

# Survey of Eastern Christmas Tree Growers

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In the spring, I sent a survey to Christmas tree growers east of the mountains, asking them about their pest control practices. The following is a summary of the results from that survey.

The survey questionnaires were completed by 27 Christmas tree growers, which produced an estimated 104,150 Christmas trees. Several of these growers also grow Fraser fir, pines and spruces in the mountains of western North Carolina. Those trees were not included in the survey.

The eastern Christmas tree production centers around Chatham, Harnett and Wake counties. Other counties having growers that returned a survey include Caldwell, Craven, Duplin, Gaston, Guilford, Johnson, Lee, Lincoln, Moore, Onslow, Pender, Randolph, Robeson, Rockingham, and Rutherford counties.

Eastern growers set an average of 720 trees in 2007, but only 70% of growers set trees. So what tree species do eastern Christmas tree growers produce? The following table summarizes survey results:

CHRISTMAS TREE SPECIES	% Total Trees Produced	% Growers
Eastern white pine ( <i>Pinus strobus</i> )	41.9%	77.8%
Leyland cypress ( <i>X Cupressocyparis leylandii</i> )	18.9%	74.1%
Virginia pine ( <i>Pinus virginiana</i> )	8.7%	37.0%
Eastern red cedar ( <i>Juniperus virginiana</i> )	8.0%	66.7%
Norway Spruce ( <i>Picea abies</i> )	7.5%	14.8%
Blue Spruce ( <i>Picea pungens</i> )	5.5%	22.2%
Carolina Sapphire ( <i>Cupressus arizonica</i> var. <i>glabra</i> – ‘Carolina Sapphire’)	5.4%	55.6%
Blue Ice Arizona Cypress ( <i>Cupressus arizonica</i> var. <i>glabra</i> ‘Blue Ice’)	2.6%	33.3%
Green Giant Thuja ( <i>Thuja standishii</i> X <i>plicata</i> ‘Green Giant’)	0.5%	25.9%
Clemson Greenspire ( <i>Cupressus arizonica</i> var. <i>glabra</i> ‘Clemson Greenspire’)	0.5%	7.4%
Scotts pine ( <i>Pinus sylvestris</i> )	0.2%	7.4%
Canaan fir ( <i>Abies balsamea</i> var. <i>phanerolepis</i> )	<0.1%	3.7%
Douglas fir ( <i>Pseudotsuga</i> spp.)	<0.1%	3.7%
Deodar cedar ( <i>Cedrus deodara</i> )	<0.1%	3.7%
Short leaf pine ( <i>Pinus echinata</i> )	<0.1%	3.7%
Atlantic white cedar ( <i>Chamaecyparis thyoides</i> )	<0.1%	3.7%
Momi fir ( <i>Abies firma</i> )	<0.1%	3.7%

Eastern Christmas tree growers have to combat a variety of different pests and diseases because of the wide variety of trees they produce. The following is a listing of different pests followed by the percentage of growers that reported damage from each pest in 2007: bagworms (37%), Cinara aphids (37%), fireants (30%), Nantucket pine tip moth (22%), spider mites (15%), rust mites (4%), weevils (7%), white pine bark adelgid (7%), white grubs (4%). Insecticides were only applied by 30% of growers. Ortene was the number one insecticide used followed by Di-Syston, horticultural oil, dimethoate, and Lorsban.

Diseases are much more of a problem for eastern Christmas tree growers than Fraser fir producers. The following is a listing of different diseases affecting eastern species followed by the percentage of growers that reported damage from each pest in 2007: Passalora needle blight (19%), Phytophthora root rot (15%), needle cast (11%), rust galls (7%), and Phomopsis (4%). In fact, 2007 was a year where disease development was slowed due to dry weather. In wetter years, more disease development would be expected. To control diseases, 23% of growers applied fungicides an average of 2.5 times using different formulations of either azoxystrobin or chlorothalonil.

Eastern Christmas tree growers rely heavily on mowing to keep weed height in check. There were 22% of growers that reported using no herbicides, but only mechanical weed control. The majority of growers (15%) use herbicides in the row and mow row-middles (70% of growers). A small percentage of growers are using low rates of post-emergent herbicides such as Roundup (glyphosate) to stunt rather than kill weeds in much the same way that Fraser fir growers are using. Only one grower reported sowing a ground cover (white clover) in their trees.

In 2007, North Carolina was in a drought and 81.5% of growers reported having losses due to the dry conditions. A total of 6,815 trees were reported lost by survey respondents representing the following species: white pine (85.6% of losses), Virginia pine (4.7% of losses), Leyland cypress (4.1% of losses), Norway spruce (1.5% of losses), Green Giant (1.5% of losses), red cedar (0.8% of losses), Carolina sapphire (0.8% of losses), white spruce (0.4% of losses), and blue spruce (0.03% of losses). Only 18.5% of growers said that they had the capability of irrigating their trees during times of drought.

In addition to selling trees grown on their farm, 40.7% of eastern growers also reported selling cut Christmas trees – that is Fraser fir from the mountains. In addition 59.2% of growers reported selling wreaths, 29.6% sold roping, 40.7% sold bows, 51.9% sold tree stands, 18.5% sold ornaments, and 14.8% had refreshments. In addition growers reported selling disposal bags for the Christmas tree, centerpieces, swags and live conifer trees in containers.

Eastern Christmas tree growers provide a fresh, convenient, farm-grown tree experience for many customers in North Carolina. This survey helps to describe some of the challenges that eastern tree growers have, and will help direct extension programming efforts in the future.

*Recommendations for the use of chemicals are included in this publication as a convenience to the reader. The use of brand names and any mention of commercial products or services in this publication does not imply endorsement by the North Carolina Cooperative Extension Service nor discrimination against similar products or services not mentioned. Individuals who use chemicals are responsible for ensuring that the intended use complies with current regulations and conforms to the product label. Be sure to obtain current information about usage and examine a current product label before applying any chemical. For assistance, contact an agent of the North Carolina Cooperative Extension Service in your county.* 🌲

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