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JOHN'S CORNER:

NEWS FROM THE WONDERFUL WORLD OF SOIL AND PLANTS

by John Ferguson

We have talked about the benefits of Mycorrhizal fungi on many occasions and their benefits to plants. Below is a summary of all they do for us.

NUTRITION

- Increase surface area of nutrient uptake
- Unlocks phosphorus for plants
- Acquires nitrogen from organic matter
- Improves uptake of trace minerals
- Enhances nutrient density of crops

SEEDLINGS

- Prevents "damping off" disease
- Reduces Transplant Shock
- Supports root initiation on cuttings

FIELD & FOREST

- Stabilizes soil aggregates
- Sequesters carbon

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- Improves plant growth and yield
- Delivers moisture as needed
- Augments deeper root penetration
- Suppresses root pathogens

PRACTICLE ADVANTAGES

- Mediates heavy metal toxicity
- Helps plants cope with soil salinity
- Breaks up subsoil compaction layer
- Suppresses non-mycorrhizal weeds
- Cuts fertilizer requirements
- Improves tolerance of higher soil temperatures

HEALTHY PLANT METABOLISM

- Improves rate of photosynthesis
- Provides cofactor role of protein synthesis
- Provides reserve energy in lipid form
- Stimulates induced systemic resistance

MYCORRHIZAL NETWORKING

- Ensures balanced nutrient uptake
- Ensures healthy forest succession
- Facilitates plant-to-plant communication
- Provides the foundation for ecosystem resiliency

Taken from the book, Mycorrhizal Planet: How Fungi and Plants Work Together to Create Dynamic Soils, by Michael Phillips

In horticulture we often see plants botanical classification or name changed as we learn more about the species. Similarly in microbiology the scientific names are changed. If one is using older books for guidelines as to which inoculants to purchase, the newer packages ones will have the new names. Below is a table listing some of the changes.

Endo Hit Parade

A quality inoculum product will offer a diverse range of Endomycorrhizal fungi. Insist on the first four, then glory in the inclusion of yet even more species.

Glomus aggregatum [now renamed *Rhizophagus aggregatus*]

- Functions well in sandy soils
- Assertive root colonization at seeding stage
- Tolerant of high fertility levels
- Improves soil aeration
- Enhances fruit tree vigor

Glomus intraradices [now renamed *Rhizophagus intraradices*]

- Highly effective in a wide range of conditions
- Quick colonization of seedlings
- Improves performance of turf grasses and nursery stock
- Provides disease resistance against Fusarium

Glomus mosseae [now renamed *Funneliformis mosseae*]

- Stabilizes soil aggregates

- Increases nitrogen and phosphorus uptake
- Moderates drought stress
- Increases flowering and fruiting
- Improved performance of woody ornamentals

Glomus etunicatum [now renamed *Claroideoglomus etunicatum*]

- Good scavenger of low-fertility soils with high acidity
- Consistently beneficial in agricultural soils
- Cofactor influence on protein synthesis
- Increases aromatic plant production of essential oils
- Improves plant establishment
- Helpful in strip mine reclamation

Glomus clarum [now renamed *Rhizophagus clarus*]

- Well adapted to a wide variety of plants and soil conditions
- Mediates heavy metal toxicity
- Improves nitrogen fixation activity
- Increases grain and legume crop yields

Paraglomus brasilianum

- Thrives in rich organic soils
- Stimulates root enzyme activity
- Protects against heavy metal toxicity
- Enhances soil remediation efforts

Glomus deserticola [now renamed *Septoglomus deserticola*]

- Common in semiarid and arid conditions



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- Improves yields in alkaline soils
- Very effective in reducing drought stress
- Promotes salt tolerance
- Delivers phosphorus from nearby rock

Gigaspora margarita

- Indigenous across many ecosystems
- Forms extensive external mycelia
- Phosphorus go-getter
- Improves production of tropical and subtropical fruits

Credit for compiling an earlier rendition of this information is due Dr. Mike Amaranthus of Mycorrhizal Applications.

Michael Phillips, *fungus emissary*

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