

COLOCASIA TARO VARIETIES ON POHNPEI

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Abstract

There are several different varieties of *Colocasia* taro on Pohnpei, but only eight are commonly known and grown. The general descriptions of these eight common varieties are included in this paper. A survey on the popularity of various taro varieties was also conducted at five local markets, and the results are reported.

Introduction

Pohnpei Island, the capitol of the Federated States of Micronesia (FSM), is a typically volcanic island about five million years old. The majority of the island's land area is characterized as steep and mountainous. Vegetation is mainly forest, with rapidly expanding areas of agroforestry and secondary vegetation. Rainfall is high (average 4,820 mm/year) and well distributed throughout the year. Temperature averages 27°C.

The cultivation of sweet taro (*Colocasia esculenta* (L.) Schott), locally known as "sawa," is an important agricultural activity on Pohnpei, mainly due to taro's prestige value, its high demand during feasts and holidays, and its role in filling in as a staple food between the breadfruit and yam seasons. *Colocasia* taro can be found growing in swampy areas, level dry fields, and sloping lands. As a staple food, it ranks below imported rice, breadfruit, and yam, but is more important than sweet potatoes.

Traditionally, taro is grown in small patches near shade trees and not very far from houses. The land is cleared by hand or with the use of knives and/or garden hoes. Planting holes are made with digging sticks or knives and are usually spaced from 50-100 cm apart. Both corm tops (sets) and suckers are used as planting materials. Sets are preferred by most farmers as they grow faster. In some farms on Pohnpei, the taro are mulched with grass and other materials, while in others plantings are kept in clean culture (bare soil). The plants are seldom fertilized, and except for the occasional removal of leaves and the larva of the armyworm, no pest and disease control is commonly practiced by subsistence farmers.

In some semi-commercial farms on Pohnpei, field and ridge preparation is done with farm tractors rented from

the Pohnpei Division of Agriculture. On these farms, sets are generally planted out on ridges spaced 60-90 cm apart. The plants are often fertilized with complete (10-20-20) fertilizer, the first application given two weeks after planting and the second application at three months after planting. Harvesting takes place when the plants are 7-8 months old or when only three functional leaves remain on the plant. Yields are estimated to range from 4-7 tons of marketable corms per hectare (Dayrit and Phillip 1987).

Planthoppers and armyworms are the most common insects infesting taro on Pohnpei. Leaf blight caused by the fungus *Phytophthora colocasiae* is the most important disease of taro on the island.

Taro Varieties on Pohnpei

Over the years, many varieties of crops, including *Colocasia* taro, have been introduced by sailors, missionaries, various colonial governments, and islanders who traveled off the island and returned. According to many local farmers, the varieties common on Pohnpei today have all been introduced to the island since European contact (circa 1826), many fairly recently. It is also believed that the pests and diseases common on taro today have probably all been introduced on new varieties of taro from outside, many fairly recently. Several of these pests and diseases, especially the planthopper and the leaf blight, have been responsible for the general decline of taro as a crop plant on Pohnpei.

As part of the LISA Taro Project, *Colocasia* taro varieties were collected from all parts of Pohnpei for description, evaluation, and maintenance as a genetic collection at the College of Micronesia (COM) Agricultural Extension Service (AES) Research Station. The collection was evaluated at the University of Hawai'i for genetic diversity, and it was found that all the Pohnpei varieties represented a single genotype (Lebot, personal communication). Despite this, the diversity of the different existing varieties in terms of morphology, flavor, and other characteristics is of serious interest. Although there are more varieties believed to be on Pohnpei, and several new high-yielding varieties have also been recently introduced jointly by the Pohnpei Division of Agriculture and the COM Land Grant AES, most taro production on Pohnpei

consists of eight varieties that are well known on the island and make up the bulk of taro produced. Their descriptions are as follows:

Taro Variety Descriptions

1) *Sawa Toantoal* ("Black taro") - This is the most popular variety on Pohnpei, due to its excellent taste. It is the most popular taro for preparing various dishes for feasts and religious activities. It is especially the preferred variety for making taro cakes with coconut cream. Stems are dark purple, as are leaf veins, and the corm is grayish and has a sticky, moist consistency when cooked. Yields are less than half of *Pasdora* or *Sawahn Kosrae* (Dayrit and Phillip 1987), and farmers believe it is more susceptible to leaf blight and planthopper than other varieties.

2) *Pasdora* - This is a dryland taro that was brought from Palau in the 1950's by Gregorio Ladore, who named it after his wife Pasdora. This is also a popular variety on Pohnpei, and it has been found to be the highest yielder (Dayrit and Phillip 1987). Commercial farmers prefer it to other varieties because corm size is large. The lower stems are dark reddish colored and the upper stems are light green, and the corm is pinkish colored and dry and loose textured when cooked.

3) *Sawahn Kosrae* ("Kosraen taro") - The name of this taro suggests that it was introduced from Kosrae, another island in the FSM. This variety grows very strongly under dryland conditions and is also a high yielder (Dayrit and Phillip 1987). This variety is unique in that it flowers when it reaches maturity. Farmers believe that it is resistant to both planthopper infestation and *Phytophthora* leaf blight infection, although limited research has not verified this (Dayrit and Phillip 1987). Stems are light to dark red, and corms are slightly yellow in color and are soft and dry textured when cooked.

4) *Sawa Pwetepwet* ("White taro") - This is one of the most common varieties. It produces many suckers and is commonly found growing wild. Yield is high, *Sawa Pwetepwet* being found to be the third highest-yielding variety after *Pasdora* and *Kosrae* (Dayrit and Phillip 1987). It was the main variety of taro during the Japanese Mandate (1914-1945) and was consumed extensively by the local people. The corm is known to be "itchy" when not prepared well. Stems are light green and bases are pink. Corms are slightly pink and have a soft, dry texture when cooked.

5) *Kuat* - This variety was very popular during the Japanese Mandate and was grown mainly as food for the Japanese soldiers. Today it is not well known. It prefers

swamp cultivation and does not yield well under dryland conditions. When the corm is cooked, it has yellow flesh and a pleasant odor.

6) *Sawa mwahng* ("Cytosperma-like taro") - The introduction of this variety is not recorded, but it is believed to be fairly recent. It is highly valued but fairly uncommon, perhaps due to its habit of setting few suckers. Suckers are located close to the main corm, similar to *Cytosperma* taro. Stems are reddish purple in upper portions and light green towards the base. Corms are yellow and hard and fibrous, much like the corms of *Cytosperma* taro.

7) *Sawa Alahl* ("Variegated color taro") - This is probably a fairly recent introduction from Hawai'i or Guam. Two types are reported on Pohnpei--a green type and a red type. Stems are mottled and streaked with dark green and light green (green type) or red and light green (red type). Both are low yielders (Dayrit and Phillip 1987), but people plant them as ornamental plants or grow them for their novelty.

8) *Sawa likodopw* ("Freshwater prawn taro") - This is an introduced taro, though it could have been pre-European contact. It grows wild in swampy areas and generally is considered inedible except as pig feed (cooked). It has very low yields (Dayrit and Phillip 1987).

Farmers often mix the varieties in their fields, and a good farmer will try to have as many different varieties as possible on their farms, although they will plant more of their favorites.

Market Survey

In order to get a better approximation of the overall popularity of the various *Colocasia* taro varieties in relation to commercial production, a monthly survey was conducted at five local produce markets. Results showed that only three varieties were regularly brought to the market--*Sawa Kosrae*, *Pasdora*, and *Sawa Toantoal*. During a series of interviews with farmers bringing these varieties into the market, it was found that these three varieties were preferred for their excellent taste and/or their high-yielding capacity. One farmer reported that through extensive experience growing *Colocasia* taro, he found that *Sawahn Kosrae* is more resistant to pests and diseases and is also higher yielding than other varieties. Another farmer felt that *Pasdora* yielded higher than either *Sawahn Kosrae* or *Sawa Toantoal*, thus her preference for this variety. The survey further established that farmers tend to bring in taro only about twice a month. Amounts sold per farmer range from 35-40 kg for

Pasdora, 25-35 kg for *Sawahn Kosrae*, and 20-25 kg for *Sawa Toqantoal*. All farmers agreed that pests and diseases severely effect their taro production.

Conclusions

There are a number of taro varieties on Pohnpei, with different characteristics including appearance, soil, and site preference, yield, pest, and disease resistance and flavor. This diversity is supported by farmer preference for planting more than one variety in a field and also trying to collect as many varieties as possible. More work needs to be done on the collection and assessment of existing varieties on Pohnpei.

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