**Abies concolor** (G. Gordon & Glend.) J. Lindley ex Hildebr.  
*(Abies lowiana)*

**White Fir**

**Other Common Names:** Colorado Fir, Concolor Fir, Sapin Argenté.

**Family:** Pinaceae.

**Cold Hardiness:** Suitable for use in USDA zones 3 through cooler portions of zones 6(7).

**Foliage:** The sickle-shaped evergreen needles arch stiffly upward from around the stem, rather resembling a hair-brush; the solitary needles are 10 to 20 long and flattened; tips are acute to rounded; needle color varies from blue-gray to silvery blue; the needles smell of oranges or tangerines when crushed; needles of *A. concolor* lack a fascicle sheath as in *Pinus* spp., nor do they have the short stout petiole like attachment of the *Picea* spp.

**Flower:** Monoecious; males in small deciduous cones which are abscised after shedding their pollen; females small and globose before maturing; pollination occurs in the spring.

**Fruit:** Erect mature cones are broadly cylindrical to barrel-shaped and taper to a blunt point; cones are 20 to 40 Q5Q long; immature cones are green to greenish purple ripening to tan; cones disintegrate as they mature, releasing the small wedge-shaped winged seeds from between the scales; cones are seldom seen on seedlings until they are 30 to 40 years old.

**Stem / Bark:** Stems — glabrous; yellow-green to olive green in color maturing to gray; Buds — terminal resinous and broadly conical; Bark — on young trunks smooth, gray, and punctuated by resin pockets; on older trunks, ridged and furrowed with a red-brown to gray-brown coloration.

**Habit:** Under ideal conditions, *A. concolor* grows spire-like with a strong central leader to 150 Nm height, but trees are only a small fraction of this, perhaps 20 Nm to 30 Nm where they can be grown in our region; the lower tiers of branches are held for an extended time when not under competition from surrounding plants; the overall texture is medium.

**Cultural Requirements:** This species requires a well drained, well aerated soil, and yet a fairly steady moisture supply is also required; in our region, plants perform best in the partial shade of the north side of large buildings or large trees; moderately mulch the roots to cool them.

**Pathological Problems:** Prone to root rots on poorly drained soils; spider mites in hot weather can be a problem; twig blights sometimes occur; infestations of balsam twig aphid, bagworms, scale insects, bark beetles, needle rusts, dwarf mistletoe and *Phytophthora* as a root pathogen have been reported.

**Ornamental Assets:** White Fir has a very handsome narrowly conical form and silvery blue foliage on the better selections which can rival the bluest of Colorado Blue Spruce (*Picea pungens* var. *glauca*) selections.

**Limitations & Liabilities:** Intolerance to heat, extended drought, and poorly drained soils are the primary limitations.

**Landscape Utilization:** Where adapted *A. concolor* can serve as a silver accent, specimen, or in groves for a group effect for formal landscapes; trees are occasionally grown or harvested as Christmas trees.

**Other Comments:** A very handsome conifer and perhaps the toughest of the more widely available *Abies* spp.; even so, it does not perform well in our region outside of very cool high elevation gardens; this species is stiffly formal in overall effect and looks out of place in free form natural landscapes.

**Native Habitat:** High elevations of the Western and Southwestern U.S. and Northern Mexico; although this species is not native to Texas, it is native to high elevations in adjacent portions of New Mexico.
**Related Taxa:** The genus *Abies* P. Miller is an important component of many cool/cold temperate forests; in these regions they are often of significant economic consequence as timber trees; there have been several cultivar selections of *A. concolor*, predominantly for silvery white foliage forms or dwarf growth habits for rock gardens; *Abies concolor* (G. Gordon & Glend.) J. Lindley ex Hildebr. subsp. *lowiana* (G. Gordon) E. Murray, the Sierra White Fir, Pacific White Fir, or Low’s Fir, is a larger tree with a more west coast distribution that is not well adapted to our region; some authorities suggest that *Abies firma* P.F. von Siebold and J.G. Zuccarini, Japanese Fir or Momi Fir, is more heat tolerant than *A. concolor*; some report it can be used from USDA zones 5 - 8 in the Southeastern U.S., however, this is based on limited observations and use of *A. firma* should be tempered until it is more widely tested; *Abies firma* also does not have the silver blue foliage of *A. concolor*.

*Abies fraseri* (F.T. Pursh) J.L.M. Poirer  
**Fraser Fir**  
C Also known as Fraser Balsam Fir, She Balsam, Southern Balsam Fir, or Southern Fir; in its native Appalachian Mountains it may attain a height of 75N but it is much smaller when grown in high elevation gardens in the Western U.S.; stout 1 long rounded needles which are notched at the tips are borne on red-brown branchlets; the leaves are stiffer and a darker glossy green color compared to those of *A. concolor*.

C Although this is one of the more heat tolerant *Abies spp.*, and can be used in some portions of USDA zones 5 through 6(7) in the Southeastern U.S., it is suitable for only the very coolest portions of our region; this species is strongly horizontal in its branching structure, is narrowly pyramidal in outline as a youth, and retains its needles for some time after being cut which makes it popular as a Christmas tree, especially in the Southeastern U.S.

**References:** Carter, 1997; Dirr, 1998; Elias, 1980; Farrar, 1995; Flint, 1997; Gilman, 1997; Whitcomb, 1983.

Copyrighted 2004 with all rights reserved by Michael A. Arnold; intended for future inclusion in *Landscape Plants For Texas And Environs, Third Edition.*