

## Arborvitae (*Thuja occidentalis*) Cultivar Observation

Vince Lawson, farm superintendent  
Joe Hannan, ag specialist

### Introduction

Fueled by increasing interest in home gardening, this trial was established to evaluate seven cultivars on hardiness, growth habit, and overall appearance. Three specimens of Emerald, Holmstrup, Woodwardii, Elegantissima, Berckman's Golden Biota, Pyramidalis, and George Washington were planted at the Muscatine Arboretum, Muscatine, IA, in June 2001. The planting site was on a knoll allowing full sun exposure and air movement. The soil is a moderately well drained, fertile clay loam. Roundup herbicide, woodchip mulching, and hand pulling controlled weeds. Plants were not pruned to observe natural growth habit.

### Results and Discussion

Emerald, Holmstrup, Woodwardii, and Pyramidalis have performed well at the Muscatine Arboretum producing plants with good green color, dense foliage, and a clean, distinct shape without pruning. These cultivars offer a variety of sizes and shapes for a landscape. Elegantissima had a more open, loose growth habit than the other cultivars and would be suited for plantings where a more natural or wild look is desired. It did show some minor tip browning of foliage in fall of 2006. Muscatine received below normal rainfall amounts during both 2005 and 2006 and it is possible the tip browning was due to drought conditions. Berckman's Golden Biota, a cultivar having light yellowish-green foliage, did not do well in the full sun location and showed sunscald injury that was most severe on the south side. George Washington did not adapt to this area and showed severe winter injury each spring. Because the plants had become unsightly and nearly dead, they were replaced by the cultivar Nigra in fall of 2005.

**Table 1. Arborvitae cultivar height and width measurements taken in October 2003 and 2006.**

Cultivar	2003		2006		Height/width	Growth rate (in./year*)
	Height (in.)	Width (in.)	Height (in.)	Width (in.)		
Emerald	34	18	50	28	1.8	5.3
Holmstrup	29	15	49	24	2.0	6.7
Woodwardii	20	25	36	46	.8	5.3
Elegantissima	42	27	73	53	1.4	10.3
Golden Biota	28	16	47	27	1.7	6.3
Pyramidalis	55	24	97	33	2.9	14.0

\*Growth rate during 2003–2006.

**Table 2. Arborvitae cultivar notes and comments October 2006.**

Cultivar	Comments and Observations
Emerald	Bright green dense foliage, compact growth, narrow pyramidal shape
Holmstrup	Foliage dark green and dense, nice clean pyramidal shape
Woodwardii	Bright green foliage, smooth globe shape
Elegantissima	Strong growth with loose open habit, slight browning of leaf tips, lots of cones
Golden Biota	Upright compact growth, yellowish-green color, foliage browning due to sunscald or drought, most severe on south side
Pyramidalis	Tall columnar shape, vigorous growth with dark green dense foliage
George Washington	Only one plant left by 2005 due to poor growth and winter injury; replaced with Nigra
Nigra	Planted October, 2005, looks healthy, loose growth habit