

XTRA EDGE™



James A. McCaskill '95

James A. McCaskill, who holds a B.S. in Botany and an M.F. in Forestry, has 12 years experience as a commercial hydroponic grower and has been a teacher of basic hydroponics for 20 years. Mr. McCaskill has written two books on the subject. "Plant Nutrient Facts for Hydroponics" and "Container Growing and How to Make Your Own Fully-Formulated Plant Nutrient." He is a regular speaker on plant nutrition at garden clubs and various growing societies throughout Southern California.



THE DIFFERENCE

nutrient change after blossoms begin—**XTRA-EDGE FORMULAS™** does this!

After more than ten years of horticultural research, the use of HUMIC ACIDS have been found to benefit even Hydroponics where no mineralizing soil is present. Basically, Humic Acids are natural occurring compounds of degrading organic materials with remarkable Plant-Growth stimulating properties. Quantity of yield, quality of produce, and "flavor-bud" enhancement when eating the produce are all benefits of using Humates in the nutrient solution. **XTRA-EDGE FORMULAS™** provide this benefit.

For your convenience to better understand the actual amounts of nutrients you use, **XTRA-EDGE™** Formulas, for the first time ever, establish—on the **MICRO** formula label—the Parts Per Million (PPM) from using our recommended levels of nutrients. You can decide, on your own, on the Parts Per Million basis, whether you want a stronger or a weaker nutrient solution for your plants. **XTRA-EDGE™** recommends the use of One Teaspoon of either **BLOSSOM** or **GROWTH** with 1/2 Teaspoon of **MICRO** per gallon, we want you to know the actual strength we are recommending. Remember, three teaspoons = one tablespoon; and two tablespoons = one ounce. Our recommended use allows the use of 1/2 Ounce in each gallon of **GROWTH** formula or **BLOSSOM** formula with 1/2 size of **MICRO formula** for the same Parts Per Million value.

Jim McCaskill

XTRA-EDGE™ Nutrient is a liquid concentrate. The percentages shown are calculated on a "Weight to Volume" basis. Dry packaged nutrient on the other hand are calculated on a "Weight to Weight" basis. Converting a liquid (Wt to Vol) to an equal dry (Wt to Wt) nutrient would change a 2-1-2 liquid to 14-7-14 dry.

Also, one other factor enters the calculation of a liquid nutrient—the total of ALL OTHER elements such as Calcium, Magnesium, Sulfur, Iron, etc are included in the calculation. In a dry package nutrient, only the N, P, or K percentages are involved.

XTRA-EDGE™ Nutrient formulas retain Calcium as soluble and available in the **MICRO** formula. By keeping Calcium separate from both Sulfates and Phosphates—which are in the **GROWTH** formula or **BLOSSOM** formula—the concentrate level of Calcium never allows a precipitation of Calcium Sulfate or Calcium Phosphate to occur.

THE XTRA EDGE™ FORMULAS MAKE YOUR NUTRIENT DOLLAR GO FURTHER AND BUY BETTER.

The one major difference between the "Growth and "Blossom" formulas is the amount of Phosphates. (That's the "P" of the N, P, K numbers on a nutrient package or bottle). Initially a young plant uses most of its Phosphate to build the root system. When plants are large enough to begin flowering the demand for Phosphates increase substantially. The roots are larger, demanding more, and now the flower buds begin doubling or tripling this Phosphate demand. It is only in recent years this increase demand has been recognized and specifically provided for in total

XTRA-EDGE™ Nutrient formula by Foothill Hydroponics has many benefits for the Hydroponic plant grower.

All plants can utilize Nitrogen from either Nitrate (NO_3^-) form or Ammonical (NH_4^+) form. Nitrogen is the only nutrient for plants which can be taken into the plants as either a Positive Ion, or a Negative Ion.

Hydroponic plants are grown under different conditions than outside soil rooted plants. Nitrate of Nitrogen builds stocky, thick stems with short leaf node development. Ammonical Nitrogen builds long thin stems with long internodal development. It is therefore most beneficial to limit Ammonical Nitrogen to less than 25%, while 75% or more is Nitrate Nitrogen.

XTRA-EDGE™ Nutrient provides 22% Ammonical and 78% Nitrate Nitrogen when the **GROWTH** formula is properly combined with **MICRO** formula. Then, as the plants begin to develop flower buds, the switch to **BLOSSOM** formula plus **MICRO** formula gives a more beneficial ration—10% Ammonical and 90% Nitrate Nitrogen.

NOW, if you are concerned about the "low level" of N, P, & K percentages shown on the **XTRA-EDGE™** Nutrient labels—DON'T BE! **XTRA-EDGE™** is actually more highly concentrated than nursery store shelf dry packages.