SEVEN MARKETING POINTS RELATING TO ACS SALES AND USE

1 – ACS usage by providing simple sugars to the soil solution, and especially when used in conjunction with a balanced soil nutrient program, will lead to increased mineralization rates of nutrients in the root zone. This results in better nutrient availability for plants and other members of the "Soil Factory". By feeding sugars to soil microbes, nutrients are re-cycled via reproduction and metabolism events, and this leads to rhizosphere stability. Research has shown an increase up to 2 – 5 times in nutrient availability and retention in the soil when sugars are added in conjunction with soil nutrients.

2 – ACS provides soil microbes available energy substrates for reproduction and metabolism. Addition of ACS sugars will result in higher numbers and increased diversity of organisms in the soil environment. When the soil nutrient load is balanced, nutrient uptake efficiencies increase and nutrient retention is maximized thereby reducing loss. Many Nutrients in the soil solution are mineralized (digested and used) by the soil microbes prior to being made available to plant roots. Plant roots and soil microbes interact in positive ways giving rise to a phrase used to describe the living soil as "The Soil Factory".

3 – ACS usage stimulates and increases; microbial populations and diversity. This leads to a synergistic relationship between microbes and plants where plants export 25 - 50% of their substrates from photosynthesis, during periods of uninterrupted growth when biochemical processes are optimized, directly into the root zone and these carbon containing materials (sugars) provide food and energy substrates for organisms living in the rhizosphere. These organisms; mobilize and bring nutrients to the root surface, immobilize nutrients for storage and recycling, and through mineralization cycles transform nutrients into more available forms. Many soil biochemical mechanisms and physical properties like: soil aggregate stability, nitrification or releasing tied up nutrients into the soil solution are positively impacted by diverse populations of microbes.

4 – ACS, by providing energy to "The Soil Factory", enhances many functions that are vital to plant health like; having a direct impact on nutrient form and availability to plant roots, stimulating microbial populations that along with other functions increase soil health by producing antibiotics and manufacturing secondary metabolites that inhibit or reduce pathogen impact. This chemical stimulation leads to better root protection from pathogens and predators. Many of these pathogens and predators are trapped or consumed by the stimulated beneficial organisms (Nematodes, grubs, pathogenic fungi, and other soil predator numbers are reduced or held in check when soil diversity is maximized.). Periodic "Priming" of the soil microbes by regular addition of incremental amounts of ACS (sugar) keeps the biology in the soil very active.

5 - ACS use will lead to an increase in diversity and population of soil organisms, primarily saprophytes (saprophytes use pre-formed organic carbon as fuel), and this population and diversity increase can result in; detoxification and cleansing of soil contaminants/organic molecules, reduction of pathogens by competition from more diverse populations of beneficial organisms, and a stable soil structure leading to better soil aggregation for; nutrient, gas and water holding capacity.

6 – ACS provides the fuel necessary so soil organisms can; recover from stresses, maintain diversity and maximize soil nutrient balance. Leaching loss and ground water contamination are reduced when the soil microbial diversity is maximized.

7 – ACS is an excellent carrier or companion material for other soil amendments such as: elemental sulfur, seaweed extract, chitosan, ATS, KTS, CATS and many other nutrient and/or soil amendment materials.