



## ***Benefits of SP-1***

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### **Career horticultural scientist finds multiple benefits of SP-1 in field tests**

*By Jerry Carlson, Renewable Farming LLC*

This spring, several firms are marketing new kinds of “new biological yield boosters.”

Their catch-up efforts confirm the benefits we’ve shown farmers with our biological focus on products like **SP-1**, **Myco Seed Treat** and **Residue**. AgriEnergy customers have said for years: “SP-1 just *works*.”

**We encourage fresh research too.** We asked one of America’s most experienced vegetable scientists, Dr. Michael Orzolek, to conduct experiments with SP-1 and Myco Seed Treat on the Penn State University’s Horticulture Research Farm near Pennsylvania Furnace, PA.

He’s Professor Emeritus of Vegetable Crops, Plant Science Department, Penn State University. Though officially retired, he continues searching for new ways to help growers. He sees crop-friendly fungi and bacteria as beneficial for soils and foundational for yields. Penn State allows him to conduct applied field research at their research farm in a mountain valley near Pennsylvania Furnace. He reported his 2017 field trials with SP-1 at our Des Moines seminar Feb. 8.

As we visited with him after seeing his PowerPoint data, he told us he’s one of the few university-based scientists eager to test beneficial microbes. “Most of our agronomists don’t even want to talk about it,” Dr. Orzolek said.

His random-replicated plot trial with SP-1 on corn in 2017 showed yield gains. That's consistent with many other positive field results we've seen over the years.

In a test of SP-1 broadcast-sprayed on 1,200-square-foot research plots four days before planting corn, yield gains over the check plots were significant in two trials out of three. One trial used only 1.5 gal. of broadcast SP-1 and showed an 8-bu. yield benefit.

AgriEnergy recommends in-furrow application of SP-1 as a means of mobilizing it consistently, with less variability imposed by weather. Dr. Orzolek wanted to measure benefits of SP-1 by a simple *broadcast* preplant application. It simulates what would happen if SP-1 is sprayed in a tank mix with preplant or premerge herbicides. Many growers don't have in-furrow application capability on their planters, so a piggyback application would save a trip.

Dr. Orzolek saw definite darkening in the soil in SP-1 treated plots — after just one season. That benefit should compound over future seasons with further applications, he reasons.

**"When you achieve an abundant, early population of beneficial bacteria and fungi,** these microorganisms enhance nutrient extraction and uptake from the soil," says Orzolek. "This also improves soil porosity and humus, which in turn builds other benefits like rain infiltration and moisture holding capacity."

"So there are lots of soil tilth and health benefits of SP-1 beyond yield," Dr. Orzolek emphasizes. "SP-1 is a great investment, with longer-term returns much higher than most growers realize if they're looking only at first-year yield response."

In another trial SP-1 produced a "50% increase in the marketable yield of processing tomatoes." In 2018, he plans more processing tomato trials, including tissue sampling to detect the additional nutrient uptake he expects with SP-1.

**"SP-1 has multiple uses,** and multiple application techniques including foliar, seed treatment and in-furrow. But I keep coming back to the biggest benefit, which is soil health. Over my career in horticulture, there have been only a few products which actually enhance soil health. I also maintain that as you enhance beneficial organisms like those in SP-1, the abundance of 'good microbes' gives pathogens more competition."

Dr. Orzolek adds: "Some no-till farmers who plant cover crops may think that's all they need to build soil health. But I'm convinced that if they include SP-1 with cover crops, they can accelerate the benefits of no-till. I also see many of our vegetable growers doing a lot of tillage, which damages soil structure. SP-1 could remedy some of that damage."

**Dr. Orzolek concludes:** "The main benefit of SP-1 is a buildup of soil health and tilth. That's the foundation for yields. Early agronomists understood that too, and urged crop diversity and rotations to encourage a wide spectrum of soil

organisms.”

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