Dyna-Gro Products for Plug Propagation and Growth

Propagation of Cuttings

Since carbohydrates stored in leaves and auxins produced by leaves help cuttings survive and root, practices that enhance leaf retention benefit plug production. Soluble silicon in Dyna-Gro Pro-TeKt® results in delayed leaf senescence producing higher success rates and faster rooting of cuttings. In studies on rose cuttings at the University of Minnesota, cuttings misted with 50 ppm Si had a 50% higher success rate than those misted with straight water, double the leaf retention, 60% more new leaves and reduced black spot rates. In tests with Pro-TeKt at the University of Florida, Apopka, ivy cuttings drenched with 65 ppm Si had a 100% success rate compared to 40% for those drenched with plain water. Cuttings soaked in a 260 ppm solution for 24 hours prior to sticking also produced a 100% success rate vs. a 35% success rate for controls.

When combined with Dyna-Gro K-L-N Concentrate™, The Rooting Solution™, or Root-Gel®, propagation aids containing IBA and NAA, Pro-TeKt results in faster root development and higher percentage success rate than other options.

Soilless Media = Hydroponics

Dyna-Gro Nutrition Solutions were developed for hydroponics or growing without soil. Growing in a soilless medium is really a form of hydroponics. Since the medium does not contain available mineral elements like soil, the plant only receives what is in the fertilizer and water. Fertilizer, defined as “any substance used to fertilize the soil,” is, by definition, intended to be used in conjunction with soil. Since virtually no container production is in soil, the lack of other elements provided by soils, which are not in fertilizers limit growth. Because Dyna-Gro Nutrition Solutions contain all 6 essential macronutrients, all 10 essential trace elements and, with Pro-TeKt providing the essential/beneficial element silicon, plants grown with Dyna-Gro formulae are able to achieve growth up to their genetic limits, rather than being limited by the deficiencies of common fertilizers.

Improved Growth Rates

Many growers have learned that there is more to plant nutrition than N-P-K. Justus von Liebig formulated "Liebig's Law of the Minimum" in the 1840s. He showed that plant growth is always limited by the lowest level of each essential mineral element. This concept is often illustrated by a barrel with staves of different lengths, each of which represents an essential mineral element. You can only fill the barrel to the level of the lowest stave. By analogy, a plant can only use nitrogen, for example, to the extent of the lowest level of each other essential mineral element. Feeding at 200 ppm N with a fertilizer that contains no calcium, magnesium or sulfur (all macronutrients) means that most of the NPK cannot be used by the plant. This necessitates leaching of the unused salts to avoid a salt build-up, not practical in ebb-flood growing. Because Dyna-Gro Nutrition Solutions are complete, they can be applied at much lower rates while achieving much better growth. This is shown by the results at Oglesby Plant Labs where switching from Peters/Miracle Grow Excel 15-5-15 at 200 ppm N to Dyna-Gro at 100 ppm N resulted in getting plants off the bench in 1/3 less time while eliminating salt build-up from the unused N-P-K. Getting plants off the bench in 1/3 less time means that you can produce in 6 weeks what used to take 9 weeks, a more efficient use of greenhouse and bench space!

Take a look at the attached comparative study on ginger plugs. This study was performed at Phoenix Foliage in Winter Garden, Florida, under the direction of Dr. Jianjun Chen of the University of Florida – Apopka. The control plants received 2 lbs/100 gal. of Excel 15-5-15. The Dyna-Gro plants received 16 oz of Foliage-Pro and 8 oz. of Pro-TeKt in the same volume of water. As you can see, the complete nutrition (all 17 mineral elements) provided to the Dyna-Gro plants resulted in more than three times the growth with less than 1/3 as much N-P-K. This is an excellent example of Liebig’s Law of the Minimum. Most of the N-P-K provided by Excel must be leached out as it cannot be used due to the lack of appropriate levels of calcium, magnesium, sulfur and several trace elements. With Dyna-Gro you use less (and waste less) while getting better growth. Equally, important, you are not contaminating ground waters with unused fertilizers!

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LIQUID PLANT FOOD PRO-SERIES AWARD WINNING FORMULAS

DYNA-GRO™

The Nutrition Solution ®

Comparative Study on Ginger Plugs
at Phoenix Foliage in Winter Garden, FL

Ginger plugs were stuck and fertilized with Dyna-Gro™ Foliage-Pro® 9-3-6 at a rate of 16 fl oz/100 gallons of water (1 tsp/gal) and Dyna-Gro™ Pro-TeKt® at a rate of 8 fl oz/100 gallons of water (1/2 tsp/gal) hand drenched twice a week to runoff.

week 4

week 6

week 9

The Dyna-Gro™ plants reached shipping size in 6 weeks vs. 9 weeks for the Miracle-Gro® plants.

Ginger plugs were stuck and fertilized with Scotts® Miracle-Gro® Excel® 15-5-15 at a rate of 2 lbs/100 gallons of water hand drenched twice a week to runoff.

week 4

week 6

week 9

This study was conducted from January 2, 2002 through February 26, 2002.