

The Uses of *Johannesteijsmannia* by Indigenous Communities and the Current Ornamental Trade in the Genus

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1. *Johannesteijsmannia perakensis*

There are four species in the genus *Johannesteijsmannia* – *J. altifrons*, *J. magnifica*, *J. lanceolata* and *J. perakensis* (Fig. 1), with the last three species rare and endemic to Peninsular Malaysia.

Many palm species have economic or ornamental value. Johnson (1996) reported 39 species (or 45%) out of the 86 listed major ornamental palms are threatened. In Malaysia,

Johannesteijsmannia palms (*J. magnifica* and *J. lanceolata*) have been reported to be threatened by illegal poaching and seed collection, because these beautiful palms are

commercialized as ornamental plants (Kiew & Pearce 1991, Lim & Whitmore 2000). Other threats include conversion of large tracts of forest to oil palm plantations and rubber estates (in Kledang-Saiong), building of dams (in Semenyih), highway construction (in Jelebu and Kuala Pilah) and logging (in Johor), which have drastically reduced the number of *Johannesteijsmannia* populations (pers. obs.).

The distributions of *Johannesteijsmannia magnifica*, *J. lanceolata* and *J. perakensis* are rather limited to a small range, compared to *J. altifrons* which is widespread from Malay Peninsula, Sumatra to Borneo (Dransfield 1972). *Johannesteijsmannia perakensis* is restricted to the Bintang Range (Kedah and Perak), *J. magnifica* (Fig. 2) to Perak, Selangor and Negeri Sembilan, and *J. lanceolata* (Fig 3) to Pahang, Selangor and Negeri Sembilan. The indigenous people use the broad leaves of *Johannesteijsmannia* as roof thatch (*atap*) (Dransfield 1972), while the Chinese in Kelantan use the fruits of *J. altifrons* (Fig. 4) as herbal medicine (Kiew 1991).

This paper highlights the uses and current collection of *Johannesteijsmannia* among the indigenous people (*orang asli*), and the current ornamental trade of the palm. We conducted surveys among the indigenous people and nurseries aim to answer these main questions:

What are the uses of the palm and its economic importance to the indigenous people, and how do they harvest it?

What is the scale of trade and market price of the palm?

Where does the source of palms come from and to what extent is the trade threatening the palms?

Additional information on the trading of the palms through the Internet was also investigated.

Methods

Survey among the indigenous people

Localities known to have *Johannesteijsmannia* palms were sourced from herbarium records and literature, and only selected localities were targeted for the study. A total of seven villages in four states were surveyed (Tab. 1)

The heads (Tok Batins) or representatives of the villages were interviewed and shown pictures of the four species of *Johannesteijsmannia* as in Figs. 1–4.

Survey of nurseries

The availability and market price of the *Johannesteijsmannia* palms were surveyed in 10 selected nurseries in Sungai Buloh, Selangor, followed by interviews with the owners or

2 (left). *Johannesteijsmannia magnifica*. 3 (right). *J. lanceolata*.



caretakers of another eight big nurseries in Bakri and Parit Sulong, Johor.

The World Wide Web was searched through the Google and Yahoo search engines for the trade of *Johannesteijsmannia* palms, using the keyword 'Johannesteijsmannia.' The first author also e-mailed an additional contact in Brunei, asking for the price of the palms.

Results

Survey among the indigenous people

a) Species identified

Local names for the palms differ among the communities, except in Selangor and Negeri Sembilan, where *J. lanceolata* and *J. magnifica* share the same local names (Table 1). Commonly, *J. lanceolata* is known as *chica*, *J. magnifica* as *segalok*, *J. altifrons* as *segalok* or *payung* and *J. perakensis* as *sang*. In Johor, however, all the four species are called *payung*.

Some Tok Batins mistook *J. lanceolata* as the sapling of *J. altifrons*, or *J. magnifica* as the sapling of *J. altifrons*. Tok Batin from Kampung Peta claimed to have seen the four species, but at different localities in the Johor State Park.

b) Traditional uses

All the indigenous communities (except Kampung Serendah) used the leaves of the palm as 'atap' or roof thatch, but since their

rooftops have been replaced by zinc roofs, they rarely used the leaves. The palms had no usage to Kg. Serendah villagers, as the palms were too remote for the villagers to collect. If they come across the palm when it rains in the forest, they will use the leaves as umbrellas.

No medicinal value of the palm was recorded except from Kampung Selai and Kampung Peta in Johor. Petioles are burnt and the ashes, with some water added, are applied topically to the body, usually of children who have respiratory problems. The ashes are also used for small wounds. Three or four seeds are boiled with water and the concoction is taken orally to reduce fever among children. Seeds are also grated into powder and applied to the face, chest or tongue for curing sore throat, cough and asthma.

c) Leaves and seeds harvesting

The *orang asli* collect the leaves and fruits occasionally for their own use. About 5–10 mature leaves are collected from each adult palm, and up to 15 leaves may be collected if the palm has 20–30 good leaves. Young leaves are not harvested, as they are not strong enough for making thatch and easily shrink upon drying. Thatch for one medium-sized house usually requires 1000–2000 leaves. Smaller hut uses about 300 leaves. The leaves of all the four species are used, but *J. lanceolata* is used less commonly, as the leaves are much

4. *Johannesteijsmannia altifrons*.



Table 1. Species of *Johannesteijsmannia* identified and their uses to the indigenous people in four different states.

| | Selangor | Perak | Negeri Sembilan | Johor |
|-----------------------|---|----------------------|--|--|
| Villages | Sg. Lalang Baru, Donglai & Serendah | Ulu Bekor | Ulu Kelaka | Selai & Peta |
| Species recorded* | <i>J. magnifica</i> , <i>J. lanceolata</i> | <i>J. perakensis</i> | <i>J. lanceolata</i> , <i>J. magnifica</i> | <i>J. altifrons</i> |
| Local name | <i>J. lanceolata</i> = chica; <i>J. magnifica</i> = segalok, selibar, daun lebar, daun serdang; <i>J. altifrons</i> = segalok | sang | <i>J. lanceolata</i> = chica, <i>J. magnifica</i> = segalok | daun payung, daun sabun |
| Collection locality | Sg. Lalang FR & Serendah FR | Kledang-Saiong FR | Jeram Toi, Gebang Angsi & Angsi FR | Johor State Park, Labis FR & G. Tiong |
| Plant parts collected | leaves, fruits | leaves | leaves | leaves, fruits |
| Collection frequency | once in 6 or more months | once in 1 or 2 years | rarely, only during 'kenduri' | occasionally for 'kenduri' and small shelter |
| Plant usage | roof thatch | roof thatch | roof thatch | roof thatch, medicine |
| Medicinal value | nil | nil | nil | cures respiratory problems and small wounds |

* Species recorded in the literature and KEP herbarium records.

Abbreviations: Sg – sungai; FR – forest reserve; Kenduri – a feast usually for religious or celebration purposes.

smaller and narrower. People collect leaves annually or less frequently, to replace old ones, depending on the durability of the existing leaves, which usually last from 1–4 years.

Villagers in Semenyih sometimes sell the leaves for US\$0.50 per leaf to other people for making roofs. One villager also collects and germinates the seeds, and sells the juveniles to private collectors. The seeds of *J. lanceolata* are harder to find than those of *J. magnifica*. In the past, seeds were collected and sold to outsiders for US\$0.15 to US\$0.60 each. However, the demand for seeds has dropped drastically nowadays. The villagers collect fruits for their own use as medicine and do not sell them, although there are demands from outsiders for the seeds as medicine.

Whole palms or seedlings, however, are not collected from the forest, although there are demands for seedlings. In the past, villagers of Kampung Peta used to sell one seedling for US\$31, which was directly collected from the forests. Trading has ceased since they were aware that *Johannesteijsmannia* species are prohibited for sale and protected in the Johor State Park.

Survey of nurseries

a) The ornamental trade

From the survey, *Johannesteijsmannia* palms were sold in 8 out of the 10 nurseries in Sg. Buloh, and in all the eight nurseries in Bakri and Parit Sulong. In Johor, seven of the interviewees were plant suppliers or

middlemen, and one was the major supplier who supplies seedlings to the middlemen.

Seedlings were rare in Sungai Buloh nurseries (only *J. magnifica* and *J. altifrons* were available) with limited stocks, 10 palms at the most, usually 0.5–1 m tall. They sourced their palms from wholesalers, from whom stock arrived within a few days.

Most nurseries in Bakri and Parit Sulong have small stocks of 30–100 palms (0.3–1 m tall), and have reduced taking in large stocks because sales were lukewarm, due to difficult handling of *Johannesteijsmannia* in cultivation; they will grow only under proper shade and will die if exposed to direct sunlight. Also, there were many other alternatives to choose from in the market. Some of the nurseries used to export the palms to Singapore, but since the Department of Agriculture Malaysia has banned the palms for export, they supply only to local demands.

The major supplier monopolized the seedlings in Bakri and Parit Sulong, with stocks of about 4000–5000, mainly *J. perakensis* (2000–3000), followed by *J. lanceolata* and *J. magnifica* (ca. 1000 each), and the least was *J. altifrons* (ca. 500). The supplier also had palms of about 1.5 m tall, but only a few of them left, as they sold fast to buyers. The supplier secured the seeds from *orang asli* or Malay villagers in Selangor, Seremban, Perak and areas bordering Malaysia and Thailand (and he was reluctant to reveal any further specifics).

b) Market prices

The palms sold from US\$6 to US\$40, depending on species and height of the palms (from 0.3–1 m). The seedlings sold by the major supplier priced from US\$2 (*J. magnifica*) to US\$2.70 (*J. lanceolata*, *J. altifrons* and *J. perakensis*). No seed was sold by any of the nurseries.

Generally, the prices for *J. magnifica* were lower than those of other species, as it was the most commonly available species in the nurseries. There was, however, one nursery willing to sell a half meter tall *J. altifrons* (old stock) for US\$6–9, compared to some other nurseries selling at US\$34–40. Prices were determined by the height or age of the palm. A 30 cm tall palm would cost about US\$19, a 1.5 m tall *J. perakensis* about US\$156 while a 15-year old *J. lanceolata* could go up to US\$312. The prices of the palms were not very stable as they varied among nurseries.

Table 2. The prices of *Johannesteijsmannia* palms based on different criteria (sourced from the websites).

| Criteria | Price | |
|-----------------------------|---------------------|---------------------|
| | <i>J. altifrons</i> | <i>J. magnifica</i> |
| Pot diameter | | |
| 100 | - | AS\$ 25 |
| 140 | AS\$ 30 | - |
| 200 | AS\$ 39.50 | AS\$ 29.50 |
| 250 | AS\$ 49.50 | - |
| 300 | AS\$ 88 | - |
| 400 | AS\$ 165 | - |
| Palm height (inches) | | |
| 7 | US\$ 50 | US\$ 50 |
| 8–10 | US\$ 44.95 | - |
| seedling | US\$ 28 | US\$ 19.50 |
| juvenile | US\$ 65 | - |
| No. of seeds | | |
| 10 | US\$ 14 | US\$ 22 |
| 100 | US\$ 85 | US\$ 200 |
| 1000 | US\$ 590 | - |

Internet trading

Twelve websites (accessed on 24 May 2007) were found to be trading *Johannesteijsmannia* palms online. *Johannesteijsmannia altifrons* (Green or Diamond Joey Palm) was traded in 10 out of the 12 websites, and *J. magnifica* (Silver Joey) was traded in seven. The nurseries were mostly from the United States of America (n = 4) and Australia (n = 3), with others from Canada, Singapore and Borneo (n = 1 for each country). Another two websites were a discussion lounge and an item-bidding site. Two of the nurseries listed *J. altifrons* and *J. magnifica* for sale, but the palms were temporarily out of stock. Another nursery (in Canada) listed all the four species but also had no stock. Overall, only *J. altifrons* and *J. magnifica* were available for sale.

A person living in Thailand offered seeds of *J. altifrons* and *J. magnifica* for sale on the discussion lounge on 3 November 2005, in batches of 10, 100 and 1000 seeds (Table 2). Meanwhile, the bidding website offered *J. altifrons* (seedling with 2–4 leaves) at the bidding price of US\$24.99. The nurseries in Australia quoted the prices based on pot diameter while those in America based on palm height. An enterprise in Brunei (contacted by e-mail) offered *J. magnifica* and *J. lanceolata* of 1 m tall for US\$37.50 and US\$18.8 respectively, while *J. perakensis* of 45 cm tall for US\$14. Another nursery in Borneo

(based in Kuching) claimed that their seeds were harvested from cultivated palms and were certified by the Sarawak Forestry Department, but the nursery also had no stock available at that time.

Discussion

From all the surveys carried out on *orang asli* and nurseries, the information gathered seems to contradict each other. The *orang asli* have ceased collecting seeds or palms for sale, but major nurseries in Johor have produced thousands of *Johannesteijsmannia* seedlings for sale, possibly from cultivated sources. It is possible that villagers (who may or may not be *orang asli*) still collect seeds for sale, but we are not certain, because we did not capture information on all the sources in the surveys. Despite that, the trade market was lukewarm, the prices were not stable and most local nurseries have reduced taking on stock.

Although the genus is not listed in the Convention on International Trade of Endangered Species (CITES), it is prohibited for export from Malaysia under the Customs (Prohibition of Export) Order 1998 (Ho, H.L., Department of Agriculture Malaysia, pers. comm.). The ban may explain the scarcity of some species like *J. lanceolata* and *J. perakensis* in the overseas market, but not *J. altifrons* and *J. magnifica*. Perhaps *J. altifrons* can be easily sourced from other countries like Thailand and Indonesia, or both *J. altifrons* and *J. magnifica* have been sourced from cultivated palms (since the palms were collected long ago by foreigners for propagation).

Conclusion

In our opinion, seeds collected from the wild for cultivation is justifiable provided the resource is not depleted, or is harvested sustainably to allow some regeneration in the wild. With much of our forests under the threat of logging or deforestation, the

cultivation of palms in nurseries or *ex situ* helps to preserve the genetic pool of the species, if the palms go extinct in the wild. However, we strongly advocate *in situ* protection of *Johannesteijsmannia* and its habitat as the main conservation priority. At the same time, domestication of the palms is highly recommended to relieve pressures of wild seed collection.

On the other hand, the *orang asli*, if properly informed and educated, can play a major role in protecting and guarding our valuable forest resources from overexploitation, especially the rare and endangered species. Furthermore, sustainable collection of forest goods by the *orang asli* helps to ensure continuous availability of the resources in the long run, as most of them still depend on forest goods to support their livelihood. The general public should also be informed of the consequences of buying such endangered species.

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