

# Sandy Soil Solution

by Anne Morris

Growing turf in sandy soil challenges a superintendent, because it's hard to maintain nutrients for any length of time--they slip through. The answer can be found in natural products.

Working with sand-based tees and greens is reminiscent of the poor quality soils that inspired the development of Essential Plus, a liquid root stimulator and soil conditioner. It helps soil maintain nutrients and hold them longer.

"We developed Essential Plus to get in all the things that you would find in naturally decomposed, good, rich soil--but that you don't have in NPK fertilizer," said Clare Reinbergen, president of Growth Products in White Plains, N.Y. Trained as a biochemist, Reinbergen started the company 24 years ago and takes pride in the way that many of the company's products, intended for specific customer needs, went on to serve a wider audience. Essential Plus began as a landscape product, but ended up also helping golf course superintendents.

"We developed Essential Plus after coming across a terrible situation; there were landscaped areas around larger homes where they had put down such bad soil that within a year to two years, the large plant materials--evergreens, rhododendrons--were really undergoing severe stress as soon as they got beyond their root ball and into the other soil," Reinbergen said. "We kind of equate that situation to the one you have on a golf course where it's built of sand, which, of course, has absolutely no nourishment, and no way to hold nutrients for any length of time."

Reinbergen explained that by adding an organic material to the soil, its holding capacity is increased. "It's almost like a sponge," she said. "With Essential Plus, superintendents are able to hold the nutrients better in the sand and keep them available longer to the turfgrass. It's a real battle when it comes to sand tees and greens. Anything they can do that enhances that sand's ability to maintain the nutrients and hold them there longer is a big plus."

Both Essential Plus and Repair Plus, a granular product, are high in organic carbon compounds, taken either from extracted

plant material or from the living part of plants. Repair Plus is used to fix divots and to get turf to grow in faster. It can be added to a topdressing mix when the superintendent is going out to do aerification. That way, it falls down the aerification holes into the root layer.

Randy Oberlander, Growth Products nutrition specialist, estimated that the customary application of Essential Plus is 4 ounces per 1,000 square feet. For more information, contact Oberlander by phone at 813-685-1600.

An important aspect of natural, organic products is that they are selective as to what they do for the plant, Reinbergen explained. Natural does not mean that a product is not specific. "For example," Reinbergen said, "kelp (seaweed) has a tremendous amount of bio-stimulants. You can add kelp, which is an excellent source of auxins, which stimulate root growth. So then, not only do you have an organic material, from seaweed, but you also have the added benefit that it stimulates root growth." Her company uses North Atlantic kelp, from Canada, chosen for its consistency.

Both products contain humic acid, which acts as a bio-stimulant on the turfgrass. At the same time, the humic acid is almost like a carbon filter, because it is such a large, organic molecule. "It traps nutrients and holds them there for the plant," Reinbergen said. Both also contain gibberellic acid, a natural compound known to stimulate root growth. Reinbergen cited an article on research at Virginia Tech Turfgrass Research Center in Blacksburg that again credits humic acid with generally enhancing turfgrass root development. Foliar application of humic acid is also said to make the plant more resistant to disease and to environmental stresses, such as drought.

Other important turfgrass aids that can be found in organic products, she said, include L-amino acids, often from soybeans. Studies have shown that plants react to L-amino acids, and that helps with their physiology--the way they grow. You might also find sugars and carbohydrates in organic products. These large organic molecules help improve the holding ability of the soil.

In other words, you can take a natural product and craft it to meet specific needs, solve specific problems. "We're still all-natural, all-organic," Reinbergen explained, "but we've got some ingredients that are very specific in what we want them to do.

"There's a lot of science behind this," she said. "If a superintendent reads the label and sees these things listed, it should give him a comfort level that he is getting something for his money. This is science; it's not snake oil." Scientists from Virginia Tech conducted studies over a 10-year period to gather data on bio-stimulant treatments for turfgrass programs. In an article published in Turfgrass Society of America 2002 Research Notes, scientists cited seaweed and humic acid as among the most commonly used ingredients in bio-stimulants. Further, the scientists note that applications of such bio-stimulants allow turfgrasses to tolerate environmental stress and improve growth, especially root development. "Possibly, the tolerance of low soil moisture could be the most evident and beneficial aspect associated with bio-stimulant treatments of turfgrasses," they wrote. They stressed that bio-stimulants do not supply all the essential nutrients a plant needs. They should be used in conjunction with mineral fertilizers and would, in fact, enhance their effects, so that less mineral fertilizer would be required when bio-stimulants were used.

Such studies show that organics help the plant withstand stress, and that's good news.

"A superintendent doesn't just want something lush green," Reinbergen said. "Ultimately, he wants grass that can withstand the torture that they put it through on a golf course."

For more information, visit [www.growth-products.com](http://www.growth-products.com).

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P.O. Box 449

St. Johnsbury, VT 05819

802-748-8908

802-748-1866 (fax)