

Staghorn Ferns for Florida¹

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Staghorn ferns are members of the fern family, Polypodiaceae, and belong to the genus *Platycerium*. Eighteen species are presently recognized along with many varieties and hybrids. *Platyceriums* are tropical plants native to the Philippines, Southeast Asia, Indonesia, Australia, Madagascar, Africa and South America. In their native habitat they thrive as epiphytes, generally found growing on tree trunks, branches, or rock out-croppings. This assures a support system, air circulation, and bright subdued light while the tropical rains provide plenty of moisture during most of the year. Nutrients are provided by rain water washing the material off of the branches and transporting it to the root area.

Staghorn ferns are valued for their highly variable and unusual growth habits. The plant produces two distinctly different fronds, (a) basal and (b) foliar. Basal fronds, often called "sterile fronds," are composed of rounded thickened fronds (foliage) growing in layers with the basal half clasping the substrate. Upper parts of basal fronds may be lobed or divided and stand erect, forming an efficient method for collection of water, fallen leaves, and other humus producing forest products. These products eventually break down, releasing nutrients necessary for growth of the fern. Foliar fronds, also

called "fertile fronds," are either erect or pendant and may be divided into lobed or strap-shaped divisions. Foliar fronds have a reproductive function forming patches of rust colored sporangia on the underside of the fronds which contain the spores. Both basal and foliar fronds are covered to varying degrees, with small stellate (star-shaped) hairs giving them a silvery cast. These hairs provide some protection from insect pests but also function as well in moisture conservation.

CARE AND CULTURE

Due to the staghorn ferns' epiphytic (non-parasitic) habit, they require an organic matter such as a loose, well-drained potting medium for proper cultivation. Sphagnum moss alone or as a mixture with other materials (bagasse, tree fern fiber, leaf mold) make an excellent medium for staghorn ferns.

Because of their relatively large size, staghorn ferns are rarely grown in pots except when small specimens are purchased. Utilizing their natural growth habit, staghorn ferns are well suited for mounting on cypress wood or tree fern fiber plaque or wire baskets. To mount a fern on a slab of wood,

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place a few handfuls of growing medium on the wood slightly below center, shaping it in a circular mound. Place the fern on the medium so the bud is slightly below center of the mount and basal fronds are in contact with the medium. Using wire (not copper) or plastic stripping, secure the fern tightly to its mount. This same method is also used for tree fern fiber plaques.

Wire baskets can also be used when packed with medium and hung so the top of the basket is vertical. The fern is secured to the basket using wire or plastic stripping. Clay pots can also be used if hung sideways.

Remounting to larger containers will be needed periodically as the fern grows. How often these are remounted depends on the size of the original mount, rate of medium breakdown, and growth rate of the fern. When the basal fronds reach the sides of the mount, it's time to place the fern on a larger mount. If the staghorn fern becomes too large, it may become impractical to remove the fern from its mount. In this case, enlarging the original mount periodically is suggested.

Staghorn ferns are rapidly increasing in popularity as plants become more widely available. They are ideally suited to south Florida's growing conditions and with some care and protection will grow beautifully in north Florida as well, provided care is given to protect them from freezing temperatures in the winter.

WATERING

The greatest number of problems in growing staghorn ferns results from improper watering practices. Sufficient time must be allowed for the medium to dry out between waterings. Don't be misled. Outer layers of the medium may look dry while the spongy inner layers of the medium and basal fronds are still saturated with water. Many commercial growers allow the moss at the bottom of the mount to dry before watering, while others watch for signs of slight wilting. The frequency of watering is dependent on the size of the fern compared to its mount. Large overgrown ferns require less frequent watering. Generally, water thoroughly one to two

times per week during warm weather and reduce the frequency during cloudy or cool weather.

FERTILIZATION

Water-soluble fertilizers with a 1:1:1 ratio (101010, 202020) produce excellent growth when used according to directions. Fertilize monthly during the warm months and every other month when growth slows down. The use of fish emulsion or blood meal is often recommended. However, today's commercial growers are using the more convenient and economical water-soluble type of fertilizer with great success. Some growers mix small amounts of dry fertilizer in their potting mix before mounting and then periodically supplement it with water-soluble fertilizers during the growing season.

LIGHT

Staghorn ferns thrive best under shade or partially shaded conditions. Light intensities of 1,000 to 2,000 fc (10.7-21.4 K lux) are ideal, but they will grow with a minimum of 600 fc (6.4 K lux). Very low light conditions produce slow growing ferns and are likely to encourage development of disease and insect problems.

TEMPERATURE

Most staghorn ferns are considered tender or semi-tender and will not tolerate temperatures below 55°F (12.8°C). There are exceptions such as *P. bifurcatum*, which can withstand temperatures as low as 30°F (1.1°C). South Florida growers will have relatively few occasions when cold protection is needed and merely moving the ferns inside a garage will be adequate. For central and north Florida or south Florida growers with large ferns, greenhouse-like structures with some source of heat is required.

PROBLEMS

Staghorn ferns are susceptible to attack by a fungus *Rhizoctonia* sp., which produces black spots on the basal fronds. The black area can spread rapidly, unless treated, and may invade the growing point, thereby killing the entire plant. This disease problem is mostly brought about by overwatering the

ferns. If symptoms appear, withhold water and reduce the humidity to slow the spread. Chemical controls are available and generally effective when used as directed. For specific recommendations, consult your county extension agent.

INSECTS

Staghorn ferns have few insect pests. However, a single infection can spread rapidly. The insect pests to watch for are mealy bugs, hard-brown, and white scale. Insecticides are effective against these pests but may cause serious burns or deformities to the foliage. Generally non-oil-based insecticides are safer on staghorn ferns than oil-based compounds. Other pests such as snails or slugs can be a problem but are easily controlled. For specific insecticide recommendations, consult your county extension agent.

VARIETIES

Most species of staghorn ferns grow readily in Florida although much depends on the familiarity of the grower with the different species. Beginners are advised to start with the "easy to grow" species which are also readily available at local nurseries. As you become accustomed to their culture and growth habits, the harder-to-grow and more expensive species can be obtained to challenge even the most experienced grower. For convenience, a partial list of species is provided below with specific cultural information and notes on their ease or difficulty in growing.

- *P. vassei*. Easy to grow species with upright fertile fronds, dark green. Basal fronds turn brown naturally. Pups well. Semi-hardy to 40°F (4.4°C). Native to Madagascar and East Africa.
- *P. hillii*. Easy to grow with semi-erect dark green foliar fronds. Produces pups. Hardy, similar to *P. bifurcatum*. Several varieties are available. Native to Australia.
- *P. stemaria*. More difficult to grow, requiring temperatures of 80°F (26.6°C) and not below 50°F (10°C). High humidity with frequent watering. Semi-erect large foliar fronds with a silvery cast when young. Pups well. Large plant native to Africa.
- *P. grande*. Difficult to grow. Likes high humidity but very easily overwatered. Young plants produce only basal fronds. Foliar fronds reclining, light green in color. Does not pup. Tender below 60°F (15.5°C). A large fern, prized by collectors. Native to Philippines.
- *P. superbum*. Difficult to grow. Very similar in appearance to *P. grande* when young. High humidity and also easily overwatered. Large reclining foliar fronds light green in color. Does not pup. Hardy to 30°F (1.1°C) for short periods, although not recommended to subject them to prolonged cold temperatures. Prized by collectors. Native to Australia.
- *P. wandae*. Difficult to grow species. High humidity, easily overwatered. Temperatures between 80-90°F (26.6-32.2°C), lows of 60°F (15.5°C). Possibly largest *Platycerium*. Native to New Guinea.
- *Platycerium bifurcatum*. The most common species in cultivation and also the easiest to grow. Produces large numbers of "pups" eventually forming a very large plant. Dark green color. Hardy to temperatures of 30°F (1.1°C) for short periods. Many varieties are available. Native to Australia and New Guinea.
- *P. veitchii*. Common species and easy to grow. Erect foliar fronds with silvery cast. Produces pups. Semi-hardy to temperatures of 40°F (4.4°C). Native to Australia.

- *P. andinum*. Moderately difficult. High humidity, needs good ventilation, drying between waterings. Both fronds covered with dense silvery hairs. Pups well. Large collector's fern. Only *Platycerium* native to South America--Mountains of Bolivia and Peru. Temperatures between 70-80°F (21.1-26.6°C), low of 60°F (15.5°C).
- *P. angolense*. Moderately difficult. High humidity, with frequent waterings. Thrives in warm temperatures of 80-90°F (26.6-32.2°C), low of 60°F (15.5°C). Produces large unbranched foliar fronds, dark green. Basal fronds brown in the winter. Large fern. Native to Africa.