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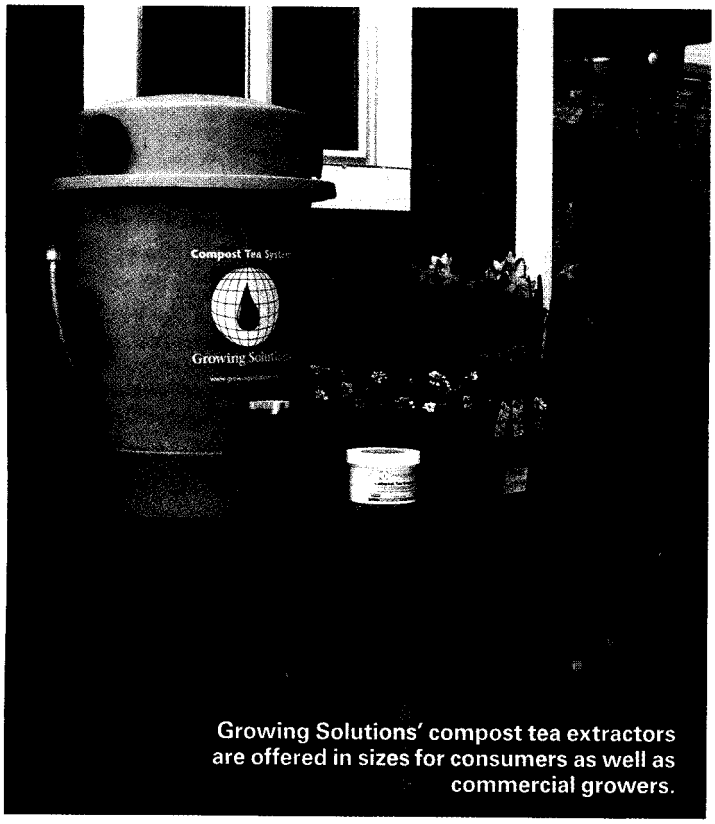

Growing Solutions' compost tea extractors are offered in sizes for consumers as well as commercial growers.

Living Media

Media inoculated with microorganisms mimics plants' natural environments.

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THERE was a time not long ago when all growers thought that compost or soil in a media mix meant fungal disease problems. A shift is happening in some areas of floriculture to move to media inoculated with compost and living organisms, making a more natural environment for plant growth, with the advantages of increased fertilizer uptake and defenses against pests and diseases.

In some instances, biological agents are being added by growers themselves to enrich soils, while some suppliers are offering

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media premixed with organisms that protect plants.

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Making Media Alive

When growers use a traditional media without live organisms, they don't enjoy the benefits from nutrient cycling. In a natural environment, microorganisms feed off the plant's released sugars and the organism provides the plant with nutrients and water, explains Michael Alms, president of Growing Solutions. The company sells the compost tea extractors that provide growers with microorganisms.

"With the biology in place, there's this constant exchange between the plant root and the microbiology exchanging back and forth to where it allows the fertility program to operate far more efficiently," Alms says. Without this system, plants rely solely on nutrition from fertigation or sprays. Having microorganisms in media also helps cut back on fertilizer use. Alms says in the landscape and nursery sector, he's heard of customers reducing fertility input by as much as 40 to 50 percent without compromising plant growth.

"The majority of fertilizers leach right through the nursery can, but there's nothing there to hold it," Alms says. "When you add the biology, it shifts the structure of that media to where more nutrients are retained. Therefore, less is needed and yet the plant response is greater."

While adding microorganisms can be thought of as a way to increase nutrition, they can also act as plant protection for pests and diseases.

"It's disease suppression with an indirect result of potential pest reduction, because the plant's immune system is stimulated," Alms says.

Not A Sipping Tea

The two ways growers can inoculate their own media are through compost extracts (compost teas) and from companies that offer select species of microorganisms that have proven beneficial, like Bioworks, Koppert, Biobest, Organica Biotech or IPM Labs. Growing Solutions provides the compost extractors, 10, 25, 100 and 500 gallon compost tea systems that draws liquid compost extract from compost.

Sound Horticulture, Bellingham, Wash., uses a vermicompost, a tea made from worm castings, as well as a biodynamic compost from Oregon. Plants receive the inoculant at planting and then are repeatedly dosed during the growing cycle.

"It has alleviated the need for any 'bugs in a jug' and only costs us $12.50 per acre to treat plants," says Alison Kutz-Troutman of Sound Horticulture.

The difference, Alms says, between bugs in a jug and compost teas is the

range of diversity. In compost, bacteria and fungi can contain as many as 5,000 to 6,000 different organisms. Science is a long way from being able to capture and sell that variety.

Typically, a compost tea costs between 40 and 50 cents a gallon and 1 gallon can usually treat 1,000 square feet in the greenhouse.

Preventative Pre-Mixes

Both Fafard and Premier Horticulture are offering media premixed with biological organisms. Fafard has incorporated Bioworks' Rootshield and Natural Industries' Actino-Iron, in addition to other organisms, including other bascillus strains and mycorrhize, into custom media blends. Premier Horticulture is now offering Pro-Mix With Biofungicide, an EPA-registered mix enriched with Subtilex, a bascillus strain that combats disease and enhances the plant's root system.

Premier Horticulture's Pro-Mix with Biofungicide is inoculated with the Subtilex bascillus strain that combats disease and enhances the plant's root system.

The advantage to a premix is a uniform population of the inoculant, says Fafard's Dr. Hugh Poole. The recommended rate for Rootshield, for example, is 1 ¼ pounds per yard, a rate that most growers aren't equipped to mix evenly.

"It's far easier to incorporate to a mix than as a drench after the plants are planted," he says.

"Most of these products work by being preventative," Poole says. "You've got to have it in place colonizing the root before a disease organism attacks. If you have a disease, it's too late to utilize these products."

These types of offerings from media companies are going to become more common, Alms says.

"I think within a year, all the soilless mix companies are going to have somebody on staff who does have the knowledge, because they're being asked more if they can inoculate with organisms or micronutrients." **GG**

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Visit our Web site for a link to Premier Horticulture's Bio Calculator to calculate the cost difference between a fungicide drench and ProMix with Biofungicide.