

PRODUCTION OF JAPANESE MAPLES BY CUTTINGS

DENNIS P. CAREY

*Bransford Nurseries
Worcester*

The stock plants are kept outside until late December, then collected up and re-potted or topped up with compost. The plants are then left in the glass-house at a temperature of 15°C. The cuttings are made when the material needed is 12 to 18 cm. long, with at least two sets of leaves. Cutting material can also be produced in a cold-protected house, but is available much later.

Cuttings are taken off the parent plant with a heel, the lower leaves removed and the cutting is then wounded down one side to the cambium layer. All cuttings are treated with a slow-dip hormone treatment by placing in the hormone IBA at the rate of 22 ppm to a depth of 2 cm. Cuttings are left to soak for 15 hours, surplus hormone is removed with clean water, they are then ready to insert. The cuttings are inserted 2½ cm. deep into honeycomb type paper pots size 7.5 cm. x 5 cm. The medium for these is 50:50 fine peat and sharp sand; the cuttings are well watered-in. Bed temperature 18° to 20°C is maintained.

The mist-house must be kept at 15°C and is heavily shaded. Mist is continued for three to four weeks, then reduced to 3 in 1 on a control system. By now rooting has taken place and as soon as roots are seen showing at the bottom of the pots they are potted on into 12.5 cm. pots. ◦

The compost is an open peaty mix with fertilizer added at the rate of 2 ounces of Osmocote, ¾ ounce of fritted trace elements, and ¾ oz. of single superphosphate per bushel.

They are placed under shading to prevent scorching and the foliage is watered 2 to 3 times per day for 3 to 4 days reducing to once per day. The shading is removed after about 3 to 4 weeks.

Introduce extra lighting 6 hours nightly, by time control or hand, from the end of June. Plants are left in this position until November, watering normally, and are pinched back to make a bushy plant. Light and heat are turned off in late November to give them a cold period. In early February greenhouse temperature is brought up to 15°C. Once they have broken dormancy re-pot plants to large pots. Plants by this time of re-potting will have reached 30 to 40 cms. in height. By this method you will have a saleable plant in 15 to 18 months.

DISCUSSION

In answer to an enquiry about the lighting programme, the speaker indicated that supplementary lighting was given for six

hours after dusk and that shading was provided by milky polythene.

PLANT GROWTH SUBSTANCES

PROFESSOR R. L. WAIN

Wye College, University of London

The discovery that the growth of plants can be modified by the application of extremely small quantities of certain chemicals has given rise to developments of great agricultural importance. The events which led to this discovery began with observations of Charles Darwin in 1880 whose experiments led him to conclude that some "influence" was transmitted from the tips of roots and shoots which controlled their direction of growth.

Since then, many research workers have added to our knowledge and it is now known that plant growth is under the control of highly active chemicals known as growth hormones which occur within the plant itself. The most important is the auxin-type hormone — IAA. This substance is produced in the growing tip, and as it moves down the stem it makes the tiny cells below get bigger, so promoting growth. It is of interest to note that IAA was known as a chemical for fifty years before it was found to be a plant growth hormone in 1934. This discovery led to big developments for here was a substance that could be made in the laboratory and when applied to plants could exert profound effects on growth, not only at the site of treatment but also in other regions of the plant to which it became transported. Since IAA is a fairly simple substance it was logical for chemists to synthesise other compounds of a similar nature and test them for their capacity to produce growth responses in plants.

These researches paid a rich dividend for many new active compounds have been discovered. These synthetic materials, it must be noted, do not occur naturally in plants and are therefore not hormones; they are better described as plant growth substances. Amongst them may be mentioned the well-known compounds 2,4-D and MCPA. The striking feature of these materials is their potency; some of them will produce an effect on plant growth at a concentration as low as one part per million of water. They are able to pass rapidly into roots, leaves or stems and are then transported within the plant. At low concentrations they may affect growth beneficially but when applied at higher strengths, some of them may produce disastrous effects which kill certain species completely. Yet with the dosage rates used in practice,