Hydroponics

Strawberry Culture

PERLITE

PLANT GUIDE

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HYDROPONIC CULTURE OF STRAWBERRIES IN PERLITE

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At the Katsambas farm of the Institute of Vine, Horticulture & Floriculture, a series of experiments were undertaken to determine the performance of horticultural perlite as a substrate in the hydroponic growing of strawberries. The experiments were conducted in a wood framed polyethylene covered glass house with no heating.

A vertical growing system was employed and four varieties of strawberries were tested. These were: Brighton, Douglas, Tioga and Tuft.

The System

The vertical system employed consisted of square containers of expanded polyethylene having a volume of .1 cuft (3.3 liters) each. Containers were stacked on top of

each other diagonally so as to form a column. A plastic pipe of 1/2 in (12 mm) diameter was passed through the containers to secure the columns and the columns were suspended from horizontal wires from the glass house roof. Each column was composed of six containers and four planting pockets were created at the corner of each container. An entire column thus contained 24 plants.

Nutrient/Water Supply

A drip irrigation system was employed to provide nutrient and water. Drip tubes were inserted in the 1st, 3rd and 5th container from the top of each column. Nutrient was collected at the base of each column and recycled. Solution was provided to each column 2-4 times per day depending on weather. Concentrations of the elements in the nutrient solution are shown in the following table.

N - 80 ppm P - 45 ppm K - 100 ppm Ca - 200 ppm Mg - 50 ppm B - 0.5 ppm	Mn - 0.5 ppm Zn - 0.5 ppm Cu - 0.05 ppm Mo - 0.05 ppm Fe - 3 ppm

The vertical growing of strawberries hydroponically in perlite enables the grower to make maximum use of his greenhouse and to take advantage of the controlled atmosphere for an extended growing period.

Brighton Has Highest Yields

Production of strawberries continued for a period of 5 months. Earliest commercial production was from the Brighton variety. Greatest yield was from Brighton as well, followed by Douglas, Tuft and Tioga. Yields for each of the varieties is summarized in the following table.

PRODUCTION OF STRAWBERRIES HYDROPONICALLY GROWN IN HORTICULTURAL PERLITE SUBSTATE		
Variety	Production per Plant	Production per Acre (4000 m^2)

	Pounds	Grams	Kilograms	Pounds
Brighton	.7	306	36,720	80,784
Douglas	.6	240	28,800	63,360
Tuft	.4	194	23,280	51,216
Tioga	.4	177	21,240	46,728

Photos

Strawberry Plants in Perlite Substrate