TERRA ELEMENTAL

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ARBUSCULAR MYCORRHIZAL FUNGI (AMF) — Glomus spp.
AMF are obligate symbiotic fungi that colonize plant roots and extend their hyphae into the soil. They are critical for nutrient uptake, drought tolerance, plant defense, and soil structure. They assist with the maintenance of a healthy microbial environment, with respiration, and exudation from root structures.

Glomus Mosseae- Protects from pathogens, enhances plant growth, and improves yield.
https://www.sciencedirect.com/topics/agricultural-and-biological-sciences/glomus-mosseae
Glomus intraradices- Enhances drought tolerance and plant nutrient exchange.
https://www.mdpi.com/2036-7481/15/2/68
https://pubmed.ncbi.nlm.nih.gov/23435173/
Glomus etunicatum- can promote plant growth by increasing P uptake, regulating plant hormone signal transduction, photosynthesis and glycerophospholipid metabolism pathways
https://pubmed.ncbi.nlm.nih.gov/37315361/
Glomus aggregatum- Pot culture experiments showed that inoculation of Begonia with Glomus aggregatumcaused a two fold increase in growth and biomass production as compared to the control plants. https://microbiologyjournal.org/mycorrhizal-association-of-glomus-aggregatum-with-begonia-malabarica-enhances-the-growth-and-biomass

AMF are the key drivers of the conversion from dry and depleted to fertile soil, helping initiate and sustain nutrient access and cycling, as well as sequestering carbon in exchange for nitrogen with plants, breaking down organic material such as dead root structures, and buffering against drought, flood, pest, and pathogenic microbial pressures.

TRICHODERMA SPP. — Beneficial Fungi

Trichoderma species are fast-growing filamentous fungi that colonize the rhizosphere. They are primarily biocontrol agents and plant growth promoters, often included in microbial inoculants.

Trichoderma harzianum- "Trichoderma harzianum is defined as a fungal species that solubilizes plant nutrients and enhances soil health, demonstrating effectiveness in boosting crop yields, particularly in rice and vegetables, when applied alone or in combination with compost or manure." https://www.sciencedirect.com/topics/agricultural-and-biological-sciences/trichoderma-harzianum

Trichoderma koningii- "...a species of plant growth-promoting fungi that enhances plant growth, improves nutrient availability, and exhibits antagonistic activity against soil-borne pathogens, contributing to both soil health and plant stress tolerance."
https://www.sciencedirect.com/topics/agricultural-and-biological-sciences/trichoderma-koningii

This research summarizes information about a few individual species themselves, and also their symbiotic relationships with each other and the plant ecosystems they inhabit and co-create. Whether restoring degraded soils, or improving upon already cultivated systems, using biostimulant agents, in conjunction with organic fertilizer and mineral complexes, can serve the needs of people, plants, and animals via an organic amendment schedule requiring no toxic components.