Biology & Pathogen Suppression

"It's a well-established fact that the plants that form "working" relationships with certain bacteria and/or fungi can grow faster, withstands certain stresses, or produce more marketable product than plants lacking these relationships."

- Dr. Matt Kleinhenz, OSU

White Mold

"Before we were using LiquiLife® and the sugars, it completely wiped the field out. As we move into last year, it would have had LiquiLife on the corn and now this year on the soybeans. There is literally no white mold out there."

4 Modes of Biological Action

Bio-Sanitation
Competitive Exclusion
Production of Natural Antibiotics
Induced Systemic Resistance (ISR)

Skip and Scott discuss white mold and pathogen suppression with biology.

Maintaining or re-establishing a biological balance can help crops survive and/or thrive in their natural environments.

LiquiLife® and LiquiLife+® are a proactive/protective approach to plant health, not a curative. Timing and observational farming can help reduce the rates and frequency of other crop protection inputs, improving productivity on your farm.

In the long run, it's about ROI today and long-term viability of the path you are on. Biological vitality can help farmers become less reliant on purchased fertilizers and the next more expensive generation of crop protection inputs.

S.T. BIOLOGICALS™

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Biology & Pathogen Suppression

Here are more field observations of our customers utilizing BIOACTIVE® and noticing improvements in crop resiliency.

- **A Florida agronomist** - "Black rot (bacterial infection) is taking down fields of broccoli, bactericides are not working. About the only broccoli being harvested are fields with LiquiLife+® incorporated into the program. A farm using LiquiLife+® reported that black rot was still present, but now manageable, and harvested approximately 80% of the crop at one time, exceptional for broccoli. Sizing was highly desirable and uniform, with 500-600 boxes per acre headed to market."
- **White mold on Dry Beans** – "All around us mold was breaking out, a consultant said there was no way to avoid it in our fields—we did thanks to biology."
- **Amish group Veggies** - "It was a pretty good year, but there were lots of late season disease pressures because of the hot wet conditions. Everybody saw it except the guys using liquid biologicals."
- **East coast greenhouse** - "Botrytis Oh my Gosh, using LiquiLife® (formerly CX-1) almost completely eliminated it in our greenhouse."
- **Organic apple grower** - "I have been working on the Orchard floor for 3 years now, I feel like I have eliminated scab from my operation."

Modes of Biological Action (Protection)

Competitive Exclusion

One organism creates an unwelcoming environment for another, effectively excluding the second organism from becoming established without directly killing it. An example of this would be creating a film on a root surface to prevent pathogens from infecting the plant.

Production of Natural Antibiotics

These secondary metabolites contribute to plant health and nutrient density.

Bio-Sanitation

Gram-positive bacteria consume pathogens (like botrytis and anthracnose) on leaf surfaces and residue.

Induced Systemic Resistance (ISR)

Nature can stimulate plant response to disease pressure before actual diseases are detected. This results in strengthened plant defenses, which helps prevent the onset of actual disease.