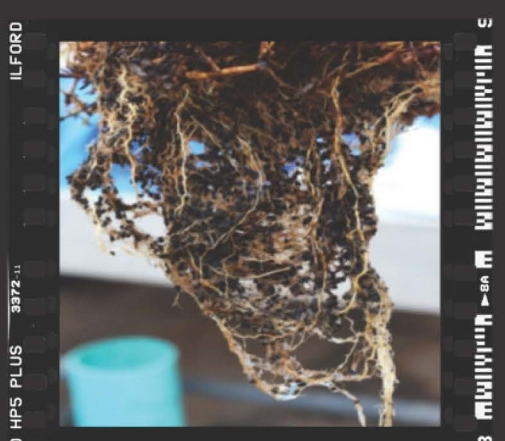
BIO-CHELATING TECHNOLOGY

Harnassing the remarkable properties of coffee to create innovative, sustainable and cost effective fertility delivery systems.

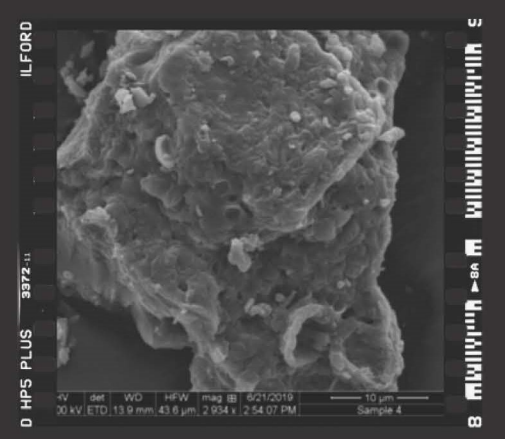
POWERED BY
COFFEE-K™
MADE WITH REAL COFFEE GROUNDS
ORGANIC BIOCHELATOR
An Innovative Organic Chelating Agent
- Increases uptake of iron, zinc & manganese
- Extends availability of micro-nutrients for uptake
- Activates & feeds soil microbes for nutrient cycling

- **Established that our COFFEE-K is increasing the uptake of nutrients by plants and extending the time nutrients are available when coupled with another source of fertility.**
- **Established that our COFFEE-K compounds, melanoidins in particular, are outperforming common commercial chelating agents (EDDHA-Fe and EDTA-Zn).**
- **Established that our COFFEE-K compounds, functionalized with Fe, Mn and ZN, significantly increases agronomic bioforticifation of plants grown using this technology.**

Texas A & M University's Soil Science Department, with the support of **GeoJava, LLC and Comanche Compost Company, LLC,** conducted a seven year field plot and greenhouse research program to look at the physical, chemical and agronomic benefits of coffee grounds from a cold brew extraction process. GeoJava, LLC and Comanche Compost jointly control and process over 20,000 tons annually used to make our various fertility products. Mining existing inputs value out of our current waste streams destined for the landfills produces better products using sustainable sources.



Study looking at influence of coffee grounds and coffee melanoidins functionalized with Fe and Zn on the agronomic biofortification of lettuce. Commercial chelates (EDDHA-Fe and EDTA-Zn) were used as controls. Total Fe and Zn content in lettuces and available Fe and Zn in soil were measured. Functionalized coffee grounds and melanoidins were able to significantly increase both Fe and Zn levels in lettuces. The study concluded that coffee grounds and melanoidins can be effective bio-chelators.



·In greenhouse studies, SCG-amended pots showed greater nutrient retention/ nutrient use efficiency following a single 1 lb. N/1000 sq. ft. application of ammonium sulfate.This was supported by a much greater and longer duration of clipping production over the study period (up to 14 weeks after this application).

After 60 days of incubation the amounts of AB-DTPA-extractable Fe in soil samples treated with both composts were always higher than in those treated with Fe alone. For both soils, the application of 40 μg Fe g^{-1} dry soil as CWC or TWC enhanced significantly ($P<0.05$) the total Fe content of radish shoots compared to the control. We concluded that it has been possible to increase the plant-available Fe in neutral to alkaline soils using coffee grounds and tea leaf wastes composted with Fe.