

***Taxus* (Yew) Production** *(draft)*

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Commonly produced yews:

Taxus cuspidata 'Capitata' (Capitata Japanese Yew) W type 4, cone **upright**

Taxus cuspidata 'Densa' (Dense Spreading Japanese Yew) H **spreader**

Taxus x media 'Densiformis' (Densiformis Yew) W type 2, semi-**spreading**

Taxus x media 'Hicksii' (Hicks Yew) H, W type 5, broad **upright**

Propagation

Yews are propagated by rooted cuttings. Most of our yew producers buy their liners from liner producers rather than root their own. They will be 6-10 inches tall when lined out.

Local liner producers are Carl Bouldin, Myers Cove, Phytotektor, Schaefer, Shadow, and Tennessee Valley Nsy in Winchester.

Site Selection

Yews require a very well drained soil, like dogwood and peach. Select a site without a fragi-pan; where water never stands.

Fertility

Yews grow best with a soil pH of 6.0--7.0. 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 prior to planting.

Problem: Yews generally take on a pale green to a yellowish green color during the winter, possibly affecting sales.

In September, 1987, Dr. Will Witte, UT Woody Ornamental Researcher with the Experiment Station, shared some Ohio State University research on how they suggest to maintain dark green foliage on yews throughout the winter.

The research suggested 6 pounds of actual nitrogen per 1000 square feet or 264 pounds of actual nitrogen per acre per year. It should be equally split into 3-4 applications per year. Four applications would mean 66 pounds actual nitrogen per application. Three applications would mean 88 pounds actual nitrogen per application. The last application should be in late Fall, October perhaps for Tennessee, according to Dr. Witte.

The normal UT Extension recommendation for all shrubs and conifers is no more than 50 pounds of actual nitrogen per acre applied in late Feb and again in late June. This

represents 100 pounds actual nitrogen per acre per year; 164 pounds less than the Ohio recommendation.

UT Extension is not prepared to recommend the Ohio findings for fear that succulent tissue would be damaged by premature low temperatures in early winter before the plants hardened off. I am not surprised that Ohio's findings kept the plants green; but I am surprised that Ohio producers can get by with this practice, yet, maybe they stay cold, while temperatures in Tennessee bounce around. We get more low temperature damage in the fall and spring. We need to inquire with Ohio research, extension and the nursery industry to see what the "Rest of the story" might be.

50 lbs. of actual nitrogen per acre is provided by:

150 lbs. 34- 0- 0

333 lbs. 15-15-15

250 lbs. 20-10-10

What if we applied 50 pounds of actual nitrogen per acre in late Feb, late June and late August??? That would be 2-4 weeks later than we would normally recommend any nitrogen. We need a test block followed by that bad early winter.

Container grown *Taxus*

Ohio's research suggested feeding till the end of October. If the slow release runs out, supply 1000 ppm of 20-20-20 until late October, at 7 to 10 day intervals.

Ohio State Univ Ext 614-292-4067 Research 614-292-3897

Field Spacing

Spacing of yews in the field depends upon the species, cultivar and anticipated size to be harvested. Yews are sold as spreading or upright (conical or pyramidal) coniferous evergreens.

Depending on the species and cultivar of yew; *Taxus cuspidata* 'Densa' and *Taxus x media* 'Densiformis' are classified as Type 2, spreaders; *Taxus cuspidata* 'Capitata' is classified as a Type 4, cone type, upright; and *Taxus x media* 'Hicksii' is classified as a type 5 broad upright type.

Type 2 conifer spreaders will be wider than tall. Type 4 cone type pyramidal should have a height to spread ratio of not less than 5 to 3, according to the ANLA Nursery Standards. A type 5 broad upright conifer should not have less than a 2 to 1 height to spread ratio.

Plant spreaders a minimum of 3-4 feet apart within the row. Middles should be at least (width of widest tractor or implement used in middles plus 2.5 feet per side = 3' implement + 5' = 8' middle.

Plant uprights a minimum of 3-4 feet apart within the row. Middles should be at least (width of widest tractor or implement used in middles plus 2 feet per side = 3' implement + 4' = 7' middle. It is critical that sunlight reach the lower branches to keep them vigorous and strong, so they will remain long.

Plant populations on a solid acre with no roadways depends on the spacing. Examples are:

$3 \times 4 = 3,630$	$3.5 \times 4 = 3,112$	$4 \times 4 = 2,723$
$3 \times 4.5 = 3,227$	$3.5 \times 4.5 = 2,766$	$4 \times 4.5 = 2,420$
$3 \times 5 = 2,904$	$3.5 \times 5 = 2,489$	$4 \times 5 = 2,178$
$3 \times 5.5 = 2,640$	$3.5 \times 5.5 = 2,281$	$4 \times 5.5 = 1,980$
$3 \times 6 = 2,420$	$3.5 \times 6 = 2,074$	$4 \times 6 = 1,615$
$3 \times 7 = 2,074$	$3.5 \times 7 = 1,778$	$4 \times 7 = 1,556$

Remember to leave a 10-12 foot roadway to load and spray from. Consider 4-6 rows per block of upright yews. An air blast sprayer is convenient for pest control. An air blast sprayer should be able to penetrate the foliage on 4-6 rows of upright yews. A tree spade will also require space to maneuver without damaging adjacent plants. A 4 row block offers 50 percent of its plants to a spade.

Spreading yews could probably be planted with 8-12 rows per block.

Planting

Exercise caution to not plant too deep. Yews are very sensitive and will not tolerate being too deep. It is also critical not to allow cultivation to throw additional soil over the roots. Some producers replace the disc blade that throws the soil with a smaller diameter blade.

Hawkersmith Nsy. in Tullahoma pots 1 year old bed grown rooted cuttings to grow for an additional 1-2 years. They also like that the containerized liners have a long shelf life if it rains and delays transplanting not. Bareroot liners must be protected from freezing and drying out.

Hawkersmith volunteered that their best success with yews has been when they plant a heavy 3-4 year rooted liner. It may be a bit too warm here for small liners to respond well.

Insects

Refer to UT Ext. pub. 1589 for a complete list of potential insects and the recommended controls. Yews seldom are attacked by insects.

Disease

Refer to UT Ext. pub. 1234 for a complete list of potential diseases and the recommended controls. Phytophthora Root Rot can be a problem in the field or container

or landscape; if the site is poorly drained or during very wet periods. Strive to select a well drained site. Subdue Maxx is only temporary and too expensive for field use.

Herbicides

Refer to UT Ext. pub. 1226 for a complete list of labeled pre and postemergence herbicides. Weeds must not be allowed to shade out lower foliage.

Pruning

Use hand or motorized shears to cut longest branches back to the canopy as often as necessary. Avoid pruning between August 15 and first killing freeze. Avoid pruning plants that will be harvested after May so plants will look natural. Frequent shearing will increase the number of branches. Encourage low branching.

Harvesting

Spreading yews are commonly sold when they are 1-3 feet tall. Upright yews are commonly sold when they are 1-4 feet tall. Yews are generally a 3-5 year crop; depending on species, soil type, fertility, moisture, growth rate, pruning, etc; with harvesting occurring the last 2-3 years.

Digging the Correct Size Ball

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 rootball size for particular plant sizes and different plant types. A copy of the Standards may be obtained by contacting the ANLA at 202-789-5980 ext 3019 for a few dollars.

Table 16

Spreading and Semi-Spreading		Upright Yews	
<u>Spread</u>	<u>Minimum Ball Diameter</u>	<u>Height</u>	<u>Minimum Ball Diameter</u>
1 foot	8 inch	1 foot	10 inches
2 feet	12 inch	2 feet	12 inches
3 feet	16 inches	3 feet	14 inches
		4 feet	16 inches

References:

"American Standard for Nursery Stock", American Association of Nurserymen, ANSI Z60.1-1996, approved Nov. 6, 1996, Section 3: Coniferous Evergreens.