



Part 1

1. General Information

Objectives and Targets

Pato Chemical Industry PCL. was established on 6 October 1972 to be Importer, formulator, repacker, and distributor of herbicide, insecticide, acaricide, molluscicide, fungicide, and plant growth regulator in liquid, powder, and granule form for use in rice, plantation crops, fruit orchards, vegetables, and livestock having a factory located in Bangpoo Industrial Estate with over 330 dealers, wholesalers, and repackers as our distribution channels in every region of Thailand currently. And in 2011, Pato has invested 99.99% stake in Pato Crop Care Co., Ltd.

The company is the importer, formulator, and distributor of pesticide which can be divided into 2 major types of imports as follows:

Major Type of Imports:

1. *Technical Grade (TG)*: is a concentrated chemicals which are used in formulations to produce final products according to the specified formulas.
2. *Finished Product (FP)*: is the product ready for use. Most of the imported FP is in liquid and solid form in bulk sizes. Therefore, repackaging is needed before distribution.

About 80% of the company's imported products are TG for formulation at the factory before distribution resulted in lower cost of raw material as compared with other competitors who import finished product for repackaging. TG has longer shelf-life than FP and can be formulated according to the requirements which is more suitable for the environment. Agrochemical in the market can be in many forms e.g. liquid, powder, and granule for safety in moving and storing. In the production process, there are 2 main ingredients in agrochemical; active and inert ingredients. "Active Ingredients" are chemical substance called by its chemical names for different uses of purposes. "Inert Ingredients" are substance to combine with the active chemical to make it in the forms suitable for different types for uses such as solvents, carriers, surfactants, emulsifiers, or any other substance which are added for special purpose called "Special Additives".

PATO submits documents for registration to the Department of Agriculture and as of December 31, 2018 PATO has been granted with 73 import registration and manufacturing and selling licenses for 176 trade names.

**Pato Crop Care Co., Ltd.**

The company is the importer, formulator, and distributor of pesticide under Global logo Pato Crop Care by planning to import chemical pesticide in 2 forms as follows:

Major Type of Imports:

1. Technical Grade (TG) which is a concentrated chemicals which are used in formulations to produce final products according to the specified formulas.
2. Finished Product (FP)

The policies established the company is to help the core business, Pato Chemical Industry PCL. to be more flexible. According to the Hazardous Substances Act (No.3) BE 2551 effective on February 25, 2008 has set a restriction on the number of trade name for 1 product registered to only 3 trade names which does not meet the demand of customers

Production plant is located in Bangpoo Industrial Estate. Pato Crop Care rents building and machinery of Building no. 5 and 6 of Pato Chemical Industry PCL. to use as office, formulating plant and warehouse. Annual capacity will be 16,500 Mts. for granule pesticide, 3,300 Mts. for liquid pesticide, and 1,650 Mts. for powder pesticide. Pato Crop Care submits documents for registration to the Department of Agriculture and as of December 31, 2018 Pato Crop Care has been granted with 4 import registration and manufacturing and selling licenses for 38 trade names.

Vision

"Manufacturing high-quality products in reasonable price for Thai farmers while placing emphasis on operating results and simultaneously taking care of its social and environmental responsibilities"

Major Changes and Development

Pato went public and changed its name to PATO CHEMICAL INDUSTRY PUBLIC COMPANY LIMITED in October 1993 then continued to sell its ordinary stocks for 3,000,000 shares at Baht 55 per share, valued at Baht 10 per share in July 1995. PATO increased its capital to Baht 140 million and the company has been listed in the Stock Exchange of Thailand in August 1995.

In 2009 - Resolution of shareholders' meeting approved share split from 10 baht per share to 1 baht per share. The ordinary shares of the company are then 140,000,000 shares.

In 2011 - Investment in a new company "Pato Crop Care Co., Ltd." The registered capital is 5 million baht for 1 million ordinary shares with the par value of 5 baht per share.

- Pato received SET Awards for Outstanding Company Performance 2011.



In 2012 - At the extraordinary shareholder's meeting No.1/2012, the shareholders passed the resolution to allocate the ESOP warrants of 2,800,000 units to the executives and employees of the Company. Registered capital increased to 142.8 million baht with 140 million baht paid –up capital and 142.8 million shares to support the exercise of warrant in 2015

- Pato has been awarded with its second consecutive year of SET Awards for Outstanding Company Performance 2012.

In 2014 - Pato has been awarded with its third consecutive year of SET Awards for Outstanding Company Performance and Best Company Performance Awards for the first time.

In 2016 - Registered and paid up capital decreased to 142,372,000 shares in accordance with ESOP right exercised.

- Pato declared an intention to declared an intent to join Thailand's Private Sector Collective Action against Corruption (CAC).

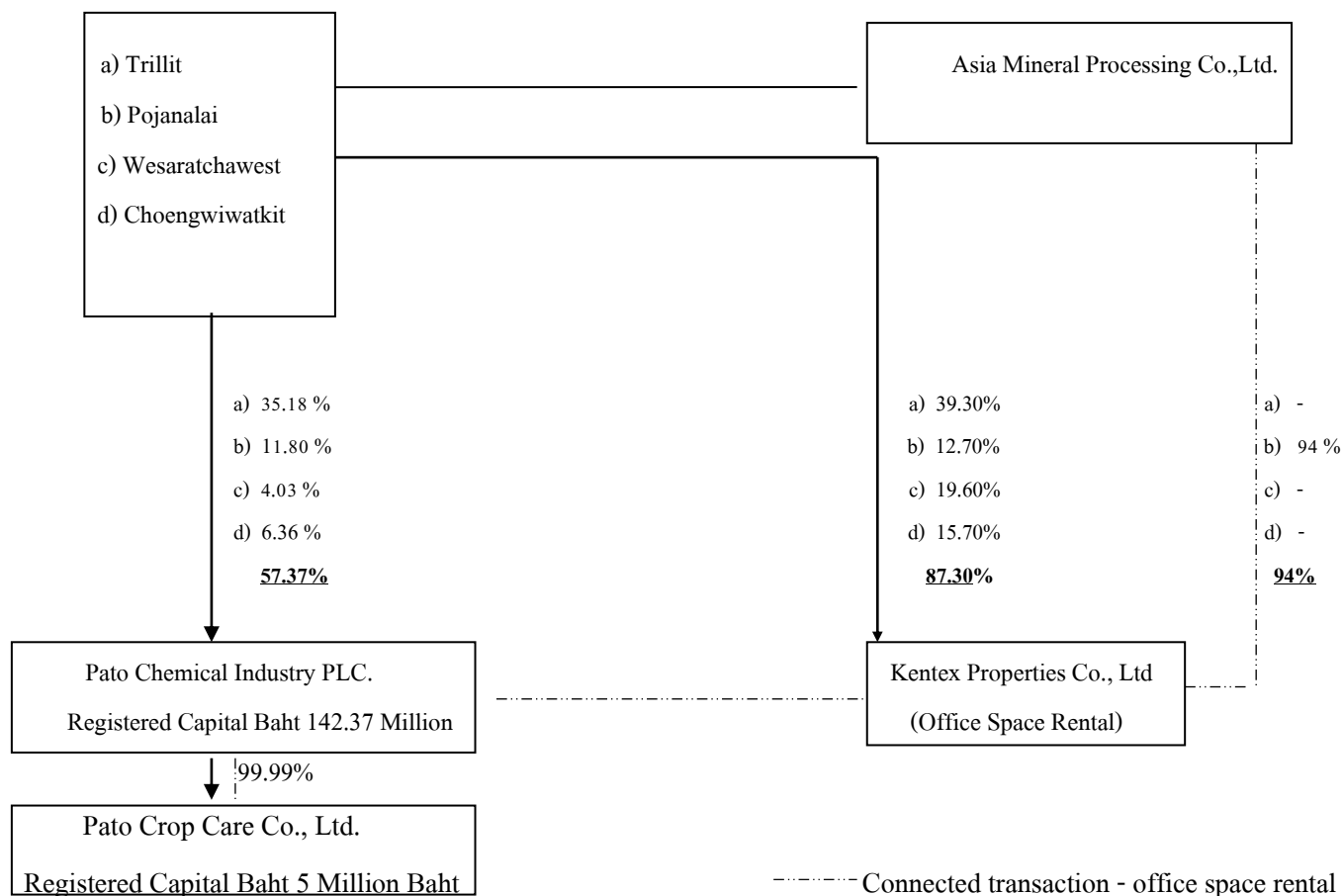
In 2017 - Pato has been awarded with the forth SET Awards for Outstanding Company Performance.

Major Changes and Development in 2018

- February 2018 : Pato has been certified with a certificate from Thailand's Private Sector Collective Action against Corruption (CAC).
- April 2018 : AGM of Shareholders 1/2018 where the meeting appointed
: Mr. Pradit Rodloytook Registration No. 218 or Ms. Nongram Laoha-areedilok Registration
: No. 4334 from AST Master Co., Ltd. to be the Company's auditor for 2017.
- May 2018 : Dividend payment for the 2016 performance at 0.92 baht per share.
- November 2018 : Pato has been awarded with the fifth SET Awards for Outstanding Company Performance and Best Company Performance awards for the second time.

**Development of major shareholders from 30 December 2014 – 15 January 2019**

Shareholders	Nationality	Number of Share As of 15/01/16	Percentage	Number of Share As of 13/12/16	Percentage	Number of Share As of 31/01/18	Percentage	Number of Share As of 15/01/19	Percentage
1. Trillit Group	Thai	50,250,000	35.29	50,300,000	35.33	50,100,000	35.18	50,100,000	35.18
2. Pojanalai Group	Thai	16,500,000	11.59	16,550,000	11.62	16,500,000	11.59	16,800,000	11.80
3. Wesaratchawest Group	Thai	8,440,341	5.93	5,896,465	4.14	5,645,165	3.96	5,741,999	4.03
4. Cheongwiwatkit Group	Thai	9,061,850	6.36	9,061,850	6.36	9,061,800	6.36	9,061,800	6.36
5. Others		58,119,809	40.82	60,563,685	42.53	61,064,985	42.89	60,668,201	42.63
Total		142,372,000	100	142,372,000	100	142,372,000	100	142,372,000	100
Paid up Capital(Million baht)		142.37		142.37		142.37		142.37	
Registered Capital(Million baht)		142.38		142.37		142.37		142.37	
Par (baht)		1.00		1.00		1.00		1.00	

**Shareholders' Structure**

**2. Type of Business****Revenue Structure**

	Operated	Percentage Of Shares	2016		2017		2018	
			Mil Baht	%	Mil Baht	%	Mil Baht	%
Local Sales by Products	PATO	99.99% in PCC						
Product Line 1								
Insecticide		15.51	174.60	24.61	245.17	28.57	203.23	25.19
Herbicide		70.03	340.07	47.93	386.38	45.03	400.13	49.59
Fungicide		11.13	120.28	16.95	162.68	18.96	136.04	16.86
Acaricide		-	28.67	4.04	20.48	2.39	23.12	2.87
Other		3.19	31.22	4.40	30.19	3.52	27.52	3.41
Total Local Sale		99.86	694.84	97.94	844.90	98.47	790.04	97.91
Export Sales by Products	PATO							
Product Line 1								
Insecticide		-	-	-	-	-	-	-
Herbicide		-	-	-	-	-	-	-
Fungicide		-	-	-	-	-	-	-
Acaricide		-	-	-	-	-	-	-
Other		-	-	-	-	-	-	-
Total Export sales		-	-	-	-	-	-	-
Local & Export Sales	PATO							
Product Line 1								
Insecticide		15.51	174.60	24.61	245.17	28.57	203.23	25.19
Herbicide		70.03	340.07	47.93	386.38	45.03	400.13	49.59
Fungicide		11.13	12.28	16.95	162.68	18.96	136.04	16.86
Acaricide		-	28.67	4.04	20.48	2.39	23.12	2.87
Other		3.19	31.22	4.40	30.19	3.52	27.52	3.41
Total Local & Export sales		99.86	694.84	97.94	844.90	98.47	790.04	97.91
Less returned & Discount		3.10	6.38	0.90	7.71	0.90	0.75	0.09
Net Sales		96.76	688.96	97.11	837.19	97.57	789.29	97.82
Contractor		-		-	-	-	-	-
Other Income		0.01	20.99	2.96	20.84	2.43	17.61	2.18
Total Revenue		96.77	709.45	100	858.03	100	806.90	100



2.1 Product Characteristic

(1) In general, there are 2 major types of agrochemical (from business aspect)

1. Specialty product: this is proprietary product belonging to a particular company which has the patent right to produce and distribute it. An agreement of contract with Manufacturers' is needed as the products are of complicated formulation to achieve efficient products to meet market demand and receive brand loyalty.

2. Commodity product: this is generic product commonly sold and distributed by many companies. Commodity product can be imported from many manufacturers around the world. It is usually imported in the form of technical grade and then formulated into finished products. Due to price competition, import of finished products is less than import of technical for formulation. Since there is no significant difference in the quality and price, brand loyalty and image are very important factors for commodity products.

Products by types

	Specialty Products	Commodity Products	Total
Technical Grade	8	26	34
Finished Products	10	25	35
Total	<u>18</u>	<u>51</u>	<u>69</u>
Total Value (Million Baht)	<u>420.93</u>	<u>368.96</u>	<u>789.89</u>

The proportion in terms of the value of imported specialty to commodity products in Thailand is 35:65. For Pato Chemical Industry PCL., this proportion is about 53:47 in 2018. Among all pesticide products used by Thai farmers, herbicides have the highest import volume followed by insecticides. In the past, most herbicide was imported in the form of finished products more than in form of technical grade and vice versa for insecticides. At present, however, the market situation has changed. More and more herbicides are now imported in the form of technical grade due to the increase demand and emphasis of farmers on herbicides. Farmers are now more conscious about weeds, which naturally grow along with the crops, and take away some of the essential water and nutrition leaving a lowered crop yield. Herbicide usage is now more frequent and consequently the total herbicide usage grew.

From the manufacturers' aspect, herbicide can be produced and distributed in almost all season despite some uncooperative weather and climate condition. In severe poor weather condition, such as drought, herbicide sales are not affected as much compared to insecticide sales, which is considered more risky. The reason for increasing imports of herbicide technical grade is because farmers demand the less



expensive locally formulated herbicide in order to reduce their cost to cope with fluctuations in their crop prices. Since there is no significant quality difference between imported finished products and locally formulated ones, price is the main concern for farmers when they decide on purchases. On the other hand, in the production side, companies need to be concerned not only about the country's principal crops, but also the geographic suitability for different types of crop. Moreover, companies are concerned with the efficiency, productivity, and environmental impacts of their production facility. Sales breakdown by region as compared to total sales of the company during 2015 – 2018 is as follows:

Proportion of sales breakdown by region

Region	2015	2016	2017	2018
Central	67%	68%	73%	78%
North	17%	17%	14%	10%
West	3%	2%	3%	2%
East	6%	5%	5%	5%
Northeast	5%	6%	4%	4%
South	2%	2%	1%	1%
Total	<u>100%</u>	<u>100%</u>	<u>100%</u>	<u>100%</u>

Type of Pesticides Distributed in Thailand

1. **Wettable Powder (WP), Water Dispersible Granule (WG)** is the combination of active ingredients, carriers or diluents such as white clay, talc, or other substance, including surface active ingredients such as wetting agents, dispersing agents.

2. **Emulsifiable Concentrate (EC)** is the combination of active ingredients with non-water miscible solvents and emulsifier for water soluble which will also help the chemical to stick on the leaf or insect's body.

3. **Soluble Liquid Concentrate (SL)** will look like emulsion and are classified in the same type. This type of pesticide is the combination of active ingredients and water miscible solvent without emulsifier.

4. **Suspension Concentrate (SC) or Flowable Formulation (FL)** is the combination of well ground active ingredients and the carriers, e.g., white clay, and liquid inert ingredients. This F or For FL will be able to dissolve in water better than the water dispersible powder, thus, making it more convenient to use. Special additives could be added during the production process to make this pesticide more soluble.



5. **Water Soluble Powder (SP)** is the combination of water soluble active ingredients in powder, or fine flake, form mixed with surface active agents or other additives or solvents to make chemical well dispersed. It will dissolve in water instantly and with no precipitation.

6. **Dust (D)** is the combination of well ground active ingredients and inert ingredient will be the carrier to dilute for lower percentage of active ingredient. This type of pesticide can be sprayed with the knapsack sprayer.

7. **Granule (GR)** is made up of carriers or other inert ingredients, such as sands, coated with active ingredients. This type of formulation is made for easy direct broadcast and soil burial.

Pato Chemical Industry PCL. formulates pesticide in following form; Emulsifiable Concentrate (EC), Soluble Liquid Concentrate (SL), Water Soluble Powder (SP), Granule (GR), Dust (D).

Pato Chemical Industry PCL. has the highest capacity of granule pesticide in the country with production capacity of 35,700 tons. In 2018, the company manufactured 8,407 tons of granule pesticide.

The percentage breakdown in terms of the company's import volume for the different types of agrochemical are as follows:

- Insecticide accounted for 30% of total import volume.
- Herbicide accounted for 55% of total import volume.
- Other pesticide such as Fungicide, Acaricide, Rodenticide, Molluscicide, and plant hormones accounted for 15% of total import volume.

In 2018, sales contribution of those three types of products as Herbicide, Insecticide and other products were 50 %: 28%: 22% respectively.

**Proportion of Sales of Product Breakdown by Crop and Planting Area**

Crop	Area	Percentage
1.Rice	North, Central, North-East, South (some provinces)	66
2.Fruit	Central, East (Rayong, Chantaburi, Trad, Chacheongsao) North (Chiangmai, Chiangrai, kampangpet) South (Suratthani)	19
3.Vegetable	Central, North, and North-East	1
4. Plantation Crops such as Corn, Soy Bean, Sugarcane, Cotton and Cassava	Central, South, North, and North-East	13
5.Oil Palm, Para Rubber	South , East, and North-East	1

Source: Marketing Department: Pato Chemical Industry PCL.

2.2 Marketing and Competition**(A) Market strategies:**

The company's competitive advantages are

1. Standard quality of product which is well accepted by the customers for more than 30 years.
2. Strategy to specify products for sale by each dealer: Aside from its financial status, the company will limit the products to be distributed by each dealer to prevent price cutting of the company's products among its dealers in the same area.
3. Price advantage as the company will produce from technical grade chemical.
4. Good relationship with dealers.
5. Fast delivery: within the 200 kilometer radius the company will provide delivery. Dealers outside the radius, the company may deliver depending on order amount. Agrochemical industry pay much importance on prompt delivery. In each particular season, the company will have prompt delivery to meet the demand in time. For example, production and distribution of herbicide should be able to meet the demand during rainy season while insecticide should be able to be delivered promptly during the insects' outbreak season.



6. Pato distributes totaling 80 various products, consequently the company will be able to share more market in more planting area for various crops such as rice, fruit, vegetable, Para rubber, palm oil and many others. This will reduce risk from natural disaster. Performance of the company will then be as we has expected for.

There are 3 main of distribution channels:

1. *Distributors*: They are mostly in Bangkok and distribute products under their own brand to dealers. They have Pato formulated, packed under distributors' registered label and brand.
2. *Local Repackers*: They are packaging companies who purchase the products from producer to repackage and distribute under their own brand. These companies will register the pesticide by themselves by getting the authorization certificate from the formulator/manufacturer.
3. *Dealers or Free Market*: They are small dealers or retailers in the upcountry and some in Bangkok who sell pesticides to the end users under Pato Globe Trade Mark.

Sales contribution for Distributors: Local Repackers: Dealers currently is 26 : 12 : 62

Types of Customers and its Relationships

In the pesticide industry, there are 2 main markets; general customers market (Free market) which is bigger, and markets for distributors and market for local repackers which is less important respectively. The company emphasizes in customers in rural area. By thorough selection of dealer for each particular area will sell different products to avoid competition. In doing so, the company will be able to sell variety of products and to reduce the risk of distributor's business. However, the company still needs to check its relationship with the customers to avoid any possible problems. The company aims to develop new products and variety, and, at the same time, aims to distribute the information on proper and efficient use of all pesticides to customers.

Criteria for selection of dealer for each are:

1. Financial status
2. Sales network and its coverage
3. No conflict agreement to sell the same product of different producers
4. Strong intention to commit to the company's products

**Product Distribution of Pato Chemical Industry PCL. in 2015 - 2018**

Area	2015		2016		2017		2018	
	Number of Customers	Total Sale Thousand Baht	Number of Customers	Total Sale Thousand Baht	Number of Customers	Total Sale Thousand Baht	Number of Customers	Total Sale Thousand Baht
1. DISTRIBUTORS	6	200.89	6	219.90	6	215.47	6	158.62
2. LOCALREPACKERS	4	89.28	4	80.66	4	101.27	5	90.32
3. FREE MARKET	322	351.50	325	394.29	327	527.82	329	540.95
Total	332	641.67	335	694.85	337	844.56	340	789.89

Percentage of 10 major customers in 2015-2018

(Unit : %)

Customers	2015	2016	2017	2018
10 Major Customers	39.73	38.85	44.06	34.14
Others	60.27	61.15	55.94	65.86
Total	100.00	100.00	100.00	100.00

Note: There is a customer whose accounts is of greater than 10%. Most customers are of long connection and of good payment. However, new customer is strictly selected to avoid bad debt.

Pricing Policy

In general, the company will set the price at the level, which is slightly higher than average price of its local competitors and slightly lower than average price of the international market, of the same product.

Other factors for the price consideration are:

1. If the product already exists in the market, the company will set its price within that product market price range.
2. If the product does not yet exist in the market, the company will conduct research on quality; the amount used and instruction for use to determine the efficacy of its product to determine the price in comparison with the pesticide farmers are currently using.

**(B) Competition:**

There are 2 major types of chemical pesticide companies:

1. Multinational Companies. These companies have their own products or buy few products from other companies. Most of them, either, imports finished products for repackaging by local repackers, or import technical grades for resell to local companies. There are about 11 multinational companies in Thailand.

2. Local Companies. There are 3 groups as follows:

2.1 Formulators and distributors : These companies have their own factory for formulating and reprocessing, and their own sales and promotion team. Most of them imports technical grade products. There are about 35 companies of this kind including PATO.

2.2 Formulators : These companies have their own factory for formulating and reprocessing, but do not have their own sales and promotion team. There are about 15 formulators in Thailand.

2.3 Distributors: These companies only have their own sales and promotion team. There are about 415 distributors in Thailand.

Currently, the company share 4% to total agrochemical market and has policy to gain more market share from the multinational or local companies in order to strengthen its competitiveness as follows:

1. Compared with other formulators, the company's factory in Bangpoo Industrial Estate is well equipped with modern machinery for higher capacity. Moreover, the company has sufficient trucks for quick delivery to serve customers better. In addition, many types of formulation such as Emulsifiable Concentrate (EC), Suspension Concentrate (SP), Wettable Powder (WP) and Granule (GR) are available.

2. Compared with Formulators and Distributors, the company's advantages are shown below:

- 2.1 Lower costs of production from the use of technical grade
- 2.2 Extensive marketing team with experience and expertise
- 2.3 Wider coverage of area all over the country
- 2.4 More product variety of various agrochemical types and uses

3. Compared with Distributor, the company's advantages over these companies are the same as those over the Formulator and Distributors. Moreover, the company has strategies to gain market share by:

3.1 Adding more products of comparable quality to those of the multi-national companies. With lower costs of production. It is expected that the company will be able to achieve more market share, initially, by 5-10% of total sales of such product, and will increase gradually.



3.2 Penetrating into new area i.e. area in the Northeast region, or in developing area of the country which is accounted for 60% of total area of Thailand. The company will send promotion team to the area to introduce the proper the quality of its produce to serve the demand in the market. By this way, farmers will also earn higher income.

Other factors contributing to the success of the industry include:

1. *Range of products*

Production must include herbicide, insecticide, fungicide, and acaricide and molluscicide according to the market share ratio.

2. *Products*

Selection of products depends on the company's policy and the fluctuating price of crops.

3. *Market distribution*

Nationwide distribution is essential, as the type of crops grown varies from region to region. Regional productivity is also effected by rainfall, irrigation and even the demand for pesticide products.

4. *Rainfall*

The amount of land allotted to agricultural purposes has a direct impact on the growth of the agricultural chemical industry. The amount of rainfall also plays an important role in influencing the success, or otherwise, of land cultivation. If there is an abundant supply of rainwater, agricultural activities can be carried out throughout the country. Conversely, when rainfall is in short supply, land cultivation can only be done successfully in irrigated areas. Accordingly, during a drought, agricultural sector profits shrink drastically, and the overall economy is badly affected.

The demand for pesticides is also largely influenced by rainfall. When the water supply was good, the demand for herbicides grew to such an extent that a significant volume had to be imported, at great expense. However, when rain water was scarce, an insect epidemic occurred, resulting in large imports of concentrated insecticides, known as "Technical Grade", which had to be reformulated, before they could be sold on the domestic market.

5. *Price of crops*

As crop prices are so heavily influenced by importing opportunities and global prices, figures on each serve as indicators for industry trends.

**2.3 Production and Produce Procurement for Sale****(A) Procurement**

Pato Chemical Industry PCL.'s factory is located at 569 Soi 12, Bangpoo Industrial Estate, Sukhumvit Road, Tambon Praksa, Amphur Muang, Samutprakarn Province.

Capacity and Actual Production

Liquid Unit: Thousand Liters

Granule Unit: Ton

Powder Unit: Ton

Product	Capacity 2015	Actual 2015	Capacity 2016	Actual 2016	Capacity 2017	Actual 2017	Capacity 2018	Actual 2018
Insecticide								
- Liquid	2,612	472	2,612	474	2,612	491	2,612	403
- Granule	14,400	1,988	14,400	2,394	14,400	4,458	14,400	3,236
- Powder	1,500	11	1,500	13	1,500	16	1,500	15
Herbicide								
- Liquid	2,600	1,595	2,600	1,981	2,600	1,795	2,600	1,457
- Granule	19,800	3,484	19,800	3,885	19,800	4,419	19,800	5,116
- Powder	2,000	196	2,000	139	2,000	219	2,000	232
Fungicide								
- Liquid	500	212	500	289	500	327	500	272
- Granule	500	-	500	-	500	-	500	-
- Powder	500	88	500	55	500	75	500	75
Acaricide								
- Liquid	270	34	270	34	270	29	270	32
Others								
- Liquid	500	144	500	160	500	110	500	99
- Granule	1,000	-	1,000	45	1,000	180	1,000	55
- Powder	60	102	500	98	500	159	500	133
Total Capacity								
- Liquid	6,482	2,457	6,482	2,878	6,482	2,752	6,482	2,263
- Granule	35,700	5,472	35,700	6,324	35,700	9,057	35,700	8,407
- Powder	4,060	397	4,060	305	4,060	469	4,060	455

Note: The factory is working 1 shift for 7 hours.

**(B) Raw Material and Suppliers**

Major raw material is chemical of technical grade. Normally, the company will buy active vs inert ingredients at the ratio of 90 : 10 respectively by direct order from abroad and via local agent. Table showing types, suppliers and price. There is no substitute substance for technical grade chemical, however, there are substitutions for other inert ingredients such as emulsifiers, solvent, auxiliary materials for solvent, but these substitute substance will have to pass laboratory test before use. There are many suppliers of raw materials for those imported and purchased locally. Diverse group of raw material suppliers will create bargaining power for the company to set a more reasonable price, higher quality products, and prompt delivery. However, there are certain substances that the company buys from a sole supplier under special condition to benefit the company such as no sale to other company of the same productions. Price of raw material depends on the world price which is the same as other commodity.

There is no supplier whose business accounts for more than 30% of the company's total raw material purchase.

Local Purchasing Ratio of 2015-2018

Value of Purchasing Ratio (Unit: Thousand Baht)

Raw Material	2015	%	2016	%	2017	%	2018	%
1.Technical Grade	2,139	0.64	4,582	1.13	5,295	1.30	8,608	1.61
2.Solvent	11,939	3.58	13,127	3.25	17,345	4.26	11,735	2.20
3.Emulsifiers	8,663	2.59	9,110	2.25	10,198	2.50	9,570	1.79
4.Auxiliary	6,024	1.80	6,576	1.63	10,479	2.57	11,504	2.16
5.Others	5,812	1.74	8,560	2.12	10,611	2.60	10,843	2.03
Total Amount	34,577	10.35	41,955	10.38	53,928	13.23	52,260	9.80

Import Purchasing Ratio of 2015 - 2018

Value of Purchasing Ratio (Unit: Thousand Baht)

Raw Material	2015	%	2016	%	2017	%	2018	%
1.Technical Grade	298,201	89.29	355,039	87.88	346,146	84.97	480,676	90.10
2.Solvent	-	-	-	-	-	-	-	-
3.Emulsifiers	1,191	0.36	7,033	1.74	7,317	1.80	570	0.11
4.Auxiliary	-	-	-	-	-	-	-	-
5.Others	-	-	-	-	-	-	-	-
Total Amount	299,392	89.65	362,072	89.62	353,463	86.77	481,246	90.20

**Local and Import Purchasing Ratio of 2015 - 2018**

Value of Purchasing Ratio (Unit: Thousand Baht)

Raw Material	2015	%	2016	%	2017	%	2018	%
1.Technical Grade	300,340	89.93	359,621	89.01	351,441	86.27	489,284	91.71
2.Solvent	11,939	3.58	13,127	3.25	17,345	4.26	11,735	2.20
3.Emulsifiers	9,854	2.95	16,143	3.99	17,515	4.30	10,140	1.90
4.Auxiliary	6,024	1.80	6,576	1.63	10,479	2.57	11,504	2.16
5.Others	5,812	1.74	8,560	2.12	10,611	2.60	10,843	2.03
Total Amount	333,969	100	404,027	100	407,391	100	533,506	100

(B) Environmental Impact from manufacturing process and the demolishing of waste**- Procedure to reduce environmental impact**

The factory situates in Bangpoo Industrial Estate, Pato strictly complies with rules and regulations prescribed by the Industrial Estate regarding environment and others.

Being a formulator, there is no waste from raw materials or from formulating process. The only wastes are from some contaminated packaging materials which Pato hires a professional licensed waste management service to handle the collection for recycling or demolishing process.

- Legal Case against Environmental Misconduct

PATO has never been sued against environmental misconduct.

2.4 Non-Delivery Goods

There is no non-delivery goods as of 31 December 2018 for PATO.

3. Risk Factors**Business Risk**

1. Natural phenomena risk, such as soil and weather conditions, which vary from year to year, not only directly affect agricultural activities, but also have a huge impact on the sales of insecticides. Drought is a major hindrance of the cultivation of high quality crops, and it reduces the volume of produce considerably, as well as the demand for insecticides. Conversely, when there has been major crop damage, the demand for insecticides could increase to such an extent that manufacturers are unable to meet the increased demand.

In recognition of such risks, therefore, PATO Chemical Industry PCL. has gone to great lengths to research and develop new products, in an effort to minimize the variations in the demand for



insecticides caused by such natural crises. For example, in the case of drought, the use of liquid weed killers, instead of granules, goes a long way in reducing the impact on PATO Chemical Industry's sales. In addition, the company's new range of insecticides, designed for use with a wide range of crops, such as rice, field crops, orchards, Para rubber, and oil palm, helps minimize the effect of such natural crisis on these crops.

2. Marketing and production risk has hardly had any impact at all for the Company. Its extensive nationwide network of agents means that this risk is negligible. Furthermore, its distribution strategy, which enables each distributor to sell only one product range to avoid competition among distributors, has proved most successful. But it is the company's reputation, amongst farmers, for manufacturing products which are both reliable and of a high quality that has contributed most to the company's success. The fact that its product prices are considerably lower than those of imported products also helps keep the company on solid ground.

3. Credit risk, the company is exposed to credit risk primarily with respect to trade and notes accounts receivables. The company's prudent credit policy and its diversified customers. The maximum credit risk exposure is equal to the book value of accounts receivable in the balance sheet. To minimize the risk of accumulating bad debts, PATO Chemical Industry has implemented a number of measures, including, Control of credit balance, Strict consideration when opening new market, Shortening of payment period, Emphasis on crops with high potential and price, Reduction of granting credit to high-risk crops, More detailed market studies by marketing personnel.

4. Foreign currency risk relates from import activities of the company. The company primarily closely monitor movements of foreign exchange market and primarily of utilizes monetary instruments to manage risks.

5. Raw material shortage risk

5.1 From 2018 onwards, registration and license such as production registration, import permit of many products of the company are gradually expired and must go through renewal process. The hesitant process of re-registration under relevant government agencies and some of the rules that are still unclear causing on some products cannot be sold in time. However, in order to reduce such risks, the company has planned to renew the registration in advance and monitor the situation of registration and extension of licenses closely.

5.2 The enforcing of new environmental laws in China has caused number of products to be limited to production. Some source of raw materials that the pollution control system does not meet the



standards or locate in areas that may affect the environment, such as upstream or communities, will be closed. The production quantities in general, therefore, decrease. The products do not meet demand, resulting in higher raw material prices. In order to reduce such risk, the Company therefore selects to register with suppliers that have a standardized environmental management system and are located in an industrial area that has been approved by government agencies.

5 . Corruption Risk as follows :

- The company is required to registered dangerous substances with the government agency, namely, Department of Agriculture, Department of Livestock Development, and Food and Drug Administration. Therefore, the risk minimization has to be performed by managing the related registrations and licenses to control and plan for filing or extension of licenses in timely manner. This is including the preparation of required documents for renewal of registration and licenses according to each agency requirements and track on the progress closely to ensure that the renewal is properly performed.
- The company is obligated to report the measurement results and the analysis concentration level of dangerous chemicals in the ambient air of the working area and its storage to Department of Labour Protection and Welfare, Samut Prakan Province. If the results fail to comply with the standard of the Department or receive complaint, this can affect the license renewal of the factory. The company shall also report to Department of Industrial Works regarding the waste management and non-use materials, to minimize risk; the company manages all documents according to the reality. Moreover, the company also employs outsource company to remove waste and non-use materials from the factory for the appropriate waste management, and also properly manage documentation, and submit reports to Department of Industrial Works. The company complies fully with the law as mentioned as the advanced technical safety officers have investigated every risky issue and always improve to meet the safety standard.
- The company is an importer of raw materials from overseas for the production process, which most of the raw materials are without customs duty. However, the company hires experienced shipping company with dangerous substances handling records and the shipping company also has to comply with the anti-corruption policy by signing the letter of acknowledgment.

Shareholders Risk

1. Pato Chemical Industry Public Company Limited and its subsidiary realize of the stability of the shareholders and then set a commitment to run the business with a good performance as possible. The companies expect to pay dividend to shareholders not less than 40% of net profit each year. Shareholders



will be able to consider history of dividend payout ratio from table under topic of Dividend Payment Policy.

2. The risk of the shareholder(s) holding shares above 25%

Trillit group is the major shareholders hold about 35.18 percent of paid-up capital in the company as of January 15, 2019. So they cannot control the resolution of the shareholders' meeting, at which majority voting system is used for approval. Moreover, the other shareholders may collect the votes to determine and counterbalance the topic that major shareholder may offer. According to the risks, the company provides a management structure which consists of the Board of Directors, Executive Directors, Audit Committee, and the Risk Management Committee that include the personnel who are competent. Furthermore, independent outsiders are appointed to be the Independent Directors: 4 people out of total 11 directors. 3 Independent Directors are appointed to be an Audit Committee and shall have the duty to determine, consider, and give reasonable advice for any connected transactions. Reports will be presented to the Board of directors or shareholders' meeting for approval.

4. Assets

4.1 Land, Buildings and Machinery

Assets of Pato as of December 31, 2018 are as follows:

Pato Chemical Industry PCL.

Location	Ownership	Book Value (Baht)	Collateral
1.1 Bangpoo Industrial Estate, Praksa, Samutprakarn 12-0-72 Rai	Owner	10,962,000.00	None
1.2 Bang Plee, Samutprakarn 1-2-57 Rai	Owner	7,030,252.00	None
1.3 Head Office	Rent	-	None
1.4 Buildings at Bangpoo Industrial Estate	Owner	3,840,609.00	None
1.5 Machinery at Bangpoo Industrial Estate	Owner	5,681,941.25	None

4.2 Right

1. BOI Pato has never applied for a privilege from BOI.

2. Other Rights



Right, belonging to Pato Chemical Industry, is intangible assets and requires 3-5 years of extensive research and laboratory tests of pesticides and insecticides. Pato has registered with the Ministry of Agriculture and Cooperatives for the owner of trademark for agrochemical. The registration is valid for six years from the date of receipt of registration and subject to renew once expire.

As of December 31, 2018, the company has received approval for import registrations of 73 products under manufacturing and selling licenses of 176 trade names.

Pato Crop Care Co., Ltd.

Location	Ownership	Book Value (Baht)	Collateral
1.1 Buildings at Bangpoo Industrial Estate	Rent from PATO	-	None
1.2 Machinery at Bangpoo Industrial Estate	Rent from PATO	-	None

Right

1. BOI Pato Crop Care Co., Ltd. has never applied for a privilege from BOI.
2. Other Rights

Right, belonging to Pato Crop Care Co., Ltd., is intangible assets and requires years of extensive research and laboratory tests of pesticides and insecticides. Pato has registered with the Ministry of Agriculture and Cooperatives for the owner of trademark for agrochemical. The registration is valid for 6 years from the date of receipt of registration and subject to renew once expire.

As of December 31, 2018, the company has received approval for import registrations of 4 products under manufacturing and selling licenses of 38 trade names.

5. Legal Dispute

None

**6. General Information****Pato Chemical Industry Public Co., Ltd**

Pato Chemical Industry Public Co., Ltd. (PATO) is the manufacturer and distributor of Agrochemical products.

Company Registration No. 0107536001214

Head office: Pato Building 3388 New Petchburi Road, Bangkapi, Huaykwang, Bangkok 10310.

Tel: 02 318 5612-19, 02 318 0360-9 Fax : 02 318 0367

Email Address: pato1@cscoms.com , pato2@cscoms.com, and mailbox@patochemical.com

Independent Directors: auditcom.pato@gmail.com

Factory : 569 Bangpoo Industrial Estate, Soi 12 Patana 3 Road, Praksa Sub-district, Muang District, Samutprakarn Tel : 02 324 0890 — 1 Fax : 02 324 0187

Website for Shareholders: www.patochemical.com

Registered capital 142,372,000 baht (One Hundred Forty Two Million Three Hundred Seventy Two Thousand Baht)

Paid up Capital 142,372,000 baht (One Hundred Forty Two Million Three Hundred Seventy Two Thousand Baht)

Total share 142,372,000 shares. (One Hundred Forty Two Million Three Hundred Seventy Two Thousand Shares)

Par value 1 baht per share.

Companies of which Pato hold share greater than 10%

Name: Pato Crop Care Co., Ltd.

Office and Factory: 569/1 Bangpoo Industrial Estate, Soi 12 Patana 3 Road, Praksa Sub-district, Muang District, Samutprakarn

Company Registration No. 0115554017320

Tel: 02 324 0890 — 1

Fax: 02 324 0187

Type of Business: Manufacturer and distributor of Agrochemical products.

Registered and paid capital: 5 million baht of total 1 million shares. Par value 5 baht per share. Pato's stake in Pato Crop Care 99.99 %

Other References

Registrar: Thailand Securities Depository Co., Ltd.



Auditor : Mr. Pradit Rodroytook Registration No. 218 or
Ms. Nongram Laoha-Areedilok Registration No 4334 from
AST Master Co., Ltd.
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