# XTRA EDGE™

# HYDROPONIC NUTRIENT

**Patrick Sano** is a graduate of the University of Nebraska-Lincoln, Class of '48.

Sano has been active in the chemical and fertilizer industry for over forty years, serving in part as a Pest Control Advisor and as District Manager for a major field chemical company. He covered both agricultural and horticultural crops.

Presently, he is working as a Technical Consultant for a Research and Chemical Company in L.A. involved in product development as well as recommending fertility programs for various vegetable, fruit and nut, forage, and nursery crops.

Although Sano is 10 years beyond retirement age, he comments: "...when my work becomes work and not enjoyment, I may decide to hang-up my Wolverine boots!"

# XTRA EDGE™

***SEMI-ORGANIC HYDROPONIC PLANT FOOD***

***XTRA-EDGE*** was especially designed for hydroponic growers. The three liquid formulae are made from superior quality ingredients that provide a combination of essential nutrients in a balanced analysis.

***XTRA-EDGE*** benefits and pluses:

- Suitable for all crops.
- Easily applied through any drip irrigation system.
- No clogging.
- Colored with food grade tracer dye.
- Needs no agitation.
- Designed to be mixed with tap water.

**Added Cobalt** helps uptake of iron and manganese. In addition to source materials for nitrogen, phosphorus, and potassium, ***XTRA-EDGE*** is formulated with silicic and humic acids and with Vitamin B-1.

**Silicon** is essential for plants to complete their full life cycle from germination to harvest. Silicon works with potassium by strengthening cell walls; helps plants resist diseases and translocates macro and micro nutrients throughout the plant.

**Experiments** have shown that Silicon improves the growth of various crops. It is believed to protect plants against certain pathogens such as rusts, and mildew (Erysiphe Graminis). The resistance to fungi is correlated to silicon deposition in the epidermis, which makes the layer more impervious to their penetration. The suggestion has been made that silica may act within the plant stimulating phosphoric movement from relatively quiescent regions to places where assimilation and growth are active.

**Humic Acid** in addition to its acidifying characteristic, supplements the solution with Aluminum, Silicon, and Titanium. Humic Acids are complex Organic molecules formed by the breakdown of organic matter. Humates are said to biologically stimulate plant growth, enhances results from plant food, help plants produce more abundant foliage, flowers and fruit, build a more substantial root system, promotes healthier plant, gets seedlings and transplants off to a vigorous start and induce flavor, color, and shelf life of fruits and vegetables.

**Vitamin B-1** provides hormones that enlarge cells and enhances pollination of vegetables, fruits, and nuts.

**B-1** aids in getting plants off to a strong start.

**B-1** aids in stronger root development and promotes greener and more vigorous plants.

**B-1** tunes Nutrient uptake by plants.

**Available Formulas:**

**Growth Formula 4-1-3**: high analysis of Nitrogen sustaining growth and maintaining chlorophyll for continued greening of foliage.

**Blossom Formula 0-5-2**: helps build strong roots and the formation of fruit and flower buds.

**Micro Formula 3-0-1**: provides the essential micro nutrients that activate the various enzymatic activities within the plant.

The combination of these three formulas applied at the rate of one teaspoon for each gallon of water will yield approximately 150 parts per million of nitrogen and potassium and approximately 100 parts per million of phosphorus.

**Rule of Thumb:**

For mild strength and slow growth decrease rates by 1/2. For strong solution and rapid growth double the rates.

To make a general purpose complete plant food all three formulas should be used equally to develop a general purpose Nutrient mixture.

**The basic rule of rate use (per gallon of water) is:**

- Maintenance 1/2 of recommended use
- Normal use 1 of recommended use.
- Finishing 2 of recommended use.
- For foliar feeding or cuttings 1/4 of recommended use.