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# Bio seed is a consortium of bacteria and fungi that work to:

- Fix atmospheric nitrogen into a plant available form
- Solubilize phosphates and potassium
- Solubilize silica, which helps alleviate drought stress
- Build organic matter and improve soil structure over time

# Familiar Faces, Unique Combination

Guaranteed analysis:

- Paenibacillus azotofixans..... 1x10^8 CFU/g
- Bacillus megaterium ..... 1x10^8 CFU/g
- Bacillus mucilaginosus..... 1x10^8 CFU/g
- Bacillus subtilis ..... 1x10^8 CFU/g
- Trichoderma harzianum ...... 1x10^8 CFU/g

Product is applied at 50-100g/acre, Results in 5.0-10 <u>billion</u>CFU/acre



### **Benefits By Strain**

Paenibacillus azotofixans - Converts atmospheric N2 to NO3 and NH4

Bacillus megaterium - Converts inorganic P into plant available form

Bacillus mucilaginosus - Releases potassium from K-rich soil minerals

*Bacillus subtilis* - Helps provide carbohydrates to seedlings and transplants before photosynthesis is in full production

*Trichoderma harzianum* - Improves soil structure by producing glomalin, which helps with water infiltration and retention

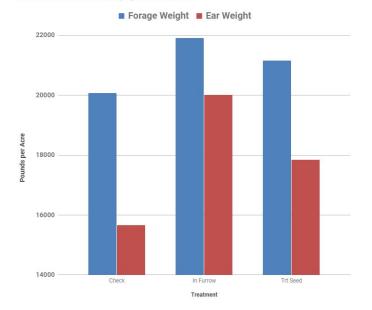


#### **Advantages of Bio Seed**

- OMRI listed
- Will maximize the uptake of nutrients applied as fertilizer
- Effective over a broad range of crops and soil conditions
- All bacteria are Gram-positive and facultative
- Low rate: 50 g/acre
- Cost effective: ranges from \$10-\$15/acre depending on seeding density

#### Results on Grain Corn - Reality Research, Geneva, NY

Average Forage & Ear Weight (lbs) per Acre, 9/23/17



Calculations for bu/a at 15.5% moisture by ear weight:

In Furrow: 169.1 bu/a

Seed Treatment: 150.9 bu/a

Untreated Check 132.4 bu/a

In Furrow increase	se	over cor	ntro	1:	27.7%
Seed Treatment	"	"	"	:	14.0%

#### Results on Onions, Guanajuato, Mexico

Treatment	Total MT/ ha	Dif. vs. Control MT/ha	% dif. with Cont.	% extras to medium	% small & waste	total %
1. Untreated control	39.0	0.0		91.6	8.4	100
2. Bio Seed 1 drench at 125 g/ha + 3 monthly 1 L/ha Vitazyme sprays	48.7	9.7	24.7	92.2	7.8	100
3. Bactiva 4 monthly drenches, cumulative 1.25 kg/ha (500 g/ha + 3 at 250 g/ha)	41.3	2.3	5.9	91.1	8.9	100
4. Bio Seed 1 drench at 125 g/ha	46.6	7.5	19.3	93.6	6.4	100

## **Preliminary Indications of Control**

Program/treatment	date	product	rate/ha	\$US/liter	\$US/ha
1. Control	09-Oct-17	MM 64-8	2 kg	18.92	37.84
	24-Oct-17	MM 64-8	2 kg	18.92	37.84
	31-Oct-17	Econil	4 L	9.73	38.92
	07-Nov-17	Econil	4 L	9.73	38.92
	14-Nov-17	Consent	2 L	21.62	43.24
	20-Nov-17	Econil	4 L	9.73	38.92
				Total	235.68
4. Bio Seed	31-Oct-17	MM 64-8	2 kg	18.92	37.84
	20-Nov-17	MM 64-8	2 kg	18.92	37.84
2. BioSeed+Vitazyme				Total	75.68
	20-Nov-17	MM 64-8	2 kg	18.92	37.84
				Total	37.84

Lucava MM 64-8 (64% mancozeb + 8% metalaxyl WP; (640 & 80 g a.i./kg, resp.). Lucava Econil 720 (52% chlorthalonil AS; 52% per wt equals 72% wt/v). Bayer Consento (7.50% fenamidone + 37.50% propamocarb SC).

# **Ongoing Trials**

- Shelled corn, soybeans, green beans, tomatoes, onions in Tennessee Agricenter International
- Strawberries, broccoli, celery Holden Research Group, California
- Almonds 80 acre grower trial, Northern California
- Apples 2nd leaf tree growth, Reality Research, NY
- Seedlings tomato, spinach, peppers, melons Central California





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