

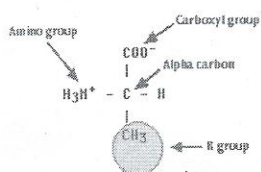
AMINO TREATMENT

Amino Treatment contains soluble silica and a seed extract of amino acids – no other product on the market has tapped into this cutting edge research in plant biochemistry.

I. Silica, or Silicon Dioxide (SiO₂) - Examples: Sand, Glass, Quartz

- Strengthens epidermal cell walls in stalks, stems, leaves, and roots
- Helps plants tolerate environmental stress (cold, heat, drought, pests, salinity, mineral toxicity, deficiencies, water stress, light burn, viruses and diseases)
- Helps to resist insects, animals, fungi, disease; also resists drought and wilting
- Silica helps the plant tolerate excessive phosphorus levels
- Increases concentration of chlorophyll in the leaves = more photosynthetic carbohydrate production

II. Amino Acids – the building blocks of proteins



- There are 20 amino acids (9 essential) and many derivatives
Examples: Glutamine, Tryptophan, Aspartic Acid, Histidine
- Have been shown to form chemical barriers against pests and disease
- Chelates metallic cations such as Ca²⁺, Mg²⁺, and anions such as **Silicates**
- Improves mineral absorption by plants; prevents deficiencies
- Improves overall plant health

III. Silica and Amino Acids Together

- Studies on flowering plants and rice have shown that simple amino acids such as Glycine, Glutamine, Histidine, and Imidazole **enhance silica uptake 3x and cut insect damage by 50%**; amino acids solubilize / chelate silica for uptake by plants
- Research studies display resistance to damage from pests, increased dry matter, and increased yields when amino acids in conjunction with silica are applied
- While silica can raise pH outside optimum levels, a.a.'s stabilize and lower pH

Sources: 1. Effect of silicon solubilizers on silica transportation, induced pest and disease resistance in rice, *Crop Protection*, Volume 27, Issue 10, Pages 1398-1402; Voleti, S.R

2. Biocompatible small molecules that enhance silica solubilization under ambient conditions and their effect on the growth and protection from pests in the rice plant. *Phosphorus, Sulfur, and Silicon and the Related Elements*, 184 (8) 2009 pp. 1975-1990; Babu, Setty Mallikarjuna