

Dwarf and Slow-Growing Conifers for Minnesota

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Conifers by definition are plants that bear cones. Usually called evergreens, conifers generally display needles or scales as foliage. Dwarf conifers are conifers which, for any number of reasons, never attain the normal size of the species or parent plants. Slow-growing conifers, as the name suggests, are slow to reach mature size and may be utilized as dwarfs, keeping in mind they may eventually lose their small stature. Dwarf conifers have a compact growth habit with short crowded branches, giving the plants a dense appearance. Two kinds of dwarf and slow-growing conifers are cultivated. Artificially dwarfed plants, such as Bonsai, require cultural practices of pruning, potting and disbudding to keep them small. The natural dwarfs which retain their size and form with minimal cultural control, are the plants discussed here.

ORIGIN

The natural dwarfs, valuable as true garden dwarfs, usually originate as seed variations or bud mutations commonly called "witches brooms." They are usually found on normal tree branches. This abnormal growth may be induced by such agents as insects, mites, mistletoes, rusts, viruses and other unknown causes. Vegetative propagation of the "witches brooms" will produce dwarf plants of similar shape. Seeds grown from "witches broom" cones will produce seedling populations ranging from very dwarf to normal. Other dwarf forms may result from the environment. Alpine forms often become dwarfed due to poor growing conditions. Fortunately, most of these hardy plants retain their dwarf stature when grown at lower elevations.

Conifers, as a general rule, have two types of foliage when grown from seed. The first awl-shaped juvenile leaves that develop on the seedling are different than the scale-like adult leaves which develop later. With the majority of conifers, the juvenile leaves eventually disappear. However, certain conifers have juvenile and adult foliage growing on the same branch. Propagation of both of these foliage types from the same plant will produce different plants, confusing plant identity.

Selection

To avoid some of the confusion in selecting dwarf conifers, plants should be purchased from nurseries specializing in them. Although dwarf conifers may be purchased from a few Minnesota nurseries, the majority of dwarf conifer nurseries are located in the eastern states. Most dwarf conifers originate in milder climates and plant hardiness must be considered if they are to be grown in Minnesota. Plants that

come from alpine areas or the colder regions of Europe, North America and Asia usually will adapt to colder temperatures. Consulting knowledgeable nurserymen, visiting private collections, arboreta, and botanical gardens would be helpful in determining suitable dwarf conifers for your garden.

Landscape Use

Originally, dwarf conifers were used extensively in large European estates and many Japanese gardens where only the rich could afford them. Dwarf conifers became useful for landscaping smaller homes with limited garden space. Useful as single specimen accent plants or in a mass planting, dwarf conifers form an effective background. They should be planted away from other plant masses and grouped so they retain their miniature scale with each other. Dwarf conifers are useful in pool landscapes, foundation plantings, rock gardens, miniature landscapes and as potted patio plants. They should always be planted in an

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Conifers—

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appropriate setting whenever possible.

Spacing between plants should be in proportion to plant size, keeping them in proper perspective. Even with proper spacing, these miniature plants will eventually become crowded and require moving. They must be considered moveable when crowding occurs or they will lose their bottom foliage and become unsightly.

Planting and Care

Although early spring is the best time for transplanting dwarf conifers in Minnesota, container grown or balled or burlapped plants may be moved during other seasons if given adequate care after transplanting. Bare root plants should be avoided whenever possible, but if bare root plants are handled, keep the roots cool and moist at all times. Water the plants immediately after planting for best results. Until the plants become established, supplemental water must be supplied whenever needed. Most dwarf conifers will tolerate dry conditions once established, but they should never be allowed to show signs of wilting as severe damage has already occurred. Heavy watering is preferred over frequent light sprinklings as this will encourage deeper rooting.

Weed control is necessary for controlling competitive vegetation and providing an aesthetic setting for dwarf conifers. Perennial weeds should be eliminated before planting to minimize their problems later on. After planting, annual weeds can be controlled by hand weeding, selective herbicides and mulches.

Besides weed control, mulches act as an effective insulation where the soil temperature is modified, retains moisture and provides an aesthetic background which enhances the planting. Many desirable mulching materials are available with organic materials such as woodchips, the most commonly used. Whatever material is used, the mulch must be kept heavy enough to be effective.

Dwarf conifers need little pruning. Plants are pruned to retain or shape young plants, to control size when maturity is reached, and to remove any undesirable portion of the plant. Winter injured foliage should be removed as soon as a determination of the new growth can be made.

Occasionally, a much larger branch, typical of the normal species, is found growing on a dwarf conifer. This growth is a reversion which must be removed whenever encountered or it will eventually take over the entire plant, replacing the dwarf form. As most reversions tend to initiate at a single bud, the removal of this single branch will usually solve the problem. Sometimes "witches broom" seedlings which grow as dwarfs for several years, revert back to normal. Pruning will not prevent the reversion in this case.

Pest control on dwarf conifers is seldom needed as few diseases and pests are encountered. Good cultural practices will help assure healthy plants which are less susceptible to most pest problems.

Winter protection from cold and wind is beneficial to most

dwarf conifers. Low temperatures and strong winds accompanying severe cold may result in winter injury which will render the plant useless as a landscape specimen. Many plants may be successfully wintered where an adequate snow cover is retained. Placing a burlap screen on the south and west sides of plants subject to needleburn will help reduce damage. Proper site selection may also be helpful in reducing winter injury.

Dwarf conifers will grow on a wide range of well-drained soils. Slightly acidic soils are preferred over alkaline soils. Dwarf conifers growing in full sunlight develop into sturdier, more compact forms than those growing in shade. However, some of the golden forms are particularly susceptible to needleburn from the intense summer sunlight which occurs in Minnesota and should be planted in a partially shaded area or be protected from the bright sunshine.

Selecting Plants for Minnesota

The following dwarf conifers may be grown in Minnesota. This is not a complete listing of what may be grown here, but is a compilation of some of the more hardy and popular plants. Many dwarf conifers have not been grown long enough in various locations around the state to make definite recommendations. In many locations, these plants should be planted for trial to determine their reliability.

Firs

Abies balsamea — Balsam Fir
cv. Nana
f. Hudsonia

Abies concolor — White Fir
cv. Compacta

Abies fraseri — Fraser Fir
cv. Prostrata

Abies koreana — Korean Fir
cv. Compact Dwarf
cv. Prostrate Beauty

False Cypresses

Chamaecyparis pisifera — Sawara False Cypress
cv. Boulevard
cv. Squarrosa Intermedia
cv. Filifera Nana
cv. Nana

Junipers

Juniperus chinensis — Chinese Juniper
cv. Dropmore
cv. Pfitzeriana Compacta
cv. Shimpaku

Juniperus communis — Common Juniper
cv. Echiniformis
cv. Repanda
cv. Silver Lining

Juniperus horizontalis — Creeping Juniper
cv. Bar Harbor
cv. Blue Horizon
cv. Filicina Minima
cv. Livingston
cv. Procumbens
cv. Wiltoni

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Juniperus procumbens — Japgarden Juniper
cv. Nana

Juniperus sabina — Savin Juniper
cv. Skandia

Juniperus sargentii — Sargent Juniper
cv. Glauca

Spruces

Picea abies — Norway Spruce
cv. Clanbrassiliana
cv. Echiniformis
cv. Gregoryana
cv. Inversa
cv. Mucronata
cv. Nidiformis
cv. Procumbens
cv. Pumila
cv. Pygmaea
cv. Reflexa

Picea glauca — White Spruce
cv. Conica
cv. Echineaformis

Picea mariana — Black Spruce
cv. Nana

Picea omorika — Serbian Spruce
cv. Nana

Picea orientalis — Oreintal Spruce
cv. Nana

Picea pungens — Colorado Spruce
cv. Compacta
cv. Globosa
cv. Montgomery

Pines

Pinus araistata — Bristlecone Pine

Pinus banksiana — Jack Pine
(Broom)

Pinus densiflora — Japanese Red Pine
cv. Umbraculifera

Pinus mugo — Swiss Mountain Pine
cv. Compacta
cv. Gnom
cv. Kobald

Pinus nigra — Austrian Pine
cv. Pygmaea

Pinus pumila — Japanese Stone Pine
cv. Dwarf Blue

Pinus resinosa — Red Pine, Norway Pine
(Broom)

Pinus strobus — Eastern White Pine
(Broom)
cv. Nana
cv. Umbraculifer

Pinus sylvestris — Scotch Pine
cv. Beuvronensis
cv. Watereri

Arborvitae

Thuja occidentalis — Eastern Arborvitae White Cedar
cv. Hetz Midget
cv. Little Gem
cv. Ohlendorffii
cv. Rheingold

Hemlocks

Tsuga canadensis — Canada Hemlock, Eastern Hemlock
cv. Cole's Prostrate



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