

Soil, Plant & Human Health with Biological Farming

PACIFIC GRO
Seafood for the Soil™

Soil health, human health, environmental health, and livestock health are frequent topics of many agriculture publications and conferences. But it's a "marathon, and not a sprint". Let's talk solutions. Most of us know the problems, but let's keep score, and measure the economic value of soil health using a program and not one solution in a jug or one management decision.

Problem:

Years of farming practices have resulted in weak malnourished plants, causing most growers to apply more water-soluble fertilizers. Plant diseases and weeds force producers to use expensive seeds with genetic traits, while disregarding the issues in the soil. Malnourished plants can cause people's health to decline, some faster than others. Same goes for livestock production. This leads to high amounts of pharmaceuticals, feed additives (supplements), doctor and veterinarian costs.

Solution:

Change the pathogens by changing the soil microbe community. Let's turn it around, "flip the script", and improve our "ground game". We must focus on profit over convenience.

**How can a producer harvest
240 bushels of corn from 120 units of N
and no P or K applied?**



Answer: Open up the nutrient pathways by improving the biology of the soil.

Why: There are more nutrients there than the plants can get.

After a total nutrient digestion test was performed in these fields, we saw there were thousands of pounds of minerals - fertility that was locked up and unavailable because the biology was not there to make these nutrients available.

Keeping score: Improving plant & soil health is a long-term game.

It requires multiple management tools in this journey to be economically sustainable. It's very useful to analyze the DNA of the soil to assess the functionality of the soil microbes. Results show that nutrient pathways were not served by the soil microbes. When present and properly fed, the microbe community can be the economic game changer.

- ⇒ DNA sequencing of the soil shows what microbes you have to open up key nutrient pathways
- ⇒ Sap analysis allows us to assess the plant sap, like a blood test for people. This shows what's deficient and excessive, leading to fertility solutions before there's yield loss, insect or fungal problems.

Please call or email us, and Pacific Gro can give you proven, experienced recommendations how to build your soils to be economically sustainable.

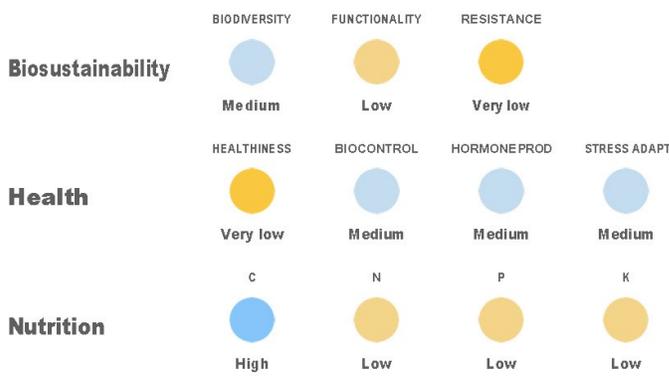
BiomeMakers Report from Corn Trial - showing weak soil biology in June

Microbiome Analysis Report



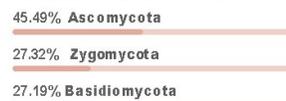
SOIL Unknown **CROP** Corn, Maize **VARIETY** Regular **DATE** 22-Jun-2020

SUMMARY

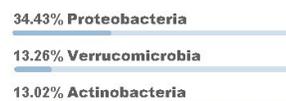


All the information shown in this microbial report is based on the detection presence of 529 different species whose distribution is

FUNGAL PHYLUM DISTRIBUTION



BACTERIAL PHYLUM DISTRIBUTION

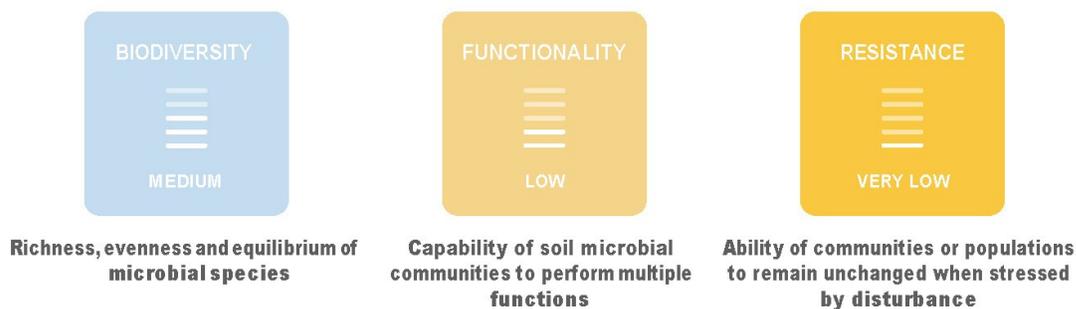


LEGEND ● Not Detected ● Very low ● Low ● Medium ● High ● Very High

CONCLUSIONS

- The healthiness value is *Very low*, we have found 3 relevant disease risks (Charcoal rot, Fusarium rot, Aspergillus rot).
- You have a *Very low* resistance value. Aggressive management can be affecting your soil biosustainability.
- The *Nitrogen, Phosphorus and Potassium* nutrition values are low.

BIOSUSTAINABILITY



BC-R-0the-ITS3-16S4-BFP1-2020-06-08-SOCOR11-1/5

BiomeMakers Report from Corn Trial - showing the disease risk in June

HEALTH

HEALTHINESS

Very low

6 Disease Risks found



Crop health according to the pathogens detected

RELEVANT RISK DETECTED

CHARCOAL ROT

STALK



WORLDWIDE INCIDENCE

(-) **Mildly spread**

18 out of 100 parcels analysed are affected by Charcoal rot

RISK LEVEL

VERY HIGH

Based on 1 pathogen



! FEATURED MICROORGANISM FOUND related to Charcoal rot

Macrophomina phaseolina • FUNGUS

FUSARIUM ROT

EAR, STALK, SEED, SEEDLING



WORLDWIDE INCIDENCE

((o)) **Widely spread**

97 out of 100 parcels analysed are affected by Fusarium rot

RISK LEVEL

VERY HIGH

Based on 1 pathogen



! FEATURED MICROORGANISM FOUND related to Fusarium rot

Fusarium equiseti • FUNGUS

ASPERGILLUS ROT

SEED, SEEDLING



WORLDWIDE INCIDENCE

(o) **Moderately spread**

48 out of 100 parcels analysed are affected by Aspergillus rot

RISK LEVEL

HIGH

Based on 1 pathogen



! FEATURED MICROORGANISM FOUND related to Aspergillus rot

Aspergillus niger • FUNGUS

SLIGHT RISK DETECTED



RED ROOT ROT



LOW Risk level

BC-R-0the-ITS3-16S4-BPPI-2020-06-08-SOCOR11-2/5