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Full Length Research Paper

Exploring Edible Plant Traditional Knowledge Among Temuan Villagers in Negeri Sembilan, Malaysia

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A total of 62 species of edible plants were reported to be used by the villagers in Kampung Guntor. The edible parts were obtained from 17 species of wild plants, 23 species of cultivated plants and 22 species of plants that exist as both wild and planted. More species (26) were eaten cooked compared to the raw species (17). Fruits and seeds were the most common parts used with a total of 38 species followed by the leafy parts with 15 species. It is important not only to record such traditional knowledge and conduct further studies but also to take steps to conserve the genetic diversity of edible plants before they are lost to humankind forever. The knowledge, as well as usage, of certain edible plants is on the decrease due to various factors such as changes in culture, personal preferences, the tedious process of preparing certain food items, and the changes in habitat, thereby causing certain edible plants to be unavailable or less available.

Key words: Temuan, traditional knowledge, edible plants.

INTRODUCTION

The indigenous people (Orang Asli) of Peninsular Malaysia are grouped into 3 different ethnic groups which are; the Negritos (Semang), the Senoi and the Proto-Malays. The Temuan tribe is in the Proto-Malay ethnic group. The Temuans are a comparatively large tribe and well-known for their knowledge and usage of a wide variety of edible plants but much of this knowledge are yet to be recorded and published by the scientific community (Carey, 1976; Ong, 1994; Ong et al., 2010). The Temuans are agriculturists as well as hunters and gatherers. Thus, they make use of the biological diversity available to them for fulfilling various needs (Carey, 1976; Ong, 1991). Plants are their major source of food but they also hunt and catch various animals such as fishes, birds, amphibians, reptiles and mammals for food.

As modernization creeps or rushes towards the doorsteps of the indigenous tribes, biodiversity of traditional species within their range decreases leading towards a decrease in traditional knowledge and usage of biodiversity and eventually such knowledge and usage become adulterated or lost to humanity. Since indigenous knowledge is unwritten and much of it remains unrecorded, it is imperative that the scientific community records and publishes this knowledge (Schultes and von Reis, 1995).

MATERIALS AND METHODS

This study was conducted in a Temuan village named Kampung (Malay word for village) Guntor, in the state of Negeri Sembilan, Malaysia. The latitude was 2^{o} 52' N while the longitude was 102^{o} 10' E. The altitude was about 100 m above sea level. The temperatures ranged from 21.8 to 32.2°C. Average annual rainfall was about 1500 mm and relative humidity ranged from 79 to 98.5%. This is a traditional native village with houses built in clearings, surrounded by vegetation and with a stream nearby. There were 40 households with a total of approximately 350 persons living in an area of about 0.8 km sq. Most of the houses were built in the native style using materials obtained from the surrounding forests. A few houses were more modern, being built using sawn planks, sawn wood, bricks and mortar. A total of 5 trips were made to the village, each time staying for 4 days. Information was obtained through general conversation, observation and participation with the adult villagers guided by a predetermined set of questions during each

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Table 1. List of edible plants used by Temuan villagers in Kampung Guntor.

S/N	Botanical name	Native name	Status	Method of usage
1	*Acrypteris irregularis* (Presl.) Holtt.	Paku papan	Wild	Soft young leaves eaten cooked.
2	*Alocasia macrorhiza* Schott.	Keladi tualang	Wild, planted	Tuber is famine food eaten after proper processing
3	*Alpinia galanga* (L.) Willd.	Lengkuas	Planted	Rhizome used to flavor food
4	*Ananas comosus* (L.) Merr.	Nenas	Planted	Ripe fruits eaten raw. Unripe fruits eaten cooked.
5	*Areca catechu* L.	Pinang	Planted, wild	Seeds eaten or chewed in betel quid
6	*Arenga westerhoutii* Griff.	Langkap	Wild	Shoot eaten cooked
7	*Artabotrys suaveolens* (Bl.) Bl.	Akar cinchon	Wild	Drinkable water from cut stem
8	*Artocarpus heterophyllus* Lamk.	Nangka	Planted	Flesh of ripe fruits eaten raw. Seeds eaten cooked. Unripe fruits eaten cooked.
9	*Artocarpus integer* (Thunb.) Merr.	Cempedak	Planted	Flesh of ripe fruits eaten raw. Seeds or unripe fruits eaten cooked.
10	*Bambusa tuldoides* Munro.	Buluh gabai	Planted, wild	Shoots eaten cooked.
11	*Bouea macrophylla* Griff.	Buah becen	Planted, wild	Ripe fruit eaten raw
12	*Calamus manan* Miq.	Rotan manan	Planted, wild	Flesh of ripe fruits eaten raw.
13	*Capsicum frutescens* L.	Lada api	Planted, wild	Green or ripe fruits used to flavor food.
14	*Carica papaya* L.	Kepayo	Planted	Ripe fruits eaten raw. Green fruits eaten cooked.
15	*Caryota mitis* Lour.	Tukas	Wild	Shoot eaten cooked
16	*Cassia tora* L.	Pucuk senting	Wild	Young leaves eaten cooked
17	*Cayratia japonica*	Daun cabang lima	Planted, wild	Young leaf eaten cooked
18	*Champereia manillana* (Bl.) Merr.	Cemperai	Wild	Young leaves eaten cooked
19	*Citrus aurantifolia* (Christm and Panzer) Swing.	Limau nipis	Planted	Juice used to flavor food
20	*Cocos nucifera* L.	Kelapo	Planted, wild	Young coconut water as a drink. Coconut milk and oil used to cook food.
21	*Codaeium variegatum* L.	Puding	Planted	Young leaf used to flavor food
22	*Colocasia esculenta* (L.) Schott	Keladi minyak	Wild, planted	Leaf, petiole and rhizome eaten cooked.
23	*Cosmos bipinnatus* Cav.	Bunga cetung	Planted, wild	Young leaves eaten cooked
24	*Cosmos caudatus* Kunth.	Ulam raja	Planted, wild	Young leaves eaten raw or cooked
25	*Cucumis sativus* L..	Timun	Planted	Ripe or green fruits eaten raw or cooked
26	*Curcuma longa L.*	Kunyit	Planted	Rhizome used to flovor and color food.
27	*Durio zibethinus Murray*	Durian	Planted, wild	Ripe fruits eaten raw
28	*Etlingera elatior (Jack) Smith*	Kantan	Planted	Flower used to flavor food
29	*Garcinia globulosa Ridl.*	Kandis	Wild, planted	Young leaf and fruit used to flavor food
30	*Garcinia mangostana L.*	Manggis	Planted	Ripe fruit eaten raw
31	*Gigantochloa heterostachya Munro*	Buluh telang	Wild, planted	Shoot eaten cooked
32	*Gigantochloa kurzii Gamble*	Buluh telur	Wild, planted	Shoot eaten cooked
33	*Hevea brasiliensis Muell. Arg.*	Pokok getah	Planted, wild	Fermented seed, young leaves eaten cooked
34	*Ipomoea aquatica Forskal*	Kangkong	Wild, planted	Leaf and stem eaten cooked
35	*Ipomoea batatas (L.) Lamk.*	Keledek	Planted	Tuber and leaves eaten cooked

Table 1. Contd.

36	*Knema laurina Warb.*	Batang berdarah	Wild	Ripe fruits eaten raw or cooked
37	*Lansium domesticum Correa*	Langsat	Planted	Ripe fruit eaten raw
38	*Limnocharis flava (L.) Buch.*	Ginjer	Wild	Leaf, flower and their stalks eaten cooked
39	*Mangifera odorata Griff.*	Kuini	Planted	Ripe fruit eaten raw
40	*Manihot esculenta Crantz.*	Galo telur	Planted	Young leaf and tuber eaten cooked
41	*Momordica cochinchinensis (Lour.) Spreng*	Peria	Planted	Green fruits eaten raw
42	*Muntingia calabura L.*	Ceri	Wild, planted	Ripe fruits eaten raw
43	*Musa acuminata Colla*	Pisang	Planted	Ripe fruit eaten raw. Inflorescence and shoot eaten cooked
44	*Musa violacea Hort. ex Baker*	Pisang cadak	Wild	Ripe fruit eaten raw. Green fruit, inflorescence, shoot eaten cooked
45	*Nephelium lappaceum L.*	Rambutan	Planted	Ripe fruit eaten raw.
46	*Nephelium ramboutan-ake (Labill.) Leenh.*	Pulasan	Planted	Ripe fruit eaten raw.
47	*Nicotiana tabaccum L.*	Tembakau	Planted	Dried leaf chewed with betel quid
48	*Pandanus atrocarpus Griff.*	Mengkuang	Wild	Young leaf used to flavor food
49	*Parkia speciosa Hassk.*	Petai	Wild, planted	Mature fruit eaten raw or cooked
50	*Passiflora foetida L.*	Lelekah	Wild	Young leaf and green fruit eaten cooked. Ripe fruit eaten raw.
51	*Phyllanthus oxyphyllus Miq.*	Bantal kijang	Wild	Leaves and fruits eaten cooked.
52	*Piper betle L.*	Sireh	Planted, wild	Leaf chewed in betel quid
53	*Psychotria stipulacea Wall.*	Sekentut kijang	Wild	Young leaf eaten cooked
54	*Saccharum officinarum L.*	Batang puah	Planted	Juice taken raw
55	*Sauropus androgynus (L.) Merr.*	Pucuk manis	Planted, wild	Leaf and shoot eaten cooked
56	*Solanum melongena L.*	Terong	Planted	Unripe fruit eaten cooked
57	*Solanum torvum Swartz.*	Tongbimang	Wild	Unripe fruit eaten cooked
58	*Stenochlaena palustris (Burm.) Bedd.*	Paku larut	Wild	Young leaf and petiole eaten cooked
59	*Streblus asper Lour.*	Ranjih	Wild	Young leaves eaten cooked
60	*Syzygium jambos (L.) Alston*	Jambu putih	Planted	Fruit eaten raw or pickled
61	*Uncaria gambir Roxb.*	Gambir	Planted, wild	Dried ripe fruit chewed in betel quid
62	*Willughbeia firma Bl.*	Akar gerit	Wild	Ripe fruit eaten raw

visit using the method of ethnobotanical enquiry (Chin, 1981; Martin, 1995). The sessions were recorded and transcribed later. Plant specimens were collected using standard taxonomical procedures, taking specimens with flowers and fruits whenever possible (Womersley, 1981). Photographs of all specimens were also taken and used together with the plant specimens for identification and record. Identification was carried out by referring to various references such as Henderson (1974a, b) for wild flowers; Ng (1989) and Whitmore (1983) for trees; Piggott (1988) for ferns; Keng (1969) and Ridley (1967) for general flora.

RESULTS

This study recorded a total of 62 species of edible plants used in the Temuan village. This village used edible plants from their home gardens, agricultural plots, wild plants surrounding their village and also the forest plants. Some species occurred as both wild and planted for two reasons. One reason was that, the natives collected edible parts from the forest plants and also from those of the same species that they planted. The other reason was that, when planted species were dispersed from cultivation and occurred also as wild plants; both sources were used. The species in Table 1 in these three categories have totals of 17 wild species (27.4%), 23 planted species (37.1%) and 22 species being both wild and planted (35.5%). In terms of usage, 26 species (41.9%) were eaten cooked, 17 species (27.4%) were eaten raw, 15 species (24.4%) were eaten both raw and

cooked, while 4 species (6.3%) were eaten raw and pickled or after fermentation. Fruits and seeds were the most common parts used with a total of 26 species (41.9%) followed by leafy parts with 13 species (21.0%). Others with much lower numbers were shoots, underground parts, stems, combinations of leafy and underground parts, fruits and shoots, fruits and leafy portion.

DISCUSSION

The results showed that, the Temuan in Kampung Guntor used 17 wild species, 23 planted species and 22 species both planted and wild edible plants. This showed that, the Temuans in this study made full use of their ability as agriculturists and hunters/gatherers. They were also able to adapt to changes in availability of wild sources of edible plants by growing some of these in their home gardens and agricultural plots. The results obtained from a different Temuan village recorded 24 species of wild edible plants, 24 species of planted edible plants and 21 species of edible plants that were both planted and wild (Ong et al., 2010). This study recorded a significantly lower number of wild edible plant species but not significantly different totals for planted edible species and edible plants that were both planted and wild. With respect to the total number of edible plant species, this study recorded 62 species compared to 69 species for the previous study (please insert a reference here). Habitat degradation will result in many wild species becoming less available or not available within walking distance. The knowledge and usage of edible plants changes as new plants become available to them. Unavailability of certain wild plants can cause the loss of knowledge on the usage of these species over the generations if these species are not planted or cannot be planted by the natives. The young natives are less keen to learn and use certain traditional edible plants due to changes in culture, personal preferences, the tedious process of preparing certain food items, and changes in habitat thereby causing certain edible plants to be unavailable or less available. It is important not only to record such native knowledge and conduct further studies but also to take steps to conserve the genetic diversity of edible plants before they are lost to humankind forever. A living collection or gene bank can serve further scientific studies on edible plants with potential for wider usage, pest and disease resistance, ability to grow and produce in different weather and soil conditions.

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