Fact Sheet ST-1
November 1993

Abies concolor
White Fir[1]

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INTRODUCTION

One of the best firs for the east, White Fir reaches a mature height of 75 feet or more but is often much smaller in the landscape, 40 to 50 feet (Fig. 1). It has a pyramidal shape and horizontal branching with the lower branches drooping toward the ground. The tree should be grown in an open area so the lower branches can touch the ground. When branched to the ground, White Fir will cast dense shade which kills turf grass. The foliage is a wonderful blue-gray which appears much like that of the Colorado blue spruce. White Fir may grow one and a half feet per year with good growing conditions. This tree can take exposure and will withstand some heat and drought better than most firs. *Abies firma* is much more heat-tolerant, has green glossy foliage, and grows even further south into USDA hardiness zone 8.

GENERAL INFORMATION

Scientific name: *Abies concolor*
Pronunciation: AY-beez KAWN-kull-er
Common name(s): White Fir, Colorado Fir
Family: *Pinaceae*
USDA hardiness zones: 3 through 7 (Fig. 2)
Origin: native to North America
Uses: Bonsai; recommended for buffer strips around parking lots or for median strip plantings in the highway; screen; specimen; Christmas tree
Availability: somewhat available, may have to go out of the region to find the tree

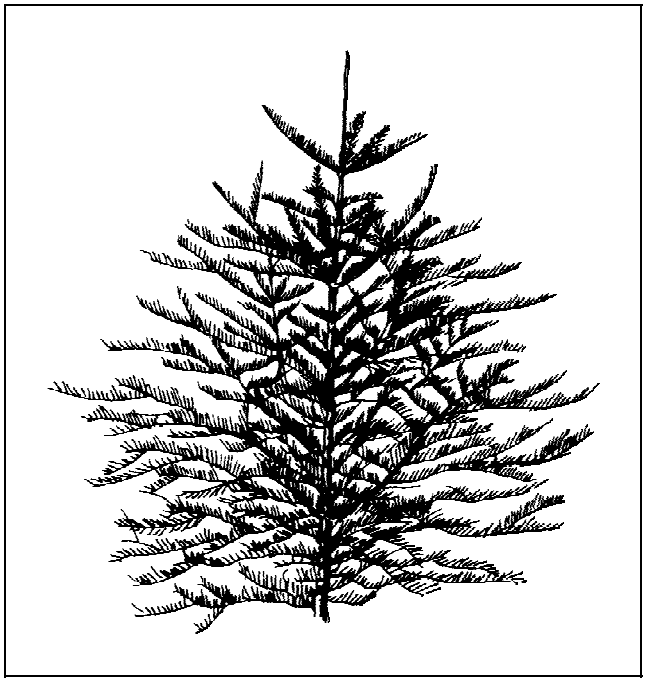

Figure 1. Young White Fir.

DESCRIPTION

Height: 40 to 50 feet
Spread: 15 to 25 feet
Crown uniformity: symmetrical canopy with a regular (or smooth) outline, and individuals have more or less identical crown forms
Crown shape: pyramidal
Crown density: moderate
Growth rate: slow
Texture: fine

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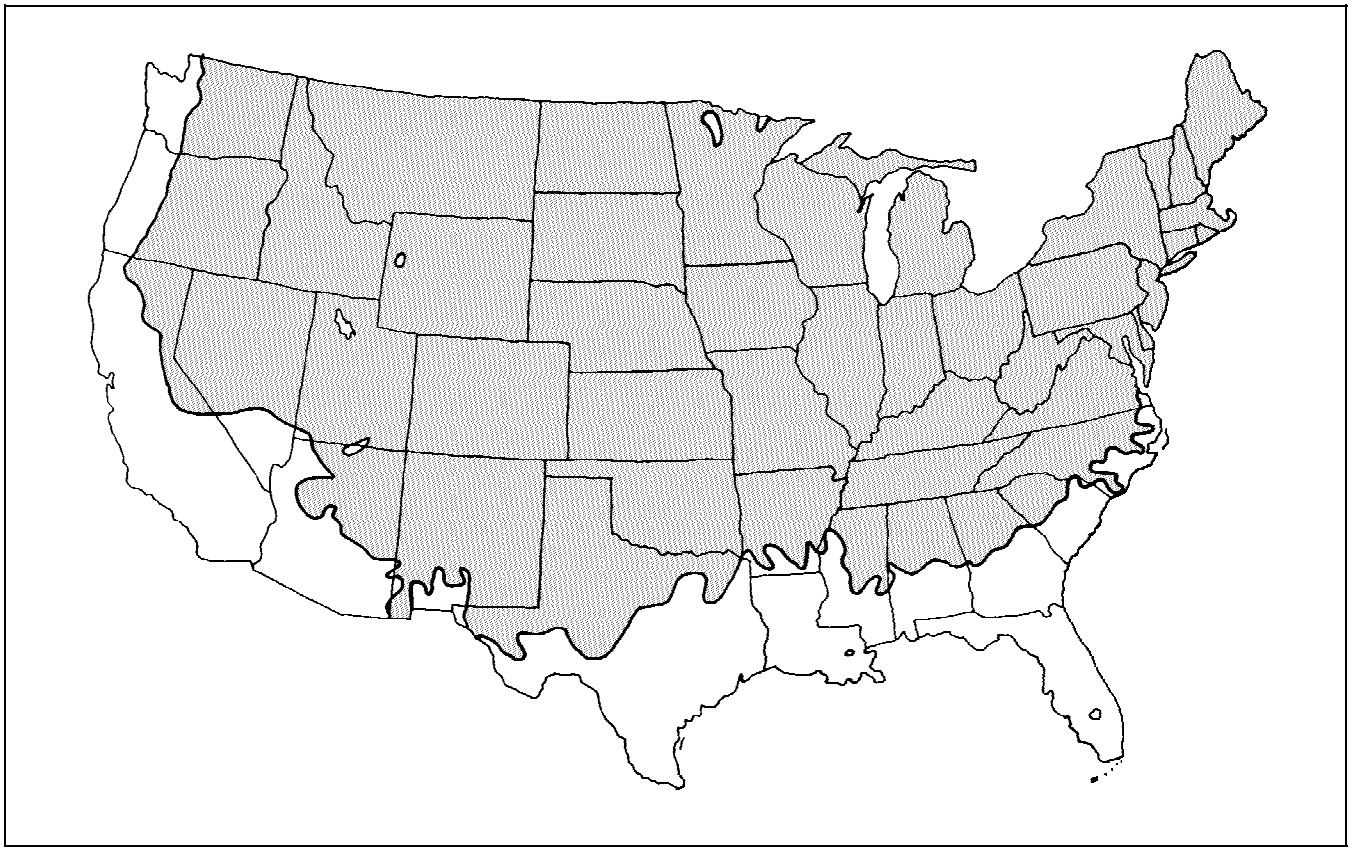

Figure 2. Shaded area represents potential planting range.

Foliage

Leaf arrangement: spiral (Fig. 3)
Leaf type: simple
Leaf margin: entire
Leaf shape: needle-like (filiform)
Leaf venation: parallel
Leaf type and persistence: evergreen; needle leaf evergreen
Leaf blade length: less than 2 inches
Leaf color: blue or blue-green
Fall color: no fall color change
Fall characteristic: not showy

Flower

Flower color: red
Flower characteristics: inconspicuous and not showy

Fruit

Fruit shape: elongated
Fruit length: 3 to 6 inches
Fruit covering: dry or hard
Fruit color: brown
Fruit characteristics: does not attract wildlife; inconspicuous and not showy; no significant litter problem

Trunk and Branches

Trunk/bark/branches: droop as the tree grows, and will require pruning for vehicular or pedestrian clearance beneath the canopy; not particularly showy; should be grown with a single leader; no thorns
Pruning requirement: needs little pruning to develop a strong structure
Breakage: resistant
Current year twig color: green
Current year twig thickness: medium
Wood specific gravity: 0.39

Culture

Light requirement: tree grows in part shade/part sun; tree grows in full sun
Soil tolerances: clay; loam; sand; acidic; well-drained
Drought tolerance: high
Aerosol salt tolerance: none

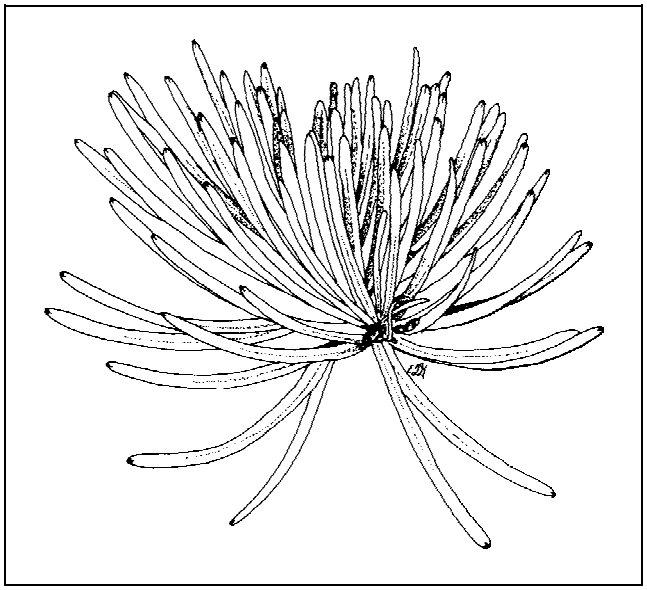

Figure 3. Foliage of White Fir.

Other

Roots: surface roots are usually not a problem
Winter interest: no special winter interest
Outstanding tree: tree has outstanding ornamental features and could be planted more
Invasive potential: little, if any, potential at this time
Ozone sensitivity: tolerant
Verticillium wilt susceptibility: not known to be susceptible
Pest resistance: long-term health usually not affected by pests

USE AND MANAGEMENT

White Fir transplants well-balled and burlapped, if properly root pruned; otherwise it will be hard to transplant. The tree prefers a moist, well-drained loam and dislikes heavy clay or high pH soils. The root system can adapt to wet or rocky soil conditions by growing close to the surface of the soil. It will not tolerate clay or constantly wet soil. As a Christmas tree, White Fir remains fresh and retains its needles for two weeks or more if provided with water. White Fir is an excellent substitute for the disease-sensitive Colorado blue spruce, since it is less prone to diseases.

Unfortunately, White Fir is rare in the horticultural trade, but it should be grown and used more often. Cultivars include 'Conica' which is more dwarf and conically-shaped, and 'Violacea' which has beautiful silver-gray foliage.

Pests

Generally none are serious, but a few cause some damage. The balsam twig aphid feeds on the new growth of fir causing distorted needles and deposits of honeydew. Trees can tolerate fairly heavy infestations for a short period of time but are weakened by repeated heavy infestations.

Bagworm builds and lives in a two to three-inch long sack built from needles and other debris. The insect overwinters as eggs in the sacks of the female. Control by hand-picking the bags in winter.

The more common scale insects infesting fir are oystershell, pine needle, and cottony cushion. These insects are hard to control once inside their shell or waxy coatings. The crawler stage is most easily controlled with appropriate pesticides.

Spider mites in hot areas cause older needles to lose green coloration and become yellowed. The insects are very small and difficult to see so infestations can become severe before being noticed. This is perhaps the most common problem.

Diseases

Generally none are serious enough to cause concern. Needle and twig blight results in the shriveling and reddening of the new growth. The needles of current seasons growth are curled and dead. Terminal growth and some laterals may be killed.

Pine twig blight is a problem on stressed trees. The fungus will not ordinarily be a problem unless the host plant is weakened. The infection usually begins at the terminal bud near a branch tip. Infection takes place in late summer and the disease progresses down a twig into a node. At times the infection may go into 2-year-old wood. Needles on infected branches turn reddish then die. Cut off and destroy infected twigs.

Several rusts attack firs but are not a problem on landscape trees. The diseases are rarely seen.

Several different fungi cause cankers on the trunks and branches of firs. Cankers are sunken areas in the bark that gradually get larger. When the stem is completely encircled the part beyond the canker dies. Keep the plants healthy by fertilizing and watering during dry weather. Cankers can be largely prevented by avoiding plant injury.

Root rots caused by several fungi kill roots and rot wood. Little can be done to control the diseases other than to keep trees healthy to prevent disease infection. Maintain tree health by regular fertilization and watering during dry weather.