"One Shot" Fertilizers for Container Plants

by H.W. Hopkins

In the mass production of container plants it would be most desirable to be able to grow them from start to finish without the addition of fertilizers. To accomplish this a mixture of slowly available nutrients would be incorporated in the starting medium. Tydex C is one of the first of these complete nutrient mixtures which holds the nutrients against loss by leaching through the use of synthetic cation and anion exchangers.

Tydex C, a product of Dow Chemical Company, has a nutrient reservoir many times greater than a comparable volume of soil. A very important part of the complex are the anion exchangers which can hold nitrate, sulphate, and phosphate, pretty much the way clay and organic colloids in natural soils hold calcium, magnesium and potassium. No natural soil has this capacity to retain large amounts of nitrogen, phosphorus and other anions against leaching. Tydex C holds both anions and cations until the plant takes them.

To determine the time Tydex C would support young carnations in an inert medium without visible hunger signs to the plants, rooted cuttings were planted in volcanic scoria. Six 10-inch pots were filled with a mixture of 18 parts scoria, 1 part Tydex C and 1 part limestone, as calcium is lacking in Tydex C. A comparable six pots were filled with scoria to which only the limestone was added. Three cuttings of Pink Sim were planted per pot on December 2, 1960. The pots containing Tydex C were watered with untreated tap water while the other set were watered with nutrient solution. On March 15, the first signs of hunger were visible on the Tydex C treated plants. A slightly different color of foliage, and a hard appearance and feel were the symptoms at this early date. Two weeks later, the symptoms were quite distinct. By April 25, Tydex C treated plants were 8 to 10 inches shorter. The plants receiving a complete nutrient solution remained soft and in active growth.

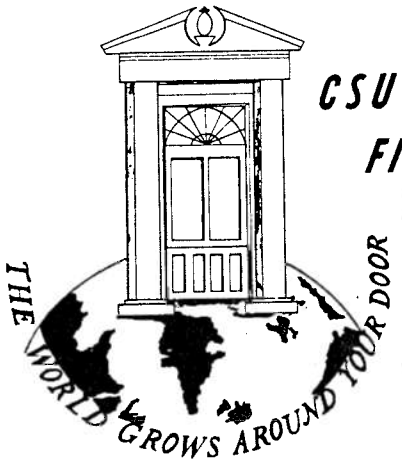
Tydex C at 1 to 19 of medium supported actively growing carnation plants in an inert medium for 15 weeks before slight nitrate hunger signs began to develop. The period when this treatment would support similar carnation growth in summer would likely be about half as long. This is a step toward supplying all the nutrients in the initial soil. Either additional Tydex C, or other slowly available nutrients would be required to support most pot plants from start to finish. The time full support could be obtained from Tydex C would depend upon the amount used, other nutrients in the medium, and the amount of growth made by the plants.

Nutrients in Tydex C

N	3.20%
P_2O_5	3.50%
K_2O	2.45%
Fe	0.0069%
Mn	0.0028%
Cu	0.00038%
Zn	0.00019%
Mo	0.00011%
B	0.00029%

1/ H. W. Hopkins completed this study while a senior in Horticulture at Colorado State University. He is presently a graduate student working on the effects of carnation nutrition and growing temperatures on petal edge burn.

COLORADO STATE UNIVERSITY HORTICULTURE SHOW



OCT. 27 6PM-10PM
OCT. 28 10AM-7PM
AUCTION 7 PM SATURDAY

The 1961 Horticulture Show will open October 27 at 6 pm and will continue from 10 am to 7 pm on October 28. The auction will start at 7 pm on Saturday. For the first time the show will be staged in the CSU Field House. The theme this year is "The World Grows Around Your Door". This largest show in Northern Colorado will feature Colorado Carnations in two separate mass displays. Another outstanding display will be a large landscaped area showing new ideas in landscape design. Approximately 1500 square feet of live turf will accent the area. Special displays are being arranged by Bristol Flowers of Fort Collins; Robbins Flower Shop, and Loveland Floral Company of Loveland; Lew Hammer, Inc. of Denver; The Colorado Gladiolus Society; and the Fort Collins Violet Club. The garden clinic will feature George Kelly, Dr. Tex Baker, Chuck Drage, Fred Bennett, and Cliff and Ellen Mann.

I know the growers and their families, and especially Aggie grads will find this a wonderful show. Larry Watson of Wheatridge, Colorado is this year's hard working chairman.

Your editor, W D Holley

COLORADO FLOWER GROWERS ASSOCIATION, INC.
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FIRST CLASS