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Mycorrhizal Symbiosis – Unlocking the Potential of Soil

What is the Most Cost-Effective Way to Reclaim Desertified Soil?

Life depends on healthy soil. Unsustainable agricultural practices are having devastating effects on global agriculture. Human induced soil degradation is transforming productive agricultural areas into wastelands at tragic speeds. Current remediation methods rarely address soil structure and rebuilding healthy rhizospheres. Mycorrhizal fungi are important members of healthy rhizospheres. This project was designed to determine: If mycorrhizal fungi (MF) could increase the viability of Zea mays grown in poor quality soil; If the soil in plots treated with MF would change making it more suitable for growing; If Zea mays grown with MF would have higher nutritional values than those grown without. I dug six 6' X 8' plots. I divided these into two groups, Control and Myco. Myco seeds were treated with MF and planted. Control seeds were untreated and planted. I documented soil properties, germination rate, drought tolerance, yield, nutritional content, and verified mycorrhizal relationships microscopically. Germination: 50% Control, 85% Myco. Drought Mortality: 47% Control, 5% Myco. Yield (ears): 11 Control, 52 Myco. Compared to the Control, the Myco group's soil improved greatly. Kernels had higher nutritional values. My research to date has shown that MF can greatly increase crop viability in poor quality soil while simultaneously improving the soil quality. This year's data shows that it can boost the nutritional content of Zea mays kernels as well. FDR said, "A nation that destroys its soils destroys itself." I believe this is true and that now more than ever we need to develop sustainable agricultural techniques.