

Traditional knowledge of medicinal plants among the Malay villagers in Kampung Tanjung Sabtu, Terengganu, Malaysia

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A total 52 species of medicinal plants were recorded during a folk botanical survey at a village at Terengganu, Malaysia. Most of these species are herbaceous angiosperms. The most common part of plants used in the preparation of herbal medicine is their leaves. More medicinal plants are used by villagers for general health, to treat dermatological complaints, reproductive system, abdominal problems and fever compared to other ailments. The most common method of preparation is decoction, followed by poultice and infusion.

Keywords: Folk medicine, Medicinal plants, Malaysia

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This study was conducted in a Malay village named Kampung Tanjung Sabtu which is located West of Kuala Terengganu, the capital city of the state of Terengganu, in Peninsular Malaysia. The latitude is 5.349°N while the longitude is 103.067°E. The village is a traditional Malay village with forests and a river nearby. The villagers still practice herbal medicine based mainly on plants found in the wild and also cultivated plants. The occupation of the villagers includes farming, Government servants and some are self employed. No study on the medicinal plants used in this particular village has been published before. Some studies on medicinal plants used in other Malay villages in different states of Malaysia have been published before this^{1,2} (Fig. 1).

Methodology

A folk botanical survey of medicinal plants was carried out in a village named Kampung Tanjung Sabtu in the state of Terengganu, Malaysia. Information was obtained through general conversation with adult villagers, local healers and herbalists during each visit using the method of ethnobotanical enquiry, observation and participation. The ages of the informants range from about 30-60 yrs. The parts of the plants used to treat diseases, types of diseases

treated, doses and method of administration were carefully recorded in the field. The villagers were mostly willing to share their knowledge on herbal medicine.

The plant specimens were collected using standard taxonomical procedures, taking specimens with flowers and fruits whenever possible. Photographs of every specimen were also taken and used together with the plant specimens for identification and record. Each specimen was numbered and detailed notes were recorded in a field notebook during the field trips. The specimens were identified and deposited in the University of Malaya. Identification of specimens to the level of current botanical nomenclature was made with the help of the series on Plant Resources of South-East Asia³⁻⁷. Identification of ferns was made with reference to Ferns of Malaysia⁸.

Results

This survey recorded 52 plant species used in traditional medicine by the Malay villagers. Table 1 records the binomial name, family name, common name, parts used, diseases for which the herbal medicine is administered and the mode of administration. The 52 plant species of medicinal plants belongs to 31 families and 49 genera. Out of the total number of medicinal plants, 51 species are angiosperms, while one species is a Pteridophyte.

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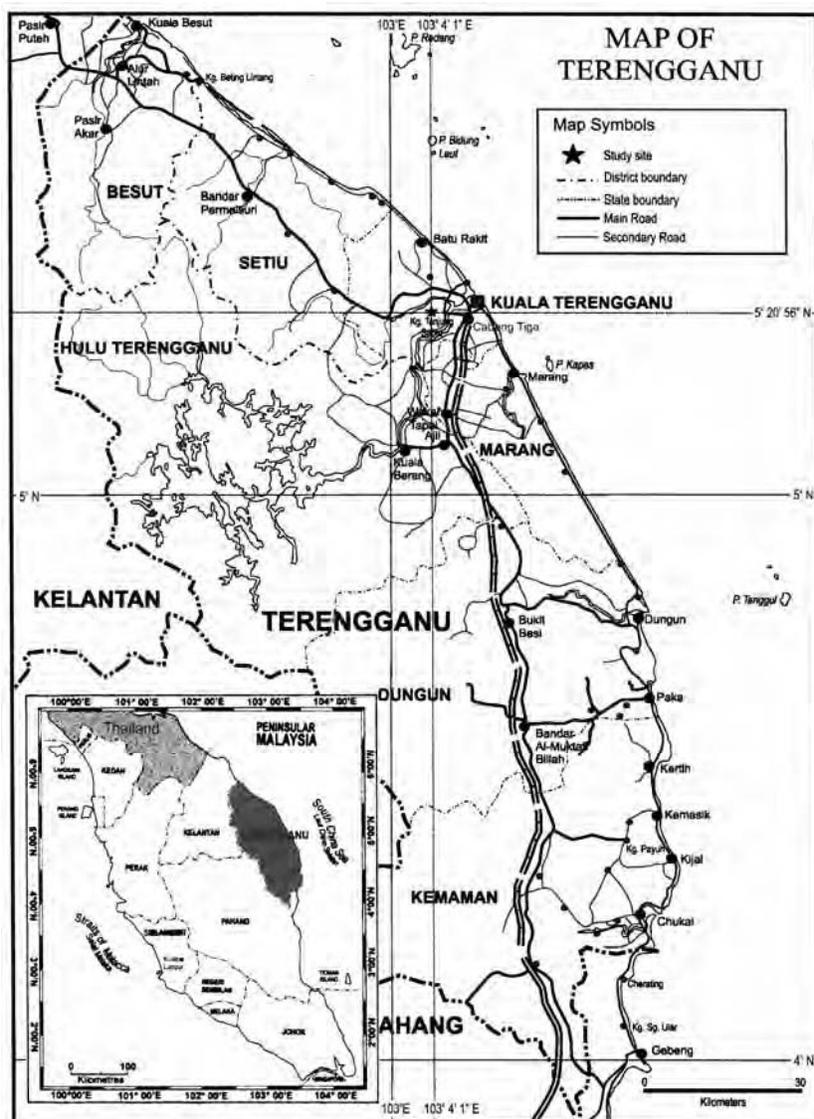


Fig.1—Map of the study area.

In terms of habit, there are 27 species of herbs (51.9%), 11 species of trees (21.2%), 9 species of shrubs (17.3%), 4 species of climbers (7.7%) and 1 species of epiphyte (1.9%). The most common plant parts used in the preparation of herbal medicine in this study are leaves (42.0%), roots (15.9) and fruits (11.6%). Other plant parts used in herbal medicine recorded here are whole plant, flowers, seeds, rhizomes, tubers, bulbs, sap and stems. Based on the number of respondents, the villagers use a good number of plant species for general health (16), to treat dermatological complaints (16), reproductive system (13), abdominal problems (10) and fever (10).

More herbal medicine were taken orally (53%) compared to topical applications (47). The most

common method of preparation is decoction (45%), followed by poultice (36%) and infusion (19%). The families with high number of medicinal plant species were Poaceae and Zingiberaceae (each family has 4 species), followed by Acanthaceae, Piperaceae, Rutaceae and Solanaceae (each family has 3 species).

Discussion

Records of traditional knowledge on medicinal plants represent a useful starting point for further research on novel chemical compounds and potentially useful drugs. This study recorded 52 species of medicinal plants used in one village. This number corresponds well with another study in another Malay village¹ which recorded a total of

Table 1—Medicinal plants used as folk medicine in Kampung Tanjung Sabtu, Terengganu, Malaysia

Botanical name, family & local name (Malay)	Uses
<i>Allium sativum</i> L. Alliaceae (<i>Bawang putih</i>)	Paste of fresh bulb mixed with oil applied on abdomen to treat distended stomach. Roasted bulb eaten to treat flatulence. Juice of roots mixed with honey taken orally to treat asthma, coughs and difficult to breathe.
<i>Aloe barbadensis</i> Mill. Liliaceae (<i>Lidah buaya</i>)	Leaf sap applied topically on burns, itch, pimples, dandruff and skin cracks. Leaf crushed in water and applied topically on headache.
<i>Alpinia galanga</i> (L.) Willd Zingiberaceae (<i>Lengkuas</i>)	Juice from pounded leaves applied topically on skin diseases. Rhizome used in food to treat or prevent flatulence.
<i>Anacardium occidentale</i> L. Anacardiaceae (<i>Jambu golok</i>)	Infusion of young leaves taken orally to treat diarrhea.
<i>Ananas comosus</i> (L.) Merr. Bromeliaceae (<i>Nanas</i>)	Fresh young leaves eaten regularly with food to slow down aging. Fruit eaten or juice taken orally to treat anemia and dysmenorrhea.
<i>Andrographis paniculata</i> (Burm.f.) Wall. ex Nees Acanthaceae (<i>Hempedu bumi</i>)	Decoction or infusion of the whole plant taken orally to treat hypertension, diabetes and fever.
<i>Annona muricata</i> L. Annonaceae (<i>Durian belanda</i>)	Infusion of crushed leaves applied topically to treat fever. Pounded leaves with water applied topically to rid off head lice.
<i>Archidendron jiringa</i> (Jack) Niels. Mimosaceae (<i>Jering</i>)	Young leaves pounded and applied topically on chest pain. Decoction of twigs taken orally to treat difficult urination. Seeds eaten with food to slow down aging. Seeds with testa eaten with food to treat diabetes. Decoction of crushed seeds with ginger taken orally to expel kidney stones.
<i>Ardisia crenata</i> Sims Myrsinaceae (<i>Mata ayam</i>)	Leaves pounded and applied topically on scabies. Young leaves and fruits eaten regularly with food to slow down aging.
<i>Asystasia coromandeliana</i> Nees Acanthaceae (<i>Rumput israel</i>)	Decoction of whole plant taken orally to treat dysuria.
<i>Averrhoa bilimbi</i> L. Oxalidaceae (<i>Belimbing buluh</i>)	Decoction of leaves taken orally to treat diabetes and hypertension.
<i>Capsicum frutescens</i> L. Solanaceae (<i>Cili padi</i>)	Leaves pounded with CaCO ₃ and applied topically on excessive hair and dark skin. Compound decoction of roots with castor roots, garlic and ginger taken orally to treat leucorrhoea.
<i>Carica papaya</i> L. Caricaceae (<i>Betik</i>)	Decoction or infusion of leaves taken orally to treat hypertension and obesity. Sap applied topically to treat toothache, corns and warts. Fruits eaten to treat constipation. Seeds pounded and taken orally to rid of intestinal worms.
<i>Catharanthus roseus</i> (L.) Don Acanthaceae (<i>Kemunting cina</i>)	Infusion of leaves taken orally to treat painful menses. Leaves pounded and applied topically on bites and stings. Decoction of roots taken orally to treat diabetes and hypertension.
<i>Centella asiatica</i> (L.) Urban Apiaceae (<i>Pegaga</i>)	Leaves eaten raw with food to slow down aging, treat poor eyesight and no appetite. Juice of leaves applied topically on cuts, sores and skin diseases. Whole plant eaten raw or juice taken orally to treat aches, pain, fever, diarrhea, liver problems and hard to breathe. Decoction of roots taken orally to treat swellings.
<i>Chrysopogon aciculatus</i> (Retz.) Trin Poaceae (<i>Muncup</i>)	Decoction of roots taken orally to treat swellings.
<i>Citrus aurantifolia</i> (Chris. & Panz.) Swin. Rutaceae (<i>Limau nipis</i>)	Fruit juice taken orally to treat dysmenorrhea, obesity and influenza. Fruit zest inhaled to treat nausea. Fruit juice applied topically during bath to treat unhealthy nails.
<i>Citrus hystrix</i> DC. Rutaceae (<i>Limau purut</i>)	Fruit zest used in bath water to treat body odors. Fruit juice mixed with salt taken orally to treat coughs. Fruits used as bath scrub to treat rough skin.

(Contd.)

Table 1—Medicinal plants used as folk medicine in Kampung Tanjung Sabtu, Terengganu, Malaysia—*Contd.*

Botanical name, family & local name (Malay)	Uses
<i>Coleus artropurpureus</i> Benth. Lamiaceae (<i>Ati-ati</i>) <i>Curcuma longa</i> L. Zingiberaceae (<i>Kunyit</i>)	Leaves mixed with CaCO ₃ and applied topically on stomachache. Juice from main rhizome taken orally to slow down aging. Rhizome mixed with rice made into face powder applied topically on pimples.
<i>Cymbopogon citratus</i> (DC.) Stapf Poaceae (<i>Serai</i>)	Leaf stalk and leafbase pounded and applied topically on aches and pain. Infusion of crushed leaves applied topically on headache. Decoction of leaf base with brown sugar taken orally to treat breathing difficulty. Compound decoction with leaves of <i>Pandanus</i> and jack used as post-partum bath for mothers. Leaf base pounded in water applied topically on mosquito bites. Heated leaf applied topically to treat flatulence. Heated leaf coated with coconut oil applied topically on sores. Grated tubers applied topically on skin cracks and itch.
<i>Datura metel</i> L. Solanaceae (<i>Kecubong</i>) <i>Dioscorea hispida</i> Denn. Dioscoreaceae (<i>Ubi gadong</i>) <i>Drymoglossum pilloselloides</i> (L.) Presl. Polypodiaceae (<i>Duit-duit</i>) <i>Elephantopus scaber</i> L. Asteraceae (<i>Tutup bumi</i>) <i>Gardenia jasminoides</i> Ellis Rubiaceae (<i>Bunga cina</i>) <i>Hibiscus rosa-sinensis</i> L. Malvaceae (<i>Bunga raya</i>)	Leaves pounded and applied topically on headache. Decoction of leaves taken orally as birth control for women. Leaves and flowers crushed and mixed in bath water to treat fever. Infusion of crushed leaves applied topically to treat fever. Crushed flowers applied topically on scalp to treat hair loss, graying and dry hair. Decoction of rhizomes taken orally to treat fever.
<i>Imperata cylindrica</i> (L.) Raeu. Poaceae (<i>Lalang</i>) <i>Ipomoea aquatica</i> Fors. Convolvulaceae (<i>Kangkung</i>) <i>Jasminum sambac</i> (L.) Ait. Oleaceae (<i>Melor</i>)	Leaves pounded with salt and applied topically on abscesses. Pounded leaves used topically to treat grey hair and rough hair. Flowers pounded with water and applied topically to treat hair loss and scalp odor. Infusion of crushed flowers applied topically on headache. Pounded buds applied topically on pimples. Leaves pounded and applied topically on swellings.
<i>Kaempferia galanga</i> L. Zingiberaceae (<i>Cekur</i>) <i>Lawsonia inermis</i> (L.) Pers. Lythraceae (<i>Inai</i>) <i>Melastoma malabathricum</i> L. Melastomataceae (<i>Senduduk</i>) <i>Mimosa pudica</i> L. Mimosaceae (<i>Semalu</i>)	Leaves pounded and applied topically to treat hair loss and grey hair. Leaves pounded with rice and applied topically on septic nails. Decoction of leaves taken orally to treat diarrhea. Root place in mouth to treat or prevent travelling sickness. Decoction of whole plant taken orally as post-partum treatment for mothers. Compound decoction with rock salt and sliced tamarind used as bath water for post-partum mothers. Pounded roots applied topically on bruises and swellings. Roots pounded with CaCO ₃ applied topically on athlete's foot.
<i>Morinda citrifolia</i> L. Rubiaceae (<i>Mengkudu</i>)	Leaves, fruits decoction taken orally to treat post-partum for mothers, intestinal worms and low sperm count. Fruit eaten or juice taken orally to treat diabetes, hypertension and for general health. Decoction of roots taken orally to treat excessive urination. Decoction of roots taken orally to treat dysentery.
<i>Murraya koenigii</i> (L.) Spre. Rutaceae (<i>Pokok kari</i>) <i>Ocimum basilicum</i> L. Lamiaceae (<i>Selasih</i>)	Decoction of leaves taken orally to treat flatulence Pounded leaves applied on headache. Fresh leaves eaten with food to slow down aging and treat gastric pain. Infusion of leaves taken orally to treat skin diseases, fever, earache, headache and joint aches.

(Contd.)

Table 1—Medicinal plants used as folk medicine in Kampung Tanjung Sabtu, Terengganu, Malaysia—*Contd.*

Botanical name, family & local name (Malay)	Uses
<i>Pandanus amryllifolius</i> Roxb. Pandaceae (<i>Pandan</i>)	Mashed leaves in water and applied topically to treat dandruff and scalp odor.
<i>Phyllanthus niruri</i> L. Euphorbiaceae (<i>Dukung anak</i>)	Plant pounded, mixed with water taken orally to treat dirty blood.
<i>Piper betle</i> L. Piperaceae (<i>Sireh</i>)	Roots decoction taken orally to treat Jaundice. Pounded leaves with gambier and CaCO ₃ applied topically on abscesses and sores. Decoction of leaves used as wash to treat vaginal odor. Rolled leaf inserted topically to treat nose bleed.
<i>Piper nigrum</i> L. Piperaceae (<i>Lada hitam</i>)	Heated leaves applied overnight to treat sagging breasts. Seeds eaten with rice to treat no appetite and for post-partum health of mothers.
<i>Piper sarmentosum</i> Roxb. ex Hunt. Piperaceae (<i>Kadok</i>)	Decoction of roots taken orally and leaves eaten with food to treat difficult urination.
<i>Psidium guajava</i> L. Myrtaceae (<i>Jambu batu</i>)	Young leaves rubbed on body to treat body odor and rough skin. Mashed leaves taken orally to treat diarrhea, stomachache and post-partum mothers. Juice from fruit blended with rind taken orally to expel intestinal worms. Juice from fruit blended with seeds taken orally to counter obesity. Powdered dried rind mixed with water and sugar taken orally to treat leucorrhea.
<i>Punica granatum</i> L. Lythraceae (<i>Delima</i>)	Flowers used in bath water mixed with 6 other types of flowers to treat headache. Juice from stem taken orally to treat fever.
<i>Rosa sinensis</i> Jacq. Rosaceae (<i>Bunga ros</i>)	Leaves pounded, mixed with kerosene and CaCO ₃ applied topically on ringworm and shingles.
<i>Saccharum officinarum</i> L. Poaceae (<i>Tebu hitam</i>)	Leaves pounded and applied topically on fungal infection.
<i>Senna alata</i> (L.) Roxb. Caesalpinaceae (<i>Gelengang besar</i>)	Leaves pounded with salt and applied topically on warts. Fruits eaten for eye health and treat eyesight problems. Decoction of roots taken orally to treat painful menses.
<i>Solanum torvum</i> Swar. Solanaceae (<i>Terung pipit</i>)	Leaf infusion applied topically to treat fever and headache.
<i>Syzygium palembanicum</i> Miq. Myrtaceae (<i>Serai kayu</i>)	Leaf decoction taken orally to treat hypertension. Leaves pounded and applied topically on post-partum women to contract the abdomen.
<i>Tetracera indica</i> (Hout. ex Chris. & Panz.) Merr. Dilleniaceae (<i>Mempelas</i>)	Infusion of crushed leaves applied topically to treat fever. Decoction taken orally to treat hypertension.
<i>Urena lobata</i> L. Malvaceae (<i>Pokok pulut</i>)	Leaves pounded and applied topically on cuts. Roots in compound decoction taken orally as post-partum herbal medicine. Roots pounded and applied topically on toothache Infusion of roots taken orally to treat fever.
<i>Zingiber officinale</i> Rosc. Zingiberaceae (<i>Halia</i>)	Rhizome eaten to increase appetite. Rhizome decoction taken orally to treat flatulence. Decoction of rhizome with black pepper and turmeric taken orally as post-partum herbal medicine for mothers. Poultice of rhizome applied topically on fungal infections.

54 species of medicinal plants but is much lower than a study conducted in yet another Malay village² which recorded a total of 146 medicinal plants. This shows that the total number of medicinal plants known to and used by any particular Malay village can vary substantially. There are variations not only in the total number of species used, but also on the diseases each plant is used for and also the methods of preparation and application. Knowledge of medicinal plants is

seldom recorded in a written form by the villagers because the traditional knowledge is orally passed on through generations. Recording and publishing of traditional knowledge on medicinal plants is important before such knowledge become diluted or disappears. Plants recorded in this study can be of interest for further research, for example *Punica granatum* to counter obesity and *Senna alata* to treat shingles.

Conclusion

The study shows that the most common plant parts used in the preparation of Malay herbal medicine are leaves, roots and fruits. Other plant parts such as stems, barks, or flowers are seldom used in Malay herbal medicine. Villagers use medicinal plants mostly for general health, dermatological complaints and the reproductive system. More serious ailments are usually treated at nearby village clinics or hospitals which have become accessible to the villagers.

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