

Plants for Your Home and Office

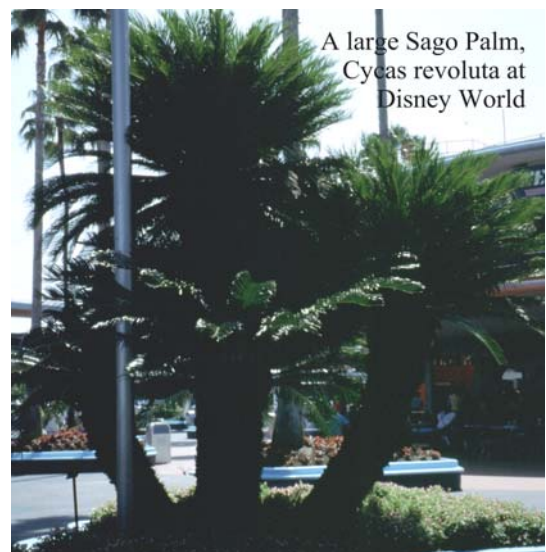
Cycads and Gymnosperms

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Cycads and gymnosperm (evergreen) trees produce magnificent large specimen plants for interior environments. These plants tolerate low humidity as well as any large plant and they will live for years with little or no maintenance. If you have a large bright room with a spot near a window that requires a large plant (3 to 7 ft diameter), a cycad or gymnosperm tree will be happy in that location for 5 to 20 years.

Cycads are primitive plants when compared to common foliage plants. This group was first to perfect the seed habit which has allowed higher plants to evolve into the diversity of plants known today. Cycads have large palm-like leaves, generally 2 to 7 feet long, which arise from a short thick stem. The 5 to 40 leaves are oriented in a tight spiral around the stem and are pinnately compound. They arise in groups of 2 to 25 simultaneously and grow to full size within 3 weeks. The leaves resemble palm leaves but live longer than palm leaves; a single cycad leaf may remain functional for 1 to 4 years. Cycads are impressive because of their durability; dust on the leaves is the only common problem on an established plant.

Cycads (except the sago palm) are not commonly available and must be considered collector's items. Seed propagation is the only way to reproduce these plants and this requires 4 to 5 years from pollination to transplant time. The sago palm (*Cycas revoluta*) is relatively common because it can be reproduced vegetatively as well as by seed. Future success in tissue culture propagation may make these plants readily available.



The cycad group is very small and is composed of only 10 genera and 76 species. The sago palm (*Cycas revoluta*) is a good large interior plant but it has stiff, pointed leaves that make it undesirable near pedestrian traffic. Other species of *Cycas* (i.e. *C. circinnalis*, and *C. media*) and species of *Macrocydas* have a softer, more desirable texture for interior use. Some species of *Zamia* and *Ceratozamia* also have a desirable texture and a smaller size necessary in some interior environments.

Gymnosperm trees are comparable to the cycads for texture and durability but also have a faster growth rate and a larger mature size. These evergreen trees are native to the temperate and mountainous regions in the southern hemisphere whose climate is similar to coastal California. Some species, will tolerate temperatures below freezing, while others will be damaged at these temperatures. The gymnosperm trees are ideal in large bright offices where cool temperatures are common in winter because of energy saving measures.

The Norfolk Island pine, *Araucaria heterophylla*, is the most common gymnosperm tree used as an indoor plant. The short flexible leaves and the somewhat pendulous branches give this plant a soft, desirable texture. *Araucaria bidwillii*, bunya-bunya, is less desirable because the awl-shaped leaves are very sharp. This species is often mistakenly called the monkey-puzzle tree in commercial greenhouses, because of the sharp leaves and their resemblance to the true monkey-puzzle, *A. araucana*. The most striking feature of the Norfolk Island pine and the bunya-bunya is the exact "Christmas tree" form and symmetry that all specimens exhibit. In addition to the consistent shape of these species, the dark green leaf color permits these plants to be used alone without background plants in the interior design.

Araucarias are easily propagated from seed by commercial growers. Although the young plants require 3 to 6 years to develop to a useable size, seed propagation is the best type of reproduction. Stem cuttings

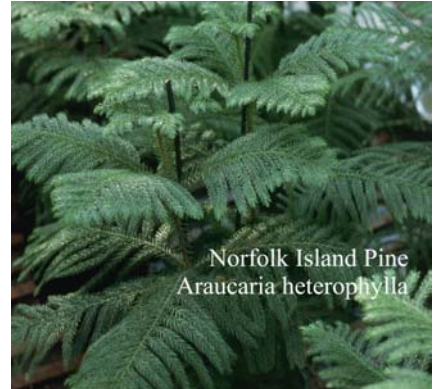


Norfolk Island Pine seedlings

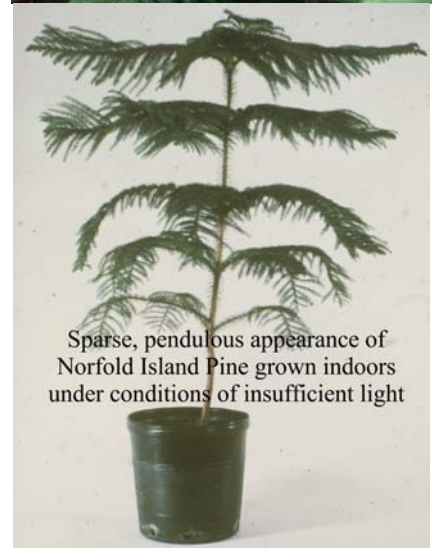
of the Norfolk Island pine may be successful but only the single terminal cutting will produce a plant that grows vertically; all cuttings from lateral branches continue to grow only horizontally. Air layers are also successful.

Species from the large southern hemisphere genus *Podocarpus* are fine plants for interior environments. Although these plants are related to our northern hemisphere gymnosperms (pines, firs, spruces, etc.), they do not have needle-like leaves that we associate with evergreens. Rather, the leaves of *Podocarpus* spp. are broader, ¼ to 1 inch wide, and flattened. *Podocarpus* produces small bluish berries after they "flower" rather than the typical woody cones of *Araucaria* and our northern hemisphere evergreens.

The Southern yew (Buddhist pine), *Podocarpus macrophyllus*, is used as a shrub in interior environments rather than a specimen tree. This species is easily pruned to many forms such as a



Norfolk Island Pine
Araucaria heterophylla

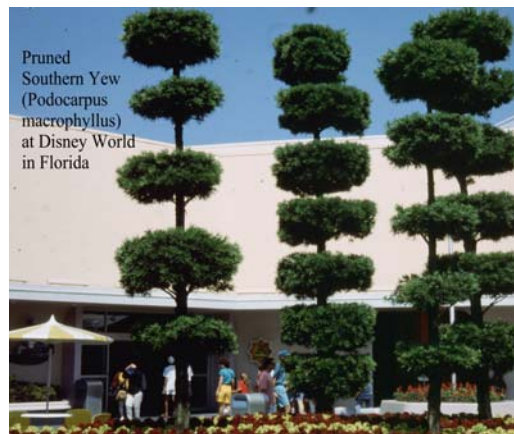
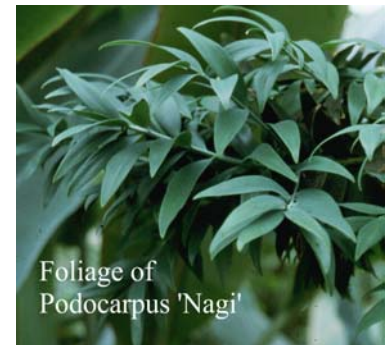


Sparse, pendulous appearance of Norfolk Island Pine grown indoors under conditions of insufficient light

hedge, topiary, etc. The leaves of the Southern yew are dark green when mature and have a linear form - 2-4 inches long and ¼ inch wide. A more graceful species, *P. gracilior* has thinner, more pendulous leaves with a bluish cast. *Podocarpus* 'Nagi' has triangular leaves (2-3 inches long) that are waxy blue with very little green color.

Cycads and gymnosperm trees are available as interior plants because they are produced as landscape plants in Florida and southern California. All the species mentioned will tolerate full sun in these warm regions of the U.S. Indoors, these species do best in locations where they receive full sun for 2-3

hours and bright reflected light for the rest of the day or where sunlight is reduced only 20 to 40% for the full day. As light intensities decrease below 50% of full sun, the vigor of the plants decreases. These plants will continue to grow at light intensities near 10% of full sun but leaves are less frequent along the stem, the branches are quite pendulous and growth is very slow. The durability of these plants is best appreciated at very low light intensities of 50-150 foot candles because the cycads and gymnosperm trees can be maintained in these locations for more than a year.



Because the cycads, *Araucaria* and *Podocarpus* are large shrubs or trees, they require soils, irrigation and fertilization rates appropriate for their size. When the plants are young, light soilless potting soil is adequate. Good commercial potting soil is appropriate when plants need to be repotted. In some circumstances, sterilized garden soil (10% to 25% by volume) can be added to large containers. The soil helps hold more nutrients and water for the large plant and the soil adds weight to the container so the plant is stable. These species produce extensive vigorous root systems when they are growing well, so containers must be of sufficient size. Irrigation and fertilization rates must increase as the plants become root-bound in their containers. Some cycads will tolerate root-bound conditions in small containers for many years, but *Cycas revoluta* and *Cycas circinnalis* have large root systems and will eventually require large containers.

Mealy bugs and scale insects are the only pests that bother the cycads and no pests are common on *Podocarpus* and *Araucaria*. The leaves of the cycads seem hard and impenetrable but mealy bugs and scale can produce large populations and damage the young leaves if the plants aren't checked regularly.

The cycads and gymnosperm trees match large palms for durability and a long maintenance-free life. These plants should be a permanent portion of an indoor planting and will grow for 5 to 20 years in large locations with adequate sunlight.

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