

## The Cultivated *Abies* Taxa in the Landscape Designs of Istanbul

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### Abstract

The *Abies* taxa have a solitary use in the planting designs of Istanbul. The native and exotic *Abies* taxa in Istanbul are propagated in state nurseries or private nurseries selling imported plants. In this research, *Abies* taxa in the sell list of some important private nurseries and Bahcekoy Forest Nursery Foundation have been established. Subsequently some visualizations belonging to those taxa, their use opportunities in the landscape and their natural deployed areas have been evaluated within the literature review.

**Key words:** Exotic, *Abies* taxa, state nursery, private nursery

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### Introduction

The firs belonging to the *Pinaceae* family are generally spread in the temperate and cool regions of the Northern Hemisphere, in North and Central America, Europe, Asia (Himalayas) and also in North Africa (Figure 1). Firs genus is composed

of up to 40 species; there are also many varieties and cultural forms. Four species (*A. bornmülleriana*, *A. cilicica*, *A. equitrojani*, and *A. nordmanniana*) grow naturally in our country (PAMAY, 1992; YALTIRIK, 1988).

### The Ecology of Firs

Firs trees are evergreen, pyramidal in youth and conical in mid-age, have crowded leafy branches, arranged on the girth of the trunk. They have high air humidity and low light requirements and are shade tolerant. Firs develop taproot in the deep, nutrient rich, sandy loam and well drained soils. Their heat requirements are moderate, and have branches from the ground level; they need a wide growing space. Branches are arranged to the trunk like a hole. Normally firs are the trees of medium and high mountainous areas (Kayacık, 1967; Gökmen, 1970). Firs don't like air pollution and prefer humid climates which are not extremely hot.

### The production and commercial presentation types of firs

The firs native to our country are generally grown in the state nurseries. They have been propagated from seedlings and have been offered for sale as coated and earth-dismantling plants. The exotic species are generally propagated from 2+1-year old *Abies bornmülleriana* by side grafting.

However *Abies concolor* and *Abies pinsapo* which are the imported species have been sold as container plants. They are propagated by seedlings but their cultivated forms are generally produced by grafting.

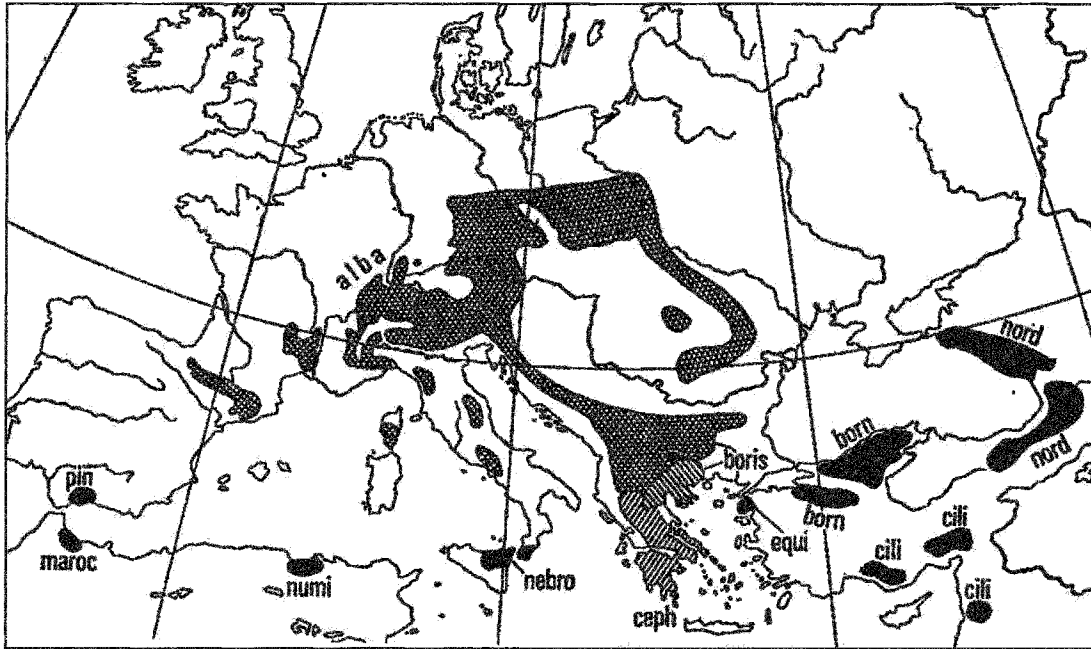


Figure 1. Range of European and West Asian *Abies* species. *A. borisii-regis* (boris), *A. bornmuelleriana* (born), *A. cilicica* (cili), *A. cephalonica* (ceph), *A. marocana* (maroc), *A. nebrodensis* (nebro), *A. numidica* (numi), *A. nordmanniana* (nord), *A. equi-trojani* (equi), *A. pinsapo* (pin).

#### The usage areas of firs

In our country, except the natural ranges of firs, some of the taxa can be seen especially in the parks and gardens of Istanbul, Ankara, Antalya and Izmir. Based on observations made in some of luxury residential gardens in Istanbul, the exotic and imported fir taxa are preferred and used. But especially for ornamentation in the Christmas time, the native firs (*Abies bornmülleriana*, rarely *Abies equi-trojani*) are produced in state nurseries. Then they are used in the public green areas and finally are planted in suitable places in the gardens.

The firs which are slow growing, branched from the ground, conical or pyramidal-shaped and having narrow habitus are usually solitary used in the landscape designs. However, in the large parks or other green areas, proportional to the area, they are used in small or large groups. Especially

*Abies bornmülleriana*, which has dark green leaf color, make a good background while they are used in mass plantings.

The other fir taxa (*Abies concolor* and *Abies pinsapo*), having light green leaf color are suitable for solitary use in the landscape designs. In addition, *Abies concolor* with its leaf color and form has been a good alternative to the aesthetic plant *Picea pungens*. Their solitary usage is suitable in the landscape. Dwarf formed Fir taxa are also used solitary in the landscape designs.

In Table 1, the fir taxa that can be obtained from some private nurseries and from the Bahçeköy State Forest Nursery and their morphological properties have been summarized (Bloom, 1972; Dirr, 1998; Gökmen, 1970; Kreuzer, 1998; Fitschen, 1994; Krüssmann, 1985; Yaltırık, 1988; Yaltırık, Efe, Uzun, 1997; Pamay, 1992; Kayacık, 1967; Ceylan, 2004 and URL 1).

Table 1. The Fir taxa and their properties in the landscape designs of Istanbul

Fir taxa	Origin/ range	Propagation place	Height (m.)	Form	Needle-like leaves			Usage areas/usage purposes
					Color	Height (mm)	Texture	
<i>A. bornmülleriana</i> Mattf.	Asia Bg—Nhg-3	State nursery	30-40	Pyramidal	Upper side glossy green, under side two white stomata stripes	20-35	Medium	Group plantings- making background Solitary Accent
<i>A. nordmanniana</i> (Stev.) Spach.	Asia (Caucasia) Bg— Nhg/BGh- 3	Private nursery	40-50	Pyramidal	Upper side dark glossy green, under side two white stomata stripes	20-35	Medium	Group plantings- making background Soliter Accent
<i>A. nordmanniana</i> (Stev.) Spach. 'Pendula'	Cultivated	Private nursery	10-15	Narrow pyramidal	Upper side dark glossy green, under side two white stomata stripes	20-35	Medium	Single-Accent
<i>A. equi-trojani</i> Aschers & Sint.	Asia Bg-Nhg-3	State nursery	20-25	Pyramidal	Upper side dark glossy green, under side two white stomata stripes	15-25	Medium -Fine	Group plantings- making background Solitary- Accent
<i>A. concolor</i> (Gord. et Glend.) Lindl. Ex Hildebr.	North America Bg—Ns-1	State and private nursery	30-40	Pyramidal	Grayish or bluish green	40-60	Medium -Fine	Single-Accent
<i>A. concolor</i> (Gord. Et Glend.) Lindl. Ex Hildebr. 'Candicans'	Cultivated	Private nursery	25-30	Pyramidal	Silvery white coloured	40-60	Medium -Fine	Single-Accent
<i>A. pinsapo</i> Boiss.	Europe, South Spain Bm^-- NGsm-3	State and private nursery	25-30	Conical	Dark green to blue-green	15-20	Medium	Single-Accent
<i>A. pinsapo</i> Boiss. 'Glauca'	Cultivated	Private nursery	10-15 (25)	Conical	Blue-green	15-20	Medium	Single-Accent
<i>A. pinsapo</i> Boiss. 'Horstmann'' ( <i>Bodur İspanya</i> <i>Göknarı</i> )	Cultivated	State nursery	1	Dwarf	Ashy blue colored	15-20	Medium	Single-Accent

(B: Boreal zone; N: Nemoral zone, NG: Nemoral stage, BG: Boreal stage, g: only in mountainous parts of the concern zone, h: humid, s: subhumid, m: mild winter (barely frosts below -15 °C. 1: western North America, 3: Europe-Mediterranean-Middle East-West Siberia).

The references (BLOOM, 1972; KREUZER, 1998; FITSCHEN, 1994; KRÜSSMANN, 1985; YALTIRIK, 1988; PAMAY, 1992; KAYACIK, 1967; CEYLAN, 2004, web site (URL1) as well as the sale lists of state and private nurseries have been used while preparing this table.

## Results

As shown in Table 1; there are lots of fir taxa that can be used solitary in the landscape designs. While choosing the suitable fir taxa,

it is important to consider its site requirements and their aesthetic values. While buying a tap rooted fir taxa, you have to pay attention that it has to be a few replacement treated, coated, single top shooted and also should have stayed in the nursery at last one growing season.

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