



Introduction: Microorganisms are ubiquitous in the world and play beneficial roles in determining soil health. In turn, healthy microbial soils increase plant health and crop quality and yields. BioNorth Solutions' plant growth promoting microbial products, PGP4 and PGP2R, are naturally climatized to cooler agricultural sites and are poised to improve plant growth and soil health.

Problem: The essential use of fertilizers diminishes soil health over time and thus, the community of natural and beneficial microbial life present in the soil leading to poorer crop quality and production.

Treatment: Planet Earth Agronomy obtained BioNorth's proprietary microbial consortia for application in their corn field in Elkhorn, Wisconsin; 25 grams of the product was filtered and sprayed through a foliar sprayer for application as a corn seed starter on June 5th 2022.

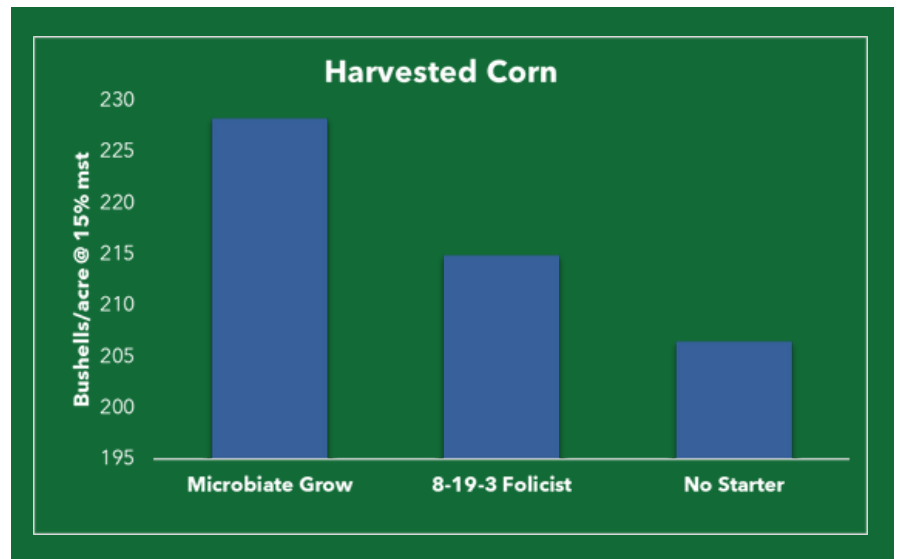
Microbial Plant Growth Promotion in Field Grown Corn

A BioNorth Solutions Case Study



The field contained plots with 4 rows each treatment averaging 350 feet long and 2.5 feet wide. Three replicate plots were treated with BioNorth's microbial consortia and the remainder of the field had plots for comparison with a starter fertilizer, 8-19-3 Folicist + Perm 6 + Zinc, and no starter applied. The whole corn field was treated the same the remainder of the season. The plants were observed throughout, and data was collected at the harvest on November 29th, 2022.

Results: Observations of the corn growth with BioNorth's proprietary consortia showed early, even, emergence; strong growth; less disease late in the season; and, best corn. Comments were recorded and observed by professional agronomists with Plant Earth Agronomy. Using a ranking system to summarize the collected data, one of BioNorth's three plots ranked number 1 and had the best corn from the entire field, it harvested at 251.1 bushels/acre at 15% moisture.



Harvested corn in bushels per acre from the replicates of the different corn treatment plots (BioNorth PGP consortia, 8-29-3 Folicist + Prem 6 + Zinc, and no starter) were averaged and compared in the graph above.

Conclusion: Growing in the Northern hemisphere can mean shorter growing seasons affecting overall crop production. Utilizing BioNorth Solutions' plant growth promoting consortia improves the production of crops even when compared to fertilizer starters as was shown in the field at Elkhorn, Wisconsin and gives crops the best chance of healthy plants, soil and best quality and quantity of final fruit harvests

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