PROPAGATION TECHNIQUES OBSERVED ON A RECENT TOUR OF AMERICA

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There would appear to be as many ways of producing any particular plant in the U.S. as there are in G.B. However, due to the higher summer temperatures throughout the U.S., there is a much greater tendency to propagate in the open or under-shade with the aid of mist. Only a very small percentage of plants are being grafted as a means of propagating some of the more difficult items, or where rapid reproduction is required. For example, a large proportion of the ferns are grown by this method. Frequent pruning and the selection of even batches of cuttings produce high quality saleable plants.

In the Sacramento Valley, California, I saw peaches, plums and almonds being produced on seedling understocks. The seed was sown in the autumn. During the following spring the seed germinated and by June had produced a pencil-thick stem. It was budded at this time after reducing the understock somewhat. Two weeks after budding, the understock is further reduced. By autumn the bud will have grown to about 6′ tall with the understock completely cut away above the inserted bud.

At Perry's Plants, where they grow bedding plants by the million, they had devised a seed-sowing rig. This enabled seed to be sown on a factory production line basis. The seed trays, filled with compost, were placed on a conveyor belt which took them under the sowing rig. The seed was sown through tubes, watered-in and covered with silver sand before continuing into a glasshouse for germination. The seed was pricked out by hand after this.

In the Pacific Northwest, Bruce Briggs was using pallets as large seed trays. He inserted cuttings into compost on the pallet at bench height and then moved the pallets by fork lift to an area for rooting. The pot liners were also put on pallets and placed under protection until established. The system involved a minimum of handling by hand but used a considerable number of pallets plus a forklift.

The Weyerhaeuser Company is a huge lumber company. They have an equally huge reforestation programme which is mainly from bare root seedling production. However, in some of the difficult establishment areas, tube-grown plants are used. These are produced in glasshouses by the million, by direct

sowing seeds into the tubes. The company is also doing considerable work on clonal selection, male and female, bud development (to produce more seed from their selected trees) and frost hardiness. Their aim is to increase the volume of timber produced by 100 percent.

It was evident that the large scale of production on many American nurseries gives them an ability to produce plants to a uniform size and high quality. Or could it be that their ability to produce plants to a uniform size and high quality enabled the companies to grow to the size that they are?

POTENTIAL EFFECTIVENESS OF GROWTH REGULANTS ON ORNAMENTALS

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A. The physiology of growth control
B. The types of chemicals with growth regulatory activity
C. Experiences with chemical control of flowering pot plants:
   i. Height retardation
   ii Production of cuttings
D. Experiences with chemical control of nursery stock:
   i Plant shaping
E. The commercial potential of growth regulator chemicals on ornamentals.

A. THE PHYSIOLOGY OF GROWTH CONTROL. The continuing advancement in the knowledge of the physiology and biochemistry of growth and developmental processes in the plant is enabling the plant scientist to explore the potential of chemical growth control with more purpose and precision and to evaluate the many biologically active compounds produced by the agricultural chemical industry. Such chemicals function by supplementing, inhibiting or interacting with the naturally occurring (endogenous) plant growth hormones. The hormone systems control not only developmental processes in plants such as germination, dormancy, flowering, and senescence but functioning within the constraints of the plant's genetic characteristics and under the influence of environmental factors they determine plant size and morphology.

The commercial production of plants in the "so-called" ornamental section of the horticultural industry involves plants of