

Foster Holly Production

Ilex x attenuata 'Fosteri' (Foster Holly)

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The secret to growing quality Foster Hollies is two shearings per year, a wide base and full bottom foliage. Full lower foliage is attained with a sufficiently wide spacing to allow sunlight penetration to the bottom foliage and weed control around the plant to prevent weeds from shading out the bottom foliage.

Propagation

Ilex x attenuata 'Fosteri' resulted from a cross of *Ilex cassine* x *I. opaca*. Seed propagation of Foster will yield 50 percent *I. opaca*. Cutting propagation is preferred. Cuttings are stuck Aug. to Nov. and can be potted in 6-10 weeks generally. A plant no less than 12 to 18" tall is transplanted in the field.

Liner Selection

Consider planting 1 gallon liners, at least for the first crop, to get a good start. During the first year, also consider buying rooted cuttings and plant them into a liner row or a transplant bed for 1-2 years with irrigation or pot them into #2 containers. Let them grow a larger root system before being spaced out to dig. This frees up some land and helps insure survival, taking a larger plant to the field.

One of every 25 or 4 percent should be Foster # 4 males interplanted to increase fruit set if potential customers will be brought to the field. Consider growing a small number of the male #4's for those retailers and landscapers that realize and promote greater fruit set.

Also consider growing a few *Ilex x attenuata* 'Blazer', 'Big John'; *Ilex opaca* 'Carolina #2' and 'Greenleaf'. Dirr's 5th ed. pg. 466 & 477 says that 'Blazer' is a compact, slower growing with greater fruit set than Foster #2, 1/3" diameter fruit, 6' by 3' in 15 years.

'Big John' is a pyramidal male with glossy dark green foliage. No fruit.

'Carolina #2' has good dark green form with heavy bright red fruit, looks a little open in youth, becoming fuller with maturity. Available since 1940.

'Greenleaf' is becoming more popular in the southeast, strong growing pyramidal form with glossy medium green, spiny foliage, margin is somewhat undulating, bright red fruits at an early age, leaves and stems cold hardy to -22 F degrees.

Dr. Cecil Pounders, a plant breeder at Mississippi State, selected 'Dixie Dream' holly from a group of *Ilex cassine* x *Ilex opaca* crosses, while looking for a better Foster Holly for the nursery industry. 'Dixie Dream' is denser, more uniform and slower growing, without Fosters pyramidal form. It may be a better plant in the landscape, without so much wild growth later. Propagation is by cuttings.

Dr. Pounders has also released two other hollies of the same cross, 'Dixie Star' and 'Dixie Flame'. 'Dixie Flame' is a seedling from Tanager but unlike Tanager will withstand our heat much better and has very prolific large berries. 'Dixie Star' has lustrous dark green leaves and a tight growth habit. Cecil thinks it is actually a better replacement for Foster Holly. They are offered through PDSI (334-964-6778) in Loxley, Ala. Call Jim Berry or Ray French. (Photos are available on Auburn's website:

<http://www.ag.auburn.edu/landscape>) July, 2001

Site Selection

Hollies require a well-drained soil, without a fragi-pan in field or landscape. Afternoon shade could provide a benefit. Container production can occur in full sun or light shade.

Fertility

Foster hollies grow best with a soil pH of 5.5-6.0. A medium to high level of phosphorus and potassium is desirable. Soil test early enough so that any lime, phosphate or potash can be broadcast and incorporated prior to planting.

Sidedress Feb 15-March 30and late June with no more than 50 pounds of actual nitrogen per acre. Examples of 50 lbs. of actual nitrogen per acre are: 150 lbs. 34-0-0 or 250 lbs. 20-10-10 or 385 lbs. 13-13-13 or 333 lbs. 15-15-15 per acre of root zone; not a broadcast acre. (like when banding a herbicide at a specific rate per acre)

Field Spacing

A secret to quality Fosters is a wide base and full bottom foliage. Full lower foliage is attained with a sufficiently wide spacing to allow sunlight penetration to the bottom foliage.

Spacing of Foster hollies in the field depends upon the anticipated size to be harvested. Fosters' are sold as conical, upright broadleaf evergreens and well grown material will have a height to spread ratio of 3 to 2, according to the ANLA Nursery Standards. For example, a 6 foot Foster should be at least 4 feet across at the base. A 9 foot Foster should be at least 6 feet wide at the bottom. Height is measured up to where the main part of the plant ends, not to the tip of a thin shoot.

Plant a minimum of 5 feet apart within the row to harvest a 6 foot Foster and 6 feet apart for a 6-8 foot Foster. Middles should be at least (width of widest tractor or implement

used in middles plus 2.5 feet per side = 4' implement + 5' = 9' middle). It is critical that sunlight reach the lower branches to keep them vigorous and strong, so they will remain long.

Number of plants on 1 solid acre at different spacings, no roadway:

| | | |
|-------------|-------------|-----------------|
| 5x5 = 1,742 | 6x5 = 1,452 | 4.5 x 5 = 1,936 |
| 5x6 = 1,452 | 6x6 = 1,210 | 4.5 x 6 = 1,613 |
| 5x7 = 1,245 | 6x7 = 1,037 | 4.5 x 7 = 1,383 |
| 5x8 = 1,089 | 6x8 = 908 | 4.5 x 8 = 1,210 |
| 5x9 = 966 | 6x9 = 807 | 4.5 x 9 = 1,076 |

Remember to skip a row or leave a 10-12 foot roadway to load and spray from. Consider no more than 4-6 rows per block. When hand digging, how far do you desire to carry a 150-250 pound root ball? An air blast sprayer may have to be used for pest control. A tree spade requires space to maneuver without damaging adjacent plants.

Pests

Refer to UT Ext. pub.1589 for a complete list of potential insects and the recommended controls at <https://utextension.tennessee.edu/publications/Documents/PB1589.pdf>

I have not experienced insect or disease problems on Foster. Dr. Alan Windham is familiar with but does not know what causes the black angular 1/8" spots that are found on Foster Holly foliage during late winter. It is not thought to be a pathogen. The new growth will be clean.

Herbicides

Weeds must not be allowed to shade out lower foliage. Several herbicides are labeled to provide preemergence control: Biathlon (CFL), Betasan 4E (L), Casoron (F), Dacthal (F), Devrinol (CFL), Dimension EC (directed FL), Kerb (L), OH 2 (CF), Pendulum (CFL), Pennant Magnum (FL), Princep/Simazine (F), Ronstar 2G (CFL) and Treflan 5G (CFL). Envoy Plus (CFL) and Fusilade T/O (FL) are labeled for postemergence grass control. (C = container; F = field; L = landscape)

Refer to Tables A and B: Preemergence and Postemergence-Nursery Crops under the Weed Control heading at <http://www.utextension.utk.edu/mtnpi/handouts.html> for a complete list of labeled pre and postemergence herbicides for most common woody ornamentals.

Pruning

A secret to quality Foster Hollies is two shearings per year, a wide base and full bottom foliage. Full lower foliage is attained with a sufficiently wide plant spacing to allow sunlight penetration to the bottom foliage and weed control around the plant base to prevent weeds from shading out the bottom foliage.

Unsheared, natural Fosters are not salable. Whether planted on the corner of a house or as a screen, the foliage must be full. A Foster will not grow full on its own. Dedicated pruning is required. Maintain only 1 central leader.

The best times are likely winter (Nov through March) and late June. Avoid August, September and October. New growth generated would likely be killed by the first frost. Prune into a pyramidal or conical shape with a wide base as mentioned in the ANLA Nursery Standards and discussed here under spacing.

Research observed that pruning at the tips of young plants does not result in fuller plants, while pruning deeper into the heavier wood produces several breaks on the stems resulting in fuller and tighter growth. Sounds like cutting them hard into pencil size wood is the best way to thicken the foliage and grow a salable plant. The best tool may be manual hedge shears or powered shears. Keep tools sharp.

Research indicated that the standard treatment of pruning twice a year to desired shape produced the best quality plants. Promalin didn't produce bud breaks or initiate new branching. (from "Pruning Foster's Holly" by Dr. James T. Midcap, University of Georgia, 2000 Research Reports published by the Center for Applied Nursery Research).

Remember to be alert for snakes, wasps and hornet nests when pruning. Drink liquids and be alert for heat exhaustion. Don not do this type of work alone in remote areas. Wear the proper safety equipment. Leg guards, boots and protective gloves are essential when shearing with a knife. Carry a stick in the idle hand or hook a finger in your belt to keep it busy and avoid cutting it.

Harvesting

Six foot Fosters are probably a 5-6 year crop; depending on soil type, fertility, moisture, growth rate, pruning, etc; with harvesting occurring the last 2-3 years.

The American Standard for Nursery Stock was written by the American Nursery & Landscape Assoc. (ANLA) (formerly the American Assoc. of Nurserymen, AAN). It establishes techniques for measuring plants and minimum rootball sizes for particular plant sizes and different plant types. A copy of the Standards may be viewed and printed from this link free:

<http://www.anla.org/docs/About%20ANLA/Industry%20Resources/ANLAStandard2004.pdf>

A 6 foot Foster Holly would require a minimum of a 24 inch ball, according to Table 26 on page 62 of the 2004 revision of the Standards, in the Broadleaf Evergreen section. A portion of Table 26 is reproduced below. The minimum ball size is stated based on the tree height. These specifications are for hand dug or machine dug balls.

Producers are not legally bound to follow the ANLA Standards but it is a good business practice and eliminates surprises.

Broadleaf Evergreens--Type 5
(Table 26 in the ANLA Nursery Standards)

| Height | Minimum Ball Diameter |
|---------------|----------------------------------|
| 4 feet | 16 inches |
| 5 feet | 20 inches |
| 6 feet | 22 inches |
| 7 feet | 24 inches |
| 8 feet | 27 inches |
| 9 feet | 30 inches |

References:

"American Standard for Nursery Stock", American Nursery & Landscape Association, ANSI Z60.1-2004

Dirr, Michael A. 1998/2009. Manual of Woody Landscape Plants, Stipes Publishing, Champaign, IL. 5th & 6th ed., pg. 466/550.

Comm/Crops/Foster Holly

Precautionary Statement

To protect people and the environment, pesticides should be used safely. This is everyone's responsibility, especially the user. Read and follow label directions carefully before you buy, mix, apply, store or dispose of a pesticide. According to laws regulating pesticides, they must be used only as directed by the label.

Disclaimer

This publication contains pesticide recommendations that are subject to change at any time. The recommendations in this publication are provided only as a guide. It is always the pesticide applicator's responsibility, by law, to read and follow all current label directions for the specific pesticide being used. The label always takes precedence over the recommendations found in this publication.

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