

## PRODUCTION OF SPECIMEN ILEX SPECIES IN VIRGINIA, U.S.A.

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The holly cultivars we produce at Mobjack Nurseries have been selected for:

- 1) Popularity in the U.S. mid-Atlantic states.
- 2) Cold hardiness in our market area.
- 3) Cultural requirements that our production system can fulfil.

Though we are constantly searching for hollies to meet these criteria, the following are currently in production:

- 1) *Ilex*. 'Nellie R. Stevens', a putative hybrid between *I. aquifolium* and *I. cornuta*, is a large evergreen shrub or small pyramidal tree. It is hardy in Zones 6 to 9 (U.S. Dept. of Agriculture hardiness map). This plant was released by G. A. Van Lennep, Jr. of St. Michael, Maryland, USA, in 1954. (1)
- 2) *Ilex attenuata* 'Foster No. 2' is one of a group of five interspecific hybrids of *I. cassine* and *I. opaca*. It has a compact, narrow growth habit to 30 ft. at maturity and is heavily fruited with small red berries. Also hardy in Zones 6 to 9, this plant was selected by E. E. Foster of Bessemer, Alabama, USA. (2)
- 3) *Ilex* × *attenuata* 'Foster Brilliant', a selected seedling of 'Foster No. 2' grows more compactly and yet more rapidly than its parent. The leaves have an olive-green cast and the bright red fruit is larger. It was selected by Charles Shreckhise of Weyers Cave, Virginia, USA.
- 4) *Ilex* 'Dr. Kassab', a beautiful dark green evergreen with a broad pyramidal form grows to 20 ft. high. This hybrid between *I. cornuta* and *I. pernyi* is hardy in Zone 5 to 9 and was introduced by Dr. Kassab, a gardener from Philadelphia, Pennsylvania, USA.
- 5) *Ilex* × *koehneana* is an interspecific hybrid between *I. aquifolia* and *I. latifolia*. A vigorous growing evergreen tree 20 to 30 ft. tall, *I. × koehneana* has superior hardiness to both species. Named and introduced in 1919, this outstanding holly has somehow been overlooked.

### PROPAGATION

The *Ilex* cultivars we grow can be propagated from cuttings during most of the summer, fall, and winter months so we take cuttings when we have time and space available. The bottom leaves are

stripped and the cuttings are bound together with rubber bands in the field. After being immersed in a Benlate solution, they receive a basal dip of 10,000 ppm (1%) aqueous solution of the potassium salt of IBA. The cuttings are stuck into flats of 3 in. peat pots containing a medium of pine bark and perlite, 3:1. These flats are pre-set under a mist system in warm weather or over bottom heat and mist in cool weather. Either way, by spring the cuttings will have enough roots to be planted out into one-gal. plastic pots.

Our growing medium is milled pine bark and washed concrete sand; 6:1, with 2 lbs. dolomitic limestone and 1 lb. urea (43:0:0) added per cu. yd. The pots are filled and set into our growing areas during late fall and early winter. The cuttings will usually flush so receive one trimming before planting out after danger of a late frost (mid to late April). The cuttings are dibbled by hand into pots at this time.

## CULTURE

Liners for field planting are grown in 1 gal. pots for one year. They are sheared flat to produce a dense, branched base. After the land is prepared and limed with two tons of dolomitic limestone per acre, the hollies are planted out into 7 or 8 ft. rows on 5 ft. centers. Irrigation is provided by 16mm tubing with in-line emitters on 2 ft. centers. A preventative spray program using Orthene, either Benlate or Bravo, and a miticide is applied every two to three weeks as needed with a mist blower type sprayer.

Cultivation between the rows is by disk or spring-tine cultivators. Herbicides are applied through low volume nozzles using a small narrow gauge farm tractor. Pre-emergence and post-emergence herbicides are applied in this way. Those weeds and grasses which escape control are treated with backpack applications of Roundup. Fertilizer is applied by hand three times per year. The first application is of 10:10:10 in early spring, the second is of 43:0:0 after the spring flush, and the last application is applied after frost.

Our hollies are shaped by one of two methods. During the winter or early spring those not listed for spring sales are heavily sheared to a narrow pyramidal form. After the spring flush the plants not scheduled for summer sales are sheared again to a fairly tight pyramidal form. During the rest of the summer our hollies are given a light clipping to maintain shape, to keep tops narrow and tight and to encourage continued growth.

## HARVESTING

Virtually all of our field-grown plants are harvested with a hydraulic tree spade. The plant is brought in the spade to the head of the row and put into a wire basket-burlap sack on a low farm

wagon. The sack is secured around the stem, the top of the basket is laced and drawn tight around the stem with poly twine and any loose wires are twisted with a hook to tighten them. The size of the ball can be adjusted to the size of the plant by lowering or raising the tree spade with adjustable legs. An operator and three men can produce 75 to 100 trees per day on wagons ready for loading into semi-trailers.

## LOADING

Our semi-trailers are equipped with steel racks along the sides which support 2 in. by 12 in. pine shelving. Field-grown plants are loaded horizontally on the floor and container plants are then loaded on to the shelves. Our farm wagons are backed up to the semi- and a ramp is made using the shelving boards. The plants are pulled up the ramp into the trailer. We feel this method is far safer than the use of loading equipment by unskilled workers.

## CONCLUSIONS

We endeavour at the nursery to keep the plant's environment weed-free and to protect them from insect pests. Sandy loam soil to grow in, sufficient moisture, and an adequate supply of nutrients are only basic. The single factor which is the strongest contributor to plant quality is timing. The timing of both shearing and feeding enables us to put the maximum amount of growth where it is most needed during the development of the plant.

We have learned that root elongation and nutrient up-take is highest when shoot elongation is least during the growing season. We try to ensure that nutrient availability is highest just before our plants begin to grow. In late spring we attempt to stop growth with heavy shearing and again feed heavily. We shear slightly before our hollies would normally finish their growth cycle and, therefore, speed up the process. During this second growth in mid-summer we trim very slightly to maintain shape and to encourage multiple breaks on new shoots where needed.

These procedures have enabled us to produce specimen hollies of very high quality which command the best price in our marketplace as well as being a lot of fun to grow!

## LITERATURE CITED

- 1 Durr, Michael A , 1983 *Manual of Woody Landscape Plants 3rd ed.*, Stipes Publishing Company, Champaign, Illinois, p 352.
- 2 Durr, Michael A , 1983 *Manual of Woody Landscape Plants 3rd ed.*, Stipes Publishing Company, Champaign, Illinois, p 348