cost Savings)

Crop: Pistachio
Outcome: Improve soil health, Cost savings
Location: California Central Valley
Delivery Method: Living Water program injected through irrigation



Soil Biology Response (~120 Days):

- Soil Salinity: -25%
- Biological Carbon: +100%
- Biological Nitrogen: +50%
- Fungi Population: +200%
- F:B Ratio: +125%

Economic Impact:

- Estimated annual savings: $94.50/acre → ~$75,600 total

Key Takeaway:

- Living Water improved orchard soil structure, enhanced nutrient efficiency, and strengthened long-term resilience by reducing salinity, restoring balanced nutrient cycling, and providing cost savings.

Living Water Crop Impact Summary



Idaho Alfalfa (Side-by-Side Pivot Trial)

Crop: Alfalfa
Outcome: Improved yield and feed quality
Location: Idaho
Delivery Method: Living Water applied via irrigation and compared to a control plot

Crop Performance (First Cutting):

- Relative Feed Value (RFV): +45%
- Yield: +17%
- Digestibility (ADF): +22%
- Crude Protein: +18%
- Increased in Available Phosphorous 8.8%



Financial Outcome:

- Net Return Increase: ~ $2,500+/acre
- Delivered one of the highest ROI results across all trialed crops

Key Takeaway:

- Living Water increased both tonnage and forage quality without requiring additional inputs, delivering higher yields and improved feed value

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Texas Cotton (Nutrient Balancing + Boll Quality)

Crop: Cotton
Outcome: Improve nutrient uptake + reduce aluminum toxicity stress
Location: West Texas
Delivery Method: Living Water program injected through irrigation



Soil & Tissue Results:

- Calcium: +125%
- Boron: +75%
- Magnesium: +25%
- Aluminum Toxicity: -50%

Key Takeaway:

- Living Water reduced soil stress and promoted stronger boll formation and fiber development, resulting in improved nutrient balance and overall boll quality

Living Water Crop Impact Summary



California Blueberries (Soil Biology Recovery & Carbon Efficiency Shift)

Crop: Blueberries
Observations: Soil Biology Recovery & Carbon Efficiency Shift
Location: California
Delivery Method: Living Water applied via irrigation and compared to a control plot



Objective:

- Assess baseline soil biological condition and monitor early-stage recovery following Living Water microbial activation.

Testing:

- Soil Life Test, Haney Soil Health, PLFA Microbial Biomass
- Early tests show a 55.4% Increase in Organic Phosphorous Release

Key Takeaway:

- Establish baseline soil biological metrics and monitor initial recovery phases post–Living Water microbial activation, with expected trends indicating enhanced biological activity and improved carbon-use efficiency

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California Garlic (Soil Biology Improvement & Root Efficiency)

Crop: Garlic
Outcome: Soil Biology Improvement & Root Efficiency
Location: Fresno, California
Delivery Method: Living Water program injected through irrigation



Soil Biology Changes (Jan → May 2025):

- Fungi: +76%
- Bacteria: +17%
- F:B Ratio: +51%
- Biological Carbon: +42%
- Biological Nitrogen: +24%

Key Takeaway:

- Living Water shifted soil from bacterial-dominant to fungal-supported, improving nutrient flow and root-zone stability, supporting stronger bulb fill

Living Water Crop Impact Summary



New Mexico Potatoes (Yield performance, Tuber Quality, Disease Incidence)

Crop: Potatoes
Outcome: Yield Performance, Improved Tuber Quality, and Reduced Disease Incidence
Location: New Mexico
Delivery Method: Living Water applied via irrigation through a trial project



Crop Performance:

- Yield improvements: 14%
- Grade increase: 28%
- Disease reduction: -60%

Key Takeaway:

- Living Water delivered higher yields, improved market quality, and reduced Rhizoctonia incidence, independently validated by an on-site agronomist

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Texas Peanuts (Pod Fill and Grade Increase)

Crop: Peanuts
Outcome: Quality of Grade Improvements, Yield Increases, Growth in Kernel Size, Shell Integrity
Location: West Texas
Delivery Method: Living Water program injected through irrigation



Crop Performance:

- Quality Improvement: Ranked 73-74 (Highest Grade Possible)
- Yield increase: 1,000 LBS
- Kernel Size: +60% Improvements in Size
- ROI: Significant Cost Savings and Grower Projected Gain

Key Takeaway:

- Living Water improved peanut yield, quality, and overall profitability, elevating crop grading to the top tier and confirming its value in premium peanut production systems

Living Water Crop Impact Summary



Idaho Sugar Beets (Nutrient Stress, Root and Foliage Brix)

Crop: Sugar Beets
Outcome: Higher Brix Levels, Increased Ionic Balance, Reduction in Nutrient Stress
Location: Idaho
Delivery Method: Living Water program injected through irrigation



Measured Soil & Plant Response:

- SPAD (Chlorophyll): 52 → 50
- Brix: 14 → 16 (Root Zone)
- EC: 3.48 → 2.04 (Root Zone)
- Brix: 8 → 11 (Foliage Analysis)
- EC: 10.29 → 5.9 (Foliage Analysis)

Key Takeaway:

- The Living Water application elevated Brix in roots and foliage, reduced EC readings, and maintained consistent pH, demonstrating greater nutrient-use efficiency, lower salt accumulation, and improved metabolic performance relative to the untreated control.

Nebraska Corn (Macro-dose Trial)

Crop: Corn
Outcome: Visual Size Increases, Improved Plant Response
Location: Nebraska
Delivery Method: Living Water macro-dose program



Measured Soil & Plant Response:

- Zinc: +75% (1.2 → 2.1 ppm) — improved enzymatic activity
- Calcium: +20% (481 → 576 ppm) — better structure & CEC
- Magnesium: Stable (123 → 118 ppm)
- Organic Matter: 3.4% → 3.55% — steady humus gain
- Ca:Mg Ratio: 2.4:1 → 2.9:1 (optimal range for structure & drainage)
- increased Available Phosphorus from 60.7 to 127.8

Key Takeaway:

- Living Water delivered noticeable gains in corn yield and quality, prompting expansion of the program to more acres next season

Final Conclusion of Soil Conditions



Baseline Testing Across Crop Blocks Showed

- Low AMF and F:B ratios (<3.0) indicated reduced biological stability.
- Living Water improved F:B ratio by 51%, signaling recovery in soil biology.
- Carbon and nitrogen pools below regenerative benchmarks.
- Elevated EC values reflected osmotic stress in multiple sites.

Observed Biological Response

- Increased soil respiration and microbial activation.
- Higher Microbially Active Carbon and organic nitrogen mineralization.
- Greater total microbial biomass and AMF activity.
- Enhanced nutrient cycling and resource efficiency.

Functional Interpretation

- Shift toward fungal-supported, regenerative soils.
- Greater water-use and phosphorus efficiency.
- Stronger roots under stress conditions.
- Enhanced long-term carbon retention.

Key Takeaway

- Living Water demonstrated a clear, repeatable pattern of biological recovery, nutrient efficiency, and yield improvement across all 2025 trials. By restoring soil microbial balance and improving plant resilience, the system provides a proven pathway toward regenerative agriculture, input efficiency, and long-term economic returns for growers.

All soil environments are unique. Results shown in this report reflect field and laboratory data specific to the soil type, region, and management conditions where Living Water was applied. Variations in soil texture, water source, climate, and historical inputs may influence outcomes. These figures represent verified results from monitored sites and are provided as performance indicators, not universal guarantees. For copies of the supporting soil analyses or to review full data sets, please contact us directly and we will provide the detailed reports upon request.