

## Fir, Pine or Spruce - Which Do I Have?

By Grant Wood

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### Needles

Like deciduous trees, conifers can be identified by their "leaves." The "leaves" of conifers are of course their needles.

**Pine tree needles are arranged in clusters, with 2, 3 or 5 needles** per cluster; spruce and fir have their needles attached individually to the branches and branchlets.

**Spruce needles appear square in cross-section**, whereas **Fir needles appear flattened**.

- The needles of Norway spruce are an exception, with three sides instead of four.
- Needles on fir trees are often blunt and notched at the outer end and usually have two white bands on the underside of the needles.
- Spruce needles can be blunt as in the white spruce, or sharply pointed as in the Colorado spruce.
- The needles on both spruce and fir trees are spirally arranged, but the branchlets on fir trees are flat on one side as compared to the rounded appearance of spruce tree branchlets.
- Spruce needles are attached to small, stalk-like woody projections. When needles are shed, these projections remain. As a result, the branchlets of spruce trees feel rough.
- Fir branchlets lack these projections, and thus have smooth bark. The color and length of needles are not reliable means of identification; these can vary from tree to tree, depending on cultural conditions and the planting site.

**Cones** - the difference in cones can be seen by the scales.

- Pine cone scales are woody in nature, with a rigid feel.
- Spruce cones have thinner scales than pine cones, which gives them a less rigid feel. Rigidity varies greatly within the spruces. Length of cone is not a reliable way of differentiating one type from another; the length can vary greatly from tree to tree.
- The margins of the scales can be used to differentiate species of spruce and pine. In some species, the margins are entire and rounded as in the white spruce, while in others they are rough and notched as in the Colorado spruce.
- Some pine scales have a small prickle on each scale to further help identification.

- Most spruce and pine trees retain their cones for a few years; thus it is common to see new and old cones still attached to a tree. A number of pines will retain their cones for many years.
- Fir cones are erect, unlike the pendulous cones of most spruce trees. In fir trees, the scales on the cones are deciduous; that is, in the autumn, the scales fall off, leaving the erect center stem attached to the branch. You will see these erect center stems near the top of the fir tree.

The cones I've been discussing are the female reproductive portions of the tree. The male cones are formed in the spring near the branch tips and are often mistaken for reddish buds. These cones are short-lived. Female cones are produced in the summer and are not fertilized until the spring of the next year. The seeds can be shed later the same fall or are sometimes not shed for a few years. Most female cones are found near the top of the tree.

**Bark** - bark alone is not a fully reliable indicator of the type of conifer you have. The surest way to identify conifers is to examine the needles and cones.

**Shape** - all conifers shed needles - sometimes this shedding is slow, but most commonly it occurs all at once in the fall. Because the oldest needles are shed, the "inner" areas of the tree closer to the trunk become less dense than the outer areas.

- Pine trees usually shed three-year-old needles. Partly for this reason, pine trees will usually appear thinner and less dense than spruce and fir.
- Spruce and fir shed needles that are four to five years old.
- For a more detailed identification of species and varieties, consult *The Manual of Cultivated Plants* by L. H. Bailey, *Trees and Shrubs for Northern Gardens* by Leon C. Snyder, or *Woody Ornamentals for the Prairie Provinces*, by R. H. Knowles.