Herbal Products of Thailand

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1. Overview of Thai Herbal Industry

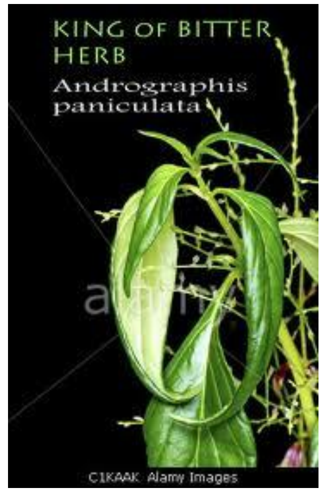
1.1 History of Thai Herbal Industry

Traditional Thai herbal treatment is one of the most valuable heritages from Thai ancestors. Since hundred years ago, the knowledge about herb, its application as well as benefits, has been learnt and accumulated from time to time, generation to generation. Defined by *Oxford Dictionary*, herb is any plant with leaves, seeds, or flowers used for flavoring, food, medicine, or perfume. Traditionally, herbal product is the output with herbal ingredients through processes which combined the beliefs, theories and cultural know-how, used to maintain the well being of health as well as to prevent, improve or treat physical and mental illnesses. Nowadays, the popularity of herbal product leads to more scientific research and development and the implementation of advanced technology in production processes. As a result, the herbal market grows significantly and becomes a spectacular industry of Thailand.

In more specific ways, Thai herb can be categorized by basic purposes. The first purpose is the benefit in digestive way such as ginger and king of bitterness. Moreover, herbs like aloe, turmeric and ringworm bush are used for skin health benefit while garlic facilitates cardiovascular system. In addition, the respiratory properties are found in peppermint and eucalyptus. The benefits of the calming and soothing are offered by passion flower. Also, curcuma comosa is another herb with women health benefit whereas fingerroot promote men health. The images of the above medicinal plants sorted from www.google.com are shown in Figure 1.

Figure 1: Images of Medicinal Plants

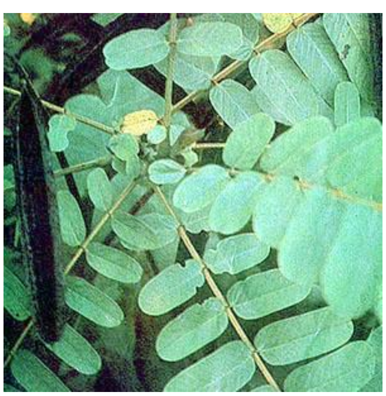
Ginger



King of Bitterness

Aloe

Turmeric



Ringworm bush

Garlic


Peppermint


Eucalyptus


Passion flower


Curcuma comosa


Fingerroot

Source: www.google.com

In Thailand, there are various kinds of Thai herb. The top 8 Thai herb are listed below:

1. Andrographis paniculata Nees
2. Cassia alata Linn
3. Curcuma comosa
4. Curcuma longa L.
5. Keampferia parvifrora
6. Pueraria candollei Grahex Benth var mirifica (Shaw & Suvat) Niyomdham
7. Solanum trilobatum
8. Zingiber cassumunar Roxb.

1.2 Segments of Thai Herbal Industry

Broken down by the form of usages, Thailand's herbal products are categorized into 3 main segments of Herbal Medicine, Herbal Cosmetics, and Herbal Supplement. For H*erbal Medicine*, it is the processed medicinal plants usually presents in the form of powder, capsule or tablets that is easy to take. Turmeric powder and garlic capsule are examples of the segment. *Herbal Cosmetics* come in the form of beautifying, nourishing and cleansing personal care products with the benefits of natural herbal extracts; for example, facial powder, body moisturizer, shampoo and hair colorant. Besides herbal cosmetics, *Herbal Supplement* is another interesting segment with wide range of product ranging from vitamins and dietary to herbal drinks and wine. For medicinal plants not only are the input for herbal products but also serve as direct or immediate consumption for good health and curing purposes, especially in rural area where chemical product is not widely available.

1.3 Position of Thai Herbal Industry

In 2007, there are 995 manufacturers produced herbal medicines, 293 manufacturers are in Bangkok, and there are 14 factories meet GMP (Good Manufacturing Practice) standard.

However, there are few factories start to produce essential oil and herbal extracts.[1] Among all herbal product manufacturers, 76 manufacturers are members of Thai Herbal Industry Club.[2]

As the health conscious trend becomes more and more popular locally and globally, herbal industry is one of the interesting markets in Thailand. From the total market size, approximately 70% is derived by domestic sale while the rest is contributed from the export market. In total value of herbal product exports 80 percent accounts for herbal cosmetics that mainly produced through Original Equipment Manufacturer (OEM) by large manufacturers operating as production base for international brands.[3] According to the Department of International Trade Promotion, 676 companies are registered as cosmetic and toiletry exporters and 270 companies as medicinal product exporters.[4]

For local herbal industry, the main business operation type is OTOP (One Tambon One Product) which is the government-supported club in a community (usually located in rural area) aiming to form a particular business and provide jobs to local people. In general, herbal OTOP offers processed consumer products emphasizing on benefit of local herb through the process with traditional know-how. Even though herbal OTOP shows potential to grow further, government subsidies are still needed for raw material and production standard, product research and development, and marketing support.

1.4 Production and Consumption of Thai Herbal Products

The production of Thai herbal product is various depending on the operation scales and investment. For local herbal OTOP, production process is quite traditional with few or no machines and less skilled labor. On the other hand, large company with Original Equipment Manufacturer (OEM) agreement, machinery and technology are used during the production processes with quality control, standard and production efficiency concept.

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[1] Sarapote Wongyai, 2007, "*Country Report of Thai Herbal Medicinal Product Industry*".
[2] http://internet1.off.fti.or.th/erp_member_search/_memberIndustrial_TH.aspx?indus_club=139
[3] http://www.biothai.net/print/7155
[4] http://application.ditp.go.th/Center_Public/thailand_export_directory.html?category_id=107#result

In Thailand, there are four technology levels of medicinal plants processing, which are classified as follows:

Level 1: Collecting and pulverization.

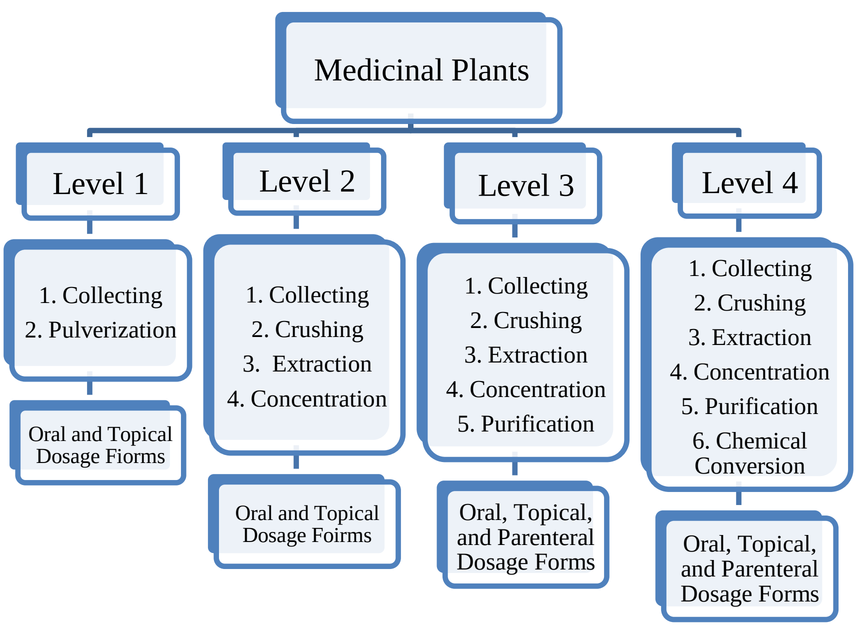
Level 2: Collecting, Crushing, Extraction, and Concentration.

Level 3: Collecting, Crushing, Extraction, Concentration, and Purification.

Level 4: Collecting, Crushing, Extraction, Concentration, Purification, and Chemical Conversion.

There are three main dosage forms of herbal product, which are oral dosage form, topical dosage form, and parenteral dosage form. The oral dosage forms that are consumed orally are ranged from pill, tablet, or capsule. The topical dosage forms such as herbal cream, gel, and balm are consumed by applying to body surfaces. The parenteral dosage forms are those that introduce nutrition or other substance into the body mainly via injection. As shown in Figure 2, the medicinal plant processing technology levels 1 and 2 are for oral and topical dosage forms production, whereas technology levels 3 and 4 are for oral, topical, and parenteral dosage forms production.

Figure 2: Technology Levels in Medicinal Plant Processing



Source: Wongyai, Surapote. 2007. Country Report of Thai Herbal Medicinal Products Industry.

2. Market for Herbal Products in Thailand

2.1 Thailand's Export of Herbal Products

As shown in Appendix A, there are various kinds of medicinal products traded in world market. According to the Harmonized System Code (HS Code), the medicinal plants products with HS Code 1211 are described as plants and parts of plants (including seeds and fruits), of a kind used primarily in perfumery, in pharmacy or for insecticidal, fungicidal or similar purposes, fresh or dried, whether or not cut, crushed or powdered such as (i) ginseng roots used primarily in pharmaceutical, perfumery, etc. (HS Code 121120), (ii) coca leaf, fresh or dried, whether or not cut, crushed or powdered (HS Code 121130), and (iii) plants and parts of plants (including seed & fruit) used in pharmaceutical, perfumery, etc. (HS Code 121190), liquorices roots used primarily in pharmaceutical, perfumery, etc. (HS Code 121110), and poppy straw, fresh or dried, whether or not cut, crushed or powdered (HS Code 121140). [5]

From Table 1, Thailand's major export of medicinal plants are plants and parts of plants (including seed & fruit) used in pharmaceutical, perfumery, etc. (HS Code 121190). The value of these exports increases significantly from US Dollars 1,455 thousands in 2007 to US Dollars 11,545 thousands in 2011. The export of pants or parts of plants grows at 275.53 percent in 2008. There is a growth of Thai exported medicinal plants to the world market at 12.67 percent as shown in Table 1. Besides those medicinal plants, Thailand also exports specific kind of medicinal plants such as ginseng roots (HS Code 121120) and coca leaf (HS Code 121130). The export value of ginseng roots is doubled from US Dollars 25 thousands in 2010 to US Dollars 50 thousands in 2011. Though the export value of ginseng roots is low, it exhibits a potential growth of 100 percent. In contrast, the export value of coca leaf declines drastically by 100 percent in 2011.

[5] http://www.hscode.org/1069

Table 1: Thailand's Export Value of Medicinal Plants to World Market (HS code 1211)

(Unit: US Dollar Thousand)

Product code	Product label	Thailand's exports to world				
		Value in 2007	Value in 2008	Value in 2009	Value in 2010	Value in 2011
121120	Ginseng roots used primly in pharm,perf,insecticide,fungicide/sim purp	44	18	7	25	50
	% Change		-59.09%	-61.11%	+257.14%	+100%
121130	Coca leaf, fresh or dried, whether or not cut, crushed or powdered	56	12	15	6	0
	% Change		-78.57%	+20%	-60%	-100%
121190	Plants &pts of plants(incl sed&fruit) usd in pharm,perf,insect etc nes	1,455	5,464	6,425	10,256	11,545
	% Change		+275.53%	+17.59%	+59.63%	+12.67%

Source: www.trademap.org and calculations are based on the data in source.

The total values of medicinal plants (HS Code 1211) that Thailand exports to the world market are shown in Table 2. The export value of products increases gradually during 2007 to 2011. In 2011, Thailand exports US Dollars 11,596 thousands of medicinal products to the world market which grows 12.71 percent from the value in 2010. The main export markets for Thailand's medicinal plants are China (45.78 percent), Japan (32.74 percent), Hong Kong (12.70 percent), Vietnam (1.85 percent), and Singapore (1.10 percent). In 2011, the export values to China and Singapore grow significantly 76.73 percent and 42.22 percent, respectively. However, the export values to Japan, Hong Kong, and Vietnam drop by 11.68 percent, 14.81 percent, and

23.21 percent, respectively. From Table 2, it demonstrates that Asian countries are Thailand's main export markets.

Table 2: Export Market for Medicinal Plants (HS Code 1211) of Thailand during 2007-2011

(Unit: US Dollar Thousand)

Rank	Country	Value (Proportion %)				
		2007	2008	2009	2010	2011
	World	1,554 (100.00%)	5,493 (100.00%)	6,447 (100.00%)	10,288 (100.00%)	11,596 (100.00%)
	% Change		+253.47%	+17.37%	+59.58%	+12.71%
1	China	88 (5.66%)	318 (5.79%)	2,317 (35.94%)	3,004 (29.20%)	5,309 (45.78%) (+76.73%)
	% Change		+261.36%	+628.61%	+29.65%	+76.73%
2	Japan	140 (9.01%)	2,631 (47.90%)	2,179 (33.80%)	4,299 (41.79%)	3,797 (32.74%) (-11.68%)
	% Change		+1,779.29%	-17.18%	+97.29%	-11.68%
3	Hong Kong, China	491 (31.60%)	663 (12.07%)	853 (13.23%)	1,729 (16.81%)	1,473 (12.70%) (-14.81%)
	% Change		+35.03%	+28.66%	+102.70%	-14.81%
4	Viet Nam	99 (6.37%)	206 (3.75%)	281 (4.36%)	280 (2.72%)	215 (1.85%) (-23.21%)

	% Change		+108.08%	+36.41%	-0.36%	-23.21%
5	Singapore	14 (0.90%)	110 2.00%)	68 (1.05%)	90 (0.87%)	128 (1.10%) (+42.22%)
	% Change		+685.71%	-38.18%	+32.35%	+42.22%

Source: www.trademap.org and calculations are based on the data in source.

In addition, herbal products are also exported in other forms such as essential oils, perfumes, cosmetics, toiletries under the HS Code 33. Table 3 reveals that the largest proportion of these exports is hair preparation (HS Code 3305) which increases sharply by 65.79 percent from US Dollars 541,546 thousands in 2009 to US Dollars 897,850 thousands in 2010. In addition, beauty products or make-up preparations and preparations for the care of the skin (HS Code 3304) also show an export growth of 24.78 percent from US Dollars 329,995 thousands in 2010 to US Dollars 411,779 thousands in 2011 after a slight drop in value in 2009. In 2008, Thai herbal cosmetics were reported to be accounted for 70 percent of Thailand's total value of exported cosmetics. However, most of Thai exported herbal cosmetics are made from imported herbs as reported by Thai Herbal Industry Club.[6]

Table 3: Thailand's Export Value of Essential Oils, Perfumes, Cosmetics, and Toiletries to World Market (HS code 33)

(Unit: US Dollar Thousand)

Product code	Product label	Thailand's exports to world				
		Value in 2007	Value in 2008	Value in 2009	Value in 2010	Value in 2011
3301	Essential oils; resinoids; terpenic by-products etc	6,628	7,601	9,788	9,189	13,908

[6] http://www.biothai.net/news/7155.

	% Change		+14.68%	+28.77%	-6.12%	+51.35%
3302	Odoriferous mixtures as raw materials for industry	53,703	125,345	51,963	70,946	79,891
	% Change		+133.40%	-58.54%	+36.53%	+12.61%
3303	Perfumes and toilet waters	4,918	6,283	5,780	5,013	6,493
	% Change		+27.76%	-8.01%	-13.27%	+29.52%
3304	Beauty, make-up & skin-care preparations; sunscreens, manicure or predicament	209,733	257,510	256,893	329,995	411,779
	% Change		+22.78%	-0.24%	+28.46%	+24.78%
3305	Hair preparations	434,164	432,421	541,546	897,850	891,032
	% Change		-0.40%	+25.24%	+65.79%	-0.78%
3306	Oral & dental hygiene preparations	94,743	136,233	148,728	186,452	229,993
	% Change		+43.79%	+9.17%	+25.36%	23.35%
3307	Personal toilet preparations shaving preparations, deodorants etc.	126,876	123,193	129,160	136,662	194,377
	% Change		-2.90%	+4.84%	+5.81%	+42.23%

Source: www.trademap.org and calculations are based on the data in source.

The total values of essential oils, perfumes, cosmetics, and toiletries (HS code 33) of Thailand that Thailand exports to the world market are shown in Table 4. The export value of products increases gradually during 2007 to 2011. In 2011, Thailand exports US Dollars 1,827,473 thousands of these products to the world market. This value grows 11.70 percent from the value in 2010. The main export markets for Thailand's essential oils, perfumes, cosmetics, and toiletries are Japan (25.66 percent), Indonesia (10.24 percent), Philippines (7.47 percent), Malaysia (7.31 percent), and Australia (5.70 percent). The export value to Japan drops by 6.55 percent due to the economic downturn caused by the major tsunami and earthquake in Japan. However, the export to other markets grows approximately 10 to 30 percent in the year 2011. The export value to Indonesia grows by 30 percent, Philippines by 10.94 percent, Malaysia by 30.24 percent, and Australia by 12.80 percent.

Table 4: Export Market for Essential Oils, Perfumes, Cosmetics, and Toiletries (HS code 33) of Thailand during 2007-2011

(Unit: US Dollar Thousand)

Rank	Country	Value (Proportion %)				
		2007	2008	2009	2010	2011
	World	930,766 (100.00%)	1,088,584 (100.00%)	1,143,857 (100.00%)	1,636,107 (100.00%)	1,827,473 (100.00%)
	% Change		+16.96%	+5.08%	+43.03%	+11.70%
1	Japan	146,761 (15.77%)	124,526 (11.44%)	241,345 (21.10%)	501,715 (30.67%)	468,867 (25.66%)
	% Change		-15.15%	+93.81%	+107.88%	-6.55%
2	Indonesia	107,553 (11.56%)	122,676 (11.27%)	116,073 (10.15%)	144,508 (8.83%)	187,208 (10.24%) (+30%)

	% Change		+14.06%	-5.38%	+24.50%	+29.55%
3	Philippines	81,254 (8.73%)	93,846 (8.62%)	99,673 (8.71%)	123,077 (7.52%)	136,537 (7.47%) (+10.94%)
	% Change		+15.50%	+6.21%	+23.48%	+10.94%
4	Malaysia	76,648 (8.23%)	92,440 (8.49%)	90,243 (7.89%)	102,531 (6.27%)	133,538 (7.31%) (+30.24%)
	% Change		+20.60%	-2.38%	+13.62%	+30.24%
5	Australia	72,496 (7.79%)	75,968 (6.98%)	77,186 (6.75%)	92,388 (5.65%)	104,217 (5.70%) (+12.80%)
	% Change		+4.79%	+1.60%	+19.70%	+12.80%

Source: www.trademap.org and calculations are based on the data in source.

2.2 Thailand’s Import of Herbal Products

Besides exporting medicinal plants, Thailand also import some products from the world market. Table 5 shows that Thailand’s import value of plants and parts of plants (including seed & fruit) used in pharmaceutical, perfumery, etc. (HS Code 121190) increases gradually from US Dollars 7,058 thousands in 2007 to US Dollars 13,088 thousands in 2011. A comparison between export value in Table 1 and import value in Table 5 implies that Thailand has trade deficit in the trade of plants and parts of plants. The imports of plants or parts of plants are used as raw material in herbal production processes such as herbal cosmetics. This is relevant to Thai Herbal Industry Club that most of Thai exported herbal cosmetics are made from imported herbs.

It is worth notice that Thailand’s import value of ginseng roots increases significantly by 128.87 percent from US Dollars 187 thousands in 2010 to US Dollars 428 thousands in 2011. In

2011, the value of this import is approximately 8 times greater than its export value. This implies that there is a high demand for ginseng roots in Thailand either for consumption or input production. In contrast to the case of ginseng roots, the data does not report any import of coca leaf since 2008.

Table 5: Thailand's Import Value of Medicinal Plants from World Market (HS code 1211)

(Unit: US Dollar Thousand)

Product code	Product label	Thailand's imports from world				
		Value in 2007	Value in 2008	Value in 2009	Value in 2010	Value in 2011
121120	Ginseng roots used primly in pharm,perf,insecticide,fungicide/sim purp	161	45	110	187	428
	% Change		-72.05%	+144.44%	+70.00%	+128.87%
121130	Coca leaf, fresh or dried, whether or not cut, crushed or powdered	35	0	0	0	0
	% Change		-100.00%	0.00%	0.00%	0.00%
121190	Plants &pts of plants(incl sed&fruit) usd in pharm,perf,insect etc nes	7,058	8,116	8,902	12,743	13,088
	% Change		+14.99%	+9.68%	+43.15%	+2.71%

Source: www.trademap.org and calculations are based on the data in source.

Table 6 shows the total values of medicinal plants (HS Code 1211) that Thailand imports from the world market. The import value of the products increases gradually during 2007 to 2011. In 2011, Thailand's total import of medicinal products from the world market is US Dollars 13,516 thousands, which grows slightly at 4.53 percent from the value in 2010. The main import markets of Thailand's medicinal plants are China (80.90 percent), India (5.51 percent), Lao People's Democratic Republic (4.89 percent), USA (1.54 percent), and Turkey (0.98 percent). In

2011, Thailand's imports from China, USA, and Turkey grow at 5.49 percent, 58.78 percent, and 16.82 percent, respectively. In contrast, the import from India decreases by 17.59 percent, while that from Lao People's Democratic Republic decreases by 0.75 percent.

Table 6: Import Market for Medicinal Plants (HS Code 1211) of Thailand during 2007-2011

(Unit: US Dollar Thousand)

Rank	Country	Value (Proportion %)				
		2007	2008	2009	2010	2011
	World	7,254 (100.00%)	8,161 (100.00%)	9,012 (100.00%)	12,930 (100%)	13,516 (100.00%) (+4.53%)
	% Change		+12.50%	+10.43%	+43.48%	+4.53%
1	China	5,293 (72.97%)	5,440 (66.66%)	6,533 (72.49%)	10,366 (80.17%)	10,935 (80.90%) (+5.49%)
	% Change		+2.78%	+20.09%	+58.19%	+5.49%
2	India	489 (6.74%)	644 (7.89%)	755 (8.38%)	904 (6.99%)	745 (5.51%) (-17.59%)
	% Change		+31.70%	+17.24%	+19.74%	-17.59%
3	Lao People's Democratic Republic	278 (3.82%)	492 (6.03%)	517 (5.74%)	666 (5.15%)	661 (4.89%) (-0.75%)
	% Change		+76.98%	+5.08%	+28.82%	-0.75%

4	United States of America	185 (2.55%)	194 (2.38%)	103 (1.14%)	131 (1.01%)	208 (1.54%) (+58.78%)
	% Change		+4.86%	-46.91%	+27.18%	+58.78%
5	Turkey	62 (0.85%)	153 (1.87%)	56 (0.62%)	113 (0.87%)	132 (0.98%) (+16.82%)
	% Change		+146.77%	-63.40%	+101.79%	+16.81%

Source: www.trademap.org and calculations are based on the data in source.

From Table 7, the import value of cosmetic products such as beauty products, make-up and skin-care preparations and sunscreens (HS Code 3304) increases slightly by 18.27 percent from US Dollars 278,611 thousands in 2010 to US Dollars 329,526 thousands in 2011 after a fluctuation during 2008 to 2010. From Tables 3 and 7, the trade data shows that Thailand's export value of cosmetic products exceeds its import value, which implies a trade surplus account. According to Thai Herbal Industry Club, Thailand is the production base for cosmetic products through Original Equipment Manufacturer (OEM) for international brands, especially brands in ASEAN market. Because of this reason, Thailand becomes a net exporter of cosmetic products. For hair preparations, since there are many manufacturers of hair preparations in Thailand, the hair preparation products are produced for both domestic consumption and export market. From the above mentioned, Thailand's import values of these products are quite low comparing to their export values shown in Table 3.

Table 7: Thailand's Import Value of Essential Oils, Perfumes, Cosmetics, and Toiletries from World Market (HS code 33)

(Unit: US Dollar Thousand)

Product code	Product label	Thailand's imports from world				
		Value in 2007	Value in 2008	Value in 2009	Value in 2010	Value in 2011

3301	Essential oils; resinoids; terpenic by-products etc	9,041	11,286	10,928	13,080	14,636
	% Change		+24.83%	-3.17%	+19.69%	+11.90%
3302	Odoriferous mixtures as raw materials for industry	246,367	284,005	288,060	378,328	414,623
	% Change		+15.28%	+1.43%	+31.34%	+9.60%
3303	Perfumes and toilet waters	36,687	47,740	40,083	48,458	57,427
	% Change		+30.13%	-16.04%	+20.89%	+18.51%
3304	Beauty, make-up & skin-care preparations; sunscreens, manicure or pedi	173,973	227,687	227,229	278,611	329,526
	% Change		+30.87%	-0.20%	+22.61%	+18.27%
3305	Hair preparations	30,134	38,479	40,193	51,021	55,380
	% Change		+27.69%	+4.47%	+26.94%	+8.54%
3306	Oral & dental hygiene preparations	17,338	24,942	23,685	33,570	38,595
	% Change		+43.86%	-5.04%	+41.74%	+14.97%
3307	Personal toilet preparations shaving preparations, deodorants etc.	30,123	37,700	34,146	52,147	69,704
	% Change		+25.15%	-9.43%	+52.71%	+33.67%

Source: www.trademap.org and calculations are based on the data in source.

Thailand's total import value of essential oils, perfumes, cosmetics, and toiletries (HS code 33) from to the world market are shown in Table 8. The import value of the products increases gradually during 2007 to 2011. In 2011, Thailand imports US Dollars 979,891 thousands of these products from the world market, which grows 14.58 percent from the value in 2010. The main import markets for Thailand's essential oils, perfumes, cosmetics, and toiletries are Singapore (20.24 percent), USA (16.46 percent), France (11.17 percent), Japan (10.57 percent), and China (6.07 percent). In 2011, Thailand's import value from China grows drastically by almost 60 percent. The imports from France, Japan, USA, and Singapore increase by 25.71 percent, 20.95 percent, 16.34 percent, and 8.21 percent, respectively.

Table 8: Import Market for Essential Oils, Perfumes, Cosmetics, and Toiletries (HS code 33) of Thailand during 2007-2011

(Unit: US Dollar Thousand)

Rank	Country	Value (Proportion %)				
		2007	2008	2009	2010	2011
	World	543,663 (100.00%)	671,840 (100.00%)	664,325 (100.00%)	855,215 (100.00%)	979,891 (100.00%)
	% Change		+23.58%	-1.12%	+28.73%	+14.58%
1	Singapore	111,614 (20.53%)	130,212 (19.38%)	141,170 (21.25%)	183,256 (21.43%)	198,294 (20.24%) (+8.21%)
	% Change		+16.66%	+8.42%	+29.81%	+8.21%
2	United States of America	88,106 (16.21%)	117,502 (17.49%)	116,566 (17.55%)	138,665 (16.21%)	161,329 (16.46%) (+16.34%)
	% Change		+33.36%	-0.80%	+18.96%	+16.34%
3	France	55,715 (10.25%)	79,567 (11.84%)	71,704 (10.79%)	87,100 (10.18%)	109,492 (11.17%) (+25.71%)

	% Change		+42.81%	-9.88%	+21.47%	+25.71%
4	Japan	47,989 (8.83%)	59,295 (8.83%)	66,827 (10.06%)	85,597 (10.00%)	103,532 (10.57%) (+20.95%)
	% Change		+23.56%	+12.70%	+28.09%	+24.46%
5	China	27,770 (5.12%)	32,840 (4.89%)	28,539 (4.30%)	37,388 (4.37%)	59,440 (6.07%) (+58.98%)
	% Change		+18.26%	-13.10%	+31.01%	+58.98%

Source: www.trademap.org and calculations are based on the data in source.

2.3 Thailand's Export of Herbal Products to India

As shown in Table 9, Thailand starts exporting plants and parts of plants (including seed and fruit) used in pharmaceutical, perfumery, etc. (HS Code 121190) to India since 2009 at the value of US Dollars 8 thousands. The export value increases to US Dollars 33 thousands in 2010, then drastically decreases to US Dollars 4 thousands in 2011. The decline in export is partially due to the severe floods in Thailand. In 2010, Thailand exports ginseng roots (HS Code 121120) to India at the value of US Dollars 4 thousands and increases more than doubled to US Dollars 9 thousands in 2011. Similar to the export of ginseng roots to the world market, Thailand's export of ginseng roots to Indian market grows more than 100 percent. However, according to the trade data, Thailand does not export any coca leaf (HS Code 121130) to India.

Table 9: Thailand's Export Value of Medicinal Plants to India (HS code 1211)

(Unit: US Dollar Thousand)

Product code	Product label	Thailand's exports to India				
		Value in 2007	Value in 2008	Value in 2009	Value in 2010	Value in 2011

121120	Ginseng roots usd primly in pharm,perf,insecticide,fungicide/sim purp	0	0	0	4	9
	% Change		0.00%	0.00%	100.00%	+125%
121130	Coca leaf, fresh or dried, whether or not cut, crushed or powdered	0	0	0	0	0
	% Change		0.00%	0.00%	0.00%	0.00%
121190	Plants &pts of plants(incl sed&fruit) usd in pharm,perf,insect etc nes	0	0	8	33	4
	% Change		0.00%	++%	+312.5%	-87.88%

Source: www.trademap.org and calculations are based on the data in source.

Thailand exports odoriferous mixtures (HS Code 3302) to India at US Dollars 58,535 thousands in 2008. However, the value drops sharply to US Dollars 254 thousands in 2009, US Dollars 62 thousands in 2010, and US Dollars 42 thousands in 2011. From 2010 to 2011, the export values of essential oils (HS Code 3301), odoriferous mixtures (HS Code 3302), hair preparations (HS Code 3305) from Thailand to India decrease, whereas those of perfumes and toilet waters (HS Code 3302), beauty and skin-care products (HS Code 3304), oral and dental hygiene preparations (HS Code 3306), and personal toilet preparations shaving preparations, deodorants etc. (HS Code 3307) increase as shown in Table 10. In 2011, the export of beauty products, make-up, and skin-care products (HS Code 3304) exhibits US Dollars 10,317 thousands, which accounts for the largest proportion of Thailand's exports of essential oils, perfumes, cosmetics, and toiletries (HS Code 33) to India.

Table 10: Thailand's Export Value of Essential Oils, Perfumes, Cosmetics, and Toiletries to India (HS code 33)

(Unit: US Dollar Thousand)

Product code	Product label	Thailand's exports to India				
		Value in 2007	Value in 2008	Value in 2009	Value in 2010	Value in 2011
3301	Essential oils; resinoids; terpenic by-products etc	0	51	26	70	49
	% Change		++%	-49.02%	+169.23%	-30.00%
3302	Odoriferous mixtures as raw materials for industry	124	58,535	254	62	42
	% Change		+47,105.65%	-99.57%	-75.59%	-32.26%
3303	Perfumes and toilet waters	33	21	65	62	710
	% Change		-36.36%	+209.52%	-4.62%	+1045.16%
3304	Beauty, make-up & skin-care preparations; sunscreens, manicure or pedi	7,062	9,134	5,862	9,347	10,317
	% Change		+29.34%	-35.82%	+59.45%	+10.38%
3305	Hair preparations	18,422	8,534	7,376	8,325	8,073
	% Change		-53.67%	-13.57%	+12.87%	-3.03%

3306	Oral & dental hygiene preparations	15	15	46	1,710	2,153
	% Change		0.00%	+206.67%	+3,617.39%	+25.91%
3307	Personal toilet preparations shaving preparations, deodorants etc.	2,030	432	745	1,130	3,224
	% Change		-78.72%	+72.45%	+51.68%	+185.31%

Source: www.trademap.org and calculations are based on the data in source.

2.4 Thailand's Import of Herbal Products from India

From Table 11, the value of plants and parts of plants (including seed & fruit) used in pharmaceutical, perfumery, etc. (HS Code 121190) that Thailand imports from India increases gradually since 2007 until 2009. However, the value drops slightly from US Dollars 904 thousands in 2010 to US Dollars 745 thousands in 2011 partially due to the severe floods in Thailand that causes major losses and damages in manufacturing sector that uses imported medicinal plants as input raw materials. However, there is no report of ginseng roots and coca leaf imported from India during 2007 to 2011.

Table 11: Thailand's Import Value of Medicinal Plants from India (HS code 1211)

(Unit: US Dollar Thousand)

Product code	Product label	Thailand's imports from India				
		Value in 2007	Value in 2008	Value in 2009	Value in 2010	Value in 2011
121120	Ginseng roots usd primly in pharm,perf,insecticide,fungicide/sim	0	0	0	0	0

	purp					
	% Change		0.00%	0.00%	0.00%	0.00%
121130	Coca leaf, fresh or dried, whether or not cut, crushed or powdered	0	0	0	0	0
	% Change		0.00%	0.00%	0.00%	0.00%
121190	Plants &pts of plants(incl sed&fruit) usd in pharm,perf,insect etc nes	489	644	755	904	745
	% Change		+31.70%	+17.24%	+19.74%	-17.59%

Source: www.trademap.org and calculations are based on the data in source.

From Table 12, major imports of products under HS Code 33 from India are essential oils (HS Code 3301) and odoriferous mixtures (HS Code 3302). The data shows fluctuation in such imports during 2007 until 2011. However, these import values grow generally comparing to those in the year 2007, especially in the products of odoriferous mixtures (HS Code 3302). A comparison between Table 10 and Table 12 implies that Thailand imports essential oils (HS Code 3301) and odoriferous mixtures (HS Code 3302) from India in order to use as input raw materials for herbal cosmetic production. These herbal cosmetics are then exported to foreign markets including Indian market. This argument is supported by the high value of Thailand's exports of beauty, make-up and skin-care products (HS Code 3304) and hair preparations (HS Code 3305) to Indian market as demonstrated in Table 10. In contrast to Table 10, Table 12 shows that Thailand imports less value of beauty, make-up and skin-care products (HS Code 3304) and hair preparations (HS Code 3305) from India.

From the above statements, it is suggested that India is a source country that supplies herb as input raw materials to Thailand either in the form of medicinal plants and parts (HS Code 121190) or essential oils (HS Code 3301) and odoriferous mixtures (HS Code 3302).

Table 12: Thailand's Import Value of Essential Oils, Perfumes, Cosmetics, and Toiletries from India (HS code 33)

(Unit: US Dollar Thousand)

Product code	Product label	Thailand's imports from India				
		Value in 2007	Value in 2008	Value in 2009	Value in 2010	Value in 2011
3301	Essential oils; resinoids; terpenic by-products etc	1,666	1,576	2,748	2,621	1,771
	% Change		-5.40%	+74.37%	-4.62%	-32.43%
3302	Odoriferous mixtures as raw materials for industry	909	2,316	1,766	2,364	2,816
	% Change		+154.79%	-23.75%	+33.86%	+19.12%
3303	Perfumes and toilet waters	6	36	58	82	182
	% Change		+500%	+61.11%	+41.38%	+121.95%
3304	Beauty, make-up & skin-care preparations; sunscreens, manicure or pedi	561	549	286	785	1,473
	% Change		-2.14%	-47.91%	+174.48%	+87.64%
3305	Hair preparations	156	192	226	221	200
	% Change		+23.08%	+17.71%	-2.21%	-9.50%

3306	Oral & dental hygiene preparations	36	20	11	8	36
	% Change		-44.44%	-45.00%	-27.27%	+350.00%
3307	Personal toilet preparations shaving preparations, deodorants etc.	115	410	386	874	843
	% Change		+256.52%	-5.85%	+126.42%	-3.55%

Source: www.trademap.org and calculations are based on the data in source.

2.5 Market Trends and Developments

Nowadays, consumers around the world including people in Thailand become more conscious and proactive in their health.[7] They pay more attention to try herbal products that include herbal medicine, herbal supplement, and herbal cosmetics. In addition, the Thai government is trying to promote the alternative treatments such as the use of herbal medicine and supplement in hospitals to cure people's diseases. This policy promotion is expected to arouse the demand for Thai herbal medicine, which will consequently decrease the demand for imported medicine from abroad.

The more popularity of herbal products supported by the changes in consumers' perceptions highlights the higher demand for herbal products not only in domestic market but also global market. According to the Thai Herbal Industry Club, 70 percent of herbal products in Thailand are for domestic consumption, whereas the rest 30 percent is for export. In the total value of exported herbal products 80 percent accounts from herbal cosmetics.

From Table 3, Thailand's export of cosmetics such as beauty, make-up and skin-care products (HS Code 3304) to the world market grows significantly 25 percent in 2011 as compared to the year 2010. This potential growth comes not only from the change in consumers'

[7] A Global Overview of Herbal and Traditional Products, Euromonitor International, 2011.

perception towards herbal products but also the production location that based in Thailand. In the total value of exported cosmetics 70 percent accounts from cosmetics with herbal ingredients. Since most of exported cosmetics are herbal cosmetics that are made from imported herbs, it is promising that Thailand has a potential to export more herbal cosmetics to the world market and thus needs to import more herbs that are used as raw materials in cosmetic production. The higher demand for herbal products opens a wider opportunity for herbal exporting countries including Thailand and India.

There is a distinctive opportunity for Indian firms to not only export herbal cosmetics to the world market but also to export Indian herb to Thailand either for direct consumption or use as inputs for herbal cosmetics produced in Thailand. Table 13 demonstrates that in 2011 Thailand imports 12 percent more of essential oils and other products under HS Code 3301 than in the year 2010. Table 14 shows that in total value of Thailand's import of essential oils and other products under the HS Code 3301, 12 percent of the value is imported from India. The higher import demand for essential oils and other products under the HS Code 3301 highlights an opportunity for Indian firms to export such products to Thailand. In addition, it is worth mention that there is also a wide opportunity for Indian firms to export more herb used in pharmacy and perfumery under HS Code 1211 to Thailand since there is no tariff on these product completely after the year 2013 based on Thailand's Schedule of Tariff Commitment shown in the next section.

Table 13: Growth in Thailand's Herbal Import from World Market

Product Code	Product Label	Growth Rate (as compared from the year 2010 to 2011)
121190	Plants &pts of plants(incl sed&fruit) usd in pharm,perf,insect etc nes	3 %
3301	Essential oils; resinoids; terpenic by-products etc	12 %
3302	Odoriferous mixtures as raw materials for industry	10 %

Source: Author's calculation.

Table 14: Proportion of Thailand's Herbal Import Value from India as Percentage of Import Value from World Market in the year 2011

Product Code	Product Label	Proportion
121190	Plants &pts of plants(incl sed&fruit) usd in pharm,perf,insect etc nes	6 %
3301	Essential oils; resinoids; terpenic by-products etc	12 %
3302	Odoriferous mixtures as raw materials for industry	1 %

Source: Author's calculation.

The analysis of herbal industry in Thailand justifies opportunities for Indian businesses to invest more in this industry. The key success factor of this industry is quality control throughout the product cycle. According to Thai Herbal Industry Association and the Federal of Thai Industry, to improve and enhance the quality of herbal products, the industry must focus on:

1. Standard of herb
2. Standard of manufacturers of herbal products
3. Research and development of herb
4. Marketing strategy of Thai herbal products.

2.6 Mode of Entry

Forms of Corporate Structure

Thailand has many forms of corporate structures that have different consequences from both legal and tax perspectives. These corporate forms include the followings:

Sole Proprietorship

Sole proprietorship is an enterprise owned by an individual. This type of structure has unlimited liability to the proprietor. Generally, a sole proprietorship can engage in any businesses not prohibited by law. There are some tax advantages to Thai sole proprietorship in which the proprietor can choose to be taxed as an individual based upon the gross receipts of the business. The Thai sole proprietorship is generally restricted to foreign nationals living in Thailand.

Partnership which can be separated into 2 categories as follows:

(1) Unregistered ordinary partnership

Unregistered ordinary partnership refers to all the partners in the company that are jointly liable without any limitation on the partnership’s total obligations. If a new partner joins the unregistered partnership, he immediately becomes liable for all the obligations incurred even before he joins the partnership. A partnership like this is not considered as a legal entity under Thailand investment law and it is subjected to be taxed as if it were an individual.

(2) A limited partnership

A limited partnership means a partnership where the partners’ individual liabilities are limited to their respective contributions to the partnership, and one or more partners are jointly liable without any limitation on all the obligations of the partnership. This type of partnership is treated as a corporate entity for income tax purpose.

Private Limited Company

A private limited company in Thailand can be owned wholly by foreigners. However, in business activities reserved for Thai nationals, foreigners can participate up to 49 percent. In a private limited company the liability of the shareholders is limited to the value of the authorized capital. However, the liability of the directors may be unlimited if the same is provided in the company’s memorandum of association or in the articles of incorporation. Usually a limited company is managed by a board of directors according to the company’s charter and by-law.

Public Limited Company

The provisions of the Limited Public Company Act of 1992 allow a private company to become a public company. A private company cannot offer shares to the public while a public company can. If the public company is incorporated in a foreign country, then it can establish a branch office in Thailand to do business and this branch office is required to maintain only those accounts which are related to its activities in Thailand. In order to open a branch office for a foreign corporation, it must bring a minimum capital of 3 million baht into Thailand.

Representative Office

A foreign company (i.e. a company not found under the laws of the Kingdom of Thailand and/or not more than 50 percent owned by a Thai National) may setup a representative office in the Kingdom of Thailand provided that its activities remain limited to non-income producing activities. Thai representative offices are designed for a specific purpose and are usually not valuable to most clients doing business in the Kingdom.

Regional Offices

According to List 3 Section 21 of the Foreign Business Act of Thailand, the activities of Thai regional offices are considered as service oriented. Thai regional offices may be created by multi-jurisdictional companies in those nations in which the corporate head office is not incorporated. The law regarding Thai regional offices does not require that the non-Thai corporate head office have recognition as a legal entity in the foreign country in which they are also doing business. Like Thai representative offices, Thai regional offices are generally barred from engaging in revenue producing endeavors within the Kingdom.

Thai regional offices are suited to certain clients with special needs and are generally not meant for those wishing to set up a small to medium sized business in Thailand. Also, Thai regional offices are generally not valuable to those that do not wish engage in a large amount of cross-border transactions and international business.

Joint Venture

In the general sense, joint venture basically covers any task undertaken by two or more natural or legal entities for the purpose of creating a profit thereby. The law treats most joint ventures as a contract matter and with the exception of filing for licenses and/or tax certificates. The parties in the joint venture remain separate entities in the eyes of the law. Another way of creating a joint venture is to have two companies or individuals engage in business as either a different legal Thai company or limited partnership respectively.

3. Trade Barriers

3.1 Tariff Barriers (TB)

The free trade agreement on Trade in Goods (TIG) between ASEAN and India is signed on 13 August 2009, which comes into effect on 1 January 2010. The objective of this ASEAN-India Free Trade Agreement (AIFTA) is to promote trade in goods between the two regions. Under AIFTA, tariffs on over 4,000 products will be eliminated by 2017. According to AIFTA, the tariff lines subject to reduction or elimination are classified as follows:

1. <u>Normal Track</u>

i. Normal Track 1: The tariff rates on about 70 percent of the total tariffs placed in Normal Track 1 will be reduced / eliminated by 2014.

ii. Normal Track 2: The tariff rates on about 8 percent of the total tariff place in Normal Track 2 will be reduced/ eliminated by 2017.

2. <u>Sensitive Track</u>

iii. Sensitive Track 1: The tariff rates on about 10 percent of the total tariff lines with applied MFN tariff rates above 5 per cent will be reduced to 5 per cent by 2017.

iv. Sensitive Track 2: The tariff rates on about 1.7 percent of the total tariff lines with applied MFN tariff rates at 5 per cent will be maintained; however, applied MFN tariff rates which are below 4 percent, will be eliminated by 2020.

3. <u>Highly Sensitive List</u>: The applied MFN tariff rates for 14 products (e.g. Sandal, bicycle and its parts, silver jewelry etc.) will be reduced to 25-30 percent by 2020.

4. <u>Exclusion List</u>: The applied MFN tariff rates for 463 products remains the same and shall be subject to an annual tariff review with a view to improving market access.

The tariff system under AIFTA for medicinal plants and parts used primarily in pharmacy or perfumery or for insecticidal or similar purposes under HS Code 1211 and that for essential oils, perfumes, cosmetics, and toiletries, etc. under HS Code 33 are shown in Table 15. Under AIFTA, Thailand's tariff rates on Indian products under HS Codes 1211 and 33 are ranged between 1 to 21 percent in 2012. However, the tariff rates for the products are ranged between 0 to 5 percent under free trade agreement of ASEAN as shown in Table 16.[8]

3.2 Non-Tariff Barriers (NTBs)

Once tariff rates are eliminated under the free trade agreement, the member countries cannot apply tariff as trade barrier. However, there are many types of non-tariff barriers that restricted the importation of some products. The main components of non-tariff barriers are as follows:

1. Quantitative restrictions

All products whose importations are harmful to public morals, national security, human, animal or plant life, and health are forbidden. These products include counterfeit goods and the equipment for their manufacture such as marble, used motorcycles, game machines, household refrigerators utilizing CFC in the production process, glazed ceramic wave, diamonds, etc.

All products whose importations hurt Thai domestic industries are required to be subject to especially regulatory requirements such as extra fees, certificates-of-origin requirements, and special permits from relevant ministries. These products include imports of food, pharmaceuticals, certain minerals, arms and ammunition, and art objects.

2. Non-automatic licensing

To protect local producers and public health, import licenses are required for items including many raw materials, petroleum, industrial materials, textiles, pharmaceuticals, and agricultural items.

[8] http://www.dft.go.th/

3. Custom barriers

Thailand's customs procedures used to be regarded as an impediment to trade and investment. However, Thailand has improved customs practices by expanding customs clearance working hours, increasing the use of electronic and paperless customs procedures, and adapting the WTO Customs Valuation Agreement in order to improve the transparency and efficiency of customs procedures of Thailand.

4. Standards, testing, labeling and certification

In order to protect public health, Thailand's Food and Drug Administration (FDA) requires standards, testing, labeling, and certification permits for the importation of all foods, pharmaceutical products, and certain medical devices. In Thailand, the Thai Food and Drug Administration (FDA) has implemented the Asean Harmonization rules since 2008. Under these rules, Asean pharmaceutical manufacturers are required to prepare application dossiers in a common format in accordance with the guidelines of the Asean Common Technical Requirement (ACTR) on safety, quality and efficacy and the Asean Common Technical Dossier (ACTD) on other details.

5. Government procurement

In Thailand, procurement regulations require that open competition are provided to all potential bidders. However, in order to ensure that public funds are used economically and efficiently, preference is given to Thai products, contractors, and consultants.

6. Other non-tariff barriers

There are also other types of non-tariff barriers that allow the government to protect government firms from foreign firms and also to control prices and supplies of products in local markets. For example, in the pharmaceutical sector, the Government Pharmaceutical Organization (GPO) is not subject to requirements faced by firms in the private sector. In addition, the government retains authority to set price ceilings for goods and services such as medicines, sound recordings, milk, sugar, fuel oil, and chemical fertilizer and also control the major suppliers of products and services such as petroleum, aviation, and telecom sectors in order to influence local prices.

Table 15: Schedule of Tariff Commitments of Thailand under ASEAN-INDIA FTA (AIFTA)

HS Code	Description	Category	Unit	Base Unit (2007 MFN)		1-Jan-2011		1-Jan-2012		1-Jan-2013	
				%	B/Unit	%	B/Unit	%	B/Unit	%	B/Unit
12.11	**Plants and parts of plants (including seeds and fruits), of a kind used primarily in perfumery, in pharmacy or for insecticidal, fungicidal or similar purposes, fresh or dried, whether or not cut, crushed or powdered.**										
1211.20	- Ginseng roots:										
1211.20.10	- - In cut, crushed or powdered forms	ST	-	30	-	24	-	21	-	18	-
1211.20.90	- - Other	ST	-	30	-	24	-	21	-	18	-
1211.30	- Coca leaf:										

1211.30.10	- - In cut, crushed or powdered forms	NT 2	KG	-	4.2	-	3.16	-	2.64	-	2.12
1211.30.90	- - Other	NT 2	KG	-	4.2	-	3.16	-	2.64	-	2.12
1211.40.00	- Poppy straw	NT 2	KG	-	4.2	-	3.16	-	2.64	-	2.12
1211.90	- Other:										
	- - Of a kind used primarily in pharmacy:										
1211.90.11	- - - Cannabis, in cut, crushed or powdered forms	ST	KG	-	4.2	-	3.02	-	2.68	-	2.35
1211.90.12	- - - Cannabis, in other forms	ST	KG	-	4.2	-	3.29	-	2.85	-	2.63
1211.90.13	- - - Rauwolfia serpentina roots	ST	KG	-	4.2	-	4.2	-	4.2	-	4.2
1211.90.14	- - - Other, in cut, crushed or powdered forms	ST	KG	-	4.2	-	4.2	-	4.2	-	4.2
1211.90.19	- - - Other	ST	KG	-	4.2	-	2.8	-	2.8	-	2.8
	- - Other:										

1211.90.91	- - - Pyrethrum, in cut, crushed or powdered forms	ST	-	4.5	-	4.5	-	4.5	-	4.5	-
1211.90.92	- - - Pyrethrum, in other forms	ST	-	4.5	-	4.5	-	4.5	-	4.5	-
1211.90.94	- - - Sandalwood	ST	-	30	-	24	-	21	-	18	-
1211.90.95	- - - Gaharu wood chips	ST	-	30	-	24	-	21	-	18	-
1211.90.96	- - - Liquorice roots	NT 1	-	1	-	1	-	1	-	0	-
1211.90.99	- - - Other	ST	-	30	-	24	-	21	-	18	-
33.01	**Essential oils (terpeneless or not), including concretes and absolutes; resinoids; extracted oleoresins; concentrates of essential oils in fats, in fixed oils, in waxes or the like, obtained by enfleurage or maceration; terpenic by-products of the deterpenation of**										

	essential oils; aqueous distillates and aqueous solutions of essential oils.										
	- Essential oils of citrus fruit:										
3301.12.00	- - Of orange	NT 1	-	5	-	3	-	2	-	0	-
3301.13.00	- - Of lemon	NT 1	-	5	-	3	-	2	-	0	-
3301.19.00	- - Other	NT 1	-	5	-	3	-	2	-	0	-
	- Essential oils other than those of citrus fruit:										
3301.24.00	- - Of peppermint (*Mentha piperita*)	NT 1	-	5	-	3	-	2	-	0	-
3301.25.00	- - Of other mints	NT 1	-	5	-	3	-	2	-	0	-
3301.29	- - Other:										
	- - - Pharmaceutical grade:										
3301.29.11	- - - - Of lemon grass, citronella, nutmeg, cinnamon, ginger, cardamon, fennel or palmrose	NT 1	-	5	-	3	-	2	-	0	-
3301.29.12	- - - - Of sandalwood	NT 1	-	5	-	3	-	2	-	0	-
3301.29.19	- - - - Other	NT 1	-	5	-	3	-	2	-	0	-
	- - - Other:										
3301.29.91	- - - - Of lemon grass, citronella, nutmeg, cinnamon, ginger,	NT 1	-	5	-	3	-	2	-	0	-

	cardamon, fennel or palmrose										
3301.29.92	- - - - Of sandalwood	NT 1	-	5	-	3	-	2	-	0	-
3301.29.99	- - - - Other	NT 1	-	5	-	3	-	2	-	0	-
3301.30.00	- Resinoids	NT 1	-	5	-	3	-	2	-	0	-
3301.90	- Other:										
3301.90.10	- - Aqueous distillates and aqueous solutions of essential oils suitable for medicinal use	NT 1	-	5	-	3	-	2	-	0	-
3301.90.90	- - Other	NT 1	-	5	-	3	-	2	-	0	-
33.02	**Mixtures of odoriferous substances and mixtures (including alcoholic solutions) with a basis of one or more of these substances, of a kind used as raw materials in industry; other preparations based on odoriferous substances, of a kind used for the manufacture of beverages.**										
3302.10	- Of a kind used in the food or drink industries:										
3302.10.10	- - Odoriferous	ST	-	5	-	5	-	5	-	5	-

	alcoholic preparations of a kind used in the manufacture of alcoholic beverages, in liquid form										
3302.10.20	- - Odoriferous alcoholic preparations of a kind used in the manufacture of alcoholic beverages, in other forms	ST	-	5	-	5	-	5	-	5	-
3302.10.90	- - Other	ST	-	5	-	5	-	5	-	5	-
3302.90.00	- Other	NT 1	-	5	-	3	-	2	-	0	-
3303.00.00	**Perfumes and toilet waters.**	ST	-	30	-	24	-	21	-	18	-
33.04	**Beauty or make-up preparations and preparations for the care of the skin (other than medicaments), including sunscreen or sun tan preparations; manicure or pedicure preparations.**										
3304.10.00	- Lip make-up preparations	NT 1	-	30	-	20	-	10	-	5	-
3304.20.00	- Eye make-up preparations	NT 1	-	30	-	20	-	10	-	5	-
3304.30.00	- Manicure and	ST	-	30	-	24	-	21	-	18	-

	pedicure preparations										
	- Other:										
3304.91.00	- - Powders, whether or not compressed	NT 1	-	30	-	20	-	10	-	5	-
3304.99	- - Other:										
3304.99.10	- - - Face and skin creams and lotions	NT 1	-	30	-	20	-	10	-	5	-
3304.99.20	- - - Anti-acne creams	NT 1	-	30	-	20	-	10	-	5	-
3304.99.90	- - - Other	NT 1	-	30	-	20	-	10	-	5	-
33.05	**Preparations for use on the hair.**										
3305.10.00	- Shampoos	NT 1	-	20	-	12.5	-	10	-	5	-
3305.20.00	- Preparations for permanent waving or straightening	NT 1	-	20	-	12.5	-	10	-	5	-
3305.30.00	- Hair lacquers	NT 1	-	20	-	12.5	-	10	-	5	-
3305.90.00	- Other	NT 1	-	20	-	12.5	-	10	-	5	-
33.06	**Preparations for oral or dental hygiene, including denture fixative pastes and powders; yarn used to clean between the teeth (dental floss), in individual retail packages.**										
3306.10	- Dentifrices:										
3306.10.10	- - Prophylactic pastes or powders	ST	-	20	-	15	-	13	-	12	-

3306.10.90	- - Other	ST	-	20	-	15	-	13	-	12	-
3306.20.00	- Yarn used to clean between the teeth (dental floss)	NT 2	-	10	-	6	-	5	-	4	-
3306.90.00	- Other	NT 1	-	20	-	12.5	-	10	-	5	-
33.07	**Pre-shave, shaving or after-shave preparations, personal deodorants, bath preparations, depilatories and other perfumery, cosmetic or toilet preparations, not elsewhere specified or included; prepared room deodorisers, whether or not perfumed or having disinfectant properties.**										
3307.10.00	- Pre-shave, shaving or after-shave preparations	NT 2	-	20	-	15	-	12	-	10	-
3307.20.00	- Personal deodorants and antiperspirants	NT 1	-	20	-	12.5	-	10	-	5	-
3307.30.00	- Perfumed bath salts and other bath preparations	NT 1	-	20	-	12.5	-	10	-	5	-
	- Preparations for perfuming or										

	deodorising rooms, including odoriferous preparations used during religious rites:										
3307.41.00	- - "Agarbatti" and other odoriferous preparations which operate by burning	ST	-	20	-	15	-	13	-	12	-
3307.49	- - Other:										
3307.49.10	- - - Room perfuming preparations	NT 1	-	20	-	12.5	-	10	-	5	-
3307.49.90	- - - Other	NT 1	-	20	-	12.5	-	10	-	5	-
3307.90	- Other:										
3307.90.10	- - Animal toilet preparations	NT 1	-	20	-	12.5	-	10	-	5	-
3307.90.20	- - Contact lens solutions	NT 1	-	20	-	12.5	-	10	-	5	-
3307.90.30	- - Papers and tissues, impregnated or coated with perfume or cosmetics	NT 1	-	20	-	12.5	-	10	-	5	-
3307.90.40	- - Other perfumery or cosmetics, including depilatories	NT 1	-	20	-	12.5	-	10	-	5	-
3307.90.90	- - Other	NT 1	-	20	-	12.5	-	10	-	5	-

Source: www.dft.go.th

Note: This data is as of November 2008. NT1 stands for Normal Track 1, NT2 for Normal Track 2, ST for Sensitive Track, HSL for Highly Sensitive List, EL for Exclusion List, and U for Unbound.

Table 16: Schedule of Tariff Commitments of Thailand under ASEAN

HS Code	Description	Base Rate (2005 MFN)	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020 and subsequent
1211	**Plants and parts of plants (including seeds and fruits), of a kind used primarily in perfumery, in pharmacy or for insecticidal, fungicidal or similar purposes, fresh or dried, whether or not cut, crushed or powdered.**													
1211.10	- Liquoriced roots	1%	1%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
1211.20	- Ginseng roots	30%	15%	10%	7%	5%	0%	0%	0%	0%	0%	0%	0%	0%
1211.30	- Coca leaf	฿ 4.2/kg	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
1211.40	- Poppy straw	฿ 4.2/kg	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
	- Other :													
1211.901	- - - Pyrethrum	4.5%	4.5%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
1211.902	- - - Medicinal plants, parts of plants (including seeds and fruit)	฿ 4.2/kg	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
1211.909	- - - Other	30%	15%	10%	7%	5%	0%	0%	0%	0%	0%	0%	0%	0%
	- - - Peels of persia	10%	7%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
3301	**Essential oils (terpeneless or**													

	not), including concretes and absolutes; resinoids; extracted oleoresins; concentrates of essential oils in fats, in fixed oils, in waxes or the like, obtained by enfleurage or maceration; terpenic by-products of the deterpenation of essential oils; aqueous distillates and aqueous solutions of essential oils													
	- Essential oils of citrus fruit :													
3301.11	**- - Of bergamot**	5%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
3301.12	**- - Of orange**	5%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
3301.13	- - Of lemon	5%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
3301.14	- - Of lime	5%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
3301.19	- - Other													
	- Essential oils other than those of citrus fruit :													
3301.21	- - Of geranium	5%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
3301.22	- - Of jasmin	5%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
3301.23	- - Of lavender or of lavandin	5%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
3301.24	- - Of peppermint (Mentha piperita)	5%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%

3301.25	- - Of other mints	5%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
3301.26	- - Of vetiver	5%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
3301.29	- - Other	5%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
3301.30	- Resinoids	5%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
	- Other :													
3301.901	- - - Extracted oleoresins	5%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
3301.909	- - - Other	5%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
3302	**Mixtures of odoriferous substances and mixtures (including alcoholic solutions) with a basis of one or more of these substances, of a kind used as raw materials in industry; other preparations based on odoriferous substances, of a kind used for the manufacture of beverages.**													
3302.10	- Of a kind used in the food or drink industries	5%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
	- Alcohol preparations used for the manufacture of beverages	5%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
3302.90	- Other	5%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
3303	Perfumes and toilet waters.	30%	15%	10%	7%	5%	0%	0%	0%	0%	0%	0%	0%	0%

3304	**Beauty or make-up preparations and preparations for the care of the skin (other than medicaments), including sunscreen or sun tan preparations; manicure or pedicure preparations.**													
3304.10	- Lip make-up preparations	30%	15%	10%	7%	5%	0%	0%	0%	0%	0%	0%	0%	0%
3304.20	- Eye make-up preparations	30%	15%	10%	7%	5%	0%	0%	0%	0%	0%	0%	0%	0%
3304.30	- Manicure or pedicure preparations	30%	15%	10%	7%	5%	0%	0%	0%	0%	0%	0%	0%	0%
	- Other :													
3304.91	- - Powders, whether or not compressed	30%	15%	10%	7%	5%	0%	0%	0%	0%	0%	0%	0%	0%
3304.99	- - Other	30%	15%	10%	7%	5%	0%	0%	0%	0%	0%	0%	0%	0%
3305	**Preparations for use on the hair.**													
3305.10	- Shampoos	20%	15%	10%	7%	0%	0%	0%	0%	0%	0%	0%	0%	0%
3305.20	- Preparations for permanent waving or straightening	20%	15%	10%	7%	0%	0%	0%	0%	0%	0%	0%	0%	0%
3305.30	- Hair lacquers	20%	15%	10%	7%	0%	0%	0%	0%	0%	0%	0%	0%	0%
3305.90	- Other	20%	15%	10%	7%	0%	0%	0%	0%	0%	0%	0%	0%	0%
3306	**Preparations for oral or dental hygiene, including denture fixative pastes and**													

	powders; yarn used to clean between the teeth (dental floss), in individual retail packages.													
3306.10	- Dentifrices	20%	15%	10%	7%	0%	0%	0%	0%	0%	0%	0%	0%	0%
3306.20	- Yarn used to clean between the teeth (dental floss)	10%	7%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
3306.90	- Other	20%	15%	10%	7%	0%	0%	0%	0%	0%	0%	0%	0%	0%
3307	**Pre-shave, shaving or after-shave preparations, personal deodorants, bath preparations, depilatories and other perfumery, cosmetic or toilet preparations, not elsewhere specified or included; prepared room deodorisers, whether or not perfumed or having disinfectant properties.**													
3307.10	- Pre-shave, shaving or after-shave preparations	20%	15%	10%	7%	0%	0%	0%	0%	0%	0%	0%	0%	0%
3307.20	- Personal deodorants and antiperspirants	20%	15%	10%	7%	0%	0%	0%	0%	0%	0%	0%	0%	0%
3307.30	- Perfumed bath salts and other bath preparations	20%	15%	10%	7%	0%	0%	0%	0%	0%	0%	0%	0%	0%

	- Preparations for perfuming or deodorizing rooms, including odoriferous preparations used during religious rites:	20%	15%	10%	7%	0%	0%	0%	0%	0%	0%	0%	0%	0%
3307.41	- - "Agarbatti" and other odoriferous preparations which operate by burning	20%	15%	10%	7%	0%	0%	0%	0%	0%	0%	0%	0%	0%
3307.49	- - Other	20%	15%	10%	7%	0%	0%	0%	0%	0%	0%	0%	0%	0%
	- Other :													
3307.901	- - - Contact lens or artificial eye solutions	20%	15%	10%	7%	0%	0%	0%	0%	0%	0%	0%	0%	0%
3307.909	- - - Other	20%	15%	10%	7%	0%	0%	0%	0%	0%	0%	0%	0%	0%

Source: www.dft.go.th

4. Competitive Analysis of Thai Herbal Industry (Five-Forces Analysis)

4.1 Bargaining Power of Suppliers

Key suppliers of herbal industry can be categorized into 3 main sectors; herb supplier, non-herb supplier, and research and development. However, as non-herb sector ranges widely from non-herb ingredients to packaging and distribution which are different in contribution across segments or even products, the analysis for supplier power thus minimize the non-herb supplier sector and emphasize mainly on the herb supplier sector and research and development sector only.

In terms of herb supplier, the main herbal inputs used by large manufactures are imported from China, India, Laos, and USA as shown in Table 6. Even if those herbs are found locally, outdated operation of Thai agricultural sector makes it hard for local supply due to quality control and the extraction know-how. On the other hand, local herbal OTOP with fewer requirements on raw material standards makes it easy to acquire the local medicinal plants. However, this becomes the two-edged sword as it is one of the barriers for OTOP products to go internationally.

For research and development, as the government is pushing and subsidizing the development of local Thai herb studies, potential application of Thai herb are available as alternatives for the manufacture's opportunity.

In conclusion, Thai herbal industry is facing medium to high level of supplier power since the dependence on imported herbal plants is reported for large manufacturers despite the availability of local research and development studies.

4.2 Threat of New Entrants

Vivid opportunity for new players is observed as Thai herbal industry is in growing stage with a few key players. Moreover, the entry barriers are low with less fixed cost required as well as plenty of local suppliers. For multinational firms, trade barriers are not high and expected to be even lower according to free trade area and the upcoming AEC (ASEAN Economic Community). In overall, threat of new entrants is high for Thai herbal industry.

4.3 Threat of Substitutes

As herbal industry is divided into 4 segments with wide range of herbal product offerings, substitution of the industry is chemical product which offers similar benefits in each individual item. In this case, the power of the substitute is high as chemical product is better-known with various popular brands and more variety of attributes offered. In addition, continuous research and development and laboratory tests are the certified standards building trust to consumer. On the other hand, chemical product usually provides immediate results compared to gradual benefits over time of herbal items. So, the above factors could significantly affect decision making of consumer towards herbal product. From the chemical product advantage, threat of substitute is high.

4.4 Bargaining Power of Buyers

The health-conscious trend is becoming more and more popular both domestically and internationally. Nowadays, people are seeking for quality, efficacy and safe treatment, so herbal product is the solution that helps them get away from chemical side effects. In addition, advanced medical development makes the number of Thai elderly (age 60 and above) increasing from time to time with 4.4% growth in 2010 based on calculation according to National Statistical Office data.[9] This group of people acts as target market of many herbal products with significant demand and high purchasing power. However, as herbal product involves health and well being, the bad effects from either allergy or misuse causing negative word of mouth could be manufacturer's concern. In addition, high level substitute chemical product and low switching cost give vast alternatives to consumer. Therefore, buyer power of herbal industry is reasonably medium.

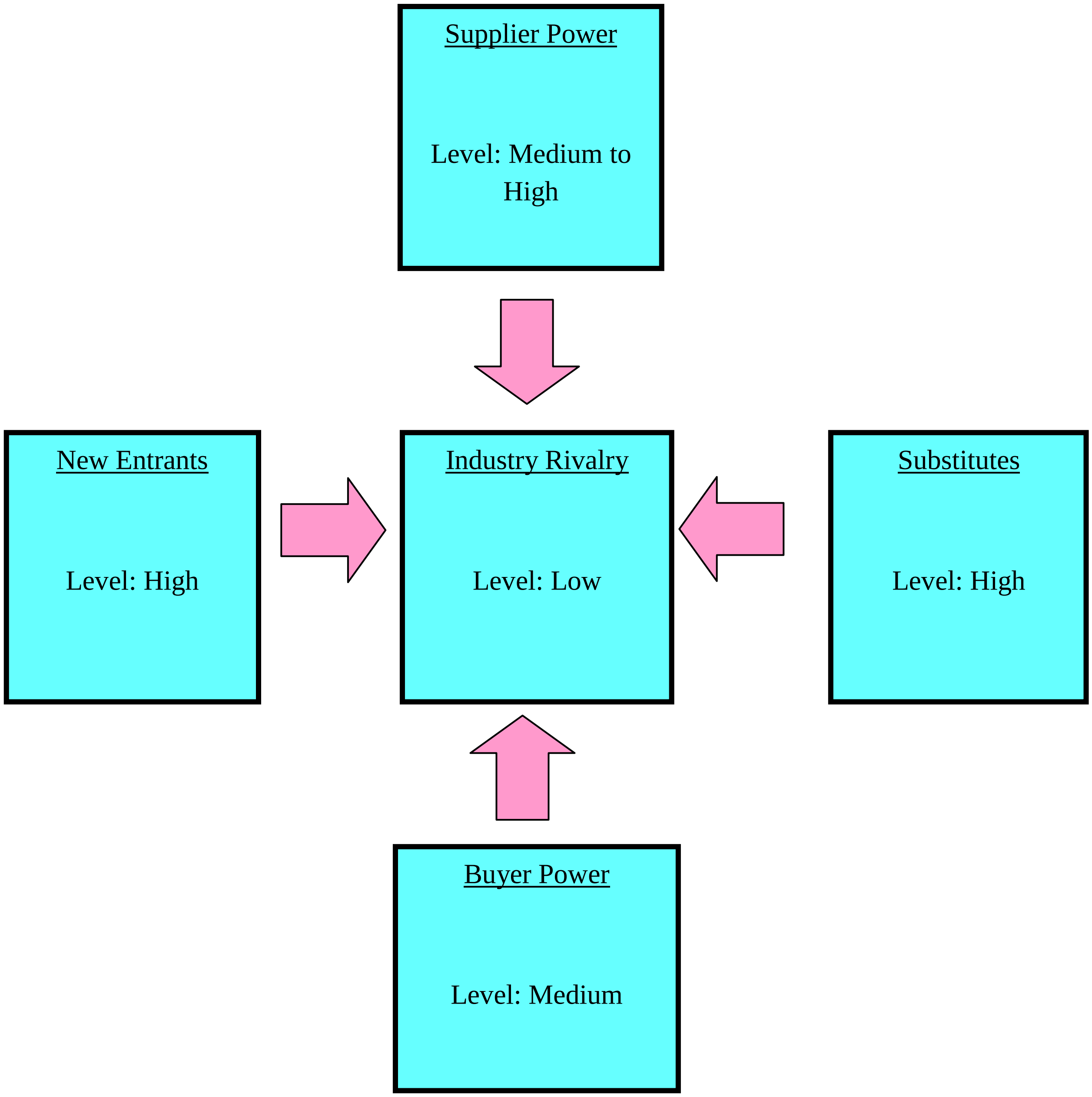
4.5 Rivalry Among Existing Competitors

The market of Thai local herbal industry is quite fragmented with no dominant leaders. The industry is in growing stage and rooms to capture growth exist in many aspects. Even if a number of OTOP players exist, competition is low. With low competence in marketing strategy, distribution channel and media usage, each OTOP plays in their own fields with no direct rivalry.

[9] http://service.nso.go.th/nso/nso_center/project/search_center/23project-th.htm

For export market, each company serves as production base of international brands with different type of products. Thus, overall competitive rivalries of Thai herbal industry are low.

Figure 3: Porter's Five Forces adapted to the Competitive analysis



5. Environmental Scanning (PEST Analysis)

5.1 Political Factors

After the long political unrest in Thailand since 2006, it was expected that the long period of instability be ended with the elections of July 2011. However, the political conflict between the red shirts that support the Pheu Thai Party and the yellow shirts that opposed to the party remains due to the election result that brought the Pheu Thai Party to power.[10]

According to Prime Minister Yingluck Shinnawatra who heads the Pheu Thai Party, the government policies are classified into two phrases, which are urgent and long-term policies. The urgent policies that need to be completed within the first year are drug problems, water management to prevent flood, restoring neighboring relations, tax reduction, and improvement of public's life quality. The long-term policies are those that focus on national security.[11]

One of the policies that tend to raise people's standard of living is a nationwide increase in daily minimum wage to be 300 baht, which will come into effect on April 1, 2012. The minimum wage adjustment has caused the low confidence level in production costs. However, employers will benefit from a cut in corporate tax rates from 30 percent in 2011 to 23% in 2012 and 20 percent in 2013.[12]

According to the Global Competitiveness Report 2011-2012, political issues are the major problematic factors for doing business in Thailand. [13] As shown in Table 17, government instability, corruption, and policy instability are the top three problematic factors, respectively.

Table 17: The most problematic factors for doing business in Thailand

Factors	Percent of responses
Government instability/coups	15.2
Corruption	14.5

[10] http://climateandsecurity.org/2011/11/14/thailand-forecast-floods-droughts-and-political-instability/
[11] Information from Policy Statement of the Council of Ministers on August 23, 2011.
[12] http://www.kpmg.com/global/en/issuesandinsights/articlespublications/taxnewsflash/pages/thailand-reduced-corporate-income-tax-rates.aspx
[13] The Global Competitiveness Report 2011-2012, World Economic Forum.

Policy instability	12.9
Inefficient government bureaucracy	11.7
Inadequately educated workforce	8.3
Foreign currency regulations	6.8
Tax rates	5.6
Poor work ethic in national labor force	5.5
Inadequate supply of infrastructure	5.3
Inflation.	5.1
Access to financing	3.1
Tax regulations	2.8
Crime and theft	2.0
Restrictive labor regulations	1.2
Poor public health	0.0

Source: Global Competitiveness Report 2011-2012, World Economic Forum.

In Thailand, there are many government offices and agencies. The main government agencies that promote Thai herbal products are as follows:

1. The Public Health Ministry
2. The Agriculture and Cooperatives Ministry
3. The Department of Industrial Promotion
4. The Department of Export Promotion.

At present, the Public Health Ministry, the Agriculture and Cooperatives Ministry, and the Department of Industrial Promotion have joined together to develop and improve the quality of Thai herbal products. In addition, the Department of Export Promotion hosts an annual Thailand Health and Beauty Show in order to promote the exports of herbal products in the overseas markets. According to the report of the Department of Export Promotion, the overseas markets have shown a high demand for Thai herbal health and beauty products and Thailand leads this industry in the ASEAN market.[14]

[14] http://www.thailandnews.co/2012/01/thai-herbal-health-products-are-booming-overseas/

5.2 Economic Factors

In the year 2011, Thailand faced the worst flood crisis in 70 years. This severe flood caused Thai economy to unable to achieve the expected economic growth. The floods directly damaged many sectors such as industry, agriculture, hotel and restaurants, and other services- retail, logistic, and construction. Some production had been halted, which consequently leaded to a shrink in the fourth quarter's production by 9 percent and a rise in unemployment rate. As a result, Thailand export slowed down. The contraction in the fourth quarter recorded 9 percent. According to this contraction, Thailand's export slowed down and Thai economy could grow only 0.1 percent in the year 2011, which reflected a sharp drop in growth rate comparing to 7.8 percent GDP growth rate in the year 2010 as shown in Table 18.

Table 18: Thailand Macroeconomic Indicators

Indicators	2012 p	2011 p	2010	2009	2008	2007
1. Population (Million persons)	....	....	63.88	63.53	63.39	63.04
2. GDP (% change)	....	0.1	7.8	-2.3	2.5	5.0
2.1 Agriculture (% change)	....	3.8	-2.3	1.3	4.2	1.2
2.2 Non-agriculture (% change)	....	-0.3	8.8	-2.7	2.3	5.4
2.3 GNP per capita (Baht : Person)	....	150,314.8	143,655.1	129,875.1	131,717.8	124,377.1
3. Inflation						
3.1 Headline Inflation Rate (%)	3.38	3.81	3.30	-0.90	5.50	2.30
3.2 Core Inflation Rate (%)	2.75	2.36	1.00	0.30	2.40	1.10
4. External Account						
4.1 Export (% change)	....	16.4	28.5	-13.9	15.8	18.2
4.2 Import (% change)	....	24.7	36.7	-25.1	26.7	9.0
4.3 Trade balance (Billions of USD)	....	23.5	32.2	32.6	17.3	26.6
4.4 Current account balance (Billions of USD)	....	11.9	13.7	21.8	2.1	15.6
4.6 Balance of payments (Billions of USD)	....	1.2	31.3	24.1	24.6	17.1
4.7 International reserves (Billions of USD)	178.6	175.1	172.1	138.4	111.0	87.4

5. Exchange rate 10/						
Baht : US$ (Reference rate) average (Baht : 1 USD)	31.58	30.49	31.73	34.34	33.36	34.56

Source: Thailand's Macroeconomic Indicators, February 2012, Bank of Thailand.[15]

However, the contraction in the year 2011 was temporary. There are signs of recovery in many industries as well as exports. The year 2012 presents an opportunity for rebuilding and reconstruction for Thai economy. Thai economy is expected to return to normal within the third quarter of 2012 with the whole year economic growth rate of 4.5-5.5 percent in 2012. The result of expansion is estimated to be from a re-investment after the flood. In addition, private consumption is expected to be rebounded and grow by 3.8 percent as facilitated by the recovery of employment situation as well as financial support from the government and financial situation.

Due to the internal factor of production disruption and the external factors of global uncertainties such as the problem of debt crisis in Europe and unemployment in the United States, Fiscal Policy Office has forecasted that Thailand's export for the year 2012 would grow by 16 percent, while imports would increase by 23.3 percent.[16] The unemployment rate is expected to be 0.7 percent of the total labor force. With higher production costs in food and fuel, the inflation rate in 2012 is expected to be 3.38 percent as shown in Table 18.

The growth projection in 2012 is supported by an improvement in confidence level. According to the report on Business Sentiment Index (BSI), the current BSI of 50.8 reflects an improvement of business sentiment after falling below the confidence level during the flooding period.[17] The index is improved in every component except the production costs. The low confidence level in production costs was partly due to higher pressure on production cost following oil price changes and the 300 baht minimum wage adjustment. Nevertheless, in overall

[15] http://www2.bot.or.th/statistics/BOTWEBSTAT.aspx?reportID=409&language=ENG.
[16] Foreign Office, The Government Public Relations Department (http://thailand.prd.go.th/view_inside.php?id=6066)
[17] Report on Business Sentiment Index, January 2012, Bank of Thailand.

The interpretations of the index are as follow :
Index = 50 indicates that respondents' business sentiment remains stable from the previous month
Index > 50 indicates that respondents' business sentiment has improved from the previous month
Index < 50 indicates that respondents' business sentiment has worsened from the previous month.

businesses still expressed more confidence in business conditions as reflected in the 3-month expected BSI of 56.6.

What businesses concerned are about labor shortage, increase in wage, and the slowdown in global economy, especially in the euro area. Moreover, the credibility of the government's water management strategy is the latest business constraint affected business decision and investment intention in the future.[18] From the view of businesses, the major business constraints are difficulty in price adjustment (50.2 percent) and economic uncertainty (45.3 percent) as shown by Table 19.

Table 19: Business Constraints

Business Constraint (% of Respondents)	Nov 11	Dec 11	Jan 12
1. Difficulty in price adjustment	43.5	44.8	50.2
2. Economic uncertainty	51.5	50.1	45.3
3. High cost of production	42.6	42.2	41.5
4. High competition from domestic market	32.2	33.3	35.0
5. Political uncertainty	30.0	29.5	30.9
6. Low demand from domestic market	29.8	25.5	20.0
7. Lack of skilled labors	14.7	15.4	16.7
8. High competition from foreign market	15.8	16.0	16.1
9. Low demand from foreign market	16.6	15.8	14.9
10. Lack of raw materials	15.6	13.5	10.7
11. Financial problem	6.2	6.8	7.6
12. Lack of information for business planning	6.2	5.2	7.2

Source: Business Sentiment Survey, January 2012, BOT.

As mentioned earlier, economic indicators in January 2012 reflected a continual recovery from the flood crisis. However, the issues of the Euro zone economy regarding the resolution of the debt crisis, as well as the rise in oil price owing to the uncertainty in the Middle East could negatively affected Thai economy in the future. As a result, the government policies to improve

[18] Business Report, "Economic/Business Information Exchange Program between the Bank of Thailand and Business Sectors" 4th Quarter 2011, Bank of Thailand.

confidence index that supports the growth in domestic consumption and investment and also to promote the export are keys to Thai economic recovery in 2012. According to the export promotion key, the Department of Export Promotion plans to promote Thai herbal products internationally by revising marketing strategies in order to draw more attention from overseas markets, where Thai herbal products are becoming more popular and the demand for herbal products is getting higher.[19]

5.3 Social Factors

According to the news reported by Herbal Industry Club, 70 percent of Thai cosmetics are made from herbal ingredients. The markets of Thai herbal products are both domestic and overseas in which 70 percent of Thai herbal products are for domestic consumption and the rest 30 percent is for export. In 2010, 80 percent of exported herbal products are herbal cosmetics such as facial herbal cosmetics.[20]

Thanisorn, et al (2010) investigate factors that influence perception of Thai consumers on facial herbal cosmetics, which include moisturizer, whitening lotions, creams, powder, toner, make-up cleansing, mask, cleansing oil, soap bar, anti-aging lotions, and creams. The result reveals that marketing mix (4Ps: product, price, place and promotion) are the key factors influencing Thai consumers' perception on facial herbal cosmetics. Thai consumers trust in the safety of both Thai herbal and imported cosmetics. However, the imported cosmetics are perceived to be more innovative than Thai products. The most convenient place to purchase cosmetics is department store. For Thai herbal cosmetics, direct sale remains popular distribution channel. Among economic factors, inflation rate is a key factor that influences Thai consumers' decision making in purchasing cosmetics. [21]

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[19] http://www.thailandnews.co/2012/01/thai-herbal-health-products-are-booming-overseas/
[20] http://www.biothai.net/news/7155
[21] Thanisorn, Rojanadilok , Nanagara Byaporn, and Bunchapattanasakda Chanchai, 2012, *"Thai Consumers' Perception on Herbal Cosmetic Products: A Comparative Study of Thai and Imported Products",* Information Management and Business Review, Vol. 4, No. 1, pp. 35-40, Jan 2012 (ISSN 2220-3796)

5.4 Technological Factors

Since contaminated and tainted herbal products can be harmful to the users, the quality control procedure of herbal products becomes very crucial. According to the regulations concerns the Medicinal and Aromatic Plants (MAPs), the herbal medicine must fulfill the followings specifications:[22]

1. Specifications of raw materials
   - 1.1 Monograph (Thai Herbal Pharmacopoeias and Traditional Pharmacopoeias)
   - 1.2 Not in monograph
     - 1.2.1 Description: macroscopic, microscopic, and organoletic
     - 1.2.2 Identity test: chemistry, physical properties, chromatography
     - 1.2.3 Main constituents or active constituents or markers
     - 1.2.4 Limit test: ash value, moisture content, microbial contamination, heavy metal, pesticide, residue, aflatoxin, and other impurities

2. Crude plants materials and processing
   - 2.1 Scientific name
   - 2.2 Common name in Thai or English
   - 2.3 Appearance and parts of use
   - 2.4 Main constituents or active constituents or characteristics compound, markers
   - 2.5 Storage condition
   - 2.6 Picture or drawing of plants and parts of use
   - 2.7 Procedure for plant preparation (GMP)

3. Details of manufacturing procedure

4. Specification of finished products
   - 4.1 Appearance
   - 4.2 Identity test: active, ingredient, vehicle
   - 4.3 Analytical method: main constituents or active constituents or markers

[22] Sarapote Wongyai, 2007, "*Country Report of Thai Herbal Medicinal Product Industry*".

4.4 Specification of dosage forms

4.5 Limit of microbial contamination

4.6 Stability study and expired date

4.7 Certified manufacturer by Government agency or notary public (import)

5. Drug formula

5.1 Name and content of active ingredient and other diluents

5.2 Raw plant materials

5.2.1 Scientific name, family

5.2.2 Parts of use, proportion

5.2.3 Extracting solvent, ratio of dried crude drug to crude extract

5.2.4 Characteristic compounds or makers per unit dose.

Besides the quality control requirement, research and development has also played a major role in the development of Thai herbal products by bringing new innovation and technology to the industry. There is a research network that focuses on the research and development of Medicinal and Aromatic Plants (MAPs) in Thailand, the research network consists of the following institutes:

1. The Government Pharmaceutical Organization (GPO), Ministry of Public Health.
2. The Department of Medical Science, Ministry of Public Health.
3. Thailand Institute of Scientific and Technological Research and Department of Medical Science Services, Ministry of Science and Technology.
4. Chulabhorn Research Institute (CRI)
5. Universities include Mahidol University (MU), Khon Kaen University (KKU), Kasetsart University (KU), Chulalongkorn University (CU), Chiang Mai University (CMU), Prince of Songkla University (PSU), Naresuan University, and Rangsit University.
6. Postgraduate Education and Research Program in Chemistry (PERCH).
7. National Research Council of Thailand.

6. SWOT Analysis

According to the above analysis; strengths, weaknesses, opportunities, and threats of Thai herbal industry can be summarized as follows:

Strengths	**Weaknesses**
• As heritage from ancestors, Thai traditional know-how is available to be developed further and applied by large manufacturers. • Subsidized by government, scientific studies on the topic of commercial herb usage are developed adding to the trust of consumer. • With the experience of large manufacturers producing for OEM (Original Equipment Manufacturer), transferred technology in terms expertise and skills are ready to be used for its own brands in the future. • Continuous government support for the export of herbal cosmetics exists in the form of annual trade exhibition.	• Lack of advanced technology in Thai agricultural industry affecting local supply of medicinal plants making the need for quality herbal input from import exists. • Barriers for local OTOP come in the form of raw material and production standard. • As OTOP is located in rural area with unskilled labors, the lack of knowledge for marketing strategies as well as distribution channels are observed.

Opportunities	Threats
• Health conscious trend both domestically and internationally of consumer indicating rooms for natural and herbal product to get increasing demand and more consumer acceptance. • Thai elderly population (age 60 and above) are expanding over time with 4.4% growth in 2010. • Policy to promote the use of herbal medicine as the substitute for imported medicine in both consumer and industrial level (i.e. hospital and medical institutions) is mentioned by Thai government.	• Free Trade Area and AEC (ASEAN Economic Community) making trade barriers for multinational herbal companies lower are threats of local firms.

7. Analysis and Recommendations

Thai consumers become more health-conscious and pay more attention to try herbal products such as herbal medicine, herbal supplement, and herbal cosmetics. In addition, the Thai government plans to promote the alternative treatments such as the use of herbal medicine and supplement as substitutes for imported medicine. The more popularity of herbal products in Thailand caused by changes in consumers' perceptions as well as government's policy highlights potential growth in Thailand's herbal market.

According to the above trends, there are distinctive opportunities for Indian firms to either export finished herbal products or herbal raw material to Thailand. The former opportunity comes directly from the growth in domestic demand in Thai market, whereas the latter opportunity is derived from the growth in demand for Thai herbal products in the world market.

For the former opportunity, Indian firms can directly export finished herbal medicine, herbal supplement, and herbal cosmetics to Thailand. In addition, Thailand's growth in import demand for essential oils and other products extracted from herbs also highlights an opportunity for Indian firms to export such products to Thailand.

For the latter opportunity, Indian firms can take an advantage to be a part of herbal production network by exporting herbal raw material to Thailand. Owing to a production base for OEM cosmetics, Thailand's export of cosmetics to the world market grows significantly. Then, it is promising that Indian firms export more herbal ingredients that required by herbal cosmetics to large manufacturers in Thailand. The benefit from exporting such products to Thailand will be enhanced since tariff rates on the products will be completely removed in 2013 according to AIFTA (ASEAN-India Free Trade Agreement).

In order to take an advantage from herbal heritages of Thailand and the growing market in Thailand, Indian firms may consider establishing subsidiaries or production base in Thailand. This business way gives an opportunity for Indian firms to access ASEAN market under AEC (ASEAN Economic Community) with the promising market of around 580 million people. Alternatively, Indian firms can be partially ally with Thai firms by taking over parts of the outsourced herbal ingredients from Thai herbal firms. This way of doing business allows Indian firms to be a part of Thailand herbal production network.

Besides, since both Thailand and India have rich herbal heritages, the Indian government should cooperate with the Thai government in exchanging knowledge of Thai herb and Indian herb. The cooperation can be in the form of a joint research and development or technology sharing and transferring. In addition, the Indian government should also negotiate with the Thai government about an agreement on the standard of herbal product in order to promote the trade of herbal products between the two countries.

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Appendix

Appendix A: Product Codes and Labels

Table A1: Product Codes and Labels for Medicinal Plants (HS Code 1211)

Product code	Product label
121110	Liquorice roots used primly in pharm,perf,insecticide,fungicid/sim purp
121120	Ginseng roots used primly in pharm,perf,insecticide,fungicide/sim purp
121130	Coca leaf, fresh or dried, whether or not cut, crushed or powdered
121140	Poppy straw, fresh or dried, whether or not cut, crushed or powdered
121190	Plants &pts of plants(incl seed fruit) used in pharm,perf,insect etc nes

Source: www.trademap.org.

Table A2: Product Codes and Labels for Essential oils, perfumes, cosmetics, toiletries (HS Code 33)

Product code	Product label
3301	Essential oils; resinoids; terpenic by-products etc
3302	Odoriferous mixtures as raw materials for industry
3303	Perfumes and toilet waters
3304	Beauty, make-up & skin-care preparations; sunscreens, manicure or pedi

3305	Hair preparations
3306	Oral & dental hygiene preparations
'3307	Personal toilet preparations shaving preparations, deodorants etc.

Source: www.trademap.org

Appendix B: Relevant Organizations' Contacts

Government Agencies and Industry Clubs:

1) The Agriculture and Cooperatives Ministry

Contact: Ministry of Agriculture and Cooperatives 3 Ratchadamnoen
Nok Road , Bangkok 10200
Tel. +662-281-5955
Website: http://eng.moac.go.th/main.php?filename=index

2) The Public Health Ministry

Contact: Ministry of Public Health, Tivanond Road,
Nonthaburi, 11000
Tel. +662-590-1000
Website: http://eng.moph.go.th/

3) The Department of Industrial Promotion, Ministry of Industry

Contact: The Department of Industrial Promotion, Ministry of Industry
Rama 6 Road, Ratchateve, Bangkok, 10400
Tel: +662-202-4511, +662-202-4414-18
Fax: +662-354-3299
Website: ttp://www.dip.go.th/

4) The Department of International Trade Promotion, Ministry of Commerce

Contact: 22/77 Rachadapisek Road, Chatuchak, Bangkok, 10900

Tel: +662-511-5066-77

Fax: +662-512-2670, +662-512-2670

Website: http://www.thaitrade.com/home

5) Herbal Industry Club, The Federation of Thai Industries

Contact: The Federation of Thai Industries

4th Floor Zone C Queen Sirikit National Convention Center,

60 New Rachadapisek Road, Klongtoey, Bangkok 10110

Tel: +662-345-1000 ext. 1178

Fax: +662-345-1281-3

Website: http://ftiweb.off.fti.or.th/industrialgroup/herbs/contact.asp

6) Cosmetic Industry Club, The Federal of Thai Industries

Contact: The Federation of Thai Industries

4th Floor Zone C Queen Sirikit National Convention Center,

60 New Rachadapisek Road, Klongtoey, Bangkok 10110

Tel: +662-345-1000

Website: http://www.fti.or.th/2011/thai/ftiindustryclub.aspx

7) Supattra Herbal Cosmetic Club

Contact: 44/33 Mu 5, Kwan-Muang, Bangpahan, Ayudhaya, 13220

Tel: +663-5301-488, +668-1667-5223

8) The Club of Conservative Thai Herb

Contact: The Club of Conservative Thai Herb

9/12 Bangkuwiang Road, Bangkuwiang, Bangkruay,

Nonthaburi, 11130

Tel: +662-984-1955, +668-6000-8898

Website: http://wwwtcocth.blogspot.com/2010/05/blog-post.html

Research and Development Institutes:

1) **Medicinal Plants Research Institute, Department of Medical Science, Ministry of Public Health**

Contact: Medicinal Plants Research Institute, 88/7 Tivanond 14 Road,
Kwankhao, Muang, Nonthaburi, 11000
Tel. +662-951-0491
Fax: n+662-589-9866
Website: http://www.dmsc.moph.go.th/webroot/Plant/MPRI/

2) **The Government Pharmaceutical Organization (GPO), Ministry of Public Health**

Contact: The Government Pharmaceutical Organization (GPO)
75/1 Rama VI Road, Ratchathewi, Bangkok 10400, Thailand
Tel : +662-354-8857
Fax: +662-354-8858
Website: http://www.intergpomed.com/Default.aspx?tabid=167

3) **Thailand Institute of Scientific and Technological Research (TISTR), Ministry of Science and Technology**

Contact: Thailand Institute of Scientific and Technological Research (TISTR),
35 Mu 3 Khlong Ha, Khlong Luang, Pathum Thani, 12120
Tel: +662-577-9000
Fax: +662-577-9009
Website: http://www.tistr.or.th/tistr_en/index_en.php?pages=home

4) **Chulabhorn Research Institute (CRI)**

Contact: Chulabhorn Research Institute (CRI)
54 Kamphaeng Phet 6, Talat Bang Khen, Lak Si, Bangkok, 10210
Tel: +662-574-0622
Fax: +662-574-0618
Website: http://www.cri.or.th/en/ac_chemsci.php

5) **National Research Council of Thailand (NRCT)**

Contact: Office of National Research Council of Thailand (NRCT)
196 Paholyotin Road, Chatuchak, Bangkok, 10900
Tel: +662-561-2445
Website: http://www.nrct.go.th/

Appendix C: Company Directory

Company: **Authentic Thai Spa Co.,Ltd.**
Address: 48/274 Mu 1 Ramkumhaeng 104, Saphan Sung, Bangkok, 10240
Tel: +662- 372-2468 ext.111
Fax: +662-729-5836
Website: http://www.sabai-arom.com, http://www.sranrom.com
Products: Skin-Care Products, Massage Oil, Herbal Soap, Herbal Spa Products

Company: **Baan Idin Co., Ltd.**
Address: 114/165 Mu 3, Ladarom Village, Rattanatibet Road, Muang, Nonthaburi, 11000
Tel: +662-985-8580
Fax: +662-985-8581
Website: http://www.baanidin.com/
Products: Virgin Oil, Massage Oil, Kumpun Bath Powder, Herbal Bath Tea, Herbal Compress Ball, and Bath Oil

Company: **B.B.Pharma Co.Ltd.**
Address: 999, Mu 18, Soi Sappirin, Thammasart-Chiangrak Road, Klongnuang, Klongluang, Pathumthani, 12120
Tel: +662-153-4115-20
Fax: +662-153-4121
Website: www.penpark.com
Products: Herbal Medicine

Company: **Chao Phya Abhaibhubejhr Hospital Foundation**
Address: 32/7 Mu 12 Prachinanusorn Road, Thangam, Muang, Prachinburi, 25000
Tel: +663-722-1088 ext. 2172

Fax: +663-721-2716
Website: www.abhaiherb.com

Products: Herbal Supplement, Herbal Beverages, and Herbal Cosmetics

Company: Chiang Rai Winery Co.,Ltd.

Address: 242/253 Mu 3 Songprapha Road, Sigun, Don Mueang, Bangkok, 10210
Tel: +662-929-9290
Fax: +662-929-8610
Website: www.chiangraiwinery.com

Products: Herbal Wine, Herbal Drink, and Supplement Food

Company: Dr.Saroj's Herbal Products Co.,Ltd.

Address: 39 Mu 2 Bhosamtoan, Bangpahan, Ayutthaya, 13220
Tel: +663-577-9501, +663-577-9502
Fax: +663-577-9517
Website: www.drsaroj.co.th

Products: Herbal Skin Lightening Cream Skin Lightening Cream, Herbal Nourishing Cream, Herbal Extract Feminine Hygiene, Herbal Liquid Soap Liquid Soap, Liquid Soap Herbal Hair Rinse, Herbal Shampoo Herbal Lotion, Herbal Acneclear Lotion Herbal Skin Lightening Lotion, Lawna Hair Tonic Lawna Hair Coat, and HI-E Marigold Nourishing Cream

Company: Harn Products Co., Ltd.

Address: 22nd Floor, Sorachai Building, 23/97 Sukhumvit 63 Road, North Klongton, Wattana, Bangkok, 10110
Tel: +662-714-3244
Fax: +662-7143247
Website: http://www.harnn.com

Products: Natural Herbal Soap, Herbal Hair-Care Products, Herbal Skin-Care Products, and Herbal Spa Products

Company: Kankee Namtaothong Co.,Ltd.

Address: 670, Charoenkrung Road, Samphantawong, Samphantawong,

Bangkok, 10100
Tel: +662-437-0131-2
Fax: +662-437-7168
Website: www.namtaothong.com

Products: Traditional Medicine and Herbal Drink

Company: Oriental Aroma Co., Ltd.
Address: 1623-25 Railway Road, Klongton, Klong Toey, Bangkok, 10110
Tel: +662-671-8027
Fax: +662-249-4427
Website: http://www.donna-chang.com
Products: Herbal Skin-Care Products and Herbal Spa Products

Company: Origin Plant Co.,Ltd.
Address: 55/53 Mu 6 Sukumvit Road, Km.35, Bangpumai, Muang, Samutprakarn, 10280
Tel: +662-323-9714-15
Fax: +662-323-9716
Website: www.originplant.co.th
Products: Thai Herbal Extract Products

Company: Panapat Healthcare Co.,Ltd.
Address: 89/29 Mu 19 Soi Yingcharoen 1, Bangplee-Tamru Road, Bangpleeyai, Bangplee, Samutprakarn, 10540
Tel: +662-174-7377-9
Fax: +662-174-7380
Website: www.panapat.com
Products: Herbal Products

Company: Phumaneerat Bhaesaj Ltd.,Part.
Address: 89/1 Mu 1 Romklao1 Road, Klongsongtonnoon, Ladkrabang, Bangkok, 10520
Tel: +662-737-8342-3
Fax: +662-737-8344
Website: www.ngamrahong.com
Products: Herbal Medicine

Company: Raksa Thai Herbs Co., Ltd.
Address: 723 Supakarn Building, 4th Floor, Suite number 4C-02

Charoennakon Road, Klongtonsai, Klongsan, Bangkok 10600, Thailand
Tel: +662-860-3535
Fax: +662-860-3600
Website: http://www.raksaherbs.com/

Products: Thai Herbal Tea, Thai Herbal Capsules, OEM Thai Herbal Tea, Slimming Capsule, Garcinia Slimming Capsule

Company: **Skyling Health Care Co.,Ltd.**

Address: 222/1-3 Navanakorn Industrial Estate, Mu 13 Paholyothin Road, Klongnueng, Klongluang, Pathumthani, 12120
Tel: +668-1859-9642
Fax: +662-909-1844
Website: www.giffarinefactory.com

Products: Herbal Tea, Evening Primrose Oil Capsule, Seasoning and Herbal Medicine (Capsule, Tablet), Packing of Fish Oil Capsule Tablet Products (Fiber Tablet, Calcium Tablet), Capsule Products (Garlic Extract Capsule, Fiber Capsule, Ginkgo Biloba Extract Capsule)

Company: **Takabb (Simtienhor) Co., Ltd.**

Address: 80/3-4 Mu 1 Soi Rama 2 (44), Rama 2 Road, Takham, Bangkhuntien, Bangkok, 10150
Tel: +662-898-5454-7
Fax: +662-416-7475
Website: http://www.takabb.com/t_products_select.php?lang=EN

Products: Herbal Medicine

Company: **Talad Siam Co., Ltd.**

Address: 25/62 Mu 6, Cheangwattana Road, Bangtalad, Pak Kret, Nonthaburi, 11120
Tel: +662-584-7223
Fax: +662-962-3465
Website: http://www.taladsiam.com

Products: Essential Oil, Aromatherapy Products, and Herbal Compress

Company: **Thai-China Flavours and Fragrances Industry Co.,Ltd.**

Address: 510/3-4, Soi Ngamwongwan 25, Ngamwongwan Road, Muang, Nonthaburi, 11000

Tel: +662-952-5380-4

Fax: +662-952-5385

Website: www.tcff-thailand.co.th

Products: Fragrances, Flavours, Essential Oil, and Natural Extract

Company: **Thai Spa And Natural Co.,Ltd.**

Address: 20/5 Mu 6 Bangkhuntien Road, Samaedam, Bangkhuntien, Bangkok, 10150

Tel: +662-892-0525-34

Fax: +662-892-0583

Website: www.sukhita.com

Products: Thai Herbal Spa Products

Company: **Thanyaporn Herb Co.,Ltd.**

Address: 825/793-4 Mu 1 Pracha Utid Road, Tungkru, Bangkok, 10140

Tel: +662-873-5516

Fax: +662-873-6515

Website: www.thanyaporn.com

Products: Herbal Medicine, Herbal Drink, Health Food, Herbal Cosmetics,

Company: **Twin Lotus Co., Ltd.**

Address: 56 Soi Seree Villa srinakarin Road, Nongbon, Prawet, Bangkok, 10250

Tel: +662-743-4000

Fax: +662-381-0930

Website: http://www.twinlotus.com/en/

Products: Thai Herbal Oral Care, Thai Herbal Skin Care, and Thai Herbal Supplement