

Table S1. Alphabetical listing of 69 exotic species used by the Hmong in six villages in Nan province in northern Thailand.

For each species the following information is provided: 1. Scientific name and author, family and number of voucher specimens deposited in Herbarium QBG at the Queen Sirikit Botanical Garden in Chiang Mai, Thailand. 2. The geographic origin of the species according to the scientific literature. 3. Use category following Cook (1995) for non-medicinal categories [105] and the WHO Classification for medicinal categories (<https://www.who.int/classifications/icd/en/>). 4. The application and treatment as observed in the field work for the present study. 5. Preparation and application of the exotic species according to field work for the present study.

Scientific name (Family and Varangrat Nguanchoo voucher number, all deposited in the QBG herbarium)	Geographic origin	Use category	Application/ Treatment	Preparation and application
<i>Aloe vera</i> (L.) Burm.f. (Xanthorrhoeaceae, no voucher)	Africa	Medicine	Burn, Poisoning due to bites and stings	Gel used for topical use by liniment
<i>Alternanthera bettzickiana</i> (Regel) G.Nicholson (Amaranthaceae, 747, 883)	America	Medicine	Blood tonic, Amenorrhoea, Dysmenorrhoea, Urinary tract disease	Decoction for orally drinking
			Bruised	Pound & burn for topical use by poultice
			Fever	Cooked by mixed with egg and steamed for orally eaten
			Tonic	Cooked by boiled with chicken soup for orally eaten
<i>Alternanthera brasiliana</i> (L.) Kuntze. (Amaranthaceae, 633)	America	Medicine	Itchy rash	Decoction for bath
			Sprain (strain)	Pound & burn for topical use by poultice
			Lower abdomen pain caused by retarded ejaculation	Decoction for orally drinking
			Tonic	Cooked by boiled with chicken soup for orally eaten
			Uterine prolapsed	Burn for seat on
	America	Food	Vegetable	Cooked
	America	Food	Vegetable	Cooked

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<i>Amaranthus spinosus</i> L. (Amaranthaceae, 625)		Animal food	Animal food_Pig	Boiled
<i>Anethum graveolens</i> L. (Apiaceae, 676)	Africa to Asia	Medicine	Aphthous ulcer, Chickenpox	Decoction for orally drinking
			Chickenpox	Cooked by boiled with chicken soup for orally eaten
			Fever (children)	Burn for sauna or decoction for orally drinking
		Food	Food additive	Herbs and spices
<i>Annona squamosa</i> L. (Annonaceae, 780)	America	Medicine	Cancer	Decoction for orally drinking
		Food	Fruit	Raw
<i>Artemisia lactiflora</i> Wall. ex DC. (Asteraceae, 683, 714, 916)	Asia (China)	Medicine	Diarrhea	Decoction for orally drinking
			Postpartum recovery (Blood tonic), Tonic	Cooked by boiled with chicken soup for orally eaten
<i>Artemisia vulgaris</i> L. (Asteraceae, 680)	Africa, Europe, Asia to China	Medicine	Headache, Wound	Pound for topical use by poultice
			Fever, Malaria	Cooked by mixed with egg and steamed for orally eaten
			Fever, Relief muscle pain	Decoction for orally drinking
			Liver disorder	Pound & burn for topical use by poultice
<i>Artocarpus heterophyllus</i> Lam. (Moraceae, no voucher)	India to Malaya Peninsula	Medicine	Diarrhea	Decoction for orally drinking
			Lactation stimulant	Cooked by boiled with pork soup for orally eaten
		Food	Fruit	Raw
<i>Ayapana triplinervis</i> (Vahl) R.M.King & H.Rob. (Asteraceae, 721)	America	Medicine	Aphthous ulcer	Raw for chewing
		Food	Vegetable	Raw
<i>Bidens biternata</i> (Lour.) Merr. & Sherff (Asteraceae, 645)	America	Medicine	Aphthous ulcer, Calculus, Chickenpox, Cough, Fever, Gonorrhoea, Malaria	Decoction for orally drinking

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			Postpartum recovery (food allergic reaction)	Cooked by boiled with chicken soup for orally eaten
<i>Bryophyllum pinnatum</i> (Lam.) Oken (Crassulaceae, 709, 917, 1058)	Africa	Medicine	Abscess, Arthralgia, Bone fractures, Bone pain, Bruised, Flatulence, Inflammation wound	Pound for topical use by poultice
			Blood tonic	Decoction for orally drinking
			Tonic	Cooked by boiled with chicken soup for orally eaten
<i>Buddleja paniculata</i> Wall. (Scrophulariaceae, no voucher)	Asia	Medicine	Abdominal pain during pregnancy	Hot infusion for orally drinking
			Calculus, Leucorrhoea, Female sterility, Peptic ulcer	Decoction for orally drinking
			Headache	Pound for topical use by poultice
<i>Caladium bicolor</i> (Aiton) Vent. (Araceae, 789)	America	Medicine	Peptic ulcer	Cooked by boiled with chicken soup for orally eaten
			Relief muscle pain	Crush for topical use by liniment
			Stomachache	Decoction for orally drinking
		Animal Medicine	Animal Medicine_Pus for buffalo, cow	Pound for topical use by poultice
		Social use	Ritual plant	Treating pain from black magic by pound for liniment
Sacred plant	Protecting from evil spirit and disease by grown at house			
<i>Canna indica</i> L. (Cannaceae, 679, 800, 991, 1054)	America	Medicine	Appendix, Flatulence, Urinary tract disease	Grind or raw for orally eaten
			Appendix, Urinary tract disease, Calculus	Hot infusion for orally drinking

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			Blood tonic, Flatulence, Kidney disorder	Decoction for orally drinking
			Tonic	Cooked by boiled with chicken soup for orally eaten
		Food	Carbohydrate source	Burned
<i>Carica papaya</i> L. (Caricaceae, 904)	America	Medicine	Gonorrhoea	Decoction for orally drinking
			Lactation stimulant	Cooked by boiled with chicken soup for orally eaten
			Peptic ulcer	Raw for orally eaten
		Food	Fruit	Raw
		Animal food	Animal food_Pig	Raw
<i>Celosia argentea</i> L. (Amaranthaceae, 652, 923)	Americas	Medicine	Amenorrhoea, Dysmenorrhea, Female fertility	Decoction for orally drinking
			Tonic	Cooked by boiled with chicken soup for orally eaten
<i>Chromolaena odorata</i> (L.) R.M.King & H.Rob. (Asteraceae, 624, 970)	America	Medicine	Burn, Hemostatic, Wound	Pound for topical use by poultice
			Fever	Decoction for orally drinking
<i>Chrysanthemum indicum</i> L. (Asteraceae, 710, 918, 1053)	China and Japan	Medicine	Tonic	Cooked by boiled with chicken soup for orally eaten
<i>Citrus maxima</i> (Burm.) Merr. (Rutaceae, no voucher)	China	Food	Fruit	Raw
<i>Crassocephalum crepidioides</i> (Benth.) S. Moore. (Asteraceae, 622)	Africa	Medicine	Ringworm infection	Crush for topical use by poultice
		Food	Vegetable	Boiled
		Animal food	Pig	Boiled or raw
<i>Crinum × amabile</i> Donn ex Ker Gawl. (Amaryllidaceae, 855)	Asia	Medicine	Abscesses, Bone fractures, Bruised, Sprain (strain)	Pound & burn for topical use by poultice
			Flatulence	Hot infusion for orally drinking
			Peptic ulcer, Stomachache	Decoction for orally drinking

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<i>Cucurbita moschata</i> Duchesne (Cucurbitaceae, 717)	America	Food	Vegetable	Cooked
		Animal food	Animal food_Pig	Boiled
<i>Dianella ensifolia</i> (L.) DC. (Xanthorrhoeaceae, no voucher)	Australia, Asia and Africa	Medicine	Amenorrhoea, Cough	Decoction for orally drinking
		Social use	Ritual plant	Used in worship house spirit ritual (Na Jong) by tied with incense and candle and keep a year
<i>Eryngium foetidum</i> L. (Apiaceae, 711)	America	Medicine	Burn	Pound for topical use by poultice
			Headache, Fever	Decoction for orally drinking
		Food	Vegetable	Cooked or raw
<i>Euphorbia tithymaloides</i> L. (Euphorbiaceae, 704, 992, 1047)	America	Medicine	Lactation stimulant, Postpartum recovery (blood tonic)	Cooked by boiled with chicken soup for orally eaten
			Lactation stimulant	Crush for topical use by liniment
<i>Gladiolus hortulanus</i> L.H. Bailey (Iridaceae, 792, 815, 1003)	Africa	Medicine	Bruised, Poisoning due to bite and sting (centipede, scorpion, snake bites)	Pound for topical use by poultice
			Cough	Decoction for orally drinking
		Social use	Ritual plant	Treating pain from black magic by pound for liniment or soul calling by liniment at body
			Sacred plant	Protecting from weapon by putted in pouch
<i>Hibiscus sabdariffa</i> L. (Malvaceae, 621, 821)	Africa	Medicine	Abscesses	Pound for topical use by poultice
			Aphthous ulcer, Blood tonic, Urinary tract disease	Decoction for orally drinking
		Food	Vegetable	Boiled or raw
<i>Hippeastrum x johnsonii</i> Bury (Amaryllidaceae, no voucher)	Africa	Medicine	Appendix, Stomachache	Raw for orally eaten
			Cough	Decoction for orally drinking
		Social use	Sacred plant	Protecting from evil spirit by grown at house

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<i>Impatiens balsamina</i> L. (Balsaminaceae, 912)	Asia	Medicine	Amenorrhoea, Dysmenorrhea, Female fertility, Fever, Labor induction, Postpartum recovery, Uterine prolapsed	Decoction for orally drinking
			Burn	Pound for topical use by poultice
<i>Iresine herbstii</i> Hook. (Amaranthaceae, 687, 715, 933)	America	Medicine	Amenorrhoea, Dysmenorrhea, Blood tonic	Decoction for orally drinking
			Bruised	Pound for topical use by poultice
			Tonic	Cooked by boiled with chicken soup for orally eaten
<i>Jatropha curcas</i> L. (Euphorbiaceae, 616, 727, 781, 921)	America	Medicine	Apthous ulcer, Burn, Itchy rash, Wound	latex for topical use by liniment
			Foot dermatitis	Decoction for orally drinking
			Tendon disorders (tendon pain)	Pound for topical use by poultice
		Material	Fence	Living plant grown at house
<i>Jatropha gossypifolia</i> L. (Euphorbiaceae, 881)	America	Medicine	Amenorrhea	Decoction for orally drinking
			Hemorrhoids, Postpartum recovery (Uterine subinvolution)	Burned for seating on
			Headache, Postpartum recovery (Uterine subinvolution)	Burned for topical use by plaster
		Social use	Sacred plant	Protecting from evil spirit by grown at house near the door
<i>Kalanchoe cf. ceratophylla</i> Haw. (Crassulaceae, 685, 958, 993)	India, Asia, china	Medicine	Chest pain	Decoction for orally drinking
			Food allergic reaction, Morning sickness	Cooked by mixed with egg and steamed for orally eaten
			Lactation stimulant, Relief muscle pain, Tonic	Cooked by boiled with chicken soup for orally eaten
	Africa	Medicine	Diphtheria	Hot infusion for orally drinking

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<i>Lagenaria siceraria</i> (Molina) Standl. (Cucurbitaceae, 854)			Poisoning due to bite and sting (scorpion bite)	Pound for topical use by poultice
		Material	Dried	Decoration, Water dipper
<i>Manihot esculenta</i> Crantz (Euphorbiaceae, 955)	America	Medicine	Cough	Decoction for orally drinking
		Animal food	Animal food_Pig	Boiled
		Food	Vegetable	Cooked
			Carbohydrate source	Burned or boiled
<i>Mimosa pudica</i> L. (Fabaceae, 602, 745, 796)	America	Medicine	Calculus, Diabetic, Dysmenorrhoea	Decoction for orally drinking
			Fever	Pound for topical use by poultice
			Nicotine dependence	Mixed with tobacco for smoking
		Social use	Ritual plant	Soul calling by liniment at body
			Sacred plant	Protecting from evil spirit by putted in pouch
		<i>Mirabilis jalapa</i> L. (Nyctaginaceae, 872, 915)	America	Medicine
Bruised, Tonic	Cooked by boiled with chicken soup for orally eaten			
Burn	Pound for topical use by poultice			
Sprain (strain)	Pound & burned for topical use by poultice			
<i>Morus alba</i> L. (Moraceae, 932)	China	Medicine	Itchy rash	Decoction for orally drinking
			tonic	Cooked by boiled with pork soup for orally eaten
		Food	Fruit	Raw
<i>Muntingia calabura</i> L. (Muntingiaceae, 731)	America	Food	Fruit	Raw
<i>Nicotiana tabacum</i> L.	America	Medicine	Hemostatic	Pound for topical use by poultice

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(Solanaceae, 922, 953)			Poisoning due to bite and sting (mosquito bites)	Crush for topical use by liniment
		Social use	Tobacco	Dried for smoking
<i>Ocimum africanum</i> Lour. (Lamiaceae, 643)	Uncertain	Medicine	Blood tonic	Raw for orally eaten
			Conjunctiva	Grind for drop into eyes
			Liver disorder, Poisoning due to bite and sting (centipede)	Pound for topical use by poultice
		Food	Food additive	Herbs and spices
<i>Passiflora edulis</i> Sims (Passifloraceae, 646)	America	Food	Fruit	Raw
			Vegetable	Cooked
<i>Passiflora foetida</i> L. (Passifloraceae, 975)	America	Food	Fruit	Raw
			Vegetable	Cooked
<i>Phyllanthus acidus</i> (L.) Skeels (Phyllanthaceae, no voucher)	America	Food	Fruit	Raw
<i>Plectranthus scutellarioides</i> (L.) R.Br. (Lamiaceae, 682, 770)	Asia southward to Malesia and Australia	Medicine	Flatulence (infant)	Decoction for orally drinking
			Liver disorder	Crush for topical use by liniment
			Tonic	Cooked by boiled with chicken soup for orally eaten
<i>Psidium guajava</i> L. (Myrtaceae, 609)	America	Medicine	Diarrhea	Decoction for orally drinking or raw for orally eaten
		Food	Fruit	Raw
<i>Psophocarpus tetragonolobus</i> (L.) DC. (Fabaceae, 778)	Asia	Medicine	Chickenpox	Decoction for orally drinking
		Food	Vegetable	Cooked or raw
<i>Sambucus canadensis</i> L. (Adoxaceae, 655, 994, 1042)	America	Medicine	Bruised, Burn, Bone fractures, Fever, Headache, Sprain (strain)	Pound for topical use by poultice
			Sprain (strain)	Decoction for orally drinking
			Tonic	Cooked by boiled with chicken soup for orally eaten

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<i>Sanchezia oblonga</i> Ruiz & Pav. (Acanthaceae, 830, 879, 999, 1048)	America	Medicine	Arthralgia, Bone fractures, Bruised, Relief muscle pain, Sprain (strain)	Pound for topical use by poultice
			Bone fractures, Relief muscle pain	Decoction for orally drinking
			Fever	Raw for orally eaten
			Relief muscle pain	Burn for topical use by plaster
			Tonic	Cooked by boiled with chicken soup for orally eaten
<i>Sansevieria trifasciata</i> Prain (Asparagaceae, 615)	Africa	Social use	Sacred plant	Protecting from evil spirit and snake by grown at house
<i>Scoparia dulcis</i> L. (Plantaginaceae, 608, 741, 777)	America	Medicine	Aphthous ulcer	Raw for chewing or crush for topical use by liniment
			Cough	Decoction for orally drinking
<i>Sechium edule</i> (Jacq.) Sw. (Cucurbitaceae, 729)	America	Medicine	Bone fractures	Pound for topical use by poultice
		Food	Vegetable	Cooked
<i>Sedum sarmentosum</i> Bunge (Crassulaceae, 706)	China	Medicine	Female fertility	Decoction for orally drinking
			Food for pregnancy, Morning sickness, Tonic	Cooked by boiled with chicken soup for orally eaten
			Food for pregnancy, Respiration disorder in newborn (cough, suffocate, sputum)	Hot infusion for orally drinking
			Food for pregnancy, Morning sickness	Cooked by mixed with egg and steamed for orally eaten
<i>Senna occidentalis</i> (L.) Link (Fabaceae, 814)	America	Medicine	Flatulence, Stomachache	Decoction for orally drinking
			Food allergic reaction, Peptic ulcer	Hot infusion for orally drinking
<i>Sesamum indicum</i> L. (Pedaliaceae, 880)	Uncertain	Medicine	Cancer	Grind or hot infusion for orally drinking

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		Food	Dessert	Raw
<i>Solanum americanum</i> Mill. (Solanaceae, 736, 878)	America	Medicine	Fever, Stomachache	Decoction for orally drinking
		Food	Vegetable	Cooked or raw
<i>Solanum lycopersicum</i> L. (Solanaceae, 612)	America	Food	Vegetable	Cooked or raw
<i>Solanum melongena</i> L. (Solanaceae, 607, 724, 919)	India and Sri Lanka	Medicine	Toothache	Cooked by boiled with chicken soup for orally eaten
		Food	Fruit	Cooked or raw
<i>Solanum torvum</i> Sw. (Solanaceae, 618, 787)	India	Medicine	Liver disorder	Decoction for orally drinking or pound for topical use by poultice
		Food	Fruit	Cooked or raw
<i>Spermacoce ocymoides</i> Burm.f. (Rubiaceae, 935)	Asia	Medicine	Poisoning due to bite and sting (snake bites)	Pound for topical use by poultice
<i>Tagetes erecta</i> L. (Asteraceae, 913)	America	Medicine	Amenorrhoea, Aphthous ulcer, Dysmenorrhoea, Female fertility, Postpartum recovery	Decoction for orally drinking
<i>Talinum fruticosum</i> (L.) Juss. (Talinaceae, 751)	America	Medicine	Tonic	Cooked by boiled with chicken soup for orally eaten
<i>Talinum paniculatum</i> (Jacq.) Gaertn. (Talinaceae, 793, 961)	America	Medicine	Postpartum recovery, Tonic	Cooked by boiled with chicken soup for orally eaten
<i>Tradescantia zebrina</i> Bosse (Commelinaceae, 701, 716, 799, 959)	America	Medicine	Amenorrhoea, Fever, Relief muscle pain	Decoction for orally drinking
			Food allergic reaction	Hot infusion for orally drinking
			Postpartum recovery, Tonic	Cooked by boiled with chicken soup for orally eaten
			Sprain (strain)	Pound for topical use by poultice
<i>Verbena officinalis</i> L. (Verbenaceae, 605, 794)	Europe	Medicine	Fever	Decoction for orally drinking
			Foot dermatitis, Itchy rash	Crush for topical use by liniment or decoction for bath

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			Itchy rash	Pound & mixed with hot oil for topical use by liniment
<i>Zea mays</i> L. (Poaceae, -)	America	Food	Carbohydrate source	Boiled
<i>Zephyranthes carinata</i> Herb. (Amaryllidaceae, 819, 828)	America	Medicine	Diarrhea (children), Epilepsy, Food allergic reaction	Hot infusion for orally drinking
			Food for pregnant	Cooked by mixed with egg and steamed for orally eaten
		Social use	Sacred plant	Protecting from evil spirit by putted in pouch
<i>Ziziphus jujuba</i> Mill. (Rhamnaceae, 730)	Europe to China	Food	Fruit	Raw