As spring is just around the corner, many of us will start thinking about gardening and landscaping needs. In the southern United States, small cycads called Sago Palms (*Cycas revolute*) are very popular in landscaping. The plants seem to do very well in the heat and humidity that we have in our area. Sago Palms are not really palms at all, they just look like palms or a giant fern. They are a Cycad, which are seed plants that are distinctly female or male. They are quite beautiful, and look very tropical, which is why they are so common in the southern United States.

Unfortunately, the plants are extremely toxic to animals and humans. While all parts of the plant are toxic, the seeds that are dropped by the female plant are extremely toxic, as they contain high levels of cycasin. The seeds are oblong in shape, with a reddish-orange color, and a little bigger than a golf ball. Many dogs seem to really enjoy chewing on the bitter seeds, which leads to nothing but trouble. Cycasin is extremely toxic to the liver. Ingestion of the tiniest amount causes liver failure within 24-36 hours. The patients will lose their appetite, start vomiting, develop diarrhea, and then become jaundiced. If a pet has ingested Sago Palm, it is very important that you seek veterinary attention immediately. If it is soon after ingestion, we may be able to induce vomiting to rid the stomach of the seeds. If it has been 4-6 hours since ingestion of the seed, vomiting will not help as the toxin is already being absorbed. There are things we can provide medically to support the liver to give it time to heal. The extent of the liver damage will determine the patient’s ability to survive. Some patients will get better with enough time and supportive care. However, very few patients survive long term without further liver disease. Quite a few patients will get better initially with care, but the damage to the liver is so severe that they develop cirrhosis (scar tissue of the liver) and die 6-8 weeks later of liver failure. Often these patients will stop eating, develop vomiting and diarrhea, their abdomen will be distended with fluid, and they may develop abnormal behavior or seizures.

Unfortunately, we find that most gardening centers and landscapers do not realize the plant is toxic. They are often sold to families with small children and pets with no warnings about their toxicity. The plant and its seeds are equally toxic to humans as well, so they can be a real issue with families with young children. In some South Pacific Islands, flying foxes eat a lot of cycad seeds. The flying foxes are considered a great delicacy and are often prepared in wedding feasts. They are then eaten, most commonly by men. Over time, men die of liver failure due to prolonged ingestion of the flying foxes that ate Sago Palm seeds. So you can tell that this toxin is very deadly. It is able to last long enough to accumulate in the flying fox and kill people that eat them later.

The past way to treat Cycad toxicity is prevention. If you have Sago Palm in your yard, it would be best to have them removed. The male plant is just as toxic, but for some reason, dogs do not really chew on the leaves or the trunk, they just like to chew on the seeds. The seeds are supposed to taste really bitter (none of us have ever tried one), so it is unknown what makes a dog want to eat them. It is important to keep in mind, that even a tiny amount of the seed is enough to cause liver failure. At TGCVS, we have about a 50% success rate in saving acute onset Sago Palm toxicity. Of the 50% that survive, 60-80% will go on to develop cirrhosis and end-stage liver failure within 6-8 weeks. As you can see, the best thing to do is avoid the problem altogether.