

Abies – the true or silver firs

Defining features: Needle-like foliage attached to the stems via a sucker-like structure (pulvinus) which leaves a circular scar when it falls or is pulled off. Note that foliar characters such as arrangement on the twig can vary considerably and most text book descriptions refer to shade material lower in the crown. Foliage from higher up in the crown or on fertile shoots is often more radial, more upright (assurgent) and with individual needles more 'chunky'. Cones are always upright on the branches, usually right at the top of the tree, and they disintegrate in situ leaving a central core. For this reason cone characters are not easily observable but looking for shed cone scales beneath the tree and using binoculars can be helpful.

Key characters to look for are:

Buds: shape, colour, and presence or absence of resin. Resin usually starts out clear but soon becomes white and opaque, obscuring the bud scales.

Leaf arrangement on the stems (look down the shoot from the apex): Pectinate, shallow-v, imbricate, hockey-stick, radial.

Stem hairs: Presence/absence, and colour

Cones: Are bracts exerted (poking out from between cone scales), or inserted (not visible). Presence of blobs of resin and colour might also be helpful.

Foliage fragrance: Very subjective, but sometimes helpful.

Useful references:

http://www.arboretumwespelaar.be/EN/Identification_keys_and_illustrations/Identification_keys/

http://www.arboretumwespelaar.be/EN/Identification_keys_and_illustrations/List_of_illustrated_taxa/

Aljos Farjon (1990). Pinaceae. Koeltz Scientific Books

Mitchell (1978). Trees of Britain and Europe. Collins.

Rushforth (1999). Trees: a photographic guide to the trees of Britain and Europe.

Species	Common name	Bud shape	Bud resin	Leaf arrangement	Stem hairs (Year 1 shoots)	Cone bracts	Crushed foliage fragrance	Other features
<i>alba</i>	European silver fir	Blunt pointed	Not or slightly resinous.	Pectinate to weak v	Yes, shades of brown.	Slightly exerted	Resinous	Leaves relatively stiff and slightly 'plasticky'. Variable.
<i>amabilis</i>	beautiful fir	Spherical	Resinous	Imbricate upper needles	Yes, short and dense.	Inserted	Tangerine	Similar to <i>A. nordmanniana</i> but differs in buds which are likened to small pearls.
<i>cephalonica</i>	Greek fir	Blunt pointed	Resinous	Radial, often pectinate below.	None - glabrous	Exserted	Resinous	Foliage stiff, leaves with pointed tips. Radial leaf arrangement more prominent at shoot tips and on fertile shoots.
<i>concolor</i>	Colorado white fir	Globular	+Resinous	Pectinate to U-shaped	Minutely hairy/glabrous	Inserted	Lemon-balm	Individual needles curved, Dull blue-grey on both surfaces.
<i>fraseri</i>	Fraser fir	Ovoid	+Resinous	Imbricate upper needles	Yes	++Exserted	Resinous	Cones present when tree are relatively young. Cones often with blobs of resin
<i>grandis</i>	grand fir	Spherical	Resinous	Strongly pectinate to weak v.	Minutely hairy	Inserted	Fruity orange 'Starburst'	Buds very small.
<i>nordmanniana</i>	Nordmann fir	Blunt pointed	No	Imbricate upper needles	+/-, located in grooves.	Exserted	Fruity	The 'non drop' Christmas tree. Foliage arrangement variable.
<i>procera</i>	noble fir	Ovoid, hidden by terminal leaves	Slightly	'Hockey-sticks'	Yes, short dense	++Exserted	Gloss paint or tomato leaves	Cones are huge, often twisting branches over with their weight.