TAP
TURF ACTION PLAN

HEAT STRESS
OVERCOMING HIGH TEMPERATURE AND HUMIDITY

Mother nature can be cruel. High temperatures and humidity reduce the intake of carbon compounds and other essentials needed to sustain basic plant processes. Floratine's Heat Stress Plan provides the requirements for molecular strength to survive the stresses of summer.

STRESS RELIEF

Perk Up provides respiration stress relief, root maintenance, and cellular strength with calcium and sugars.

HEAT AND WEAR TOLERANCE

X-Factor 0-0-22 offers heat and wear tolerance from highly available potassium with proprietary X-Factor technology for superior translocation.

RECOVERY & COLOUR

Renaissance initiates stress resistance and recovery, root initiation, and colour from patented phytochemicals and micronutrients.

STRENGTH

ProteSyn gives energy and molecular strength from simple and complex carbohydrates and all the essential amino acids.

GLYCOMICS

GlycoFuze with next generation technology provides glycomic sugars when the photosynthetic process is compromised due to heat stress.

X-FACTOR

X-Factor 0-0-22 *contain Floratine's proprietary organic acid translocation technology to enhance uptake, utilization of nutrients, and provide defense mechanisms to protect internal plant functions.*

FLORATINE®
Rooted in Science™

Floratine Products Group, Inc.
355 East South Street · Collierville, TN 38017
901.853.2898 · www.floratine.com

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SCIENCE BEHIND HEAT STRESS

1. Photosynthesis – $CO_2 + H_2O \xrightarrow{Sun} Carbs + O_2$

The heat and drought of the summer blocks a key part of the photosynthetic process and promotes the generation of free radicals that damage cellular components. Also, the soil is having difficulty holding moisture (due to evaporation). As the soil dries out and compacts, the gas exchange decreases. So, the photosynthetic process has become stressed because the raw materials (CO2 and water) have decreased. But - sunlight (energy source) is more abundant. This is STRESS.

2. Respiration – $Carbs + O_2 \xrightarrow{Chem\ Energy} New\ Growth + CO_2$

The speed of respiration (the consuming of carbs) increases with the temperature of the leaves and roots. A high canopy temperature leads to ultra high rates of respiration. High soil temperature means higher consumption of carbs. As the supply of carbs from topical growth begins to diminish, the roots will pull carbs from reserves until they are used up. Now what? The bottom line is that the energy sources are there but the raw materials are lacking. This is STRESS.

3. Translocation/Transpiration – Movement of water and nutrients throughout the plant.

Water is needed not only in photosynthesis but also to transport nutrients. Water is also key in helping the plant stay cool and turgid. However, in high heat and drought conditions, water is less available to perform these functions. There is less water in the soil and weaker cell walls are incapable of holding water in the cells. So, there is less evapo-transpiration which means higher canopy temps and less water to keep the tissue rigid. This is STRESS. The entire system is in a death spiral – unless action is taken.

SOLUTIONS

1. Supplement the carbohydrate supply through the use of ***Perk Up*** and ***ProteSyn***. The forms of "glyco-" sugars in these products are readily used by the roots to support respiration.

2. Support the proper and efficient work of stomates with potassium supplements such as ***X-Factor 0-0-22*** or ***PK Fight***. Potassium controls the water – whether it's held or expelled. X-Factor technology enhances uptake of potassium, which controls stomatal opening and closing, and provides antioxidant properties.

3. What is one of the key nutrients in the stress response mechanisms? It's calcium. Regardless of the origin of the stress, the response is the same. Calcium, when supplied by ***Perk Up***, is used by the plant to buffer the needed reactions within the nucleus and combines with pectin to strengthen the cell wall and minimize water loss.

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