

4) Satisfaction/Attitude about traditional herbal medicine used

- Safety (D1) Yes No
- Easy to use (D2) Yes No
- Price (D3) Cheap Expensive
 Suitable Unsuitable
- Effectiveness of traditional herbal medicine (D4)
 Can heal Can't heal
- Acceptance Level (D5) Not accept Less
 More Most
- Did you want to use traditional herbal medicine to cure disease? (D6)
 Yes because
- No because
- Do you want to change dosaged form of traditional herbal medicine? (D7)
 Yes because
- No because
- If the dosage form was change , the price of traditional herbal medicine may be higher. Will you accept this change? (D8)
 Yes because
- No because

Appendix B

Basic Data of Phaya Mengrai district

Phaya Mengrai district became a district on 31 August, 1987. It is 47 kilometers distant from Muang district and on the east is a distance of about 887 kilometers from Bangkok. Its area is 514 square kilometers (321,250 Rai) in the average 4.4% of Chiang Rai's area. The northern point borders on Chiang Khong district. The southern point borders on Theong district. The eastern point borders on Khun Tan district and the western point borders on Wieng Chai district. It was divided into 5 Tambons with 63 villages, Mae Pao (17 villages), Meng Rai (12 villages), Mai Ya (16 villages), Mae Tum (10 villages), and Tad Kwan (8 villages). There is one municipal office with accessible transportation between the Tambons and districts. The main road is Highway Number 1152 across the district of Theong and Chiang Khong.

The overall population is in totals 48,161 (24,540 Males and 23,621 females), and 2,859 hill-tribes. (Source : Phaya Mengrai Health Office, October, 2000). There are many ethnic groups such as Thai Lue, Thai Yuan, which are called *Khon Muang*, Thai E-San which are called *Khon Lao*, and three groups of hill tribe such as Mong, Yao, and Lesue which are called *Khon Doi*. The main religion was Buddhist, the second were Christian and Islam, and Khon Doi still trust in Phi (Spirits). Every ethnic group still trusts in their culture and custom, especially the custom of religion and social life.

In education and culture, there are 27 primary schools, and 3 secondary schools. Most villagers hold on to their tradition and customs from their ancestors' transmission, especially the important days of Buddhism like Buddhist Lent, Robe presentation to Buddhist, and social, cultural and traditional rites such as Pouring Water on Songkran's day.

In community economics, at present people use their land for agriculture (66.95%). Most work mainly as natural agriculturists. The second occupation is employees, service work, and commercial work. Their income is enough to satisfy their needs.

In health service, there is a Public Health Office in each sub-districts except for Mai Ya, where there are 2. There is a 30-beds hospital in the community located in Mai Pao sub-district . There are health volunteers and primary health centers around every area. There are 10 private clinics, 3 modern pharmacy stores and 69 grocery which sell drugs. In addition, there are Lanna healers in each community.

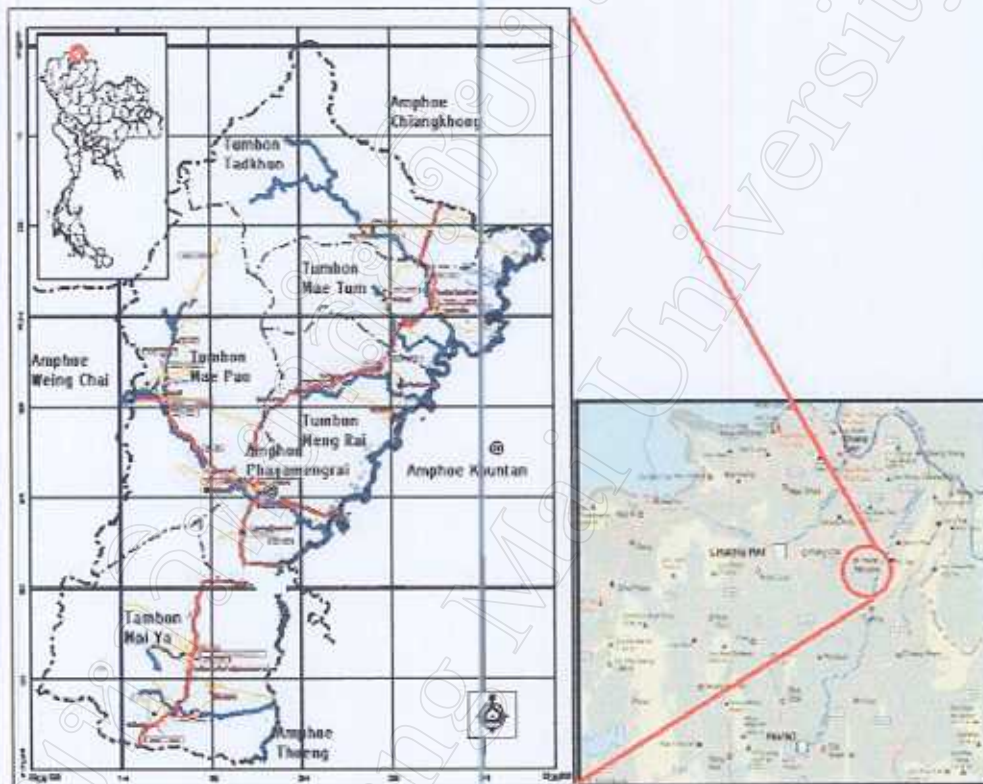


Figure B.1 Map of Phaya Mengrai district

Appendix C

The SPSS/PC⁺ Analysis: The Use of Herbal Medicine of "Lanna" Healers

in Phaya Mengrai District, Chiang Rai Province

Table C1 Personal data: Age

Age	Number	Percent
less than 20 year	67	10.1
21-40 years	160	24.1
41-60 years	286	43.1
More than 61 years	150	22.7
Total	663	100.0

Table C2 Personal data: Gender

Sex	Number	Percent
Male	280	42.2
Female	383	57.8
Total	663	100.0

Table C3 Personal data : Education

Education	Number	Percent
Lower than primary school	514	77.5
Primary school	52	7.9
Secondary school	79	11.9
Higher than Secondary school	18	2.7
Total	663	100.0

Table C4 The type of herbs

Type of Herbs	Number	Percent
fresh herbs	76	11.5
dry herbs	362	54.6
tea	1	.2
powder	180	27.1
ointment	6	.9
modern form	9	1.4
no answer	29	4.4
Total	663	100.0

Table C5 The dosage form

Dosage form	Number	Percent
YaPong	131	19.8
YaTom	244	36.8
YaJue	46	6.9
YaLukeklon	43	6.5
YaFon	89	13.4
YaDong	73	11.0
others	37	5.6
Total	663	100.0

Table C6 The direction for use (Sign & Symptom)

Sign & symptom	Number	Percent
Fainting	119	17.9
Nutrient	62	9.4
Postpartum	62	9.4
Poison	119	17.9
Muscle pain	268	40.4
others	13	5.1
Total	663	100

Table C7 The cost of traditional medicine

Cost	Number	Percent
>10 baht	121	18.3
11 - 30 baht	196	29.6
31 - 50 baht	71	10.7
51 - 70 baht	11	1.7
<91 baht	37	5.6
no answer	227	34.2
Total	663	100.0

Table C8 The source of traditional medicine

Source	Number	Percent
grocery	237	35.7
Pharmacy store	31	4.7
elders	248	37.4
healers	70	10.6
public health	42	6.3
no answer	35	5.3
Total	663	100.0

Table C9 The satisfaction/ Attitude of traditional medicine:

Safety

Safety	Number	Percent
yes	329	49.6
no	9	1.4
no answer	325	49.0
Total	663	100.0

Table C10 The satisfaction/ Attitude of traditional medicine:

Easy to use

Easy to use	Number	Percent
Yes	550	83.0
No	96	14.5
No answer	17	2.6
Total	663	100.0

Table C11 The satisfaction/ Attitude of traditional medicine:

Expenses

Expenses	Number	Percent
cheap	380	57.3
expensive	42	6.3
suitable	187	28.2
unsuitable	5	.8
No answer	49	7.4
Total	663	100.0

Table C12 The satisfaction/ Attitude of traditional medicine:

Effectiveness

Effectiveness	Number	Percent
effective	587	88.5
not effective	31	4.7
no answer	45	6.8
Total	663	100.0

Table C13 The satisfaction/ Attitude of traditional medicine:

Want to change dosage form

Change dosage form	Number	Percent
Yes	430	64.9
No	88	13.3
no answer	145	21.9
Total	663	100.0

Table C14 The satisfaction/ Attitude of traditional medicine:

Acceptance Level

Acceptance	Number	Percent
Not accept	37	5.6
Less	203	30.6
More	346	52.2
Most	47	7.1
No answer	30	4.5
Total	663	100.0

Table C15 The satisfaction/ Attitude of traditional medicine:

Want to use again

Use again	Number	Percent
Yes	556	83.9
No	76	11.5
No answer	31	4.7
Total	663	100.0

Table C16 The satisfaction/ Attitude of traditional medicine:

Acceptance of price increase from changing dosage form

Acceptance of price shift up	Number	Percent
Yes	472	71.2
No	90	13.6
no answer	101	15.2
Total	663	100.0

Appendix D



Figure D.1 HPLC System for Chromatographic Fingerprint Analysis

Appendix F

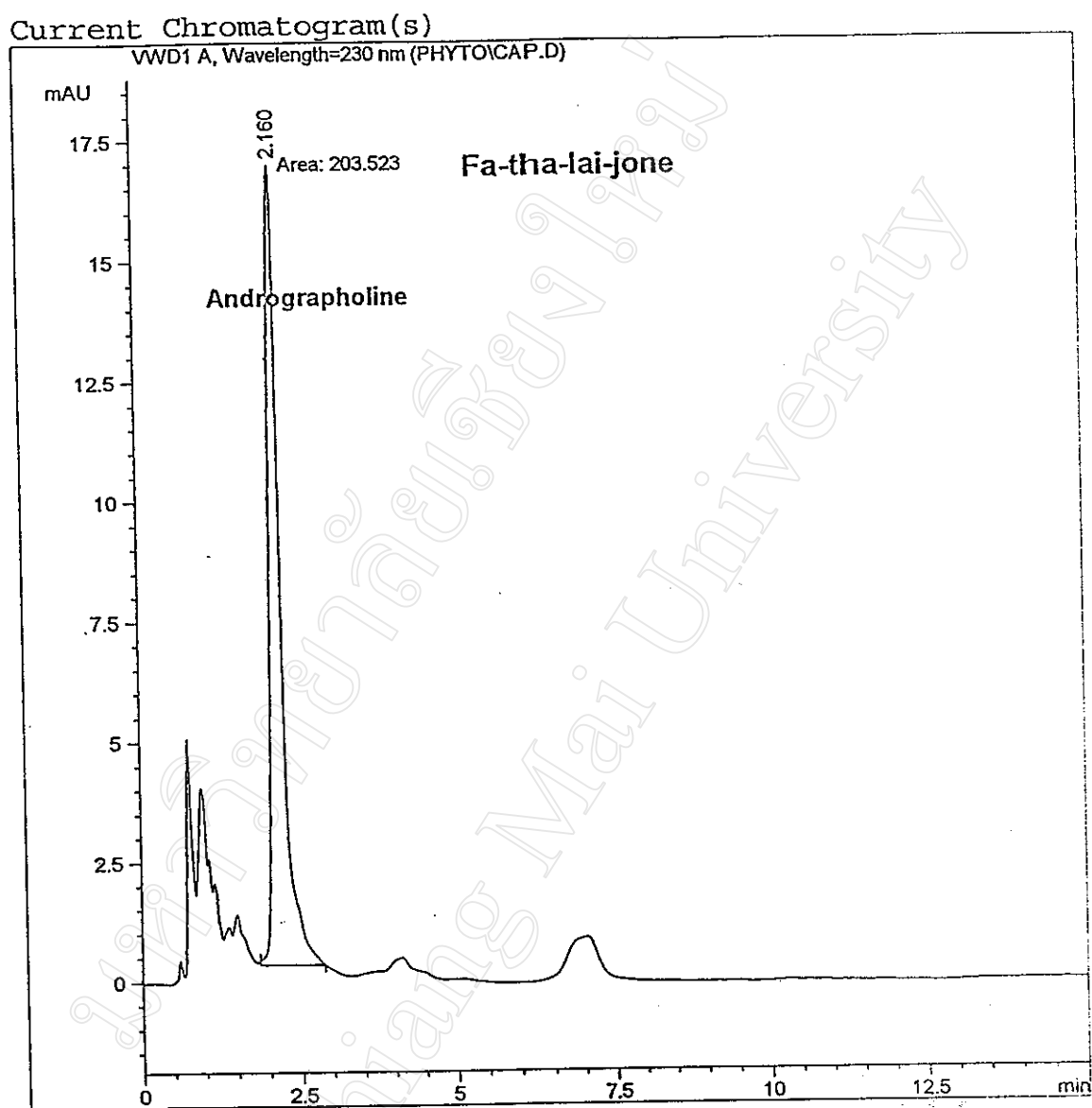


Figure F.1 HPLC Chromatographic Fingerprint of Fa-Tha-Lai-Jone (*Andrographis paniculata* L.)

Condition:

Column : Nova-Pak[®] 5 μ m C 18, 4x150 mm

Detection : UV 230 nm

Eluent : H₂O:Acetonitril(ACN.):EtOH= 65:30:5

Inj. Vol. : 5 μ l

Flow : 1.0 ml/min

Sample : Fa-Tha-Lai-Jone Extract

Appendix G

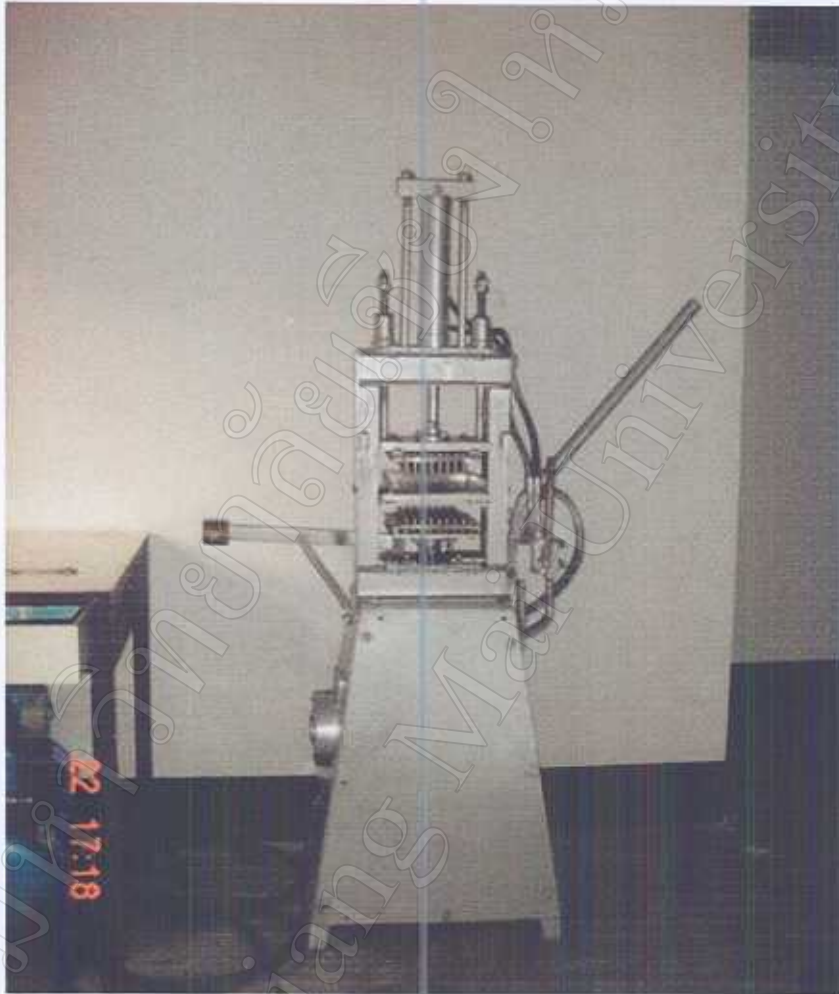


Figure G.1 The Hydraulic Tablet Compression Machine : modified from indigenous Knowledge by Daranee Onchomchant 2000. (By the research of "Development of Traditional Herbal Medicine for Community Economy in Phaya Mengrai District", funded by the Thailand research Fund .)

Appendix H

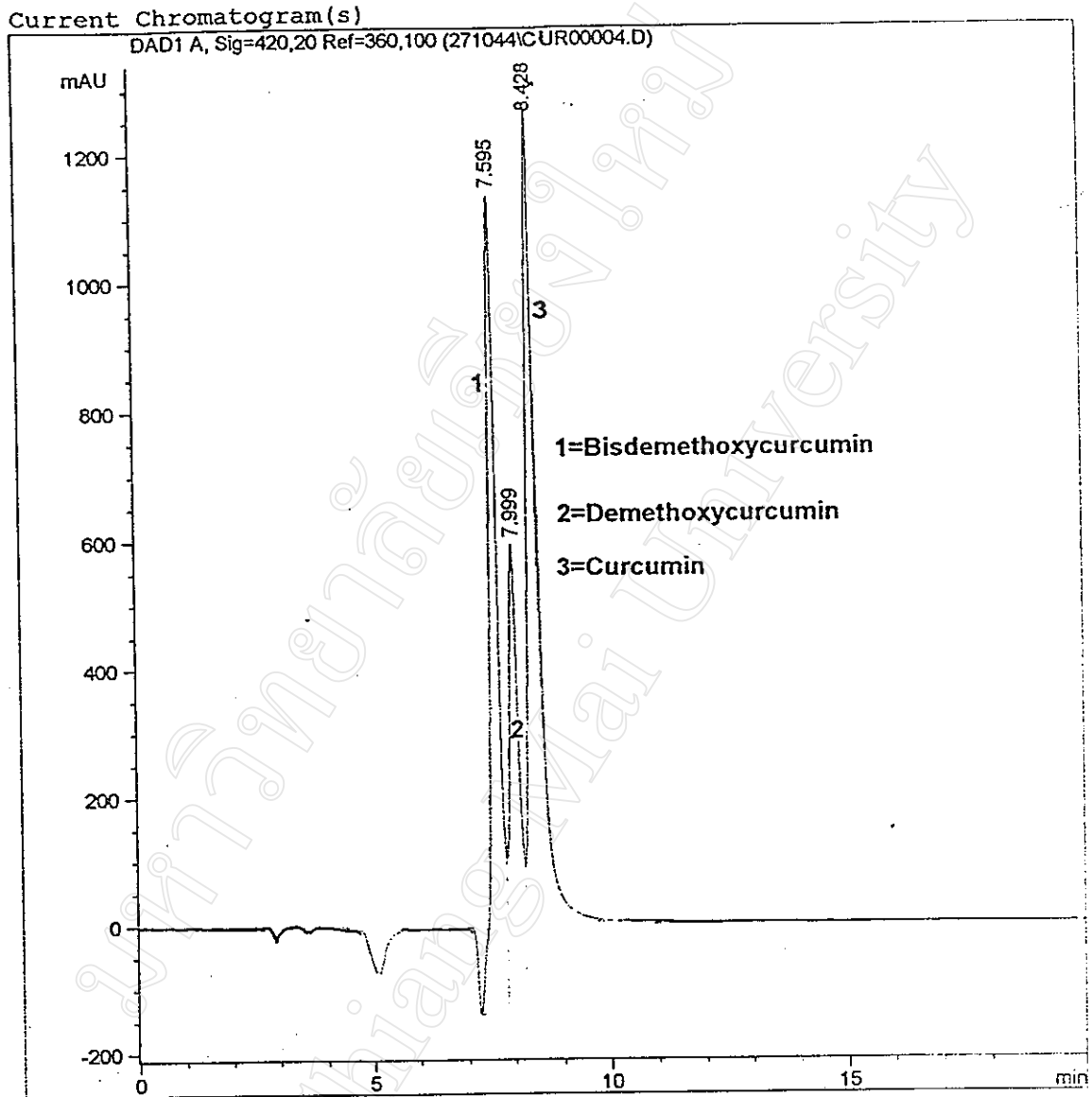


Figure H.1 HPLC Chromatographic Fingerprint of Kha-Min-Chan (*Curcuma Longa* L.)

Condition:

Column : Nova-Pak[®] 5 μ m C 18, 4 x 150 mm

Detection : UV 420 nm

Eluent : H₂O(dil.H₃PO₄,pH3):ACN= 40:60

Inj. Vol. : 5 μ l

Flow : 0.6 ml/min

Sample : Kha-Min-Chan Extract

Appendix I

Result of physical evaluation of Ka-Min-Chan tablet

1) Weight

mean = 0.4350 gms. Standard of Ministry of Public Health is $\pm 15\%$ the sample were between 0.3698 - 0.5002 gms., and any sample not over standard. So, this product was in the standard range.

2) Disintegration test

Timing of disintegration = 10.45 minute. Standard of Ministry of Public Health = 30 minute and 1 hour for tablet coat.. So it is in the standard range.

3) Friability of tablet

Mean of tablet before test (X) = 0.4147

Mean of tablet after test (Y) = 0.4152

Percent of Friability of tablet = $(1 - Y/X) \times 100 = (1 - 0.4147/0.4152) \times 100$
= 0.12.2

Standard is not over 1%. So it is in the standard range.

4) Hardness

Mean of 10 tablet

Weight	=	0.4307	gms
Thickness	=	5.81	mm.
Diameter	=	10.68	mm.
Hardness	=	3.72	kgs

Standard is 4-8 kgs. Mean of this hardness is 3.72 kgs, it's not in Standard range but researcher tested by "Thumbing technique", it was in the standard range.

Appendix J

Table J.1 Advantages and disadvantages of development and experiment and recommendation

Development and experiment	Advantages	Disadvantages	Recommendation
1. Development of raw plant materials	Raw plants materials are developed to standardization of quality control.	The cost of raw plant materials are increased due to the methodology of the quality control.	To study the methodology of quality control of more medicinal plants in each specific characteristic.
2. Experiment to improve dosage form of Ya-Jue to be the Herbal Sand Bag Compress	- It is easy to use, not dirty and more effective than the old dosage form of dry herbs. -It can be use with the microwave and do not need to be kept in refrigerator after being used.	- The new dosage form is less effective than the old dosage form of fresh herbs.	-To develop the effectiveness to be equal to that fresh herbs. -To modify the package in other forms to satisfy the users.
3. Experiment to improve dosage form of Ya-Dong to be the melted	-It is easy to use with alcohol or hot water -and convenient to carry around. - A person who	Some pieces of drugs is appeared after used with hot water.	Modify into spray dry dosage form.

Development and experiment	Advantages	Disadvantages	Recommendation
powder	does not want to drink alcohol can use this medicine		
4. Experiment to improve dosage form of Ya-Luke-Klon to be the tablet dosage form	<ul style="list-style-type: none"> - Save time in process of preparation - Easy to use - More satisfactory than dosage form of Ya-Luke-Klon - The instrument is 8 to 10 times cheaper than the import instrument. 	<ul style="list-style-type: none"> - It have to use other compound for blinder to make a good quality tablet. - The instrument is still expensive for healers to use in the community. 	<ul style="list-style-type: none"> - To experiment the compound for blinder from natural products - To develop the instrument to more easy to use, and cheaper for using in the community.

Appendix K

GLOSSARY

Dhatus	ธาตุ	Nature element in the human's body
Dhatus Din	ธาตุดิน	human body element which compares with body organs
Dhatus Fie	ธาตุไฟ	human body element which compares with the metabolic system in human body
Dhatus Lom	ธาตุลม	human body element which compare with blood circulation and nervous system
Dhatus Nume	ธาตุน้ำ	human body element which compares with fluids in the body
Dhatus Pra-Chao	ธาตุพระเจ้า	human body element which compares with body space and cavity
Hong-Khwan	ฮ้องขวัญ	The "Lanna" ritual to call back vital energy which may leave the body during sickness or in the bad situation to come back in the body
Jitt	จิต	mind, spirit
Jitt-Derm	จิตเดิม	Old spirit
Kaie	กาย	Body or physical aspect
Karma	กรรม	fate
Ka-Tha	คาถา	magic spell
Khum-Muang	คำเมือง	"Lanna" dialect
Khwan	ขวัญ	vital energy
Kru	ครู	(Magic) teacher in traditional medicine
Kun-Tung	ขันตั้ง	A tray with flowers, candle, joss stick and some money in the ritual of paying respect to the (magic) teacher of "Lanna" healer
Lom-pid-Deaun	ลมผิดเดือน	The symptom of postpartum

Mor	หมอ	healer
Mor-Herg-Kai	หมอเอี้ยกไซ	"Lanna" healer who uses an egg in the ritual of diagnosis
Mor-Muang	หมอเมือง	"Lanna" healer. Its usually means general healers
Mor-Mur	หมอเมือ	"Lanna" healer who are fortune-teller
Mor-Ya-Muang	หมอยาเมือง	"Lanna" healer who uses herbal medicine in Treatment (herbalist)
Pha-Yard	พยาธิ	Disease
Phe-Yah-Mau-Neung	ผียาหม่อง	"Lanna" healer who uses a pot in the ritual of diagnosis
Pōng	โป่ง	The symptom of bone pain with or without edema or inflammation
Pup-Ya	ป๊บบยา	The "Lanna" medical text book
Suay-Dok	สวดยดอก	A cone from banana leave which had flowers candle and joss stick for using in ritual to request someone to do something
Sue-Khwan	สู่วัญ	The "Lanna" ritual to motivate or rehabilitate human spirit after sickness or in bad situation
Thung-Ya	ถุงยา	The medicine bag
Tua-Muang	ตัวเมือง	"Lanna" alphabet
Tud	ตัด	A ritual to separate between human and the supernatural for prevention the bad happening

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