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The "Americanization" of Dwarf Rhapis Excelsa: How I Got Involved In An International Secret

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Rhapis excelsa is one of the oldest ornamental palms in the world. Native to the temperate regions of China, dwarf varieties have been popular container plants in Japan for over three centuries. Forms of *Rhapis excelsa* were introduced into America during the 1850's. Our Victorian ancestors often used these plants as indoor parlor palms and courtyard accents. Many old Victorian homes in the South still display beautiful clumps of *Rhapis*, over 100 years old. In 1939, Fairchild Tropical Gardens in Miami planted twelve single canes of *Rhapis excelsa* six feet apart. Today these palms stand in a 10′–12′ tall "hedge" which is more than eight feet wide and eighty feet long. These palms of Fairchild and the Victorian homes are large "standard" *Rhapis excelsa*; the dwarf varieties of *Rhapis excelsa* were not collected by Americans until the 1960's—a surprise since we are usually quick to discover, import, and cultivate highly prized plants of other countries. Perhaps dwarf *Rhapis excelsa* could be called "the secret of the Orient"!

I discovered this secret, by chance, in 1976. At that time, few Americans distinguished one species or type of *Rhapis* palm from another. Fortunately, I chose dwarf *Rhapis excelsa* for commercial production and later found it the most adaptable type of *Rhapis* for interior use. However, back then, it was just another *Rhapis* palm.

Rhapis Gardens began with the purpose of finding and producing plants which were not "typical tropicals." A well-known South Texas nurseryman, J. B. Wright, suggested that we consider growing *Rhapis* palms. Mr. Wright had admired these palms for many years, but had never found a reliable supplier. As we began to search for a source of plants and information, we found that *Rhapis* palms were available on a limited basis and production information was non-existent. My husband, a graduate of Cornell University, suggested that I contact the Bailey Hortorium. I received a reply from Dr. Harold E. Moore, Jr., an outstanding palm authority and editor of PRINCIPES. Dr. Moore reported that little was known about the culture of these Far Eastern palms, but recommended several PRINCIPES articles which had information about the few known species of *Rhapis*. He offered encouragement and requested that I someday share my experiences and knowledge with The Palm Society.

In the past six years, I have reached many conclusions on the growth and culture of the dwarf forms of *Rhapis excelsa*; however, I have "Americanized" the growing methods of these palms. The traditional Japanese culture of *Rhapis excelsa* is very involved and complex, and not easily adaptable to the American lifestyle. The methods used by Rhapis Gardens are successful and simple—but required many years of experimenting. As promised to Dr. Moore, I will gladly share my current knowledge with the members of The Palm Society.

1. *Rhapis excelsa*, Daruma in 7″ pot.

2. *Rhapis excelsa*, Tenzan in 7″ pot.

Our first challenge was to locate a source for *Rhapis* palms. Only a few nurseries in California and Florida had palms available in quantity. Sample *Rhapis* were totally different in size, leaf shape, and overall appearance—some were seedlings, while others were new divisions. A Californian broker supplied several *Rhapis excelsa* from Japan which were uniform, named varieties. According to the broker, California nurseries routinely imported bare-root *Rhapis*, potted, and sold them. He warned that only small palms could be purchased since the U.S.D.A. would not admit foreign plants over three years old or 18″ tall.

Several factors needed to be analyzed before a decision could be made. The forms of *Rhapis* from Japan were far superior to the domestic samples, but Texas seemed a long distance from the Orient for frequent orders. In addition, imported palms often carried hibernating scale and suffered from "jet lag"! I projected that Japanese prices, plus air freight, plus costs of acclimatizing the palms would result in extremely high prices at the market level. However, plants of dwarf *Rhapis excelsa* produce several offshoots per year, which can be grown and sold. The solution to costs and problems of continuous imports was simply to purchase growing stock and propagate *Rhapis excelsa* in Texas. American descendants of Japanese *Rhapis* could then be domestically produced at low cost and grown to large sizes. The 1977 dollar was strong, Japanese prices were reasonable, and air freight was tolerable. (Times have since changed! Japanese prices have doubled and air freight has tripled; as for the dollar . . . .).

Four varieties were originally selected for propagating stock: Tenzan, Koban, Daruma, and Kodaruma. Two thousand palms were imported during the first year. The importing was easy; the hard part was just beginning. The Japanese were happy to sell the palms, but provided only vague hints concerning culture. Instructions included using three sizes of granite for soil, 50% shade, and Japanese Bush Warbler droppings as fertilizer. Our nursery is 1,500 miles from the Rocky Mountains (the closest granite source); 50% shade in

3. *Rhapis excelsa*, Koban in 8″ pot and Zuikon-ishiki in 5″ pot.

4. *Rhapis excelsa*, Kodaruma in 7″ pot.

Japan equalled ??% shade in South Texas; and alas, we didn't import any birds. We considered our native seagull as a possible source for droppings, but our employees just wanted to collect seashells! Thus began the years of trial and error.

Experimenting is an integral part of many commercial operations. Most ordinary plants have numerous guidelines which are established and proven (and often available from a local extension service). Further testing is usually a means of "fine-tuning" predetermined growing methods. In our case, we faced an almost impossible situation with few guidelines and five variables present—type of soil, type of fertilizer, rate of fertilizer application, amount of shade, and possible insects. Another drawback was the slow growth rate of *Rhapis*—first test results were over a year away.

We initially set up twelve experiments using bone meal, cottonseed meal, fish emulsion, and several different commercial fertilizers and soil mixes. Plants were shaded to 55% and sprayed with general insecticides. During the first year, imported scale inundated the palms, most fertilizers burned (application rates were too high and we could not control the levels of organic fertilizers), the sun toasted the leaves, and our "1,000 ppm of salt" city water silently encrusted our soils. Surprisingly, few palms died—proof of the endurance of *Rhapis excelsa* (although I refuse to describe the appearance of the survivors).

The following year, we shaded to 73%, installed a water deionizer, used several soil mixes, limited our choices of fertilizer to the commercial chemical types, submitted soil samples monthly for lab analysis, and used a systemic for pest control. That year ended with better results—shade was adequate, scale was almost eliminated, a peat-based mix proved successful, and the best fertilizer was 20–20–20 at low rates. Today, our experiments continue and provide new methods for growing *Rhapis* palms.

Propagation of our dwarf *Rhapis*

5. *Rhapis excelsa*, Gyokuho, 7″ pot.

excelsa is by division. Clones provide a true plant variety and a constant supply of stock. Each mature palm produces an average of two offshoots per year. "Pups" remain attached to the parent plant until a root system develops that will fill a 4″ or 4½″ pot. An offshoot this size usually takes two years to reach a salable 5″ pot size, and six to seven years to qualify as a 10″ pot size. Some of our imported stock, purchased at three years of age, are now 10 year old specimens, over 42″ tall with 12–15 canes.

We totally acclimatize dwarf *Rhapis excelsa* to low light conditions. Our greenhouses are now shaded to 90% in the summer and 80% in winter. Palms to be sold are held under 95% shade for three to six months. As a result, our palms can easily adapt to low light conditions of 200 f.c. (98% shade) and still maintain growth.

The variegated forms of *Rhapis excelsa* require different culture than the green varieties. The Zuikonishiki is a white and green striped palm which prefers very low light and reduced fertilizer rates. Another variegated, the Chiyodazuru, has chartreuse leaves with delicate white stripes. The variegation disappeared within several months after importing this variety. Correspondence with the Japanese resulted in the advice "more cool, less

6. *Rhapis excelsa*, Zuikonishiki, 5, 10, and 7 years old.

Table 1. Comparisons of 10 year old varieties in U.S. commercial production—10″ pot size, grown under an average 1,000 foot candles; height measured from soil line to top of leaves; average leaf split indicates leaf on pup versus leaf on tallest cane; light recommended is a minimum–maximum range for each variety.

Name	Average Lv. Split	Growth Habit	Average Height	Fert. Rate	Light F.C.	# of Canes	Comments
Daruma	4–11	tall	36″	1/2	150–4,000	12	leaf resembles the standard *R. excelsa*
Tenzan	2–5	tall	36″	1/2	150–4,000	8	long, oval, drooping leaves
Koban	2–6	medium	32″	1/2	150–4,000	10	large oval leaves
Kodaruma	3–6	short	24″	1/2	150–4,000	20	small twisted leaves
Gyokuho	2–3	short	24″	1/2	150–4,000	10	small oval leaves
Daikokuten	4–11	tall	36″	1/2	150–4,000	12	large thick leaves
Zuikonishiki	3–6	short	20″	1/4	100–800	10	green stripes on white leaves
Chiyodazuru*	3–6	short	22″	1/2	100–800	12	light stripes on green leaves
Kotobuki	2–5	tall	34″	1/2	100–2,000	8	white stripes on green, leaves resemble Tenzan

* Chiyodazuru—bright light will result in loss of variegation. Grow in low light with the higher recommended fertilizer level to maintain the striped appearance.

shine." Three years later, after many experiments, we discovered that the Chiyodazuru produces beautiful stripes if grown under very low light and fed high rates of fertilizer.

Our last shipment of *Rhapis excelsa* was received in 1979. The order consisted of 200 Kobans and 50 Kodaruma. We found many palms which seem to be "different." The Koban has large, oval leaves and upright growth; the Kodaruma has more segments per leaf and a very short compact growth. The odd ones seemed to be a combination of both varieties—small oval leaves on short canes. The mystery palm was nick-named "Bush baby" until we verified the type to be Gyokuho. This variety is a pleasant surprise and seems to be a favorite.

We propagate five green and three variegated varieties of dwarf *Rhapis excelsa*. Some people often think that the dwarf forms of *Rhapis excelsa* will eventually all look alike, regardless of variety. However, many of our original palms are 10–15 years old and remain true to variety. Of our total stock, very few are "unknowns" and we hope these may be new "sports." Only time and more experiments will tell!

A last word is needed on the genus *Rhapis*. America is finally becoming aware of "*Rhapis* palms," but confusion about the different species is still prevalent. Two main species are *Rhapis excelsa* and *Rhapis humilis*. Several other *Rhapis* are native to the Far East, but have not yet been classified or named and are presently listed under the general category of *Rhapis* sp. An unclassified Thailand *Rhapis* is becoming common because it is easily grown from seed. This palm is often incorrectly listed as *R. humilis*. The Thailand palms have thin canes, frail leaves, and segments per leaf which vary. *Rhapis* "*Thailand*" should not be mis-

taken for *Rhapis excelsa* or *Rhapis humilis*. It is to be hoped that greater interest in the genus *Rhapis* palms will result in more knowledge of the species.

I am presently involved in researching any and all known types of *Rhapis* in America. So far, *Rhapis humilis* is only prevalent in California. This species is scarce and expensive, and will seldom tolerate the hot summers of the Gulf Coast or indoor culture. *Rhapis* "*Thailand*" is easily grown in Florida, but has limited success in interior culture and in Texas landscapes (our drastic 40 degree temperature fluctuations seem to be detrimental). *Rhapis excelsa* is the only species which is reportedly adaptable to all interiors and temperate regions of the United States.

Varieties of Dwarf *Rhapis excelsa*

The Japanese have collected, cultivated, and classified over 100 varieties of dwarf *Rhapis excelsa*. In America, the more popular and available types are green Daruma, Koban, Tenzan, Gyokuho, and Kodaruma, and variegated Zuikonishiki, Chiyodazuru, and Kotobuki. Each variety has an individual leaf shape and growth habit. Some are short and compact; others are tall and slender. Table 1 compares the varieties.

Commercial production provides perfect conditions for maximum growth rates of 3″–6″ per year (depending on variety). Interior light levels usually result in slower growth rates of 1″–3″ per year.

Acknowledgments

I am grateful to the late J. B. Wright for the original idea of *Rhapis*, to the late Dr. Harold Moore for encouragement, to the Japanese who discovered dwarf *Rhapis excelsa* 300 years ago, and to my many employees who have assisted me in "Americanizing" the culture of these delightful palms.

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