

## Appendix 1: *List questionnaire*

### I. Part one: Biography has been asked by the interviewers.

1. What is your name and family name?
2. How old are you?
3. How many members have you got in your family?
4. What religion are you into?
5. How many years have you been residing here in your town (province)?

### II. Part two: About experiences

1. Do you have any other occupations besides traditional healer?
2. Why did you decide to be a traditional healer?
3. How long have you been as a traditional healer?
4. What is the highest degree or level of school have you completed?

### III. Part three: About knowledge or Experience that related to the medicinal plants use for relieving pain.

#### i. Relates to low back pain

1. Which are the medicinal plants that you use for stopping or relieving low back pain?  
(Could you please indicate their vernacular name, part(s) of use, posology and preparation method, toxicity and Contraindication? Ex. Pregnant is not permitted to use).
2. Among the plants that you have cited, which plant is the most powerful for curing low back pain?
3. Beside from relieving low back pain, is there any other illness that we can use those plants to cure?

#### ii. Relates to headache

1. Which are the medicinal plants that you use for stopping or relieving headache?  
(Could you please indicate their vernacular name, part(s) of use, posology and preparation method, toxicity and contraindication? Ex. Pregnant is not permitted to use).
2. Among the plants that you have cited, which plant is the most powerful for curing headache?
3. Beside from relieving headache, is there any other illness that we can use those plants to cure?

#### iii. Relates to joint pain

1. Which are the medicinal plants that you use for stopping or relieving joint pain?  
(Could you please indicate their vernacular name, part(s) of use, posology and preparation method, toxicity and contraindication? Ex. Pregnant is not permitted to use).
2. Among the plants that you have cited, which plant is the most powerful for curing joint pain?
3. Beside from relieving joint pain, is there any other illness that we can use those plants to cure?

Appendix 2: Medicinal Plants used by Khmer traditional healers

Vernacular name	Scientific name	Family	Part of use (s)	Ailment(s)	Total citation (s)	Route of administration	Recipe (s)
1. ត្បាល់កិន/ Tbal Ken	<i>Abutilion indicum</i> (L.) Sweet	Malvaceae	Entire plant	Headache (1)	1	Oral	Decocted
2. ត្រាជៀកក្រាញ់សម្រុះ/ Tror cheak kranh samout	<i>Acanthus ilicifolius</i> L.	Acanthaceae	Entire plant	Headache (1) Gynecological diseases (1)	2	Oral	Decocted
3. អណ្តាតគោ/Andat kor	<i>Achyranthes bidentata</i> Blume	Amaranthaceae	Entire plant	Joint pain (2) Sprain (1)	3	Oral	Combined with <i>Gnetum gnernon</i> (entire plant), <i>Cibotium barometz</i> (wood), <i>Leea rubra</i> (rhizome), <i>Drynaria roosii</i> and <i>Morus alba</i> (root) crushed and drunk.
4. ខ្ចីមស/Khatem sor	<i>Allium sativum</i> L.	Amaryllidaceae	Rhizome	Headache (1)	1	Oral	Combined with <i>Phyllanthus urinaria</i> , <i>Piper nigrum</i> , <i>Zingiber officinale</i> and <i>Curcuma longa</i> , dried, crushed. Drunk
5. ក្រវ៉ាញ/Krovanh	<i>Amomum verum</i> Blackw	Zingiberaceae	Entire plant	Headache (1) Stomachache (1)	2	Oral	Decocted
6. ទំពាំងបាយជូរត្រៃ/Tompang Bay-chau Prey	<i>Ampelocissus latifolia</i> (Roxb.) Planch	Vitaceae	Rhizome	Low back pain (1)	1	Oral	Decocted
7. ម្កាស់/Mnoh	<i>Ananas comosus</i> (L.) Merr	Bromeliaceae	Crown	Low back pain (1) Renal calculus (1)	2	Oral	Associated <i>Ananas comosus</i> with rhizome of <i>Leea rubra</i> , addition coin and decocted.
8. ត្រៀលស្វា/ Treal Sva	<i>Anomianthus dulcis</i> (Dunal) J.Sinclair	Annonaceae	Entire plant	Low back pain (3) Joint pain (2) Post-partum (2) Sprain (1) Paresthesia (1) Tonic (1)	10	Oral	Mixed these 5 whole plants (8,9,15,33,59) dried, chopped. Decocted until reducing the volume of water by one third. Drunk until get better. Or macerated those with alcohol 1 liter (drink a spoon per day)
9. អង្កញ់ស្វា, ប្រញញួរ, ពពោះឆ័រ/ Ang-konh Sva	<i>Archidendron quocense</i> (Pierre) I.C.Nielsen	Fabaceae	Entire plant	Low back pain (2) Joint pain (1) Post-partum (1) Paresthesia (1) Sprain (1)	6	Oral	mixed these 5 whole plants (8,9,15,33,59) dried, chopped. Decocted until reducing the volume of water by one third. Drunk until get better. Or macerated those with alcohol 1 liter (drink a spoon per day)

10.	ស្លា/Sla	<i>Areca catechu</i> L.	Areaceae	Fruit	Headache (1)	1	Oral	Chopped fruit of <i>Cocos nucifera</i> , with small amount of <i>Areca catechu</i> , <i>Tamarindus indica</i> (bark) and root <i>Calamus viminalis</i> decocted. Drunk
11.	ប្រស្សីប្រៃ/Reu-sei Prey	<i>Bambusa bambos</i> (L.) Voss	Poaceae	Wood	Low back pain (1)	1	Oral	Decocted
12.	ប្រស្សីស្រក/Reu-sei Srok	<i>Bambusa blumeana</i> Schult.f.	Poaceae	Wood	Low back pain (1)	1	Oral	Decocted
13.	ម្រលពេជ្រ/Mochol pich	<i>Barleria lupulina</i> Lindl.	Acanthaceae	Entire plant	Low back pain (1) Joint pain (1) Reduce pain (1) Backache (1)	4	Oral	Decocted
14.	ម្រលប្រាក់/Mochol prak	<i>Barleria prionitis</i> L.	Acanthaceae	Entire plant	Low back pain (1) Joint pain (1) Reduce pain (1) Backache (1)	4	Oral	Decocted
15.	ដណ្តើរស្វា, ខ្លែងពណ័រ/Jonder Sva	<i>Bauhinia bracteata</i> (Benth.) Baker	Fabaceae	Entire plant	Low back pain (2) Joint pain (1) Post-partum (1) Paresthesia (1) Sprain (1)	6	Oral	Mixed these 5 whole plants (8,9,15,33,59) dried, chopped. Decocted until reducing the volume of water by one third. Drunk until get better. Or macerated those with alcohol 1 liter (drink a spoon per day)
16.	សណ្តែកអង្កាម = ឆ្កែងអង្កាម/Pdav Ankuy	<i>Calamus acanthospathus</i> Griff.	Areaceae	Entire plant	Low back pain (1)	1	Oral	Combined with <i>Tamarindus indica</i> (bark). Dried and decocted. Drunk
17.	ប្រស្រែកក្រក/Ros Pdav krek	<i>Calamus viminalis</i> Willd.	Areaceae	Root	Headache (1)	1	Oral	Chopped fruit of <i>Cocos nucifera</i> , with small amount of <i>Areca catechu</i> , <i>Tamarindus indica</i> (bark) and root <i>Calamus viminalis</i> decocted, Drunk
18.	ខ្លែងស្រង/Chhake sreng	<i>Cananga latifolia</i> (Hook.f. & Thomson) Finet & Gagnep.	Annonaceae	Entire plant, Wood	Low back pain (2) Headache (2) Hemorrhoid (1) Leucorrhoea (1) Stomachache (3) Antibiotic (1) Wound (1)	11	Oral	All key informants' mention, <i>Cananga latifolia</i> is highly efficacy to treat many diseases. Decocted wood of <i>Walsura villosa</i> , root <i>Smilax china</i> , <i>Ruellia tuberosa</i> , <i>Cananga latifolia</i> , ( <i>Oroxylum indicum</i> , <i>Diospyros ehretioides</i> use the quantity less than three grams). Make a sweet flavor by using use <i>Cinnamomum cassia</i> .

19.	កញ្ជើយដាច់ /kon-Jer bay-dach	<i>Capparis micracantha</i> DC.	Capparaceae	Entire plant, Wood	Low back pain (2) Headache (3) Rhinitis (2) Leucorrhea (1) Post-partum (2) Cough (1) Gynecological diseases (1)	12	Oral	Mixed these 7 plants (19, 50,81, 85, 92,97, 100) with <i>Smilax china</i> (rhizome). Dried, chopped and decocted.
20.	រោគក្រហម/ Rok kro-ham	<i>Capparis sepiaria</i> L.	Capparaceae	Entire plant	Headache (2) Rhinitis (1) Gout (1) Diabetes (1)	5	Oral	Boiled together ( <i>Capparis sepiaria</i> , <i>Capparis zeylanica</i> , <i>Vernonia elliptica</i> ) Steamed to reduce headache, also cooled down and drink. Forbidden for pregnant woman. Another recipe for <i>Capparis sepiaria</i> is chopped together with <i>Micromelum falcatum</i> , <i>Capparis sepiaria</i> , <i>Capparis zeylanica</i> , <i>Derris scandens</i> , <i>Derris trifoliata</i> , <i>Vernonia elliptica</i> , and decocted.
21.	រោគស/Rok sor	<i>Capparis zeylanica</i> L.	Capparaceae	Entire plant	Headache (2) Hemorrhoid (1) Rhinitis (1) Leucorrhea (1) Leukemia (1)	6	Oral	Boiled together ( <i>Capparis sepiaria</i> , <i>Capparis zeylanica</i> , <i>Vernonia elliptica</i> ) Steamed to reduce headache, also cooled down and drink.
22.	ន្ទូនពិសីប្រមោយស្វា/ Promoay Sva	<i>Cibotium barometz</i> (L.) J.Sm.	Cibotiaceae	Wood	Low back pain (1) Joint pain (2)	3	Oral	Combined with <i>Gnetum gnerron</i> (entire plant), <i>Achyranthes bidentata</i> , <i>Leea rubra</i> (rhizome), <i>Drynaria roosii</i> and <i>Morus alba</i> (root) crashed and drunk.
23.	ទេពក្សិរ, ទេពិរ, ទេព្វិរ/ Tepiru	<i>Cinnamomum cambodianum</i> Lecomte	Lauraceae	Wood	Low back pain (1)	1	Oral	<i>Murraya siamensis</i> Craib, oil of <i>Dysoxylum loureirii</i> , bark of <i>Cinnamomum cambianum</i> , <i>Cinnamomum cassia</i> , <i>Scoparia dulcis</i> , and <i>Croton crassifolius</i> .
24.	សម្បវល្លេង/Sombol Lor veng	<i>Cinnamomum cassia</i> (L.) J. Presl	Lauraceae	Entire plant	Low back pain (1)	1	Oral	Decocted wood of <i>Walsura villosa</i> , root <i>Smilax china</i> , <i>Ruellia tuberosa</i> , <i>Cananga latifolia</i> , ( <i>Oroxylum indicum</i> , <i>Diospyros ehretioides</i> use small quantity than three grams). Make a sweet flavor by using <i>Cinnamomum cassia</i> .
25.	វល្លិកំហោរ/Voir Kom-baor	<i>Cissus modeccoides</i> Planch.	Vitaceae	Rhizome	Joint pain (1) reduce pain (1) Swelling (1)	3	Oral	Decocted
26.	ក្រូចឆ្មារ/Kroch Chmar	<i>Citrus aurantiifolia</i> (Chrism.) Swingle	Rutaceae	Fruit	Headache (1)	1	Oral	Decocted
27.	ក្រូចសើច/Kroch Serc	<i>Citrus hystrix</i> C. DC.	Rutaceae	Fruit, Leaves	Headache (1)	1	Oral	Decocted

28.	កម្រិត្រាប /Kon-trob	<i>Clausena lenis</i> Drake	Rutaceae	Root	Joint pain (1) Hemorrhoid (1)	2	Oral	Decocted
29.	មមាញ់ខ្មៅចង្ការលឿង /Mor Meach kmoach	<i>Cleome viscosa</i> L.	Cleomaceae	Entire plant	Low back pain (1) Backache (1) Swelling (1)	3	Oral	<i>Cleome viscosa</i> , <i>Orthosiphon aristatus</i> , dried, boiled. Enable to everyone.
30.	ដូង/ doung	<i>Cocos nucifera</i> L.	Arecaceae	Fruit	Low back pain (2) Headache (1) Swelling (1)	4	Oral	Chopped fruit of <i>Cocos nucifera</i> , with small amount of <i>Areca catechu</i> , <i>Tamarindus indica</i> (bark) and root <i>Calamus viminalis</i> decocted, Drunk
31.	វល្លិរមៀត /Voir rorr meath	<i>Cosciniium fenestratum</i> (Goetgh.) Colebr.	Menispermaceae	Entire plant	Joint pain (1) Colitis (1) Gynecological diseases (1)	3	Oral	Decocted
32.	ថ្លាន់ /Thngan	<i>Crateva adansonii</i> DC.	Capparaceae	Bark	Low back pain (1) Headache (1) Stomachache (1) Post-partum (1) Nervous tonic (1)	5	Oral	Used as cataplasm. Combined <i>Crateva adansonii</i> powder with rice applied on forehead
33.	ចង្កៀងស្នា(ស្លឹកបី), សណ្តែកក្អម /Chong krong sva	<i>Crotalaria pallida</i> Aiton	Fabaceae	Entire plant	Low back pain (2) Joint pain (1) Post-partum (1) Paresthesia (1) Sprain (1)	6	Oral	mixed these 5 whole plants (8,9,15,33,59) dried, chopped. Decocted until reducing the volume of water by one third. Drunk until get better. Or macerated those with alcohol 1 liter (drink a spoon per day)
34.	បង្កី, កង្កី /Bong ky	<i>Croton crassifolius</i> Geiseler	Euphorbiaceae	Entire plant	Low back pain (1) Joint pain (1) Swelling (1)	3	Oral	<i>Murraya siamensis</i> Craib, oil of <i>Dysoxylum loureirii</i> , bark of <i>Cinnamomum cambianum</i> , <i>Cinnamomum cassia</i> , <i>Scoparia dulcis</i> , and <i>Croton crassifolius</i> .
35.	ដើមតាពូង, តាពូង, ទំពូង / Ta-poun	<i>Croton obliquifolius</i> Vis.	Euphorbiaceae	Root	Low back pain (1)	1	Oral	Woods mixed together <i>Scoparia dulcis</i> , <i>Ficus pumila</i> , root of <i>Croton obliquifolius</i> ; <i>Dracaena angustifolia</i> dried. Enable for everybody.
36.	រមៀត(ក្រហម) / Ro-meath kror-ham	<i>Curcuma longa</i> L.	Zingiberaceae	Rhizome	Low back pain (1) Headache (1) Joint pain (3) Swelling (1)	6	Oral	<i>Curcuma</i> sp., <i>Curcuma longa</i> , <i>Eurycoma longifolia</i> (red and white) <i>Scleropyrum pentandrum</i> . Mixed together, Decocted
37.	រមៀតស /Ro-meanth sor	<i>Curcuma</i> sp.	Zingiberaceae	Rhizome	Joint pain (1)	1	Oral	<i>Curcuma</i> sp., <i>Curcuma longa</i> , <i>Eurycoma longifolia</i> (red and white) <i>Scleropyrum pentandrum</i> . Mixed together, decocted

38.	ស្លឹកក្រូច / <i>Slerk krei</i>	<i>Cymbopogon citratus</i> (DC.) Stapf	Poaceae	Entire plant	Headache (1) Joint pain (1)	2	Oral	Decocted
39.	វល្លិ៍ប្រេងស/ <i>Voir Preng Sor</i>	<i>Derris scandens</i> (Roxb.) Benth.	Fabaceae	Entire plant	Headache (1)	1	Oral	Chopped together with <i>Micromelum falcatum</i> , <i>Capparis sepiaria</i> , <i>Capparis zeylanica</i> , <i>Derris scandens</i> , <i>Derris trifoliata</i> , <i>Vernonia elliptica</i> and decocted.
40.	វល្លិ៍ប្រេងក្រហម / <i>Voir Preng Kro-ham</i>	<i>Derris trifoliata</i> Lour.	Fabaceae	Wood	Headache (2) Joint pain (1)	3	Oral	Chopped together with <i>Micromelum falcatum</i> , <i>Capparis sepiaria</i> , <i>Capparis zeylanica</i> , <i>Derris scandens</i> , <i>Derris trifoliata</i> , <i>Vernonia elliptica</i> and decocted.
41.	ក្រឡាញ់ / <i>Krolanh</i>	<i>Dialium cochinchinense</i> Pierre	Fabaceae	Wood	Headache (1) Fever (1)	2	Oral	Decocted
42.	មេន្រៃ / <i>Mean Prey</i>	<i>Dimocarpus longan</i> Lour.	Sapindaceae	Entire plant	Headache (1)	1	Oral	Combined with <i>Micromelum falcatum</i> dried, decocted, drink to releave headache
43.	ក្លួច / <i>Kdouch</i>	<i>Dioscorea hispida</i> Dennst.	Dioscoreaceae	Rhizome	Headache (1) Reduce pain (1)	2	Oral	Decocted
44.	មីងម៉ាង, មម៉ាង, រម៉ាង / <i>Ming Moang</i>	<i>Diospyros ehretioides</i> Wall. ex G.Don	Ebenaceae	Entire plant	Low back pain (1) Headache (1) Joint pain (1) Appetizer (1) Stomachache (2) Post-partum (1)	7	Oral	Boiled or another recipe is mixed together with <i>Morus alba</i> , <i>Oroxylum indicum</i> , <i>Leea rubra</i> , (rhizome). Chopped, dried, Decocted. 50 gramme per each. No toxicity, available to everyone. Or another reported Decocted, wood of <i>Walsura</i> <i>villosa</i> , root <i>Smilax china</i> , <i>Ruellia tuberosa</i> , <i>Cananga</i> <i>latifolia</i> , ( <i>Oroxylum indicum</i> , <i>Diospyros ehretioides</i> , use small quantity than threes). Use <i>Cinnamomum</i> <i>cassia</i> to make a sweet flavor.
45.	អង្រែងដៃក / <i>Ang re dek</i>	<i>Dracaena angustifolia</i> (Medik.) Roxb.	Asparagaceae	Entire plant	Low back pain (1) Joints pain (1)	2	Oral	Woods mixed together <i>Scoparia dulcis</i> , <i>Ficus</i> <i>pumila</i> , root of <i>Croton obliquifolius</i> ; <i>Dracaena</i> <i>angustifolia</i> dried. Enable for everybody.

(Continued)

46.	ប្រក / <i>Bor Brok</i>	<i>Drynaria roosii</i> Nakaike	Polypodiaceae	Rhizome , wood	Low back pain (1) Hemorrhoid (2) Leucorrhea (1) Malaria (1)	5	Oral	Rhizome without fur are used. Another recipe is combined with <i>Achyranthes</i> <i>bidentata</i> <i>Leea rubra</i> , <i>Cibotium barometz</i> ; <i>Gnetum gnemon</i> , <i>Morus alba</i> . Crushed and drunk.
47.	ដំរីប្រាំដៃក / <i>Domrei Pram dok</i>	<i>Dunbaria bella</i> Prain	Fabaceae	Entire plant	Low back pain (1)	3	Oral	Decocted

					Joint pain (1) Stomachache (1)			
48.	ម្រះព្រៃក្នុង /Moreah prov Phnom	<i>Dysoxylum loureirii</i> (Pierre) Pierre ex Laness.	Meliaceae	Entire plant	Low back pain (1)	1	Oral	<i>Murraya siamensis</i> Craib, oil of <i>Cinnamomum porrectum</i> , bark of <i>Cinnamomum cambianum</i> , <i>Cinnamomum cassia</i> , <i>Scoparia dulcis</i> , and <i>Croton crassifolius</i> .
49.	រលួសហាយ /Ror-luy Bay	<i>Erythrina variegata</i> L.	Fabaceae	Wood	Low back pain (1) Sleepiness (1)	2	Oral	Decocted
50.	ចង្កែងសេក, ផ្កិលមាស, ភ្លៅមាត់, ផ្កាលមនស្សា ត/Chong-Eng Sek	<i>Erythroxylum cambodianum</i> Pierre	Erythroxylaceae	Entire plant	Low back pain (1)	1	Oral	Mixed these 7 plants (19, 50,81, 85, 92,97) with <i>Smilax china</i> (rhizome). Dried, chopped and decocted
51.	គោម្មយ, សរសៃ១០០ /Kor mouy	<i>Euonymus cochinchinensis</i> Pierre	Celastraceae	Entire plant	Low back pain (1) Tonic (1)	2	Oral	Decocted
52.	វល្លិអន្ទង់ក្រហម/ Voir An tong kro-ham	<i>Eurycoma longifolia</i> Jack	Simaroubaceae	Entire plant	Joint pain (1)	1	Oral	<i>Curcuma sp.</i> , <i>Curcuma longa</i> , <i>Eurycoma longifolia</i> (red and white) <i>Scleropyrum pentandrum</i> . Mixed together, decocted
	អន្ទង់ស/ Voir An-tong sor	<i>Eurycoma longifolia</i> Jack	Simaroubaceae	Entire plant	Joint pain (1)	1	Oral	<i>Curcuma sp.</i> , <i>Curcuma longa</i> , <i>Eurycoma longifolia</i> (red and white) <i>Scleropyrum pentandrum</i> . Mixed together, decocted
53.	វល្លិក្របីត្រោស /Voir kro bei Troas	<i>Ficus pumila</i> L.	Moraceae	Entire plant	Low back pain (1) Joint pain (1) Appetizer (1)	3	Oral	Woods mixed together <i>Scoparia dulcis</i> , <i>Ficus pumila</i> , root of <i>Croton obliquifolius</i> ; <i>Dracaena angustifolia</i> dried. Enable for everybody.
54.	អញ្ចាញ/ Anh chanh	<i>Gmelina asiatica</i> L.	Lamiaceae	Entire plant	Joint pain (1)	1	Oral	Decocted

55.	វល្លិ័ខ្លត /Voir khlot	<i>Gnetum gnernon</i> L.	Gnetaceae	Entire plant	Joint pain (1)	1	Oral	Combined with <i>Achyranthes bidentata</i> (entire plant), <i>Cibotium barometz</i> (wood), <i>Leea rubra</i> (rhizome), <i>Drynaria roosii</i> and <i>Morus alba</i> (root) crushed and drunk.
56.	ភ្នំភ្លើង/ Phnom phneng	<i>Hymenocardia punctata</i> Wall. ex Lindl.	Phyllanthaceae	Entire plant	Low back pain (1) Joint pain (1) Nervous tonic (1)	3	Oral	Woods mixed together <i>Scoparia dulcis</i> , <i>Ficus pumila</i> , root of <i>Croton obliquifolius</i> ; <i>Dracaena angustifolia</i> dried. Enable for everybody.
57.	វល្លិ័ផ្កាម្លិះ /Voir Phkar mlih	<i>Jasminum sambac</i> (L.) Aiton	Oleaceae	Entire plant	Joint pain (1) Reduce pain (1)	2	Oral	Decocted
58.	ផ្លឹងមាស់ខ្មៅ /Cha-ung moan khmao	<i>Justicia gendarussa</i> Burm.f.	Acanthaceae	Entire plant	Low back Pain (1) Joint pain (1)	2	Oral	Decocted
59.	ប្រដាះស្វា វីប្រស់ស្វា/ Broh Sva	<i>Kaemferia harmandiana</i> Gagnep.	Zingiberaceae	Entire plant	Low back pain (2) Joints pain (1) Post-partum (1) Paresthesia (1) Sprain (1)	6	Oral	Mixed these 5 whole plants (8,9,15,33,59) dried, chopped. Decocted until reducing the volume of water by one third. Drunk until get better. Or macerated those with alcohol 1 liter (drink a spoon per day)
60.	ក្តាំងបាយ /kdang Bay	<i>Leea rubra</i> Blume ex Spreng.	Vitaceae	Rhizome	Low back pain (1) Headache (1) Joints pain (3) Hemorrhoid (1) Appetizer (1) Leucorrhoea (1) Stomachache (1) Sexual transmitted (1) Renal calculus (1) Snake bit (1)	12	Oral	Boiled or mixed together with <i>Diospyros ehretioides</i> , <i>Morus alba</i> , <i>Oroxylum indicum</i> . chopped, make its dried, Decocted. 50 grams per each. No toxicity. Enable to everyone. Another recipe is Associated with <i>Ananas comosus</i> (crown) and silvery coin. Decocted. Another recipe is Combine with <i>Achyranthes bidentata</i> ., <i>Cibotium barometz</i> , <i>Gnetum gnernon</i> , <i>Morus alba</i> Crushed and drunk.
61.	ក្រពុលបាយ /Kompol bay	<i>Litsea glutinosa</i> (Lour.) C.B.Rob.	Lauraceae	Bark	Low back pain (1) Uterine prolapse (1) Reduce pain (1) Paresthesia (1)	4	Oral	Decocted
62.	វល្លិ័ទុន /Voir Tortong	<i>Loesneriella cambodiana</i>	Celastraceae	Entire plant	Low back pain (1) Joint pain (1) Toxicity of food (1)	3	Oral	Decocted



63.	បញ្ជីកែវ / Banher kaek	<i>Loranthus longispicatus</i> Lecomte	Loranthaceae	Entire plant	Low back pain (2) Joint pain (2) Reduce pain (1)	5	Oral	Decocted
64.	រលាយស្ងួង/ Ro leay smong	<i>Micromelum falcatum</i> (Lour.) Tanaka	Rutaceae	Entire plant	Headache (3) Tonic (1) Snake bite (1)	5	Oral	Combined with <i>Dimocarpus longan</i> , dried, decocted, drink to relieve headache. Another recipe for <i>Micromelum falcatum</i> is chopped together with <i>Capparis sepiaria</i> , <i>Capparis</i> <i>zeylanica</i> , <i>Derris scandens</i> , <i>Derris</i> <i>trifoliata</i> , <i>Vernonia elliptica</i> decocted and drunk.(induced hair fall in case overdose used)
65.	ព្រះខ្ពុប/Bon la bro klub	<i>Mimosa pudica</i> L.	Fabaceae	Entire plant	Joint pain (1) Dysuria (1) Hypertension (1)	3	Oral	Decocted
66.	ញីព្រៃ/Nhor Prey;	<i>Morinda tomentosa</i> B.Heyne ex Roth	Rubiaceae	Fruit	Low back pain (1) Joint pain (1) Diabetes (1)	3	Oral	Decocted
67.	ញីស្រក/Nhor srok	<i>Morinda citrifolia</i> L.	Rubiaceae	Fruit	hypertension (1) Joint pain (1)	2	Oral	Decocted
68.	ម្រៃ/Mrom	<i>Moringa oleifera</i> Lam.	Moringaceae	Leaves	Headache (1) Joints pain (1) Fever (1)	3	Oral	Mixed with <i>curcuma longa</i> (Rhizome) and <i>Plukenetia volubilis</i> (seed) chopped, dried and decocted. Drunk.
69.	មន (មនធំ)/Mon	<i>Morus alba</i> L.	Moraceae	Stem, Root, Wood	Low back pain (2) Joints pain (3) Diuretic (2) Fever (1) Placenta evacuation (1)	9	Oral	Boiled or mixed together with <i>Diospyros</i> <i>ehretoides</i> , <i>Oroxylum indicum</i> , <i>Leea rubra</i> (rhizome). Chopped, dried, Decocted. 50 grams per each. No toxicity, Enable to everyone. Another recipe is Combine with <i>Achyranthes bidentata</i> , <i>Leea rubra</i> , <i>Cibotium barometz</i> , <i>Gnetum gnernon</i> , crushed and drunk.
70.	ផ្កាកែវ/Phka keo	<i>Murraya paniculata</i> (L.) Jack	Rutaceae	Leaves	Headache (1) Paralysis (1)	2	Oral	Decocted
71.	ពង្រង់អាកាស/ Pong-Roh Ar-kas	<i>Murraya siamensis</i> Craib	Rutaceae	Entire plant	Low back pain (1) Joint pain (1) Post-partum (1)	3	Oral	<i>Murraya siamensis</i> Craib, oil of <i>Dysoxylum</i> <i>loureirii</i> , bark of <i>Cinnamomum</i> <i>cambianum</i> , <i>Cinnamomum cassia</i> , <i>Scoparia</i> <i>dulcis</i> , and <i>Croton crassifolius</i> . Mixed, <i>Por</i> <i>kroh</i> grinded into powder

72.	ឈូក/Chhouk	<i>Nelumbo nucifera</i> Gaertn.	Nelumbonaceae	Embryon	Headache (1)	1	Oral	Decocted. Drink as often as possible
73.	បំពង់ផ្លោម/Bompong Ploom	<i>Nepenthes kampoiana</i> Lecomte	Nepenthaceae	Entire plant	Low back pain (1) Uterine prolapse (1)	2	Oral	Decocted
74.	ពិកា, ភិកា, ស្រាមដាវ/Pika	<i>Oroxylum indicum</i> (L.) Kurz	Bignoniaceae	Entire plant, Wood	Low back pain (1) Joint pain (1) Uterine prolapse (1) Pregnancy care (1)	4	Oral	Decocted
75.	ពុកមាត់ឆ្មារ(ផ្កាស)/Smau Pok-mat chmar	<i>Orthosiphon aristatus</i> (Blume) Miq.	Lamiaceae	Entire plant	Low back pain (1) Joint pain (1) Renal calculus (1) Gout (1)	4	Oral	<i>Cleome viscosa</i> , <i>Orthosiphon aristatus</i> , dried, boiled. Enable to everyone
76.	វល្លិអង្កត់ក្រហម/Voir Ang kot Kro Horm	<i>Parameria laevigata</i> (Juss.) Moldenke	Apocynaceae	Wood	Low back pain (1) Joint pain (1)	2	Oral	Decocted
77.	ប្រក់ផ្លែ/Prok ple	<i>Phyllanthus urinaria</i> L.	Phyllanthaceae	Entire plant	Low back pain (1) Joint pain (1)	3	Oral	Combined with <i>Piper nigrum</i> , <i>Zingiber officinale</i> , <i>Allium sativum</i> and <i>Curcuma longa</i> , dried, crushed. Drunk
78.	ម្រេច/Morej	<i>Piper nigrum</i> L.	Piperaceae	Fruit	Headache (1)	1	Oral	Combined with <i>Phyllanthus urinaria</i> , <i>Zingiber officinale</i> , <i>Allium sativum</i> and <i>Curcuma longa</i> , dried, crushed. Drunk
79.	សណ្តែកផ្កាយ/Son dek pkay	<i>Plukenetia volubilis</i> L.	Euphorbiaceae	Seed	Joints pain (1) Hypertension (1)	2	Oral	Mixed with <i>curcuma longa</i> (Rhizome) and <i>Moringa oleifera</i> (leaves) chopped, dried and decocted. Drunk.
80.	ដីពងទាតុន, ដីសាំងក្រហម/Chi pong tea kon	<i>Polygonum odoratum</i> Lour.	Polygonaceae	Entire plant	Joints pain (1)	1	Oral	Decocted
81.	កណ្តាប់ចង្កេះ/Kon Dab Jong Ae	<i>Pouzolzia zeylanica</i> (L.) Benn.	Urticaceae	Entire plant	Low back pain (1)	1	Oral	Mixed these 8 plants (19, 50,81, 85, 92,97, 100, 113) with <i>Smilax china</i> (rhizome), <i>Spirolobium cambodianum</i> (entire plant). Dried, chopped and decocted.
82.	គ្រឿងដីក/Kroleng Vek	<i>Pseuderanthemum latifolium</i> B. Hansen	Acanthaceae	Wood	Joints pain (1)	1	Oral	Decocted

(Continued)

83.	លាជង្គុះ/Leach Patous	<i>Ruellia tuberosa</i> L	Acanthaceae	Wood	Low back pain (1)	1	Oral	Decocted wood of <i>Walsura villosa</i> , root of <i>Smilax china</i> , <i>Ruellia tuberosa</i> , <i>Cananga latifolia</i> , ( <i>Oroxylum indicum</i> , <i>Diospyros ehretioides</i> use small quantity than three grams). Make a sweet flavor by using use <i>Cinnamomum cassia</i> .
84.	អំពៅខ្មៅ/Ampov khmao	<i>Saccharum officinarum</i> L.	Poaceae	Wood	Joints pain (1)	1	Oral	Decocted
85.	វាយ/Veay	<i>Salacia chinensis</i> L.	Celastraceae	Wood	Low back pain (1) Ascites (1) Constipation (1)	3	Oral	Mixed these 8 plants (19, 50,81, 85, 92,97, 100, 113) with <i>Smilax china</i> (rhizome). Dried, Chopped and decocted
86.	បន្លាបួស/Kror la buos	<i>Scleropyrum pentandrum</i> (Dennst.) Mabb.	Santalaceae	Root	Joint pain (1)	1	Oral	<i>Curcuma sp.</i> , <i>Curcuma longa</i> , <i>Eurycoma longifolia</i> (red and white) <i>Scleropyrum pentandrum</i> . Mixed together, Decocted
87.	គសឡ្ហ្រួស/Ey sei Psom srach	<i>Scoparia dulcis</i> L.	Plantaginaceae	Entire plant	Low back Pain (2) Joints pain (1)	3	Oral	Woods mixed together <i>Scoparia dulcis</i> , <i>Ficus pumila</i> , root of <i>Croton obliquifolius</i> ; <i>Dracaena angustifolia</i> dried, Enable for everybody. Another recipes for <i>Scoparia dulcis</i> is combined with <i>Murraya siamensis</i> , oil of <i>Cinnamomum porrectum</i> , bark of <i>Cinnamomum cambodianum</i> , <i>Cinnamomum cassia</i> , <i>Scoparia dulcis</i> , <i>Croton crassifolius</i> .
88.	កកោះ/Kor koh	<i>Sindora siamensis</i> Miq.	Fabaceae	Wood	Low back pain (1) Stomachache (1) Reduce pain (1)	3	Oral	Decocted
89.	បាក់ដោត/Bak Doat	<i>Siphonodon celastrineus</i> Griff.	Celastraceae	Root	Low back pain (1) Reduce pain (1)	2	Oral	Decocted
90.	ផ្លូវចិន/Tnam Chen	<i>Smilax china</i> L.	Smilacaceae	Rhizome	Low back pain (3) Leucorrhoea (1) Leukemia (1)	5	Oral	Decocted wood of <i>Walsura villosa</i> , root <i>Smilax china</i> , <i>Ruellia tuberosa</i> , <i>Cananga latifolia</i> , ( <i>Oroxylum indicum</i> , <i>Diospyros ehretioides</i> use small quantity than three grams). Make a sweet flavor by using use <i>Cinnamomum cassia</i> .
91.	ត្រប់វង់/Trob veng	<i>Solanum torvum</i> Sw.	Solanaceae	Root	Low back pain (3) Leucorrhoea (1) Leukemia (1)	1	Oral	Decocted

92.	កំរើកគុម្ព, ក្រែវត្រាំង/Kom rerk koum	<i>Spirolobium cambodianum</i> Baill.	Apocynaceae	Entire plant	Joint pain (2)	2	Oral	Mixed these 7 plants (19, 50,81, 85, 92,97,100) with <i>Smilax china</i> (rhizome). Dried, chopped and decocted
93.	កន្រ្ទាំធារី/Kon trom theary	<i>Stephania pierrei</i> Diels	Menispermaceae	Rhizome	Joint pain (1)	2	Oral	Grinded and molded into pill
94.	កុមារពេជ្រមើម (ទងបៃតង)/Koma pich merm(green stem)	<i>Stephania rotunda</i> Lour.	Menispermaceae	Rhizome	Low back pain (1) Headache (1) Joint pain (1)	3	Oral	Bitter flavor, grinded into powder and shaped into small pill, we took two pills/once.
95.	កុមារពេជ្រមើម (ទងក្រហម)/Koma pich merm(red stem)	<i>Stephania venosa</i> Spreng.	Menispermaceae	Rhizome	Low back pain Headache Joint pain		Oral	Bitter flavor, grinded into powder and shaped into small pill, we took two pills/once.
96.	ស្លែងធំ/Sleng	<i>Strychnos nux-vomica</i> L.	Loganiaceae	Seed	Headache (1) Reduce pain (1)	2	Oral	Used all parts of <i>Tinospora cordifolia</i> , <i>Strychnos nux-vomica</i> seed in small amount. Dried, crushed, make in pills form.
97.	ទ្រម្លងសេក/Chong- Eng Sek	<i>Suregada multiflora</i> (A. Juss.) Baill.	Euphorbiaceae	Entire plant	Low back pain (1)	1	Oral	Mixed these 7 plants (19, 50,81, 85, 92, 97, 100) with <i>Smilax china</i> (rhizome). Dried, chopped and decocted.
98.	ចង្កេះអង្កង/Chang keh Ang krong	<i>Tadehagi triquetrum</i> (L.) H.Ohashi	Fabaceae	Entire plant	Joint pain (1) Toothache (1)	2	Oral	Decocted
99.	អំពិលជូរ-ផ្លែម/ Ampil	<i>Tamarindus indica</i> L.	Fabaceae	Bark, Wood	Headache (1)	1	Oral	Chopped fruits of <i>Cocos nucifera</i> , take small amount of <i>Areca catechu</i> , Bark of <i>Tamarindus indica</i> also root <i>Calamus</i> <i>viminalis</i> . Decocted, drunk
100.	វល្លិយារ/Voir yeav	<i>Tiliacora triandra</i> (Colebr.) Diels	Menispermaceae	Root, Entire plant	Low back pain (1)	1	Oral	Mixed these 7 plants (19, 50,81, 85, 92,97, 100) with <i>Smilax china</i> (rhizome). Dried, Chopped and decocted
101.	វល្លិអំបោះព្រា/Voir Om boh preah	<i>Tinospora cordifolia</i> (Willd.) Miers	Menispermaceae	Entire plant	Low back pain (1) Headache (1) Joint Pain (1)	3	Oral	Used all parts of <i>Tinospora cordifolia</i> , <i>Strychnos nux-vomica</i> seed in small amount. Dried, crushed, make in pills form.

102.	ស្បែងក្របី, ក្រញ៉ាំព្រាយ, ផ្លែកំសក់ /Smeng kr bey	<i>Uncaria macrophylla</i> Wall.	Rubiaceae	Wood	Low back pain (1) Post-partum (1)	2	Oral	Decocted
103.	គគីរ /Kor ky	<i>Vatica helferi</i> Dyer	Dipterocarpaceae	Root	Joint pain (1) Snake bite (1)	2	Oral	Chopped, decocted
104.	កន្លើតថក /Konlert chork	<i>Vernonia elliptica</i> DC.	Asteraceae	Entire plant, Wood	Headache (3) Rhinitis (1) Oral thrush (1)	5	Oral	Boiled together ( <i>Capparis sepiaria</i> , <i>Capparis zeylanica</i> , <i>Vernonia elliptica</i> ) steamed to reduce headache. cooled down and drink. Forbidden for pregnant woman. Another recipe for <i>Vernonia elliptica</i> is chopped together with <i>Micromelum falcatum</i> , <i>Capparis sepiaria</i> , <i>Capparis zeylanica</i> , <i>Derris scandens</i> , <i>Derris trifoliata</i> , <i>Capparis sepiaria</i> , and decocted. Decocted
105.	កន្លី /Kunty	<i>Vitex negundo</i> L.	Lamiaceae	Entire plant	Headache (1) Rhinitis (1)	2	Oral	Decocted
106.	ស្តុកស្តុរ /Sdok sdoa	<i>Walsura villosa</i> Wall. ex Hiern	Meliaceae	Wood	Low back pain (1)	1	Oral	Decocted wood of <i>Walsura villosa</i> , root of <i>Smilax china</i> , <i>Ruellia tuberosa</i> , <i>Cananga latifolia</i> , ( <i>Oroxylum indicum</i> , <i>Diospyros ehretioides</i> use small quantity than three grams). Make a sweet flavor by using <i>Cinnamomum cassia</i> .
107.	វល្លីគុយ /Voir kuy	<i>Willughbeia edulis</i> Roxb.	Apocynaceae	Entire plant	Low back pain (1)	1	Oral	Mixed these 7 plants (19, 50,81, 85, 92,97, 100) with <i>Smilax china</i> (rhizome). Dried, Chopped and decocted
108.	ខ្លី /Khnhay	<i>Zingiber officinale</i> Roscoe	Zingiberaceae	Rhizome	Headache (1)	1	Oral	Combined with <i>Phyllanthus urinaria</i> , <i>Piper nigrum</i> , <i>Allium sativum</i> and <i>Curcuma longa</i> , dried, crushed. Drunk

- Generally, when they decoct plants, they reduce by a third. And drink until get better.
- Number in parenthesis ( ) indicated number of citation(s) for each ailment

Appendix 3: medicinal plants used for three pain types

Ailment	Number of citation	Number of plant species	ICF	Plants species used (by number of citation)
Low back pain	80	65	0189	<p><i>Anomianthus dulcis</i> (3); <i>Smilax china</i> (3); <i>Archidendron quocense</i> (2); <i>Bauhinia bracteata</i> (2); <i>Cananga latifolia</i>(2); <i>Capparis micracantha</i>(2); <i>Cocos nucifera</i>(2); <i>Crotalaria pallida</i> (2); <i>Kaemferia harmandiana</i>(2) ; <i>Loranthus longispicatus</i>(2); <i>Morus alba</i> (2); <i>Scoparia dulcis</i>(2); <i>Spirolobium cambodianum</i>(2); <i>Amomum verum</i>(1); <i>Ampelocissus latifolia</i>(1); <i>Ananas comosus</i>(1); <i>Barleria lupulina</i>(1); <i>Barleria prionitis</i>(1); <i>Cibotium barometz</i>(1); <i>Cinnamomum cambodianum</i> (1); <i>Cinnamomum cassia</i> (1); <i>Cinnamomum porrectum</i>(1); <i>Cleome viscosa</i> (1); <i>Crateva adansonii</i> (1); <i>Croton crassifolius</i>(1); <i>Curcuma longa</i>(1); <i>Bambusa blumeana</i> (1); <i>Diospyros ehretioides</i>(1); <i>Dracaena angustifolia</i>(1); <i>Drynaria roosii</i> (1); <i>Dunbaria bella</i> (1); <i>Euonymus cochinchinensis</i> (1); <i>Ficus pumila</i>(1); <i>Hymenocardia punctata</i> (1); <i>Jasminum sambac</i> (1); <i>Justicia gendarussa</i>(1); <i>Leea rubra</i>(1); <i>Litsea glutinosa</i>(1); <i>Loesneriella cambodiana</i> (1); <i>Morinda citrifolia</i> (1); <i>Murraya siamensis</i> (1); <i>Nepenthes kempferiana</i> (1); <i>Oroxylum indicum</i> (1); <i>Orthosiphon aristatus</i> (1); <i>Parameria laevigata</i>(1); <i>Phyllanthus urinaria</i> (1); <i>Polygonum odoratum</i> (1); <i>Pouzolzia zeylanica</i> (1); <i>Pseuderanthemum latifolium</i> (1); <i>Ruellia tuberosa</i>(1); <i>Saccharum officinarum</i> (1); <i>Salacia chinensis</i> (1); <i>Sindora siamensis</i> (1); <i>Siphonodon celastrineus</i> (1); <i>Solanum torvum</i> (1); <i>Stephania rotunda</i> (1); <i>Suregada multiflora</i> (1); <i>Tiliacora triandra</i> (1); <i>Tinospora cordifolia</i>(1); <i>Walsura villosa</i> (1); <i>Willughbeia edulis</i> (1); <i>Calamus acanthospathus</i>(1); <i>Erythrina variegata</i> (1); <i>Uncaria macrophylla</i> (1); <i>Bambusa bambos</i>(1)</p>
Headache	45	35	0.227	<p><i>Vernonia elliptica</i> (3); <i>Micromelum falcatum</i> (3); <i>Capparis micracantha</i> (3); <i>Derris trifoliata</i>(2); <i>Capparis zeylanica</i>(2); <i>Capparis sepiaria</i> (2); <i>Cananga latifolia</i> (2); <i>Cymbopogon citratus</i> (1); <i>Curcuma longa</i>(1); <i>Tinospora cordifolia</i>(1); <i>Derris scandens</i>(1); <i>Dimocarpus longan</i> (1); <i>Leea rubra</i>(1); <i>Diospyros ehretioides</i>(1); <i>Crateva adansonii</i>(1); <i>Cocos nucifera</i> (1); <i>Tamarindus indica</i>(1); <i>Areca catechu</i>(1); <i>Calamus viminalis</i> (1); <i>Moringa oleifera</i>(1); <i>Zingiber officinale</i> (1); <i>Allium sativum</i>(1); <i>Piper nigrum</i>(1); <i>Stephania rotunda</i>(1); <i>Nelumbo nucifera</i> (1); <i>Vitex negundo</i> (1); <i>Dialium cochinchinense</i>(1); <i>Centella asiatica</i> (1); <i>Strychnos nux-vomica</i> (1); <i>Dioscorea hispida</i> (1); <i>Citrus aurantiifolia</i> (1); <i>Murraya paniculata</i>(1); <i>Abutilion indicum</i> (1); <i>Citrus hystrix</i> (1); <i>Stephania pierrei</i>(1)</p>
Joint pain	57	46	0.196	<p><i>Curcuma longa</i> (3); <i>Morus alba</i> (3); <i>Leea rubra</i> (3); <i>Loranthus longispicatus</i> (2) ; <i>Cibotium barometz</i> (2); <i>Anomianthus dulcis</i>(2); <i>Loesneriella Cambodiana</i> (1); <i>Morinda citrifolia</i> (2); <i>Derris trifoliata</i> (1); <i>Parameria laevigata</i> (1); <i>Cymbopogon citratus</i>(1); <i>Tinospora cordifolia</i> (1); <i>Pseuderanthemum latifolium</i> (1); <i>Justicia gendarussa</i>(1); <i>Barleria lupulina</i> (1); <i>Kaemferia harmandiana</i> (1); <i>Archidendron quocense</i>(1); <i>Bauhinia bracteata</i> (1); <i>Crotalaria pallida</i> (1); <i>Oroxylum indicum</i> (1); <i>Diospyros ehretioides</i>(1); <i>Barleria prionitis</i> (1); <i>Achyranthes bidentata</i> (2); <i>Gnetum gnerron</i> (1); <i>Eurycoma longifolia</i> (2); <i>Curcuma zedoaria</i> (1); <i>Scleropyrum pentandrum</i> (1); <i>Moringa oleifera</i> (1); <i>Orthosiphon aristatus</i> (1); <i>Cosciniium fenestratum</i> (1); <i>Plukenetia volubilis</i> (1); <i>Hymenocardia punctata</i>(1); <i>Ficus pumila</i>(1); <i>Dracaena angustifolia</i> (1); <i>Scoparia dulcis</i> (1); <i>Stephania rotunda</i>(1); <i>Croton crassifolius</i> (1); <i>Murraya siamensis</i> (1); <i>Cissus modeccoides</i> (1); <i>Clausena lenis</i> (1); <i>Vatica helferi</i> (1); <i>Gmelina asiatica</i> (1)</p>

Appendix 4: Fidelity level (FL) for the most cited medicinal plants

Ailment	Medicinal plants	Ip	Iu	Fidelity level
Low back pain	<i>Anomianthus dulcis</i>	3	10	30%
Low back pain	<i>Smilax china</i>	3	5	60%
Low back pain	<i>Archidendron quocense</i>	2	6	33%
Low back pain	<i>Bauhinia bracteata</i>	2	6	33%
Low back pain	<i>Cananga latifolia</i>	2	11	18%
Low back pain	<i>Capparis micracantha</i>	2	12	17%
Low back pain	<i>Cocos nucifera</i>	2	4	50%
Low back pain	<i>Crotalaria pallida</i>	2	6	33%
Low back pain	<i>Kaeinferia harmandiana</i>	2	6	33%
Low back pain	<i>Loranthus longispicatus</i>	2	5	40%
Low back pain	<i>Morus alba</i>	2	9	22%
Low back pain	<i>Scoparia dulcis</i>	2	3	67%
Low back pain	<i>Spirolobium cambodianum</i>	2	2	100%
Headache	<i>Vernonia elliptica</i>	3	5	60%
Headache	<i>Micromelum falcatum</i>	3	5	60%
Headache	<i>Capparis micracantha</i>	3	12	25%
Headache	<i>Derris trifoliata</i>	2	3	67%
Headache	<i>Capparis zeylanica</i>	2	6	33%
Headache	<i>Capparis sepiaria</i>	2	5	40%
Headache	<i>Cananga latifolia</i>	2	11	18%
Headache	<i>Tinospora cordifolia</i>	1	3	33%
Headache	<i>Curcuma longa</i>	1	6	17%
Joint pain	<i>Curcuma longa</i>	3	6	50%
Joint pain	<i>Morus alba</i>	3	9	33%
Joint pain	<i>Leea rubra</i>	3	12	25%
Joint pain	<i>Loranthus longispicatus</i>	2	5	40%
Joint pain	<i>Cibotium barometz</i>	2	3	67%
Joint pain	<i>Anomianthus dulcis</i>	2	10	20%
Joint pain	<i>Loesneriella cambodiana</i>	2	3	67%
Joint pain	<i>Morinda citrifolia</i>	2	5	40%