

Propagation of *Ilex aquifolium*®

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INTRODUCTION

The genus *Ilex* has more than 800 species, including both deciduous and evergreen (Galle, 1997); Huxley (2002) notes in the New Royal Horticultural Society Dictionary of Gardening that there are more than 400 species. My discussion is confined to the English holly and its allies, *I. aquifolium* and *I. × altaclerensis*. English holly (*I. aquifolium*) has many uses. The most obvious is as a colourful ornamental where the female forms have attractive, brilliant berries through winter. These are used by florists in their winter decorations and may last for many weeks. The English have a heritage for using these at Christmas time. The fruit in the garden is relished by wildlife, while most gardeners would like them left for their own enjoyment. Holly, when established, will tolerate even dry shade, thus making it an ideal choice for hedging and specimen planting.

PROPAGATION METHODS

Seed. Seed propagation is not normally practiced these days mainly because of the variability of plants produced. Many years pass before it is known which plants are male or female. In the cooler parts of New Zealand, where natural stratification of seed takes place, holly is gaining a bad name for its weed potential. In the warmer parts, holly is still an appreciated ornamental. In some areas where a security hedge is desired, male plants are requested and one cultivar called 'Mr. Hedge' fills this specification.

Cuttings. Clonal production is the normal method of propagation of the many selected and named cultivars of the English holly. Cuttings should be selected from current season's growth from the shaded side of the stock plant. The stock plant should be young, juvenile, healthy, and typical of the cultivar desired. We have found late summer to early autumn as the best time as the soft new growth is firming. We leave the top three leaves intact (but may reduce the size of the lower leaf) and then cut to 8 cm (3 in.) long. The bottom of the stem is side wounded for 1.5–2 cm ($\frac{3}{4}$ in.). This stimulates callous growth and then rooting. I also believe more rooting hormone is absorbed by these cuts. We use the powder type, the modern equivalent of Seradix 3 (0.8% IBA in talc). The medium used consists of coarse peat and crushed sand (2–6.5 mm) (2 : 2, v/v). If it were cheap enough we would use pumice instead of sand. The media is carefully placed in trays so as not to compress it. On top of this a thin mulch of sand is placed, 5–10 mm deep. The purpose of this is to have an inert surface to discourage sciarid flies and fungal problems. The cuttings are inserted one-half to two-thirds their length, which is usually to the axil of the lower leaf, and spaced as close as possible without leaves overlapping.

The trays are placed in a glass propagation house lined with plastic for heat and humidity retention. The benches have hot water heating to maintain a bottom heat temperature of 17–18 °C and mist nozzles to provide a continuous film

of water on their leaves when first inserted. As the weeks go by and callusing on the base of the cuttings is evident, we reduce the misting as soon as we can as this reduces fungal problems.

FINAL OBSERVATIONS

Now I come to the main reason for delivering this paper. I find it quite difficult to insert all our cuttings that we would like in the late summer and find there are still some left to do in early winter. During this time some plants, notably *Ilex*, object to being placed in a propagator late in the season and I believe it is mainly the temperature differential from the outside coolness to the inside warmth that causes stress and the severe leaf drop. I have also observed this phenomenon on other evergreens, such as *Pittosporum*, *Camellia*, *Pseudowintera*, and *Rhododendron*. To overcome this we have reduced the temperature of the propagation houses and used cool tunnels in our larger unheated greenhouses. This has alleviated the problem on the late propagation dates and has not reduced rooting percentage but has increased rooting time until the natural warm-up of spring.

LITERATURE CITED

- Galle, F.C. 1997. The genus *Ilex*. Timber Press, Portland, Oregon.
Huxley, A.J., M. Griffiths, and M. Levy (eds.). 1992. The New Royal Horticultural Society Dictionary of Gardening. The MacMillan Press Ltd., London.