



**Base Performance...  
Nitrogen Fixing  
Inoculant**

**How does VIGOR Perform  
as a Nitrogen Fixing  
Inoculant?**



# 2006 Ohio Soybean Inoculation Report

By Dr. Jim Beuerlein  
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**6 treatment locations across the state of Ohio.**

**23 commercial and experimental treatments.**

**3 x VIGOR (Sintesis Quimica) Inoculant Treatments, pre-inoculated at 7 days, 21 days, and 30 days prior to planting.**



**How does VIGOR Nitrogen Fixing Inoculant Compare to other Brands?**



VIGOR Inoculant – Pre-treated 30 days prior to planting, ranked as the **#3 commercial brand** of those tested in the study.

The VIGOR technology **yielded statistically significant better** results compared to the untreated-check **95% of the time**.

Across 6 locations, VIGOR inoculant **averaged 2.2 bushel increase compared to the untreated check**. VIGOR inoculant was only 0.5 bushel behind the leading inoculant treatment in the study (not a statistical difference).

In head to head comparisons, the **VIGOR inoculant beat Optimize performance in 4 out of 6 study locations** and across the 6 locations averaged .5 bushel better than the Optimize product. In the four locations where VIGOR technology beat Optimize, VIGOR averaged 1.2 bu. better performance than Optimize.

# BioBOOST Plus

Vs.



Excerpt from BrettYoung Literature →

2006 BioBoost US Trials				
	Untreated	BioBoost® Plus	Optimize	Vault NP
Carrington, ND	19.1	21.4	21.8	20
N1, OH	54.1	55.6	59	56.9
N2, OH	51.3	<b>55.9</b>	53.6	51.8
C1, OH	45.5	<b>49.5</b>	45.9	46.7
S2, OH	69.1	70.4	71.2	71.1
<b>AVERAGE</b>	<b>47.8</b>	<b>50.6</b>	<b>50.3</b>	<b>49.3</b>

	30d	21d	7d
	59.4	59.4	56.7
	54.1	53.7	52.2
	49.2	49.9	48.9
	69.1	71.7	74.6

AVG							
w/o Carrington, ND	55.0	57.85	57.42	56.6	57.95	58.67	58.1

## 2006 Ohio Soybean Inoculation Report - Average across all 6 locations...



- BioBoost Plus... 54.7
- Vigor (7 days pretreat) ... 55.6
- Vigor (21 days pretreat) ... 55.2
- Vigor (30 days pretreat) ... 55.7
- Optimize... 55.2
- Vault NP... 54.5



**Value-Add performance...**  
**Plant Growth Promoting Rhizobacteria**

**What is the PGPR in  
VIGOR and how does it  
work?**



# PGPR

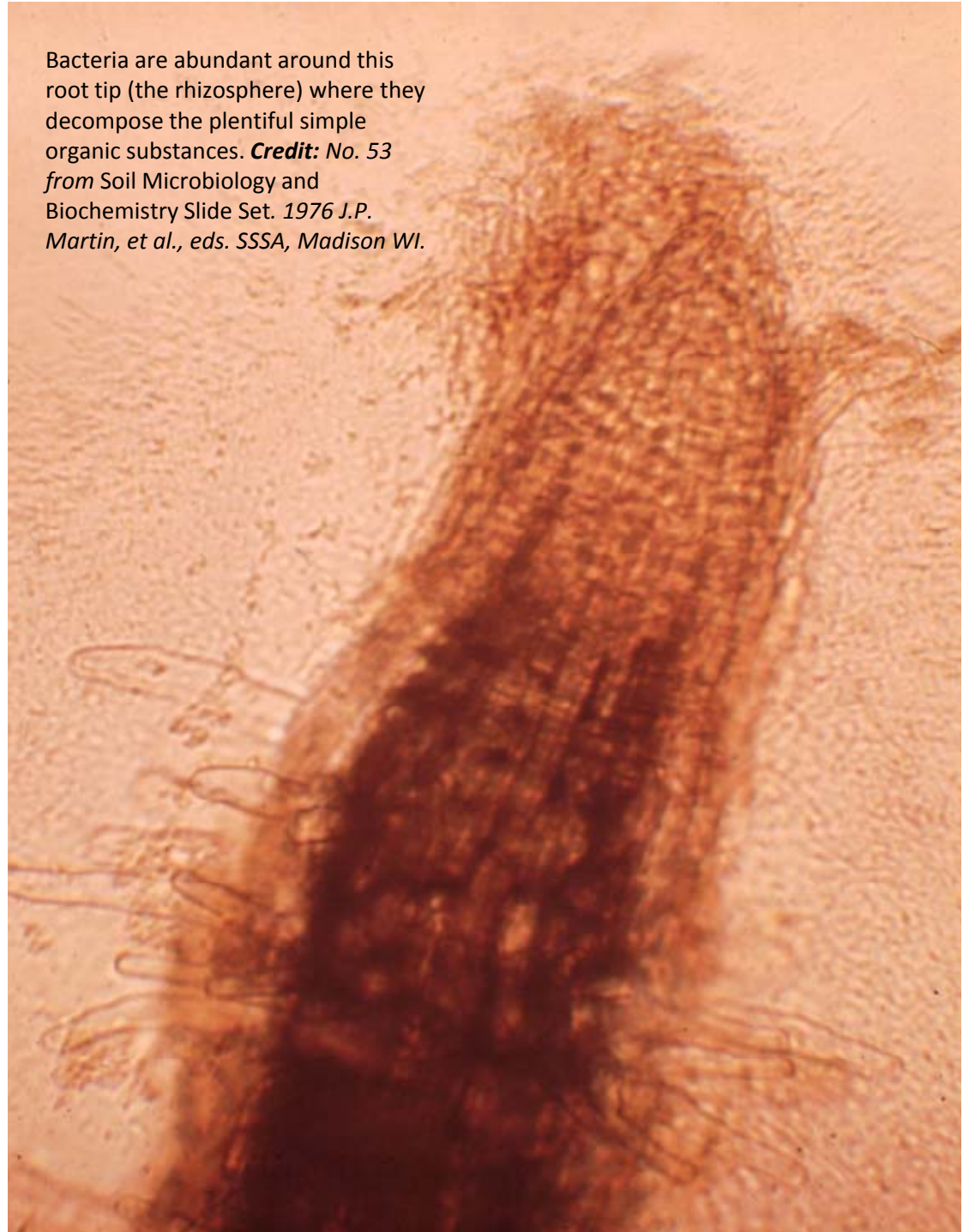
PGPR<sup>1</sup> stands for Plant Growth Promoting Rhizobacteria, a term first used by Kloepper and Schroth to describe bacteria that are able to colonize plant root systems and promote plant growth.

- ✓ VIGOR delivers a co-inoculation system of performance along with a proprietary PGPR strain of *Azospirillum brasilense*.
- ✓ The VIGOR PGPR contributes to performance of the system by colonizing in the plant and contributing to complex reactions within the plant rhizosphere.

<sup>1</sup> Kloepper and Schroth (1978)

Proceedings from the 4<sup>th</sup> International Conference on Plant Pathogenic Bacteria

Bacteria are abundant around this root tip (the rhizosphere) where they decompose the plentiful simple organic substances. **Credit:** No. 53 from Soil Microbiology and Biochemistry Slide Set. 1976 J.P. Martin, et al., eds. SSSA, Madison WI.





# PGPR

Interacts synergistically with nitrogen fixing bacteria (inoculant) to promote improved nodulation and nitrogen fixation.


Phytohormones produced by the VIGOR PGPR, have been shown to promote epidermal-cell differentiation in root hairs that increase the number of potential sites for rhizobial infection, leading to the enhanced nodulation and Nitrogen fixation, among many other biological benefits.

Most importantly, VIGOR is designed to deliver premium inoculation with the backup co-inoculation of PGPR, giving the crop a better start and hastened stand establishment.

Untreated



The PGPR in the inoculation system hastens plant growth resulting in a plant with more “*vigor*”.

Treatments	Stem lenth	Roots length	Nodules N° p/Plant	Nodules n° principal root	Nodules N° p/ secondary roots	YIELD (bushels/acre)
Untreated	24	37	23	9	14	31.4
Inoculant Alone	26	39	29	15	14	40.4
	30	41	34	20	18	46.2

Maybe it should have been called “*Yield Booster*”

