Soybean *with Vitazyme application*

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Location: Memphis, Tennessee ***Variety:*** P4255RR2X ***Planting date:*** July 12, 2019 ***Planting rate:*** 140,000 seeds/acre
Planting depth: 1.0 inch ***Row spacing:*** 30 inches
Soil type: Falaya silt loam, pH = 6.3, organic matter = 2.4%, fertility level = good, drainage = good
Experimental design: A small-plot soybean trial was established, using 10 x 30-foot plots (300 ft.^{2}) and five treatments with four replications in a randomized complete block design.

Treatment	Bio Seed application		Vitazyme applicaton[1]	
	On seed	In-furrow	In-furrow	foliar
1. Control	0	0	0	0
2. Bio Seed	136 g/cwt	0	0	0
3. Bio Seed	0	50 g/acre	0	0
4. Bio Seed + Vitazyme in-furrow	0	50 g/acre	13 oz/acre	0
5. Bio Seed + Vitazyme in-furrow and foliar	0	50 g/acre	13 oz/acre	13 oz/acre

[1]13 oz./acre = 1 liter/ha

Bean pods removed from three plants of both the Vitazyme and Bio Seed treatment and the control reveal more pods and potential yield for the treated plants...up to 40% more yield for Treatment 5.

Fertilization: none
Vitazyme application: 13 oz/acre (1 liter/ha) in-furrow at planting for treatments 4 and 5; 13 oz/acre (1 liter/ha) sprayed foliar 30 days after planting at early bloom.
Bio Seed application: Bio Seed is a formulation of bacteria and fungi that stimulates rhizosphere microbial populations. 136 g/100 lb of seed applied before planting for Treatment 2; 50 g/acre in-furrow at planting for Treatments 3, 4, and 5.
Harvest date: November 5, 2019, of the middle two rows of each plot with an Almaco plot combine
See moisture: There were no significant differences in seed moisture content (8.13 to 8.48%).
Seed Test weight: There were no significant differences among treatments for test weight (55.98 to 58.32 lb/bu).

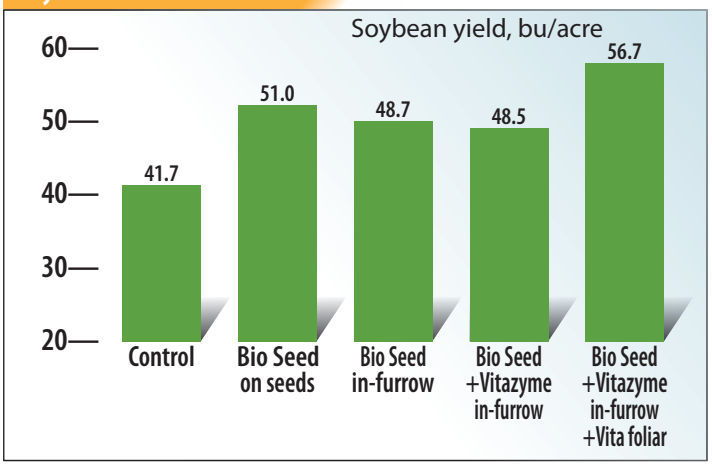
This soybean trial with Vitazyme and Bio Seed produced excellent and highly significant responses in a small plot setting.

Yield results:

Treatment	Yield	Yield change
	bu/acre	bu/acre
1. Control	41.7 c	—
2. Bio Seed on seeds	51.0 b	9.3 (+22%)
3. Bio Seed in-furrow	48.7 b	7.0 (+17%)
4. Bio Seed in-furrow +Vitazyme in-furrow	48.5 b	6.8 (+ 16%)
5. Bio Seed in-furrow +Vitazyme in-furrow +Vitazyme foliar	56.7 a	15.0 (+40%)
LSD (P=0.05)	3.68	
CV	4.85	
Treatment F -value	0.0001	

Notice the taller, stronger soybean plants on the right that have received Vitazyme and Bio Seed. Their leaf area is greater, root development is more extensive, and leaf chlorophyll level is better than for the untreated control.

Soybean Yield



Income results: Income increase data is given for Treatments 1, 4, and 5.

Treatment	Extra income	Extra costs	Net increase
	----------U.S. $/acre----------		
1. Control	—	—	—
4. Bio Seed in-furrow +Vitazyme in-furrow	63.72	21.13	42.58
5. Bio Seed in-furrow +Vitazyme in-furrow +Vitazyme foliar	140.55	29.77	110.78

Increase in soybean yield

Bio Seed on seeds 22%
Bio Seed in-furrow..... 17%
Bio Seed + Vitazyme in-furrow 16%
Bio Seed + Vitazyme in-furrow + Vitazyme foliar..... 40%

Conclusion: A small-plot soybean study conducted with Bio Seed and Vitazyme in Memphis, Tennessee, revealed that, while test weight and seed moisture at harvest were not significantly affected, Bio Seed seed pre-treatment and in-furrow treatment increased the yield by 22 and 17%, respectively. When Vitazyme was applied together with Bio Seed in-furrow, the yield improved by 16%, which was statistically the same as the Bio Seed treatments alone at P=0.05. However when a foliar Vitazyme treatment was added to the in-furrow Bio Seed and in-furrow Vitazyme treatment, the yield shot up to 40% greater than the control. These results show the great efficacy of Bio Seed alone either pre-treated on the seeds or in-furrow, but epecially Vitazyme applied foliar along with Bio Seed and Vitazyme added in-furrow. Income was increased by up to $110.78/acre with Bio Seed and Vitazyme.This experiment reveals the great value of the products for soybean growers.