

Enlightening Technology for Turf

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“Leaders in innovative technology for all photosynthetic life”©

When I was asked 7 years ago to evaluate this new patented technology by a couple of scientists from Innovation Hammer, LLC (iHammer Technologies) for the golf and turf markets, I was more than a little skeptical. This is “science of the first order”, meaning scientific study at Nobel Laureate level, which was out of my league. However, I didn’t get discouraged and pursued it “all in”. This meant re-reading about photosynthesis and carbon fixation, plant physiology and the like. This was a real challenge for me as I really didn’t like reading about this in college the first time around! So here we are 7 years later, with several hundred superintendents embracing the technology and their end results, but maybe not totally understanding **how or why** these products do what they do. In other words, all of you are in the same place as I was 7 years ago. Here is my attempt to explain in a short narrative (trust me, volumes have been written on this) the uniqueness of our technology, and hopefully how it can play an important role in reducing your daily challenges and stresses while you manage your turf.

Our unique patented technology begins with the key ingredient, methyl glucoside. Minute quantities of methyl glucosides have been isolated from plant parts establishing their occurrence as a natural product in all plants. The presence of methyl glucosides in plants is a result of plant metabolism (Elizabeth Gout, Serge Aubert, Richard Bligny, Fabrice Rebeille, Arthur Nonomura, Andrew A. Benson, & Roland Douce, University Joseph Fourier, May 2000, Plant Physiology). It was shown in these studies that methyl glucosides are incorporated into the growth of thalloid (algae) and all green vascular plants. What this means is that your turf recognizes methyl glucosides when it is applied because the plant is familiar with this compound. By a little more being added every 2-3 weeks, the turf plants can convert this 7-carbon sugar molecule into energy more readily and efficiently than if it had to produce it on its own. Due to the “recognition” of the methyl glucosides by the plant, it allows it to penetrate the cell walls readily, and in the process the rest of the nutrient package in **MegAlex®** and **Upplause® Plus** is also easily absorbed and utilized. That’s why the percentages of nitrogen, magnesium, iron, and manganese are lower than most foliar products you are familiar with. It is because of more efficient cellular absorption. You can use less and achieve more.

Turf... we try to grow it, regulate it or kill it. It all depends on the situation. Hopefully you are successful in doing all three when you want to, and not killing it while trying to regulate it, or growing it when you wanted to kill it, well, you know what I’m saying.

Photosynthesis is growth, that's all you need to know. When turf is active (not in dormancy) you have two things going on, photosynthesis (growth) or photorespiration (wilt).

Our technology keeps the window of photosynthesis open longer and reduces the window of photorespiration. Again, the primary key to this is the methyl glucoside (as the carbon source and anti transpirant) and the secondary key is the proprietary surfactant (or surface active spreader) in the formulations. This enables optimal penetration and longer cell hydration in the leaf tissue. The methyl glucosides maintain the processes of photosynthesis in the plants for a longer period of time and utilize nutrients in our formulation and other foliar or granular products that have been applied for consistent but controlled growth. The formulation of **MegAleX[®]** alone will not give a flush of top growth, but it will process the carbon energy for better root growth. There is no substitute for deep and healthy roots in the middle of the heat stress of summer. This is why in growth-limiting irradiance (not enough sunlight) our technology products will help you grow better quality turf under these stressful conditions.

7 years ago, it was this particular type of turfgrass micro-environment in which I witnessed tremendous improvement that convinced me that this technology had unlimited value. As a former superintendent that had several lowlight micro-environment green sites, had this technology been available to me, it would have been priceless.

On the flip side, in growth-saturating irradiance (full sunlight), of which I had a couple of these sites also; these formulations reduce photorespiration (wilt) and overall irrigation management. As the methyl glucosides consistently "slow feeds" energy and micronutrients throughout the plant, along with the patented anti transpirant surfactant, keeps the cells hydrated and thus slows the respiration process (doesn't stop it), so photosynthesis continues longer throughout the day into the night. I think we all want consistency (especially our primary asset, the greens) and by reducing photorespiration and continuing photosynthesis the physiology and turgidity of the turf is more consistent from morning to darkness.

MegAleX[®] & Upplause[®] Plus helps mediate the turf conditions of your individual micro-environments. The technology helps bring your turf into balance regardless of micro-environment. This technology is truly the best of both worlds.

Make light (photosynthesis) work for you! We are dedicated to optimizing photosynthesis; thus helping plants turn carbon into plant growth, the efficient use of nutrients, less water usage, being environmental stewards, and yes, reducing your carbon footprint. I hope this short narrative has given you some useful *enlightenment*!

"Doing our world some good"

Patented Plant Growth Technology