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Growth Rates—is it a Tortoise or a Hare?

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Have you ever been asked to describe the growth rate of a palm in terms of feet or centimeters of height per year? Anyone who has been involved with horticulture for any length of time knows that plants do not usually grow at a measured pace, and that some grow faster than others, and some have a surprisingly irregular pace of growth.

For the past twelve years or so I have observed two palm species in my yard in central Florida that seem to have very different growth rates; *Copernicia alba* and *Sabal mauritiiiformis*. *C. alba* is the southernmost member of its genus and is found in southern Brazil, Paraguay, Bolivia, and northern Argentina, it is the only *Copernicia* which occurs naturally outside of the tropics. It is not surprising then that it is the most cold hardy of the genus *Copernicia*, and it is the fastest grower as well. *S. mauritiiiformis*, on the other hand, is the most tropical species of a genus of tough and often very cold-hardy palms. *S. mauritiiiformis* is native to parts of Central America and northern South America.

C. alba grew rapidly in my back yard, almost from the time it was planted, and began to form an above ground trunk in only one year or two, the only other fan-leaved species that I know which forms an above ground trunk so quickly are the two species of *Washingtonia* and *Livistona decipiens*. Since *C. alba* is a smaller palm than those other fast growers, it has great potential as a landscape plant.

The early development of my *S. mauritiiiformis* was very slow. Young sabals have an underground stem which somewhat resembles a saxophone in shape and which is sometimes referred to as a “tillering heel”. Sabals can spend quite a few years at the rosette stage of development as their tillering heel grows larger and plows a foot or two downwards and to one side before they begin to produce a woody above-ground trunk.

For a number of years there seemed to be no contest in a race between *C. alba* and *S. mauritiiiformis*. The *Copernicia* was adding about fifteen inches of trunk per year and had grown to about 14 feet, a quick measured pace that will slow when it reaches flowering size. Meanwhile the *Sabal* seemed a laggard, it was green and healthy, and produced new leaves regularly but it had increased in size by only a few feet after 8 years. During the summer of 1997 with its below ground development complete, and its resources gathered the *S. mauritiiiformis* began to make its move, and now only two years later the once tortoise-like *S. mauritiiiformis* is overtaking the *C. alba* in overall height and probably will provide shade for it in 2000. In this case both species could be considered fast-growing as long as a time frame of a decade or so is provided.

All of us observe the plants in our own gardens casually and over a period of years, one person’s casual observation may help another understand what is happening with one of the palms. Share your experiences with us.

Q. Should soil amendments be used when planting a palm in the ground? Libby Besse, Florida

A. The old adage was to “plant a 50 cent tree in a five dollar hole”, or in other words amend the soil to a great degree and even a small tree, or palm will thrive. It is doubtful whether this old adage is worth following, however. There have been a number of field tests which have sought to determine whether the addition of soil amendments actually help a young plant become established. The tests in general fail to prove any benefit from the use of soil amendments, but in most cases there was no harm done by them either. As far as I know palms were not included in these tests.

One thing that is known for certain is that it is a bad practice to amend the soil beneath the

roots of a newly planted palm, the organic amendments will decompose and the disturbed soil will settle with the result that the palm will settle to a lower position. Also, drainage problems or root suffocation could be the result. It is best to try to dig the hole in such a way that the plant will be at the correct depth, and to simply use the soil which came out of the planting hole to fill around the roots of the new plant. It is acceptable to loosen the native soil around the planting site, if it is compacted to allow for root penetration. The most valuable amendment to most planting sites will be water. Organic matter can be provided in the form of mulch applied over the root zone of newly planted and existing palms. This is the way that soils in the forest are enriched with organic matter. There may, of course, be situations where soil amendments are useful; for adjusting pH for example, and in some cases even soil replacement is called for.

Horticulture can be a little like cooking; some of us have recipes that we have used for years and which have given results which we are satisfied with. There's probably no need to change your recipe simply because a test somewhere has shown it to be less than ideal. The important thing is that it works in your case. I stopped using soil amendments years ago although my soil is very poor; I spend that extra money on the best available fertilizers and I mulch my plants. I think I get good results.

Q. I bought a Coconut palm, on a whim, while on my honeymoon in Maui two years ago. I kept it in a shallow container of water where it has consistently grown new leaves. Recently, I planted it into a large pot with soil composed mostly of potting soil, but with some sand and organic compost added. "Palmer", (yeah I named him, so what), has been spending some time outdoors lately. Most of the leaves have turned brown and dried up, although there is one new leaf that appears to be okay except for a small yellow spot at the tip. "Palmer" gets a lot of light and has never been subjected to temperatures below 70 degrees F, (22 C). I don't know what kind of fertilizer to use and I'm now concerned about the soil composition. Shane Wilson, Missouri

A. The browning of "Palmer's" leaves is probably the result of sudden exposure to full sun. It would only take a short period of time in full sun to damage leaves that had developed while the palm was indoors. A few hours would do it. It

would have been best, perhaps, to have left the sand and organic compost out and just used a commercially available potting soil. It is important that both soil and container allow for good drainage. For palms that will be spending a lot of time indoors I suggest that the pot size be increased in small increments when repotting, say from a 3 gallon to a 5 or 7 gallon size. As for fertilizer, use a balanced, soluble houseplant fertilizer, such as 20-20-20, at from ¼ to ½ the recommended rate every 2 months.

Losing so many leaves is quite a setback for a young palm, but it sounds as though it does have one good leaf and by the end of the growing season it should have 3 or 4 and be an attractive plant again.

Q. I have a *Hyphaene petersiana* that has developed a second trunk. I thought this was a non-branching palm, was I sold something different? Rod Anderson, Arizona

This question is answered by John Dransfield.

A. *H. petersiana* is almost always solitary and unbranched—it is often bellied (*H. ventricosa* is a later synonym). Sometimes, however, you see paired trunks, of the same size, from the same stool—I interpret this as dichotomous branching underground when the palm was still at rosette stage. Very rarely the trunk actually branches dichotomously above ground. This is how the species behaves in the wild. The trouble is that there are lots of fruiting *Hyphaenes* in gardens all round the world, carrying names of very dubious value—old synonyms, or obviously the wrong name for the plant that is growing. Then these fruits are distributed and some could well be hybrids. My bet is that your plant is probably not true *H. petersiana*, though I wouldn't stake my life on it!

Q. Sometimes I gather seeds to swap, but only a few at a time depending on the source. And at times I receive more than I can plant at once. What is the best way to save palm seeds for a few months, keeping them as fresh as possible? L. Steve Rohrmayr, Hawaii

A. An article in *Principes* 32:3, by Broschat and Donselman examined a number of factors affecting the germination of palm seeds including storage techniques. Seeds were sealed in plastic bags and stored at temperatures around 23 degrees C, after first having been cleaned, air-dried in an environment with 80-90% humidity and treated with a seed protectant fungicide,

(thiram). Seeds of *Dypsis lutescens* treated this way were successfully stored for a year or more, *Syagrus romanzoffiana* could be stored for up to 4 months, *Phoenix roebelenii* 8 months and *Roystonea regia* 9 months.

It might also be worth mentioning that in a study of the germination of seeds of *Attalea spe-*

ciosa (*Orbignya phalerata*), by Carvalho et al in *Principes* 32:55, refrigeration was found to be detrimental to germination.

Clearly the length of time that palm seeds can be successfully stored depends on the species, and with particularly valuable seeds every effort should be made to clean and plant them quickly.

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