

# *Cycas revoluta* – The Sago Palm

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*Cycas revoluta*, the king sago palm, or simply ‘sago palm’, is a member of the Cycadaceae family. Most common names for this and other cycads include the word palm because of its resemblance to some members of the palm family (Arecaceae). However, it is *not* a true palm. Cycads are more closely related to conifers, i.e. pine trees, because they are cone-bearing plants. The name ‘sago’ comes from the name of an edible starch extracted from palms and some cycads in Asia. Sago starch has been a staple in the diets of people in this area, but today, sago from members of the cycad family is not recommended for consumption. Cycads contain various toxins in all parts of the plant which have been shown to be carcinogenic, mutagenic, and teratogenic (causing birth defects). Unprocessed, or poorly processed sago from cycads can contain high levels of these harmful chemicals.

## General Information

A native of Japan, the king sago palm (*Cycas revoluta*) is an important landscape plant in subtropical and warm-temperate climates. It is valued for its tropical appearance, architectural form and relatively low maintenance requirements. Its growth range encompasses all of Florida, and extends into southern Georgia, Alabama, Mississippi, Louisiana, and Texas. Temperatures in the northern most areas of the king sago palm’s range regularly drop into the low to mid-teens (degrees Fahrenheit) in the colder months. Especially cold temperatures may result in damage to the plant’s foliage, but the meristem and trunk typically survive.

## Description

*Cycas revoluta* is native to the tropical regions of Asia, but its range extends into area where

temperatures dip down to about 15F (-9C) for brief periods.

Leaves on the sago palm are pinnately compound, up to 5 feet long. The rigid, leathery leaflets are about 4 inches in length and 1/8 to ¼ inch in width and sharply pointed. The margins of the leaflets are curled under (revolute). The leaflets emerge in a flush of growth occurring in the spring. Additional growth flushes may occur if growing conditions are favorable.

All cycads, including the sago palm, are dioecious meaning that there are separate male and female plants. Female plants produce a terminal, flattened cone with light brown to tan scales. The red to orange rounded seeds are found beneath these scales. Male plants produced a terminal, elongated cone with light brown to tan scales. Interestingly, male plants tend to produce branches more than female plants.

The trunk of the sago palm is dark brown and typically covered with the stubby petioles of previous season’s leaves. They are slow growing, though they eventually may reach 25 or more feet in height after many years.

## Cultural Requirements

Sago palms tolerate a range of growing conditions. They adapt to a variety of soil types, including the typical sandy soils of most of Florida, but can tolerate clay. The plants can grow in full sun, but also tolerate partial shade which may result in larger leaves. They are considered drought tolerant plants once established and can go for extended periods of time without supplemental water. Growth may be slow during these times, but the plant will survive. Root rot may occur during periods of wet combined with cold. This is more of a concern with young plants rather than older, well-established plants.

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The fertilizer requirements for the sago palm are like those of actual palms. Fertilizers formulated for palms contain additional magnesium and should be applied following label directions.

### **Pests and Problems**

Although considered a fairly hardy species, *Cycas revoluta* is not without its problems. Various species of scale insects are pests of sago palms, but one particular scale, the Cycad Aulacaspis Scale (*Aulacaspis yasumatsui*) has caused widespread damage, and even death, to many species of cycads. Cycad Aulacaspis Scale was first noted in southern Miami-Dade County in the mid 1990s. By the early 2000s, the scale had been identified on plants in the northern part of the state. Cold weather seems to keep the pest population down to a level that can be tolerated by the plant, but high levels of the scale in South Florida has made it difficult to grow cycads in the landscape. Control is best achieved by close monitoring and a rotation of horticultural oils, insect growth regulators and systemic insecticides if the scale is detected.

Mealybugs are another insect that may cause problems on sago palms. Like scale, they feed by sucking nutrient-rich sap out of the plant. Control is best achieved by a combination of horticultural soaps and systemic insecticides.

Abiotic factors such as cold and mineral nutrition can cause problems on sago palms. As previously noted, magnesium (Mg) nutrition needs to be monitored, and additional magnesium supplied if needed. A symptom of Mg deficiency is chlorosis (yellowing) of the center of the older leaves. The temptation is to remove these leaves to improve the over-all appearance of the plant, but it is best to allow them to remain until the leaf is dead.

Manganese (Mn) is another nutrient that may be problematic on sago palms. While the name may be similar to magnesium, do not confuse the two. Manganese is a micronutrient needed in small amounts. When Mn levels are too low, the newest leaves may appear discolored (yellow to brown) and distorted. Insufficient soil levels or high pH may lead

to Mn deficiency, as may any condition that leads to root restriction or root death. Root rot, over or under watering or poor establishment may lead to Mn deficiency. Application of a fertilizer containing micronutrients (all fertilizers do not) following label directions can alleviate these problems.

Sago palms are tolerant of brief periods of cold temperature but can suffer damage when exposed to extreme or prolonged cold. Fronds with cold injury have uneven browning. The uppermost leaves show the most damage. Unless the terminal bud is damaged, a new flush of growth should soon appear. Again, the temptation is to quickly remove the unsightly leaves, but, if possible, the leaves should be left until the new growth flush appears to allow the movement of all nutrients into the new foliage.

### **Conclusion**

When properly placed and cared for, the sago palm, is a beautiful and relatively low-maintenance addition to our North Florida landscapes.



Figure 1. A healthy King Sago Palm (*Cycas revoluta*) makes an attractive addition to the landscape.