
5. INFORMATION ON OUR GROUP (Cont'd)

5.4.3.4 Selected Investors by Way of Private Placement

9,400,000 Public Issue Shares, representing approximately 5.66% of our enlarged issued and paid-up share capital will be made available for application by way of private placement to selected investors.

5.4.4 Listing

Upon completion of all the abovementioned exercises, we shall seek the listing of and quotation for our enlarged issued and paid-up share capital of RM83,000,000 comprising 166,000,000 Shares on the Main Market.

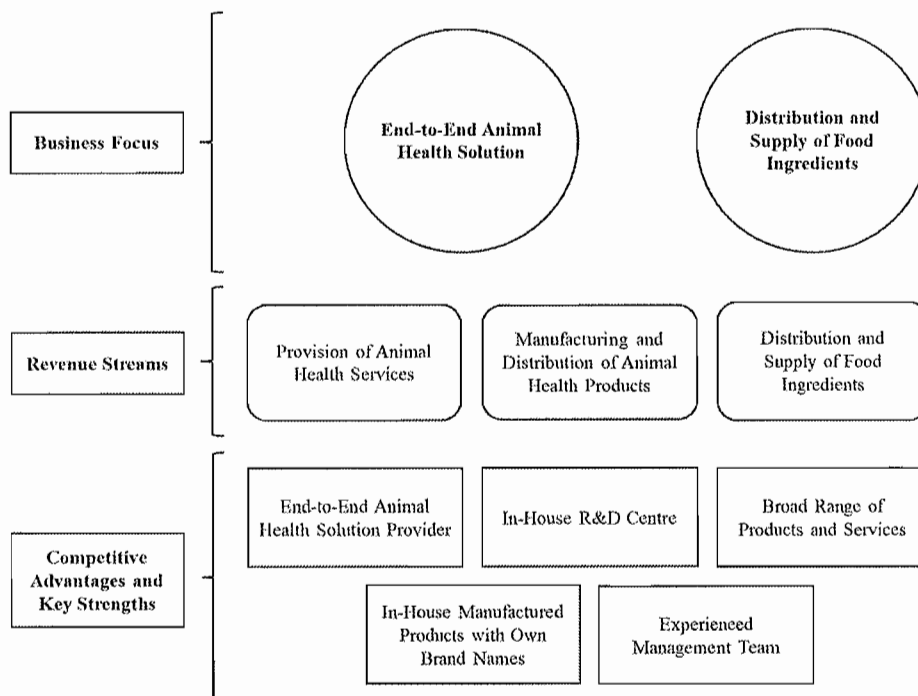
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6. BUSINESS OVERVIEW

6.1 Business Model, Competitive Advantages and Key Strengths

6.1.1 Business Model

Our business model is depicted in the figure below:



6.1.2 Business Focus

Our Group is primarily an end-to-end animal health solution provider, integrating the provision of animal health services as well as the manufacturing and distribution of animal health products focused mainly on the livestock industry.

The animal health services provided by our Group consist of technical and R&D services whereas the animal health products provided by our Group include vaccines, pharmaceuticals and feed additives which are mainly sourced from third party international manufacturers. Our Group also manufactures selected pharmaceuticals and feed additives at our own GMP-compliant plant. In addition, we also carry out repackaging and relabelling of products sourced from third parties at our GMP-compliant plant to cater to the local market as well as to meet the regulations of the local authorities. Kindly refer to Section 6.2.1.1 of the Prospectus for details on the provision of animal health services and Section 6.2.1.2 of the Prospectus for details on the manufacturing and distribution of animal health products.

As part of our Group's continuing efforts as an end-to-end animal health solution provider, we have launched our TSP programme in 2009. The TSP programme is an approach to animal health solutions where the animal health services and products are customised to the needs and requirements of each customer. In general, our customers would have the flexibility and option to select the animal health services they need or require and pair it with the animal health products provided by our Group, thus forming their desired animal health solution via our TSP programme.

In addition, our Group is also involved in the distribution and supply of food ingredients.

6. BUSINESS OVERVIEW (Cont'd)

6.1.3 Revenue Streams

Our revenue is mainly derived from the provision of end-to-end animal health solution comprising the provision of animal health services and the manufacturing and distribution of animal health products. For the FPE 31 August 2016, revenue from our end-to-end animal health solution accounted for 78.42% of our Group's total revenue where the provision of animal health services accounted for approximately 1.60% of our Group's total revenue and the manufacturing and distribution of animal health products accounted for approximately 76.82% of our Group's total revenue. In terms of revenue generated from the manufacturing and distribution of animal health products, approximately 84.11% was derived from the sales of third party products whereas the remaining 15.89% was derived from the sales of in-house manufactured products.

In addition, the distribution and supply of food ingredients accounted for approximately 21.58% of our total revenue for the FPE 31 August 2016.

6.1.4 Competitive Advantages and Key Strengths

Our competitive advantages and key strengths are important in sustaining our business and providing our Group with future growth opportunities.

(i) End-to-End Animal Health Solution Provider

One of the main competitive strengths of our Group lies in our ability to provide end-to-end animal health solution to our customers via our TSP programme. Through our TSP programme, we provide customised animal health solution to address the problems and meet the needs and requirements of each customer.

Over the years, our Group which started with the distribution of animal health products has expanded our product range as well as service offerings towards developing into an end-to-end animal health solution provider. The business expansion plans that we have undertaken, amongst others, are as follows:

- expansion of our product range;
- expansion of our business operations with the provision of technical services;
- establishment of an in-house R&D team and facility;
- establishment of a GMP-compliant plant;
- manufacturing of pharmaceuticals and feed additives that are marketed under our own brand names; and
- introduction of the TSP programme.

In addition, our Group is able to minimise the dependency on third parties in providing technical services as part of our end-to-end animal health solution as our technical and R&D services are carried out by our in-house personnel. This would provide convenience and at the same time ensure faster and more reliable services to be provided to our customers.

6. BUSINESS OVERVIEW (Cont'd)

(ii) In-House R&D Centre

We have established an in-house R&D centre in 2007. It is located at our head office in Petaling Jaya, Selangor Darul Ehsan and is operated by eight (8) personnel as at the LPD. Our in-house R&D centre provides us the platform to expand our product range and allows our Group to continuously develop new products as well as improve our existing products to meet existing market and our customers' requirements. In addition, our in-house R&D centre is one of the key components of our TSP programme. The ability to undertake in-house R&D activities enables our Group to respond faster to the changing customer preferences and new market developments.

The success of our R&D is evident by the development of various animal health products under our own brand names over the years. Since the establishment of our in-house R&D centre, we have successfully developed eleven (11) pharmaceuticals and thirteen (13) feed additives. The R&D efforts will increase the capabilities and product variety of our Group over time to compete with other market players.

(iii) Broad Range of Products and Services

Our Group has an extensive range of animal health products which consists of more than 300 types of products including vaccines, pharmaceuticals and feed additives for livestock and companion animals. For the FPE 31 August 2016, our Group sold a total of 306 types of products of which 283 types are third party products and the remaining 23 types are in-house manufactured products. As part of our TSP programme, we also provide an extensive range of technical services comprising veterinary advisory and diagnostic laboratory analysis to our customers.

The offering of a broad range of animal health products and services allows our Group to cater to the demands and requirements of our existing and new customers in order to serve as an end-to-end animal health solution provider. In addition, our sales team is able to cross sell our Group's products and services, with an aim to provide convenience to our customers and meet their needs and requirements.

With such broad product offerings, our Group's reliance on the sales of any single product is reduced.

(iv) In-House Manufactured Products with Own Brand Names

Our Group emphasises on continuous product development in order to increase our product variety and address business opportunities arising from new market developments. We are able to develop and manufacture a range of pharmaceuticals and feed additives that are marketed under our own brand names and conform to the standards required by the relevant authorities through our in-house R&D activities and GMP-compliant plant.

It also allows us to carry out product development and enhancement to ensure that we continue to meet the requirements of our customers. In addition, the offering of in-house manufactured products under our own brand names allows our Group to build brand equity and create brand loyalty, which is an important factor in promoting business sustainability and growth.

6. BUSINESS OVERVIEW (Cont'd)

(v) Experienced Management Team

Our Group is led by an experienced management team who has collectively contributed to the growth and development of our Group. Our Group has been jointly spearheaded by our Group Managing Director, Dr. Lim, Group Marketing & Technical Director, Dr. Yip and Group Sales Director, Foong Kam Weng, all of whom have played an important role in the expansion of our Group over the years from a distributor of animal health products to an end-to-end animal health solution provider.

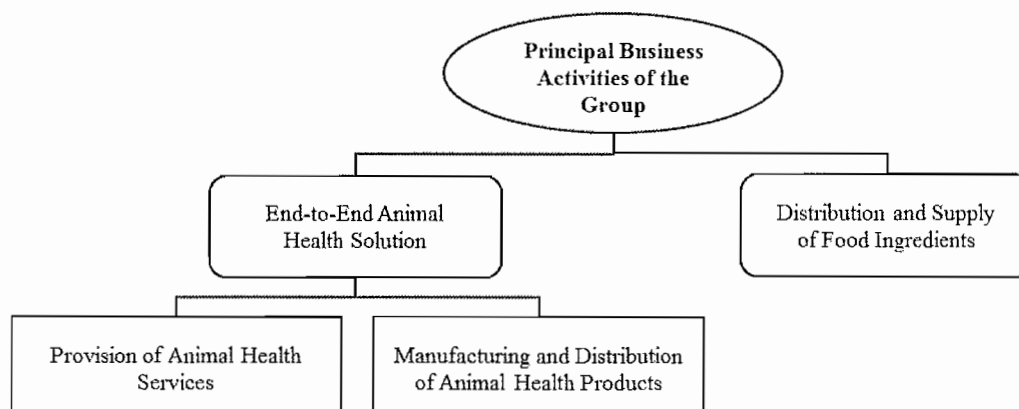
The management team is supported by our key personnel, comprising individuals with relevant experience in dealing with animal health products and food ingredients, providing veterinary advisory services, diagnostic laboratory analysis, R&D and accounting and finance related functions. In addition, as at the LPD, our Group has a total of thirteen (13) veterinarians that work with our technical and marketing team to carry out marketing campaigns, seminars and events as well as site visits to provide technical services to our customers.

We believe the continuous effort of our experienced management team will provide the basis for the business growth of our Group moving forward.

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6. BUSINESS OVERVIEW (Cont'd)

6.2 Business Activities



Our Group is primarily an end-to-end animal health solution provider involved in the provision of animal health services and the manufacturing and distribution of animal health products. Our Group is also involved in the distribution and supply of food ingredients.

6.2.1 End-to-End Animal Health Solution

6.2.1.1 Provision of Animal Health Services

The animal health services provided by our Group can be classified into the following two (2) categories:

(a) Provision of Technical Services

Our Group's technical services involve the provision of veterinary advisory and consultation services as well as diagnostic laboratory analyses which can be grouped under routine, specific and advisory.

The following table summarises the technical services provided by our Group:

Type	Description
Routine	<ul style="list-style-type: none"> • Routine farm visits • Technical consultation • Product introduction and training • In-house training
Specific	<ul style="list-style-type: none"> • Diagnostic laboratory services • Disease investigation, control and monitoring • Vaccination, medication programme and nutritional consultation
Advisory	<ul style="list-style-type: none"> • Vaccination equipment • Troubleshooting of closed house system and farm management • Disease prevention and improvement of livestock production performance • Farm accreditation scheme consultation

6. BUSINESS OVERVIEW (Cont'd)

Routine

Routine technical services include services that are provided regularly or according to scheduled timelines.

We conduct routine visits to our customers' farms to assess the condition of their farms and monitor the health of their livestock to ensure that our products are able to fulfil the needs of our customers.

In addition, we also routinely provide our customers with new product introduction and in-house training programme to familiarise them with the administration of our products.

Specific

Specific technical services include services that are provided to our customers to address their specific needs or requirements.

Our Group provides a range of diagnostic laboratory analyses that can be divided into four (4) types, namely serology, microbiology, molecular biology and chemistry to assist our customers in assessing the health status of their livestock.

We also offer disease investigation, control and monitoring programme as well as vaccination, medication programme and nutritional consultation for the livestock depending on the requirements of our customers and the results of our diagnostic laboratory analyses.

Advisory

Our advisory services include the provision of various type of vaccination equipment used for vaccine administration and troubleshooting services related to farm's management, disease prevention and improvement of livestock production.

Further, our Group also provides guidance and consultation to our customers in relation to good husbandry practices and assists our customers in obtaining the necessary farm accreditations such as Malaysian Good Agricultural Practices ("MyGAP") and Hazard Analysis and Critical Control Points ("HACCP") status.

(b) Provision of R&D Services

Our R&D activities can be divided into three (3) types as follows:

Type	Description
Basic research	Conduct experiments and / or analyses to acquire new knowledge of a subject
Applied research	Conduct specific investigations to acquire new knowledge of a subject with a practical aim or objective
Experimental development	Conduct systematic work by using the existing knowledge gained from research and practical experience to develop new products / methods or improve existing products / methods

6. BUSINESS OVERVIEW (Cont'd)

Our R&D activities provide a vital support to our business operations as we are able to develop new testing methods, test kits and products in response to customer's preferences and new market developments.

6.2.1.2 Manufacturing and Distribution of Animal Health Products

Our animal health products can be classified into the following three (3) major categories:

(a) Vaccines

Vaccines are animal health products that are used to provide the animals with immunity against one or several diseases. They are widely used in the livestock industry as means of disease prevention and control.

Our Group currently distributes more than eighty (80) types of vaccines for use in livestock and companion animals which are mainly sourced from third party international animal health product manufacturers.

The following table sets out the different group of the vaccines distributed by our Group:

Category	Type of animal	Origin
Avian vaccine	Chicken and duck	France, PRC, Italy and USA
Swine vaccine	Pig	France, United Kingdom and USA
Canine vaccine	Dog	France and USA
Feline vaccine	Cat	France and USA
Equine vaccine	Horse	France

As part of our TSP programme, our Group also stations vaccination equipment at our customers' premises to enable them to administer the vaccines purchased from our Group. Such equipment is owned by our Group and we are responsible for the repair and maintenance of such equipment.

(b) Pharmaceuticals

Pharmaceuticals are animal health products that are used for the prevention and treatment of disease, disorder and injury in livestock and companion animals.

Our Group currently offers more than 250 types of pharmaceuticals for the livestock and companion animals, of which eleven (11) products are manufactured by our Group whilst the remaining are sourced mainly from international animal health products manufacturers.

6. BUSINESS OVERVIEW (Cont'd)

Our Group's pharmaceuticals consist of the following:

(i) Water-Soluble Pharmaceuticals

Water-soluble pharmaceuticals comprise pharmaceuticals which are added into the drinking water of the livestock in the farm, according to the dosage of the product.

Such products distributed by our Group include antimicrobials (products used for treatment and / or prevention of microbes), health supplements (includes multi-vitamins, electrolytes, probiotics and other products indicated for better growth performance, improve health status and gut health), non-antimicrobials (products used as supplement for general health and curative treatments) and anticoccidials (products used for treatment and prevention of intestinal parasitic disease in poultry).

(ii) Injectable

Injectable pharmaceuticals are pharmaceuticals which are applied through injection using hypodermic syringes. Such products distributed by our Group are mainly antimicrobials and health supplement (used to supply additional nutrients and ingredients to improve livestock performance).

(iii) Others

Other pharmaceuticals distributed by our Group include a range of pesticides, test kits, disinfectants, pet shampoos and microbial tools.

The table below sets out some of the pharmaceuticals manufactured by our Group:

Type of products	Description	Brand / Series
Antimicrobial	For treatment and / or prevention of infectious diseases	Rhomicosin 25 LQ Rhonomox 50 WSP Rhobazin Plus Solution
Non-antimicrobial	Supplement for general health and heat stress control	Rholyte
Disinfectants	Use to sanitise farms	Bioclean Farmsafe
Pet shampoo	Shampoo product for pets	Relief Oatmeal Shampoo
Microbial tools	Microbial preservation, storage and recovery system	APSN Microcryobeads

6. BUSINESS OVERVIEW (Cont'd)

The following table sets out some of the pharmaceuticals distributed by our Group:

Type of products	Description	Origin
Antimicrobial	For treatment and / or prevention of infectious diseases	France, Ireland, Brazil and USA
Non-antimicrobial	For preventive and curative treatment of hypocalcemia and / or hypomagnesia and / or hypophosphatemia	France
	For preventive and curative treatment of vitamin A, D3 and E deficiencies	France
	Treatment and prevention of iron deficiency anaemia	France

(c) Feed Additives

Feed additives are substances that are added into animal feed for the following purposes:

- As an antimicrobial for bacterial disease treatment and prevention;
- As a nutritional supplement to improve the growth performance and health status of livestock;
- As an anticoccidials for treatment and prevention of coccidiosis in poultry;
- As a mycotoxin binder for the control of mycotoxin contamination in feed;
- As an antifungal used for treatment of fungal infections;
- As a mold inhibitor;
- As supplements for gut health and growth performance enhancement;
- As an anthelmintic for treatment of parasite infestations; and
- As a premix for nutritional supplements for sows and pigs.

Our Group currently offers more than fifty (50) types of feed additives of which thirteen (13) are manufactured by our Group whilst the remaining are sourced from local and international animal health product manufacturers.

6. BUSINESS OVERVIEW (Cont'd)

The table below sets out some of the feed additives manufactured by our Group:

Type of products	Description	Brand / Series
Antimicrobial	For bacterial disease treatment and prevention	Rhonamox 50 FG Imequyl 50 FG Rhomicosin 20 FG
Nutritional supplement	Supplement to improve the growth performance and health status of livestock	Alpha D3 250 Prokel Se 1000
Antifungal	For treatment of fungal infections	Nystatin FG
Anthelmintic	For treatment of parasite infestations	Efendazole 8%
Premix for nutritional supplements for sows and pigs	Nutritional supplements for sow	Sow Care Premium Birthcare Sow Care Premium Gestation Sow Care Premium Lactation
	Feed supplement for piglets, growers and finisher pigs	Performix Performix Starter Performix Finisher

The following table sets out some of the feed additives distributed by our Group:

Type of products	Description	Origin
Nutritional supplement	Includes protein concentrates, fat powder, enzyme, probiotics, milk replacer, emulsifier and other products indicated to improve growth performance and health status of livestock	USA, Malaysia, Netherlands, India and Singapore
Anticoccidials	For treatment and prevention of coccidiosis in poultry	USA and PRC
Mycotoxin binder	For the control of mycotoxin contamination in feed	USA
Mold inhibitor	Indicates for mold and microbial contamination in raw materials used for feed production	Colombia
Supplements for gut health and growth performance enhancement	For gut health and growth performance enhancement	France, Brazil, USA and Thailand
Anthelmintic	For treatment of parasites infestations	Netherlands

6. BUSINESS OVERVIEW (Cont'd)

Type of products	Description	Origin
Premix for nutritional supplements for sows and pigs	Nutritional supplement for sow and pigs feed	Netherlands

6.2.2 Distribution and Supply of Food Ingredients

Our Group is also involved in the distribution and supply of food ingredients to bakeries and producers of confectioneries, ice creams, sauces and snacks, as well as to the food manufacturers and pharmaceutical companies in Malaysia. Our Group currently distributes more than thirty (30) types of food ingredient products to customers in Malaysia.

We do not have our own brand for the sale of food ingredients. However, we have registered the company's logo of Link Ingredients as trademarks in respect of our food ingredients business. The following table summarised the food ingredients distributed and supplied by our Group:

Product category	Food ingredients
Starch	Maize starch, wheat starch, potato starch, pea starch
Modified starch	Cross-linked and / or stabilised starches, pre-gelatinised starches
Sweetener	Dextrose monohydrate, maltitol, xylitol, sorbitol
Vegetable protein	Wheat gluten, pea / wheat protein
Soluble fibre	Wheat dextrin
Bulking agent	Maltodextrin
Vegetable powder	Sweet corn, tomato and pumpkin vegetable powder
Phosphate	Sodium acid pyrophosphate
Lubricant	White mineral oil (food grade)
Food additive	Potassium sorbate, sorbic acid, glucono delta lactone

Leveraging on our existing suppliers' broad range of products, our Group is able to offer various types of food ingredients to food manufacturers, producers and wholesalers.

6.3 Output, Capacity and Utilisation

The animal health products currently manufactured by our Group are categorised into powder-based products such as Nystatin FG, Rhonamox 50 FG, Efendazole 8%, Imequyl 50 FG and Rhonamox 50 WSP and liquid-based products such as Rhomicosin 25 LQ and Bioclean. The machineries that we use for our production are mixers. As at the LPD, our Group has three (3) powder-based mixer machines and two (2) liquid-based mixer machines which are located in our GMP-compliant plant.

Our Group's products are manufactured in batches. Each batch of our products only requires to go through one (1) of the mixer machine to complete the production process. The three (3) powder-based mixer machines do not operate simultaneously in order to avoid contamination of the different products manufactured. However, the two (2) liquid-based mixer machines can operate simultaneously together with any one of the three (3) powder-based mixer machines.

6. BUSINESS OVERVIEW (Cont'd)

The utilisation of our production equipment for the manufacturing of animal health products for the past three (3) financial years up to the FYE 31 December 2015 and FPE 31 August 2016 are as follows:

Type of machinery	Operating days per year ^(a) No. of days	Maximum production capacity per year ^(b) tonnes	FYE 31 December						FPE 31 August		
			2013		2014		2015		2016		
			Actual production output ^(c) tonnes	Production utilisation %	Actual production output ^(c) tonnes	Production utilisation %	Actual production output ^(c) tonnes	Production utilisation %	Actual production output ^(c) tonnes	Production utilisation %	
Powder-based											
Paddle mixer	170	544.00	299.50	55.06	373.87	68.73	541.90	99.61	361.60	99.71 ^(d)	
Ribbon mixer	71	71.00	6.72	9.46	52.20	73.52	58.26	82.06	35.65	75.32 ^(d)	
Cube mixer	43	21.93	15.38	70.13	14.03	63.98	14.44	65.85	14.00	95.76 ^(d)	
Total	N/A	636.93	321.60	50.49	440.10	69.10	614.60	96.49	411.25	96.85^(d)	
Liquid-based											
Mixing vessel 1	284	284.00	23.28	8.20	2.46	0.87	4.20	1.48	11.10	5.86 ^(d)	
Mixing vessel 2	284	568.00	35.91	6.32	43.43	7.65	57.14	10.06	34.90	9.22 ^(d)	
Total	N/A	852.00	59.19	6.95	45.89	5.39	61.34	7.20	46.00	8.10^(d)	

Notes:

- (a) Based on the estimated number of days that our machineries are in operation after taking into consideration 365 days a year and subtracting fifty two (52) days for Sundays, twelve (12) days for repair and maintenance work (one (1) day per month) and seventeen (17) days for festive periods and other public holidays. The number of operating days is allocated based on historical trends as the powder-based mixer machines cannot operate simultaneously in order to avoid contamination of the different products manufactured. The allocation of the number of operating days based on historical trends is as follows:
- (i) 60.00% of the total number of operating days per year for paddle mixer;
- (ii) 25.00% of the total number of operating days per year for ribbon mixer; and
- (iii) 15.00% of the total number of operating days per year for cube mixer.

6. BUSINESS OVERVIEW (Cont'd)

- (b) *Based on operating hours of eight (8) hours per day and the daily maximum production capacity of each machines as follows:*

<i>Machinery</i>	<i>Daily maximum production capacity tonnes</i>
<i>Paddle mixer</i>	<i>3.20</i>
<i>Ribbon mixer</i>	<i>1.00</i>
<i>Cube mixer</i>	<i>0.51</i>
<i>Mixing vessel 1</i>	<i>1.00</i>
<i>Mixing vessel 2</i>	<i>2.00</i>

- (c) *Based on the actual production output for the respective financial years / periods.*
- (d) *Computed based on annualised production output for comparison purposes.*

Based on the table above, the capacity of our Group's production equipment for the manufacturing of animal health products is determined based on the number of days that our machineries are in operation per year, operating hours per day and the maximum production capacity per day. The operation of our mixer machines is dependent on the orders from our customers and the level of inventory required to be maintained for our business operations.

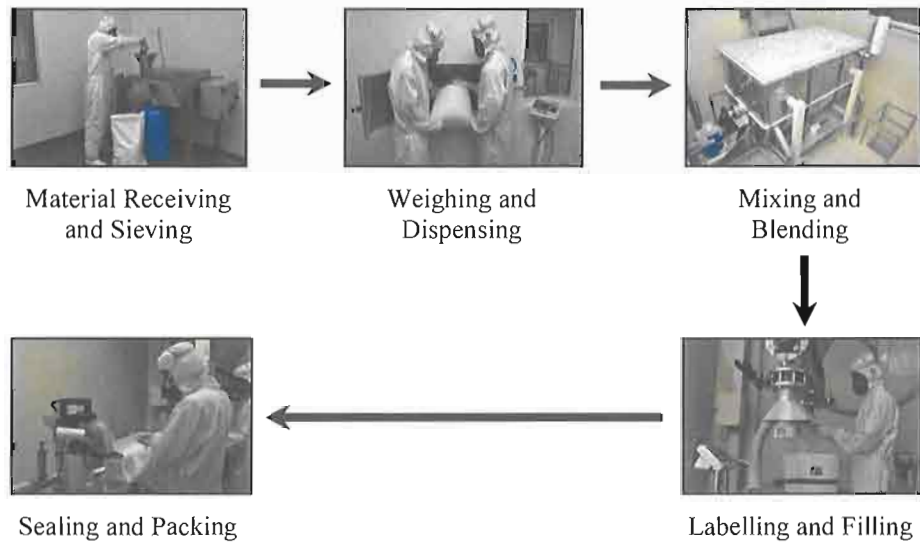
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6. BUSINESS OVERVIEW (Cont'd)

6.4 Production Process

6.4.1 Powder-Based Products

The general production process of the powder-based products is as follows:



(a) Material Receiving and Sieving

Following the bill of materials, raw materials are supplied to the designated production area. Upon receiving the raw materials, our production staff will check to ensure the correct raw materials are received in accordance with the batch production record. Raw materials are then subjected to the sieving process to remove any foreign materials as well as to ensure the consistency of the material before the next process.

(b) Weighing and Dispensing

Once sieved, all the required raw materials are weighed by the production staffs according to the formula before dispensing them into the designated powder-based mixer machine. The mixer machine used depends on the type of powder-based products manufactured.

(c) Mixing and Blending

In this stage, all the raw materials are mixed and blended together in the mixer machine with a pre-set blending speed and time. The blending speed and time is determined based on the type of powder-based products being manufactured. Typically, the blending time takes up to several hours.

(d) Labelling and Filling

Once the mixing and blending process is completed, samples are collected and subjected to a series of tests at our laboratory to ensure product quality. Upon completion and passing of the test, the blend is filled into the labelled packaging materials according to the intended weight.

Before filling the blend into the packaging materials, the packaging materials are labelled to display our brand name, product name, contents and ingredients used in the product, in accordance to the regulations set by the local authorities.

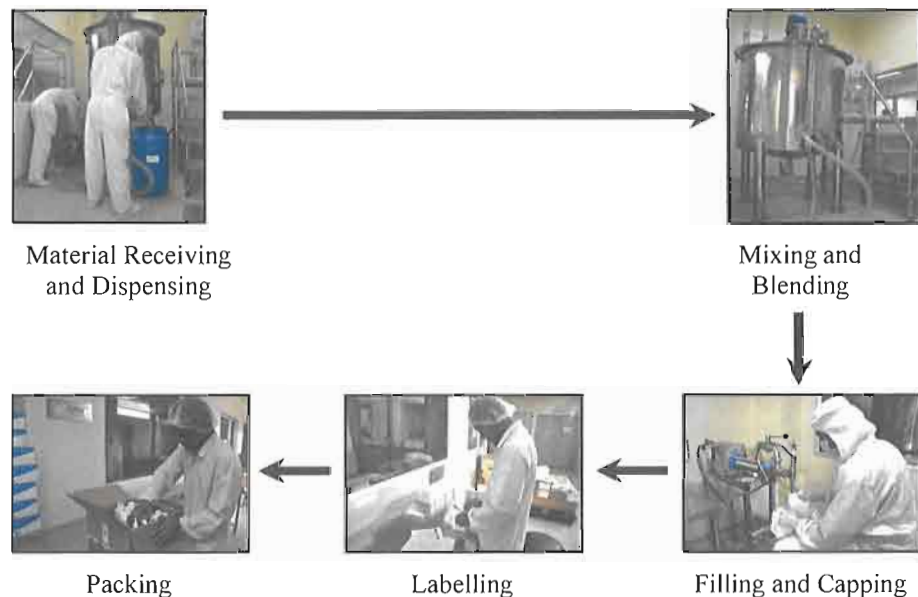
6. BUSINESS OVERVIEW (Cont'd)

(e) Sealing and Packing

Upon completion of the filling process, the products are then sealed and packed. Packed products are then transferred for storage and / or delivery to customers.

6.4.2 Liquid-Based Products

The general production process of the liquid-based products is as follows:



(a) Material Receiving and Dispensing

Following the bill of materials, raw materials are supplied to the designated production area. Upon receiving the raw materials, our production staff will check to ensure the correct raw materials are received in accordance with the batch production record. Depending on the form of the raw materials, the raw materials in powder and / or liquid form are dissolved to reconstitute the specified concentration, percentage and consistency according to the formula before dispensing them into the designated mixer machine. The mixer machine is chosen according to the type of liquid-based products manufactured.

(b) Mixing and Blending

Once all the materials are prepared to the respective specifications, all the raw materials will be mixed and blended in the designated liquid-based mixer machine with a pre-set blending speed and time. The blending speed and time are determined based on the type of liquid-based products being manufactured. Typically, the blending time takes up to several hours.

(c) Filling and Capping

Once the mixing and blending process is completed, samples are collected and subjected to a series of tests at our laboratory to ensure product quality. Upon completion and passing of the test, the manufactured liquid-based products are then filled into the intended containers before capping them.

6. BUSINESS OVERVIEW (Cont'd)

(d) **Labelling**

The containers are then labelled to display our brand name, product name, contents and ingredients used in the product, in accordance to the regulations set by the local authorities.

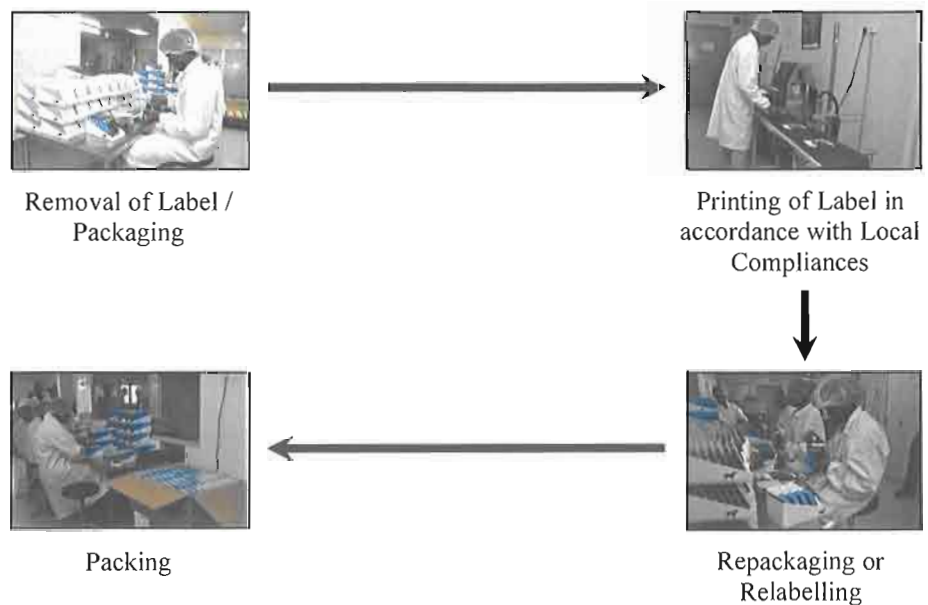
(e) **Packing**

The products are then packed in boxes for storage and / or delivery to customers.

6.4.3 **Relabelling and Repackaging**

Our Group relabels and repackages some of the products imported from third party international animal health product manufacturers before distributing the products to our customers in order to meet the regulations and requirements set by the local authorities.

The general production process of the relabelling and repackaging is as follows:



(a) **Removal of Label / Packaging**

In terms of repackaging, the products are first removed from their original external packaging. For relabeling, the original labels are removed from the original packaging.

(b) **Printing of Label in accordance with Local Compliances**

New labels / external packaging are printed with information that complies with local requirements.

(c) **Repackaging or Relabelling**

In terms of repackaging, the products are then repackaged to the new external packaging. For relabeling, the printed labels are labelled on the original packaging.

6. BUSINESS OVERVIEW *(Cont'd)*

(d) Packing

The products with new labels / external packaging are then repacked and sealed in boxes, before they are transferred for storage and / or delivered to customers.

6.5 Location of Operations

Our Group's head office and in-house R&D centre is currently located at Lot 18A and 18B, Jalan 241, Seksyen 51A, 46100 Petaling Jaya, Selangor Darul Ehsan.

Details of our location of operations as at the LPD are set out below:

Location	Address	Purpose	Approximate built-up area sq. ft.
Petaling Jaya, Selangor Darul Ehsan	Lot 18A, Jalan 241 Seksyen 51A 46100 Petaling Jaya Selangor Darul Ehsan	Office and warehouse	12,836
Petaling Jaya, Selangor Darul Ehsan	Lot 18B, Jalan 241 Seksyen 51A 46100 Petaling Jaya Selangor Darul Ehsan	Office, warehouse, laboratory and manufacturing plant	24,982
Petaling Jaya, Selangor Darul Ehsan	Lot 4, Lorong 51A/227B 46100 Petaling Jaya Selangor Darul Ehsan	Warehouse	12,500
Klang, Selangor Darul Ehsan	Lot 28326, Jalan Pelabuhan Utara 42000 Pelabuhan Klang Selangor Darul Ehsan	Warehouse ^(a)	3,000
Klang, Selangor Darul Ehsan	Lot 19, Lebu Sultan Muhamed 2 Bandar Sultan Suleiman 42000 Pelabuhan Klang Selangor Darul Ehsan	Warehouse ^(a)	4,000

Note:

(a) Provision of warehousing services by third party logistics company.

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6. BUSINESS OVERVIEW (Cont'd)

6.6 Types, Sources and Availability of Materials

6.6.1 Purchases and Sources of Materials

	FYE 31 December						FPE 31 August	
	2013		2014		2015		2016	
	Value of purchases RM'000	Percentage of total Group purchases %	Value of purchases RM'000	Percentage of total Group purchases %	Value of purchases RM'000	Percentage of total Group purchases %	Value of purchases RM'000	Percentage of total Group purchases %
Animal health products								
- Trading products	38,072	66.80	37,301	64.83	48,134	65.97	34,304	63.76
- Raw materials	2,613	4.59	3,085	5.36	8,009	10.98	7,193	13.37
Food ingredients								
- Trading products	16,305	28.61	17,148	29.81	16,821	23.05	12,301	22.87
Total	56,990	100.00	57,534	100.00	72,964	100.00	53,798	100.00
Animal health products								
- Overseas	38,598	67.73	37,656	65.45	52,918	72.53	39,127	72.73
- Local	2,087	3.66	2,729	4.74	3,225	4.42	2,370	4.41
Food ingredients								
- Overseas	15,689	27.53	16,553	28.77	15,725	21.55	11,642	21.64
- Local	616	1.08	596	1.04	1,096	1.50	659	1.22
Total	56,990	100.00	57,534	100.00	72,964	100.00	53,798	100.00

Our total purchases of materials for the past three (3) financial years up to the FYE 31 December 2015 and FPE 31 August 2016 were primarily sourced overseas. The prices of our materials are subject to price fluctuations as a result of demand and supply conditions. However, the prices of our materials purchased have been relatively stable over the financial years / periods under review.

Purchases of trading products for both animal health products and food ingredients comprise products distributed and traded by our Group which are sourced from third parties. On the other hand, raw materials are purchased by our Group for the manufacturing of our in-house products with our own brand names which consist of active ingredients, non-biological carriers and stabilisers.

The increase in purchases for the past three (3) financial years up to the FYE 31 December 2015 is attributed to the increased demand by our customers for such products as evident by the increase in our Group's total revenue generated for the past three (3) financial years up to the FYE 31 December 2015.

6. BUSINESS OVERVIEW (Cont'd)

6.6.2 Availability of Inputs

We have not faced any shortage in the availability of inputs required by our Group over the last twelve (12) months.

6.7 Principal Markets

For the past three (3) financial years up to the FYE 31 December 2015 and FPE 31 August 2016, our Group's revenue was primarily derived from Malaysia whilst a small portion was derived from overseas market. A breakdown of our principal markets is illustrated in the table below:

	FYE 31 December						FPE 31 August	
	2013		2014		2015		2016	
	RM'000	%	RM'000	%	RM'000	%	RM'000	%
Malaysia	83,330	99.54	90,017	98.35	105,242	98.60	76,088	97.59
Overseas*	385	0.46	1,512	1.65	1,494	1.40	1,881	2.41
Total	83,715	100.00	91,529	100.00	106,736	100.00	77,969	100.00

Note:

* Includes Brunei, France, Indonesia, the Philippines, Singapore, Thailand and Vietnam. Kindly refer to Section 12.2.1.3 of this Prospectus for further breakdown of the revenue from each respective overseas market.

6.8 Marketing and Distribution Network

6.8.1 Marketing Strategies

Our Group adopts several marketing strategies which include our TSP programme, seminars and events, advertisements, referrals and feedback from customers for our animal health business segment. Our sales team comprises thirteen (13) personnel which is headed by Foong Kam Weng and supported by our technical and marketing team headed by Dr. Yip. Our technical and marketing team comprises thirteen (13) personnel of which ten (10) are veterinarians that carry out marketing activities, seminars and events as well as site visits to provide technical services to our customers.

The marketing strategies initiated by our Group for our animal health business segment are as follows:

(i) TSP Programme

Our TSP programme is an approach that integrates our Group's key strengths which includes the provision of technical and R&D services with the availability of over 300 types of animal health products to meet the needs and requirements of our customers. Through the TSP programme, our Group is able to ensure that the provision of animal health solution is customised to the needs and requirements of each customer.

(ii) Seminars and Events

Our Group organises and participates in seminars and events both locally and overseas. Such seminars and events serve as a platform for our Group to create awareness of our services and products and at the same time, allow us to identify new products and latest industry trends.

6. BUSINESS OVERVIEW (Cont'd)

(iii) Advertisements

Our services and products are advertised through various mediums including brochures, local newspapers, radio, television, cinema and animal health industry magazines.

(iv) Referrals

Our Group has been involved in the animal health industry for over fifteen (15) years. As at the LPD, we have more than 660 customers and many of our new customers have been introduced to our services and products through referrals from existing customers.

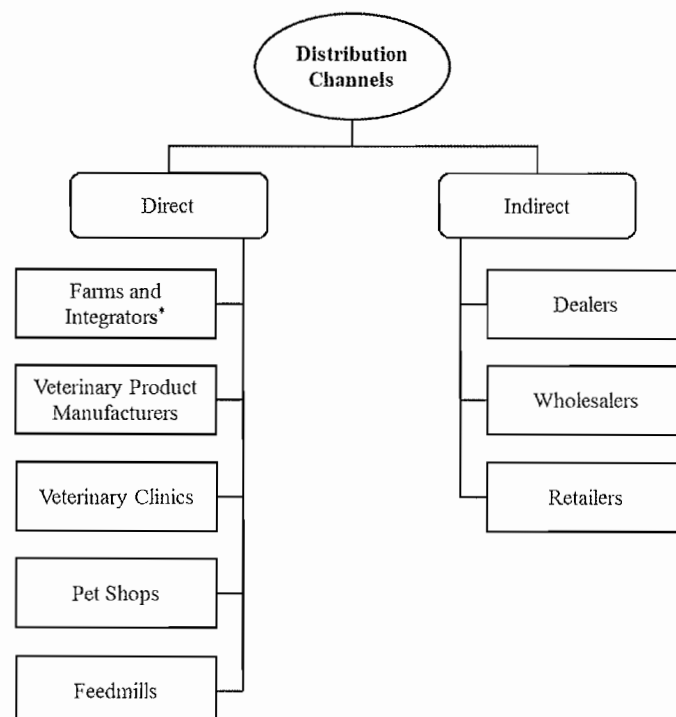
(v) Feedback from Customers

Our sales and marketing team will carry out routine visits to our key customers' premises to obtain feedback and address any problems that our customers may encounter. In addition, all our customers are encouraged to provide their feedbacks to us via our annual survey forms. Such feedback will allow our Group to better understand the requirements of our customers and improve our services and products to meet their demands.

For our food ingredients business segment, we update our websites periodically to provide information on the type of food ingredients distributed by our Group. We employ cross-selling synergies to promote our food ingredients to our customers who are involved in various downstream activities within the poultry products industry. Our sales and marketing team works closely with our customers to attain a better understanding of their business operations and value chain. Should the opportunity arises, we will offer and promote our food ingredients to satisfy their needs and requirements.

6.8.2 Distribution Network

Our Group's distribution network comprises direct and indirect channels as depicted in the diagram below:



6. BUSINESS OVERVIEW (Cont'd)

Note:

* *Integrators refer to companies that are involved in various upstream and downstream activities within the poultry and poultry products industry. Upstream activities involve all the early phases in the poultry farming including breeding, production and raising of poultry whereas downstream activities involve meat processing and distribution of the processed parts and products within the poultry and poultry products industry value chain. Kindly refer to Paragraph 2.1.1, Section 7 of the Prospectus for further details on the upstream and downstream activities within the poultry and poultry products industry.*

(i) Direct distribution network

We distribute our products to end-customers directly. This provides us with the opportunity to work closely with our customers to obtain feedback on their requirements in order to improve our services and products.

(ii) Indirect distribution network

Some of our products are distributed through intermediaries, which will then rely on their own distribution network to reach the end-customers. This will effectively expand our Group's market coverage.

Our Group does not enter into any contract with the end users or intermediaries for the provision of products and / or services save for the vaccination equipment agreements entered into between Rhone Ma Malaysia and some of our customers to grant the use of our vaccination equipment to administer the products purchased from the Group and a distribution agreement entered into between Rhone Ma Malaysia and a distributor to market and distribute our products in Indonesia.

We do not provide any warranty policy on our products.

6.9 Key Achievements, Awards and Recognition

The following table lists our Group's key achievements, awards and recognition since our establishment:

Year	Milestones
2000	Establishment of Rhone Ma Malaysia
2001	Establishment of Vet Food Agro Diagnostics
2003	Rhone Ma Malaysia obtained MS ISO 9001:2000 Quality Management System certification from SIRIM QAS Sdn Bhd (now known as SIRIM QAS International Sdn Bhd)
	Rhone Ma Malaysia obtained OHSAS 18001:1999 Occupational Health and Safety Management Systems certification from SIRIM QAS International Sdn Bhd
2005	Establishment of Asia-Pacific Special Nutrients
2007	Vet Food Agro Diagnostics obtained MS ISO/IEC 17025 accreditation from the Department of Standards Malaysia for its Laboratory Quality Management System
	Establishment of Link Ingredients
	Vet Food Agro Diagnostics won the 'Anugerah Inovasi Penyelidikan Bersama Antara Sektor Awam Dengan Sektor Swasta' awarded by Chief Secretary to the Government of Malaysia
	Asia-Pacific Special Nutrients was awarded BioNexus status by Malaysian Biotechnology Corporation Sdn Bhd
2009	Rhone Ma Malaysia launched the TSP programme
2010	Asia-Pacific Special Nutrients achieved AA-rating under I-InnoCERT Rating (Innovation Certification for Enterprise Rating and Transformation)

6. BUSINESS OVERVIEW (Cont'd)

Year	Milestones
2011	Rhone Ma Malaysia won the Industry Achievement Award at the Malaysian Livestock Industry Awards 2011
	Asia-Pacific Special Nutrients won a Gold Award at the BioInnovation Awards 2011
2012	Manufacturing plant certified as GMP-compliant by NPRA
	Rhone Ma Malaysia recognised as one of the top 10 outstanding SMEs at the Golden Bull Award 2012
	Asia-Pacific Special Nutrients was awarded one Gold and two Bronze Awards at the BioInnovation Awards 2012
2013	Asia-Pacific Special Nutrients was awarded the SME 100 Award 2013 in SME 100 Award 2013 – Fast Moving Companies by SME & Entrepreneurship Magazine, Malaysia
	Asia-Pacific Special Nutrients was awarded the BioMedical Excellence Award 2013 by Malaysian Biotechnology Corporation Sdn Bhd
2014	Establishment of Rhone Ma Holdings
2015	Rhone Ma Malaysia won the Halal Hi-Tech Challenge 2015 organised by PlaTCOM Ventures Sdn Bhd
	Rhone Ma Malaysia was awarded the Product and Service Excellence Award under the Sin Chew Business Excellence Awards 2015 by Sin Chew Daily and sinchew.com.my
	Rhone Ma Malaysia received the Outstanding Animal Health Provider Award at the Malaysian Livestock Industry Awards 2015
2016	Certified entry into the Malaysia Book of Records by Vet Food Agro Diagnostics for being the First Testing Laboratory Accredited MS ISO/IEC 17025 (Veterinary Field).

6.10 Quality Control

Our Group places significant emphasis on the quality of our services and products. Our Group's dedication to quality control has been recognised through the ISO 9001:2008 certification, MS ISO/IEC 17025:2005 accreditation and GMP certification.

6.10.1 ISO 9001:2008

The QMS of Rhone Ma Malaysia received the ISO 9001:2008 certification for the trading of animal health products and provision of related services from SIRIM QAS International Sdn Bhd and The International Certification Network (IQNet). The QMS aims to ensure high quality of services and timely deliverance to our customers. In addition, our Group has put in place a QMS manual which details the processes and procedures of the QMS.

(a) Product Realisation

Product realisation is a series of processes and sub-processes required to achieve the required results. Planning of the realisation processes shall be consistent with the other requirements of the QMS and shall be documented in a format suitable for Rhone Ma Malaysia's method of operation. In planning the processes for realisation of products, the following shall be determined, as appropriate:

- (i) quality objectives and requirements of the service;
- (ii) the need to establish processes and documentation, and provide resources and facilities specific to the services;

6. BUSINESS OVERVIEW (Cont'd)

- (iii) verification, validation, monitoring, inspection activities, and the criteria for acceptability, compliance with documented procedures and quality plan; and
- (iv) ensuring records and documentation necessary to provide confidence of conformity of the processes and products meeting the requirements.

(b) Measurements, Analysis and Improvement

As part of the QMS, Rhone Ma Malaysia plans and implements the monitoring, measurement, analysis and continual improvement processes to achieve the following:

- (i) demonstrating conformity of the product requirements;
- (ii) assuring conformity of the QMS; and
- (iii) achieving continuous improvement of the effectiveness of the QMS.

(c) Management Responsibilities

Our management shall provide commitment to the development and improvement of the QMS by:

- (i) communicating to our employees the importance of meeting customers' requirements, as well as regulatory and legal requirements;
- (ii) establishing the quality policy and distributing them to our employees;
- (iii) ensuring quality objectives are established and displayed openly as a sign of commitment. Our Group will also present both the quality policy and quality objectives to new staff during orientation;
- (iv) conducting management reviews; and
- (v) ensuring the availability of necessary resources.

(d) Resource Management

As part of our QMS, we will determine and provide, in a timely manner, the resources needed:

- (i) to implement and maintain the QMS and continually improve on its effectiveness; and
- (ii) to ensure client satisfaction.

6.10.2 MS ISO/IEC 17025:2005

Vet Food Agro Diagnostics' laboratory is accredited with the MS ISO/IEC 17025:2005 by the Department of Standards Malaysia under the fields of veterinary, biological and chemical testing, covering more than 200 types of test.

6. BUSINESS OVERVIEW (Cont'd)

6.10.3 GMP

Our plant is certified as GMP-compliant by NPRA in 2012 for the manufacturing of powder-based and liquid-based animal health products. GMP is a system established to ensure that our products are consistently manufactured, stored and controlled to the quality and safety standards appropriate for their intended use and in accordance with their registration particulars and specifications. The basic requirements of GMP include, amongst others, the following:

- (i) all manufacturing processes are clearly defined and are systematically reviewed;
- (ii) critical steps of manufacturing process and significant changes made to the manufacturing process are validated;
- (iii) all necessary facilities for GMP are provided which include:
 - (a) qualified, trained and / or experienced personnel;
 - (b) adequate premise and space;
 - (c) suitable equipment and services;
 - (d) correct materials, containers and labels;
 - (e) manufacturing process and instructions are approved and in accordance with GMP guidelines; and
 - (f) suitable storage facility and transportation.
- (iv) instructions and procedures of the manufacturing processes are written clearly and unambiguous;
- (v) proper records are to be kept during the manufacturing process to ensure that all steps required are in accordance to the defined procedures and instructions. Significant deviations from the aforementioned defined procedures and instructions are recorded and investigated;
- (vi) retain and make accessible, records of manufacture including distribution information to enable the traceability of manufactured batches;
- (vii) put in place a system that is able to recall any batch of products from sale or supply; and
- (viii) conduct examination of feedbacks about marketed products, the causes of quality defects investigated as well as take appropriate corrective and preventive measures in respect of defective products and to prevent re-occurrence.

6. BUSINESS OVERVIEW (Cont'd)

6.11 Technology Used

Our Group relies on the technology embedded in our machineries as detailed in Section 6.18.3 of this Prospectus for the manufacturing of our animal health products.

In addition, our Group is using a password protected online system, VetLab Reporting System that provides customers with immediate reporting on the results of laboratory diagnostic analysis via a secure web login process. Our customers are able to access faster to the results of the laboratory diagnostic analysis through this system.

Our Group also relies on the following laboratory equipment that are used to provide diagnostic laboratory analyses:

Equipment	Description
LightCycler 480	A type of real-time PCR system that is able to provide medium to high-throughput real-time platform that provides various methods for gene detection, gene expression analysis and genetic variation analysis.
Liquid chromatography – mass spectrometry	An analytical chemistry technique that combines the physical separation capabilities of liquid chromatology (or high-performance liquid chromatography) with the mass analysis capabilities of mass spectrometry.
High performance liquid chromatography	A technique in analytic chemistry used to separate the components in a mixture, to identify and quantify each component.
Crystal Identification System	A miniaturised identification method employing modified conventional, fluorogenic and chromogenic substrates. It is intended for the identification of frequently isolated anaerobic, aerobic, enteric and fastidious bacteria.

Save as disclosed above, our Group does not use any other identified technology.

6.12 R&D

Our Group has the capability of providing R&D services which are carried out at our in-house R&D facility as part of our TSP programme and we are not dependent on any third party to carry out R&D activities. In addition, we also undertake R&D activities to continuously develop new products and improve on existing products offered by our Group.

6.12.1 R&D Facilities

Our R&D facility and laboratory is currently located at our head office in Petaling Jaya, Selangor Darul Ehsan. Our R&D facility and laboratory are fitted with the required machineries and equipment to carry out our R&D activities.

6.12.2 R&D Team

As at the LPD, our R&D team consists of eight (8) members who are led by our Group Marketing & Technical Director, Dr. Yip. In addition, our Group also collaborates with external parties that include local universities and other international researchers, covering areas such as veterinary disease investigation, diagnosis, control, treatment and prevention to enhance our R&D activities.

6.12.3 R&D Milestones and Achievements

As at the LPD, our Group has managed to develop eleven (11) pharmaceuticals and thirteen (13) feed additives. The pharmaceuticals and feed additives are also manufactured by our Group as disclosed in Section 6.2.1.2 of this Prospectus whilst the three (3) notable test kits (part of pharmaceuticals) developed by our Group are as follows:

6. BUSINESS OVERVIEW (Cont'd)

Product name	Description	Year commissioned	Classification
QUICK water test kit	An eight (8) in one (1) test kit that is used for routine monitoring of the quality of animal drinking water and for the detection of contaminants in the drinking water. The test kit is able to detect coliforms, free chlorine, chloride, hardness, alkalinity, pH and nitrate / nitrite. This QUICK water test kit enables farmers or veterinarians to monitor the quality of animal drinking water in real time with easy steps, followed by the identification of the cause of contamination and actions to rectify it, to prevent further losses.	2013	Pharmaceuticals
Multi Porcine Derivatives Detection Kit	Facilitates the detection of porcine derivatives in food, which is crucial for the Halal authentication in food products. The detection kit employs Multiplex PCR technology to detect three (3) different porcine mitochondrial genes instead of a single gene as compared to other commercialised test kits.	2010	Pharmaceuticals
CytoStain Plus	A four (4) second stain that delivers differential staining for blood, blood parasites, tissue, bacteria and fungi. It is a quick stain, cost-effective and offers good contrast and differentiation in cell and tissue morphology.	2006	Pharmaceuticals

In addition, our R&D team is capable to conduct disease surveillance which enables our Group to inform customers and the industry on latest disease situations as well as efficacy of certain vaccines available in the market.

Some of the researches performed by our Group or with other institutions are as follows.

Title of research	Event for presentation of research findings
Phylogenetic Characterisation of Porcine Circovirus Type 2 (PCV2) in Malaysia Characterisation of PCV2 in Malaysia	22nd International Pig Veterinary Society Congress, Jeju, South Korea, 2012
An Update on the Status of Porcine Reproductive and Respiratory Syndrome Virus ("PRRSV") Isolated in Malaysia	6th Asian Pig Veterinary Society Congress, Ho Chi Minh, Vietnam, 2013
A Report on Antibiotic Resistance of Escherichia coli Isolated from Veterinary Samples in Malaysia from 2010 to 2013	26th Veterinary Association Malaysia Congress, 2014
Occurrence of variant infectious bronchitis virus (QX-like and 793/B strain) in Peninsular Malaysia	World Veterinary Poultry Association, Bangkok, Thailand, 2014

6. BUSINESS OVERVIEW (Cont'd)

Title of research	Event for presentation of research findings
A High Resolution Melting (HRM) analysis to differentiate the Villegas-Glisson / University of Georgia (VG/GA) Avinew Strain from virulent Newcastle disease virus strains and pathotypes	19th World Veterinary Poultry Congress 2015, Cape Town, South Africa
Observation of risk factors, clinical manifestations and genetic characterisation of recent Newcastle Disease Virus outbreak in West Malaysia	Bio Med Central (BMC) Veterinary Research, 2015
Genetic Characterization of ORF5 and ORF7 from an atypical PRRSV case in 2014 in Malaysia	International Pig Veterinary Congress (IPVS) Ireland, 2016

6.12.4 R&D Expenditures

Our Group's R&D expenditures for the past three (3) financial years up to the FYE 31 December 2015 and FPE 31 August 2016 are as follows:

	R&D expenditures RM'000	Percentage of revenue %
FYE 31 December 2013	1,645	1.97
FYE 31 December 2014	1,412	1.54
FYE 31 December 2015	1,691	1.58
FPE 31 August 2016	1,310	1.68

6.12.5 Future R&D Directions / Development

Our Group's future R&D directions will focus on the development of new pharmaceuticals and feed additives. The table below shows the products that are currently under development:

Product category	Type of products	Product name	Current progress	Percentage of completion	Expected date of commercialisation*
Pharmaceuticals	Antimicrobial	• Rhomiquyl	Formulation study	10%	Fourth (4 th) quarter of 2017
		• Rhotarsin 20 WSP	Formulation study	60%	Third (3 rd) quarter of 2017
	Disinfectants	• Farmsafe Max	Formulation study	50%	First (1 st) quarter of 2017
		• Iodine Solution	Formulation study	20%	Second (2 nd) quarter of 2017
Feed additives	Antimicrobial	• Florxin 20 FG	Approved by NPRA on 30 June 2016	100%	December 2016
		• Tyloxin FG	Formulation study	20%	Fourth (4 th) quarter of 2017

Note:

* The expected date of commercialisation is subject to approval from NPRA.








6. BUSINESS OVERVIEW (Cont'd)

6.13 Brand Names, Registrations and Trademarks









6.13.1 Trademarks

Our Group has registered or applied for the registration of the following trademarks with the Intellectual Property Corporation of Malaysia as at the LPD:


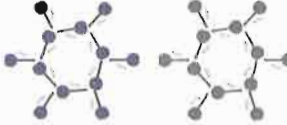
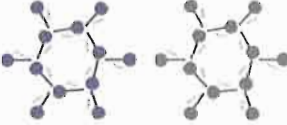
Registered trademarks

No.	Trademark	Registered owner	Trademark no.	Class	Description	Condition	Validity period	Type of products attached
1.		Rhone Ma Malaysia	02002891	16	Note a	-	19.03.2012 to 19.03.2022	Vaccines, pharmaceuticals and feed additives
2.		Rhone Ma Malaysia	02002895	16	Note a	-	19.03.2012 to 19.03.2022	Vaccines, pharmaceuticals and feed additives
3.		Rhone Ma Malaysia	08009856	44	Note b	-	20.05.2008 to 20.05.2018	Animal health services
4.		Rhone Ma Malaysia	09000637	44	Note b	-	15.01.2009 to 15.01.2019	Animal health services
5.		Rhone Ma Malaysia	09000638	10	Note c	-	15.01.2009 to 15.01.2019	Pharmaceuticals
6.		Rhone Ma Malaysia	09000640	5	Note d	-	15.01.2009 to 15.01.2019	Animal health services
7.		Asia-Pacific Special Nutrients	07016346	10	Note c	-	20.08.2007 to 20.08.2017	Pharmaceuticals

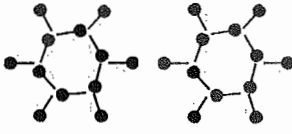
6. BUSINESS OVERVIEW (Cont'd)

No.	Trademark	Registered owner	Trademark no.	Class	Description	Condition	Validity period	Type of products attached
8.		Asia-Pacific Special Nutrients	07016347	10	Note c	Registration of this trademark shall give no right to the exclusive use of the letters and symbol "R&D".	20.08.2007 to 20.08.2017	Pharmaceuticals
9.		Asia-Pacific Special Nutrients	07016348	44	Note b	Registration of this trademark shall give no right to the exclusive use of the letters and symbol "R&D".	20.08.2007 to 20.08.2017	Animal health services
10.	 	Asia-Pacific Special Nutrients	08009861	5	Note e	Registration of this trademark shall give no right to the exclusive use of the letters and symbol "R&D".	20.05.2008 to 20.05.2018	Animal health services
11.	 	Asia-Pacific Special Nutrients	09001488	44	Note b	-	04.02.2009 to 04.02.2019	Animal health services
12.	 	Asia-Pacific Special Nutrients	09001489	5	Note e	-	04.02.2009 to 04.02.2019	Animal health services



6. BUSINESS OVERVIEW (Cont'd)

No.	Trademark	Registered owner	Trademark no.	Class	Description	Condition	Validity period	Type of products attached
13.		Asia-Pacific Special Nutrients	09001490	10	Note c	-	04.02.2009 to 04.02.2019	Pharmaceuticals
14.		Asia-Pacific Special Nutrients	09002187	10	Note c	Registration of this trademark shall give no right to the exclusive use of the device of "molecule".	16.02.2009 to 16.02.2019	Pharmaceuticals
15.		Asia-Pacific Special Nutrients	09002188	5	Note e	Registration of this trademark shall give no right to the exclusive use of the device of "molecule".	16.02.2009 to 16.02.2019	Animal health services

6. BUSINESS OVERVIEW (Cont'd)

No.	Trademark	Registered owner	Trademark no.	Class	Description	Condition	Validity period	Type of products attached
16.		Asia-Pacific Special Nutrients	09002189	44	Note b	-	16.02.2009 to 16.02.2019	Animal health services
17.	ROBOTIX	Asia-Pacific Special Nutrients	2010000972	44	Note b	-	19.01.2010 to 19.01.2020	Animal health services
18.	SPARROX	Asia-Pacific Special Nutrients	2010000974	9	Note f	-	19.01.2010 to 19.01.2020	Animal health services
19.	MERIMYCIN	Asia-Pacific Special Nutrients	2012007678	5	Note g	-	10.05.2012 to 10.05.2022	Pharmaceuticals
20.	RHOMICOSIN	Asia-Pacific Special Nutrients	2012007679	5	Note g	-	10.05.2012 to 10.05.2022	Pharmaceuticals and feed additives
21.	RHONAMOX	Asia-Pacific Special Nutrients	2012007680	5	Note g	-	10.05.2012 to 10.05.2022	Pharmaceuticals and feed additives
22.	RHOLYTE	Asia-Pacific Special Nutrients	2012007682	5	Note g	-	10.05.2012 to 10.05.2022	Pharmaceuticals
23.	DR RHONE	Asia-Pacific Special Nutrients	2012007681	5	Note g	By consent of the registered proprietor of the trademark no. 08009856.	10.05.2012 to 10.05.2022	Pharmaceuticals








6. BUSINESS OVERVIEW (Cont'd)

No.	Trademark	Registered owner	Trademark no.	Class	Description	Condition	Validity period	Type of products attached
24.	 Link Ingredients	Link Ingredients	2013001669	30	Note h	Registration of this trademark shall give no right to the exclusive use of the words "Link Ingredients".	30.01.2013 to 30.01.2023	Food ingredients
25.	 Link Ingredients	Link Ingredients	2013001670	31	Note i	Registration of this trademark shall give no right to the exclusive use of the words "Link Ingredients".	30.01.2013 to 30.01.2023	Food ingredients
26.	VETLAB	Vet Food Agro Diagnostics	2010000973	9	Note f	-	19.01.2010 to 19.01.2020	Animal health services
27.	VETLAB	Vet Food Agro Diagnostics	2010001087	44	Note b	-	20.01.2010 to 20.01.2020	Animal health services

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6. BUSINESS OVERVIEW (Cont'd)

Applications have been submitted but pending approval for registration

No.	Trademark	Applicant	Class	Description	Application no.	Application date
1.		Rhone Ma Malaysia	5	Note e	08009855	20.05.2008
2.		Rhone Ma Malaysia	5	Note d	2015058210	29.05.2015
3.		Rhone Ma Malaysia	10	Note c	2015058209	29.05.2015
4.		Rhone Ma Malaysia	44	Note b	2015058208	29.05.2015
5.		Asia-Pacific Special Nutrients	44	Note j	08004940	14.03.2008
6.	Rhobazin Plus	Asia-Pacific Special Nutrients	5	Note k	2016055507	29.03.2016
7.	Cytostain	Asia-Pacific Special Nutrients	5	Note l	2016057429	22.04.2016
8.		Vet Food Agro Diagnostics	5	Note m	2014063174	05.09.2014
9.		Vet Food Agro Diagnostics	44	Note n	2014063171	05.09.2014

6. BUSINESS OVERVIEW (Cont'd)

Notes:

- (a) Logo, name card; letterhead; signboard made of paper or cardboard; paper and paper articles; cardboard and cardboard articles (not included in other classes); printed matter and publications; plans; periodicals, newsletters; blueprints; brochures; pamphlets; handbooks; advertising mats of paper or cardboard, poster, photographs; calendars, display signs of paper or cardboard, cardboard store signs; label (non-textiles) and decals, stickers, business printing information; envelop, receipts, invoices; plastic materials for packaging; wrapping paper; adhesive materials for office or household purposes; charts; sacks and bags of paper or plastics for wrapping and packaging; pens; pencils; note books; stencil paper; memo paper; index cards (stationery); ledgers book; graph papers; books; atlases; all included in Class 16.
- (b) Veterinary services and assistance; medical services and assistance; all included in Class 44.
- (c) Testing apparatus, instruments and kits for medical purposes; surgical, medical, dental and veterinary apparatus and instruments; all included in Class 10.
- (d) Pharmaceutical and veterinary preparations; biological preparations for medical and veterinary purposes; bacterial and bacteriological preparations for medical and veterinary use; bacteriological cultures; blood for medical purposes; blood plasma; enzymes and enzyme preparations for medical and veterinary purposes; cultures of microorganisms for medical and veterinary use; all included in Class 5.
- (e) Veterinary and pharmaceutical preparations; biological preparations for veterinary, medical or pharmaceutical purposes; chemical preparations for veterinary, medical or pharmaceutical purposes; chemical reagents for medical or veterinary purposes; diagnostic preparations for veterinary or medical use; drugs for medical purposes; enzyme preparations for veterinary, medical and pharmaceutical purposes; medicines for veterinary purposes; cultures and preparations of microorganism for veterinary and medical purposes; food preparations adapted for medical purposes; all included in Class 5.
- (f) Bar code readers; computer programs, computer software, data processing apparatus; all included in Class 9.
- (g) Antibiotics; antiseptics; bicarbonate of soda for pharmaceutical purposes; chemical preparations for veterinary purposes; chemico-pharmaceutical preparations; dietary supplements for animals; fungicides; glucose dietary supplements; glucose for medical purposes; medicines for veterinary purposes; pharmaceutical preparations; potassium salts for medical purposes; pharmaceutical preparations for skin care; sodium salts for medical purposes; veterinary preparations; all included in Class 5.
- (h) Baking powder; baking soda (bicarbonate of soda for cooking purposes); bicarbonate of soda for cooking purposes (baking soda); binding agents for ice cream (edible ices); corn flour; corn meal; essences for foodstuffs, except etheric essences and essential oils; flavourings, other than essential oils; flavorings, other than essential oils, for beverages; flavourings, other than essential oils, for cakes; glucose for culinary purposes; gluten additives for culinary purposes; gluten prepared as foodstuff; honey; maize flour; malt extract for food; malt for human consumption; maltose; oat-based food; potato flour for food; cake powder; powders for ice cream; salt for preserving foodstuffs; sago; tomato sauce; sausage binding materials; seasonings; soya flour; starch for food; natural sweeteners; tapioca flour for food; thickening agents for cooking foodstuffs; vanilla (flavoring) (flavouring); vanillin (vanilla substitute); wheat flour; wheat germ for human consumption; preparations for stiffening whipped cream; yeast; all included in Class 30.
- (i) Algae for human or animal consumption; raw barks; maize; wheat; wheat germ for animal consumption; yeast for animal consumption; all included in Class 31.
- (j) Veterinary services and assistance; medical services and assistance; fertilizers and other agricultural chemicals; pharmacy advice; all included in Class 44.
- (k) Antibiotics; antiparasitic collars for animals; antiparasitic preparations; biological preparations for veterinary purposes; chemical preparations for pharmaceutical purposes; chemical preparations for veterinary purposes; chemical reagents for medical or veterinary purposes; drugs for medical purposes; medicines for veterinary purposes; cultures of microorganisms for medical and veterinary use; pharmaceutical preparations; poisons; chemical reagents for medical or veterinary purposes; veterinary preparations; all included in Class 5.
- (l) Biological preparations for medical purposes; biological preparations for veterinary purposes; blood for medical purposes; blood plasma; chemical preparations for pharmaceutical purposes; chemical preparations for veterinary purposes; chemical reagents for medical or veterinary purposes; diagnostic preparations for medical purposes; haemoglobin; chemical reagents for medical or veterinary purposes; veterinary preparations; all included in Class 5.

6. BUSINESS OVERVIEW (Cont'd)

- (m) *Animal washes; antibiotics; bacterial preparations for medical and veterinary use; bouillons for bacteriological cultures; media for bacteriological cultures; bacteriological preparations for medical and veterinary use; biocides; biological preparations for veterinary purposes; biological tissue cultures for veterinary purposes; chemical preparations for veterinary purposes; chemical reagents for medical or veterinary purposes; cultures of microorganisms for medical and veterinary use; diagnostic preparations for medical purposes; bacteriological culture mediums; nutritive substances for microorganisms; preparations of microorganisms for medical and veterinary use; veterinary preparations; all included in Class 5.*
- (n) *Animal grooming; pet grooming; veterinary assistance; all included in Class 44.*

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6. BUSINESS OVERVIEW (Cont'd)

6.13.2 Patents

Our Group has registered or applied for the registration of the following patents as at the LPD:

Registered patents

No.	Patent title	Patent owner	Country of registration	Patent no.	Filing date	Expiry date
1.	An improved microplate	Asia-Pacific Special Nutrients	Malaysia	MY-145216-A	26.06.2009	26.06.2029
2.	Detection of porcine derivatives	Asia-Pacific Special Nutrients	Malaysia	MY-153152-A	24.04.2009	24.04.2029
3.	An internal amplification control for polymerase chain reaction	Asia-Pacific Special Nutrients	Malaysia	MY-153643-A	06.11.2009	06.11.2029

Applications have been submitted but pending approval for registration

No.	Patent title	Applicant	Country of registration	Application no.	Filing date
1.	A universal polymerase chain reaction	Asia-Pacific Special Nutrients	Malaysia	PI 20093284	07.08.2009
2.	A method for differentiating vaccine-type from wild-type microbial strain	Asia-Pacific Special Nutrients	Malaysia	PI 20094788	11.11.2009
3.	High resolution melt genotyping of IBV, CSFV and NDV	Asia-Pacific Special Nutrients and Merial Limited	USA	61/738, 688 and 14/109,104	18.12.2012 and 17.12.2013
4.	High resolution melt genotyping of IBV, CSFV and NDV	Asia-Pacific Special Nutrients and Merial Inc.	*	PCT/US2013/075695	17.12.2013
5.	High resolution melt genotyping of IBV, CSFV and NDV	Asia-Pacific Special Nutrients and Merial Limited	Taiwan	102146755	17.12.2013

Note:

* An international application filed under the Patent Cooperation Treaty (World Intellectual Property Organisation) through United States Patent and Trademark Office as the receiving office. The application has entered into national phase in the following countries namely, Australia, New Zealand, European Patent Office, Japan, Republic of Korea, the Philippines, Canada, PRC, Singapore, Peru, Colombia, Indonesia, Thailand, India, Vietnam, Brazil, Mexico, Qatar, Saudi Arabia, Chile, United Arab Emirates and Malaysia.

6. BUSINESS OVERVIEW (Cont'd)

6.14 Dependency on Commercial Contracts / Agreements / Other Matters

Save for the trademarks, patents and major licences as disclosed in Sections 6.13.1, 6.13.2 and 6.17 of this Prospectus and the agreements below, our Group is not dependent on any contracts, arrangements or any matters that could materially affect our business as at the LPD:

- (i) A distribution agreement dated 7 November 2000 between Rhone Ma Malaysia and Merial SAS (“**Merial**”) as amended on 31 July 2001, 31 January 2003, 6 June 2003 and 23 July 2014 whereby Merial grants Rhone Ma Malaysia the exclusive right to market and sell Merial products in Malaysia for non-avian products and Malaysia, Brunei and Singapore for avian products (“**Territory**”). The salient terms of the agreement are as follows:
 - (a) the agreement is effective from 1 January 2001 for an initial term of three (3) years;
 - (b) the agreement will be renewed automatically for subsequent terms of two (2) years each, unless terminated by either party by giving at least ninety (90) days’ written notice before the expiry of the term;
 - (c) Merial may terminate the agreement by giving three (3) months’ prior notice if Rhone Ma Malaysia is no longer managed and controlled by Dr. Lim, Foong Kam Weng, Dr. Yip, Dr. Raymond Choo and Chan Chew Yen (“**Change**”). These five (5) persons are deemed to have control of Rhone Ma Malaysia if they own, directly and / or indirectly, fifty percent (50%) of Rhone Ma Malaysia’s voting shares. Rhone Ma Malaysia must inform Merial immediately when such Change occurs;
 - (d) Rhone Ma Malaysia will purchase a minimum quantity of the products from Merial every year (“**Target**”). The Target will be revised annually after discussion between the parties;
 - (e) If the parties cannot agree on the establishment of a Target for any particular year, the previous years’ Target plus a fixed percentage will be adopted. Merial can terminate the agreement without any compensation to Rhone Ma Malaysia by giving ninety (90) days’ prior notice if the parties cannot establish the Target for two (2) years continuously. Merial may waive its right to remove Rhone Ma Malaysia’s distribution rights if Rhone Ma Malaysia cannot meet Merial’s marketing plan of the products in any year due to disaster or destruction of animals;
 - (f) Merial can terminate the agreement by giving a thirty (30) days’ prior notice or delete specific product(s) from the agreement without any compensation to Rhone Ma Malaysia, if Rhone Ma Malaysia cannot meet certain percentage of the Target set for the product(s) on a given period; and
 - (g) the agreement is governed by the laws of Singapore.
- (ii) A distribution agreement dated 1 October 2015 between Roquette Singapore Pte Ltd (“**RSP**”) and Link Ingredients whereby RSP grants Link Ingredients the non-exclusive distribution rights in Malaysia of the products as set out in the agreement. The salient terms of the agreement are as follows:
 - (a) RSP may exclude or add other product(s) to the agreement by giving three (3) months’ notice without any compensation to Link Ingredients;
 - (b) the delivery to Link Ingredients shall be composite full loads of the products approximating eighteen (18) metric tonnes deliveries and be minimum one (1) full container load by sea;

6. BUSINESS OVERVIEW (Cont'd)

- (c) the agreement is effective from 1 October 2015 for two (2) years;
- (d) the agreement will be renewed from year to year if both parties decide to continue the distribution at the end of the term. Each party may terminate the agreement at any time by giving six (6) months' prior notice;
- (e) RSP may terminate the agreement at any time and without prior notice in the event of serious misconduct by Link Ingredients or a change in Link Ingredients' legal structure, management or financial situation; and
- (f) the agreement is governed by the laws of Singapore.

6.15 Major Customers

The table below lists the customer that accounted for ten percent (10%) or more of our Group's revenue for the past three (3) financial years up to the FYE 31 December 2015 and FPE 31 August 2016:

Customer	Type of products	Length of relationship as at the LPD	FYE 31 December						FPE 31 August	
			2013		2014		2015		2016	
			Years	RM'000	%	RM'000	%	RM'000	%	RM'000
An established bread manufacturer in Malaysia ("Customer A")	Starch, modified starch, sweetener, vegetable protein, vegetable powder, lubricant and food additive	5	9,425	11.26	12,498	13.65	11,660	10.92	7,751	9.94

Customer A has been our customer since the commencement of our food ingredients business segment in 2011, which demonstrates the stable and long-term business relationship that we have with Customer A. In addition, our Group has enjoyed long-term business relationships with our customers.

As at the LPD, we have more than 660 customers and over 130 of our customer have had dealings with us from as early as 2005. This provides us with a stable customer base to sustain and grow our business.

6.16 Major Suppliers

The table below lists the suppliers that accounted for ten percent (10%) or more of our Group's purchases for the past three (3) financial years up to the FYE 31 December 2015 and FPE 31 August 2016:

Suppliers	Type of products	Length of relationship as at the LPD	FYE 31 December						FPE 31 August	
			2013		2014		2015		2016	
			Years	RM'000	%	RM'000	%	RM'000	%	RM'000
Merial Group	Animal health products comprising vaccines, pharmaceuticals and feed additives	15	25,847	45.35	25,490	44.30	31,072	42.59	23,481	43.65
Roquette Group	Food ingredients	5	15,070	26.44	15,813	27.48	16,854	23.10	12,356	22.97

6. BUSINESS OVERVIEW (Cont'd)

Our Group is dependent on the abovementioned suppliers for the distribution rights of certain animal health products and supply of food ingredients. However, we have cultivated strong and good business relationships with the suppliers through periodic meeting with the suppliers to provide feedback on the products, timely settlement of amount payable and provide adequate lead time between placement of an order and delivery of the products. In the past, we have not experienced any difficulty in obtaining supplies of animal health products and food ingredients from our suppliers.

There is no competition between our in-house manufactured animal health products and products purchased from the Merial Group as our in-house manufactured products consist of different ingredients which are used for the treatment of different disease and different type of parasite infestations as compared to Merial's products.

Further, our Group does not manufacture any food ingredients and majority of our food ingredients are sourced from the Roquette Group.

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6. BUSINESS OVERVIEW (Cont'd)

6.17 Approvals, Major Licences and Permits

As at the LPD, save as disclosed below, there are no other approvals, major licences and permits obtained by our Group.

No.	Licence no. / Certificate no. / Reference no.	Issuing authority	Subject matter / Purpose	Issue / Renewal date	Expiry date / Validity period	Major conditions imposed	Status of compliance
Rhone Ma Malaysia							
1.	LTPP1604614	Majlis Bandaraya Petaling Jaya	Licence for trades, business and industries to store animal medications and operate an administrative office at Lot 18A, Jalan 241, Seksyen 51A, 46100 Petaling Jaya, Selangor Darul Ehsan	18.12.2015	01.01.2016 to 31.12.2016	Licence must be displayed at the premises.	Complied
2.	LTPP1604618	Majlis Bandaraya Petaling Jaya	Licence for trades, business and industries to import / distribute animal medications / animal feed, manufacture and process animal medications / animal feed and to display illuminated and non-illuminated advertisements at Lot 18B, Jalan 241, Seksyen 51A, 46100 Petaling Jaya, Selangor Darul Ehsan	18.12.2015	01.01.2016 to 31.12.2016	Licence must be displayed at the premises.	Complied
3.	LAM / S / No. 3291	Board of Architects Malaysia	Certificate of Completion and Compliance issued for the amendment plan to the approved plan to build on the existing factory on Lot 18A & 18B, Jalan 241, Seksyen 51A, 46100 Petaling Jaya, Selangor Darul Ehsan	08.06.2015	-	-	N/A
4.	SEL 2014/389/134(SJ)	Department of Agriculture Malaysia	Licence to sell pesticides	29.09.2014	29.09.2014 to 28.09.2017	This licence shall be displayed.	Complied
5.	MALLP20151361A	Ministry of Health Malaysia	Manufacturer's licence	13.11.2015	01.01.2016 to 31.12.2016	For products to which the Control of Drugs and Cosmetics Regulations 1984 apply, the holder of this licence is allowed to manufacture only the registered products as approved by the Drug Control Authority.	Complied

6. BUSINESS OVERVIEW (Cont'd)

No.	Licence no. / Certificate no. / Reference no.	Issuing authority	Subject matter / Purpose	Issue / Renewal date	Expiry date / Validity period	Major conditions imposed	Status of compliance
6.	MALL120151376A	Ministry of Health Malaysia	Import licence	13.11.2015	01.01.2016 to 31.12.2016	A copy of authentic invoice and certificate of analysis for each group of imported goods shall be submitted to the authority upon receipt of each consignment. For products to which Control of Drugs and Cosmetics Regulations 1984 apply, the holder of this licence is allowed to import only the registered products as listed in the attachment to the licence.	Note (a) Complied
7.	B 004432	Fisheries Development Authority of Malaysia	Licence to deal, import, export and process fish at Lot 18B, Jalan 241, Seksyen 51A, 46100 Petaling Jaya, Selangor Darul Ehsan	07.03.2016	March 2017	Dealing and processing shall be conducted at the place specified in the licence only.	Complied
8.	064959	Health Department, State of Selangor	Pharmacist's poisons licence (Type A licence) issued to Law Sok Fern with the business address of Lot 18A & 18B, Jalan 241, Seksyen 51A, 46100 Petaling Jaya, Selangor Darul Ehsan to import, store and deal generally in all poisons by wholesale only ^(b)	17.11.2015	01.01.2016 to 31.12.2016	Subject to the provisions of the Poisons Act 1952 and of any regulations made under it and such other terms and conditions specified in it.	Complied
9.	064916	Health Department, State of Selangor	Pharmacist's poisons licence (Type A licence) issued to Chan Khai Xuen with the business address of Lot 18A & 18B, Jalan 241, Seksyen 51A, 46100 Petaling Jaya, Selangor Darul Ehsan to import, store and deal generally in all poisons by wholesale only ^(b)	16.11.2015	01.01.2016 to 31.12.2016	Subject to the provisions of the Poisons Act 1952 and of any regulations made under it and such other terms and conditions specified in it.	Complied
10.	AMH(B)(C)2015111-2016	Feed Board	Licence to import feed additives specified in the licence under the Feed Act 2009	31.12.2015	31.12.2015 to 31.12.2016	Any importation of feed or feed additives must be for the purposes declared by the Feed Board.	Complied

6. BUSINESS OVERVIEW (Cont'd)

No.	Licence no. / Certificate no. / Reference no.	Issuing authority	Subject matter / Purpose	Issue / Renewal date	Expiry date / Validity period	Major conditions imposed	Status of compliance
11.	AMH(G)022016114-2016(10)	Feed Board	Certificate of Registration of Seller of Feed or Feed Additive issued to Dr. Lim of Rhone Ma Malaysia with business address at Lot 18A & 18B, Jalan 241, Seksyen 51A, 46100 Petaling Jaya, Selangor Darul Ehsan	30.03.2016	30.03.2016 to 29.03.2017	-	N/A
12.	JPV:PSTT/100-3/1/33	Ministry of Agriculture and Agro-Based Industry	Notification on the status of import, manufacture and sale of feed additives under the Feed Act 2009(c)	05.08.2016	31.12.2016	(i) The notification must not be used when licence or registration certificate has been issued. (ii) The notification does not exempt the applicant from the requirements of other relevant act.	Complied
Asia-Pacific Special Nutrients							
13.	CSSD/BNX-100076/LOA-TAX/afh	Malaysian Biotechnology Corporation Sdn Bhd ("Biotech Corp")	Letter of award of BioNexus Status and tax incentive issued to Asia-Pacific Special Nutrients with address at Lot 18B, Jalan 241, Seksyen 51A, 46100 Petaling Jaya granting 100% tax exemption of the statutory income for a period of ten (10) years to conduct the following qualifying activities: Research, development, manufacturing and sale of diagnostic products for use in veterinary, food, agriculture and medical / pharmaceutical applications ("Qualifying Activities") ^{(d)(e)}	29.09.2008	Effective 23.07.2007	(i) Asia-Pacific Special Nutrients must undertake continuous R&D on new diagnostic kits production as proposed. (ii) Asia-Pacific Special Nutrients must invest at least 5% of its annual revenue in R&D. (iii) Asia-Pacific Special Nutrients must employ at least 40% knowledge workers of its total workforce. ^(f) (iv) Any change to the Qualifying Activities must have prior written approval of Biotech Corp. (v) Asia-Pacific Special Nutrients must not conduct any activities other than the Qualifying Activities. ^(g) (vi) Asia-Pacific Special Nutrients must commence the Qualifying Activities within one (1) year from the date of the letter of award.	Pending compliance ^(g)

6. BUSINESS OVERVIEW (Cont'd)

No.	Licence no. / Certificate no. / Reference no.	Issuing authority	Subject matter / Purpose	Issue / Renewal date	Expiry date / Validity period	Major conditions imposed	Status of compliance
						<p>(vii) Asia-Pacific Special Nutrients must conduct the Qualifying Activities at the following location: Lot 18B, Jalan 241, Seksyen 51A, 46100 Petaling Jaya, Selangor, Malaysia.</p> <p>(viii) Where there is a change in the location of Asia-Pacific Special Nutrients' operations from the address specified in the letter of award, Asia-Pacific Special Nutrients must immediately notify Biotech Corp in writing.</p> <p>(ix) Where there are justifiable reasons for relocating any portion of the Qualifying Activities to be conducted outside of Malaysia on a temporary basis, Asia-Pacific Special Nutrients must seek prior written approval of Biotech Corp, which may in its sole discretion evaluate the proposal, and if approved, such approval may be subject to conditions as Biotech Corp deems fit.</p> <p>(x) Permanent relocation outside Malaysia will result in the revocation of the BioNexus Status.</p> <p>(xi) Asia-Pacific Special Nutrients must immediately notify Biotech Corp of: (a) any circumstances that have occurred that would materially affect Asia-Pacific Special Nutrients or its performance of the Qualifying Activities;</p>	

6. BUSINESS OVERVIEW (Cont'd)

No.	Licence no. / Certificate no. / Reference no.	Issuing authority	Subject matter / Purpose	Issue / Renewal date	Expiry date / Validity period	Major conditions imposed	Status of compliance
						<p>(b) any substantial change in the nature of the operations of Asia-Pacific Special Nutrients or the manner in which Asia-Pacific Special Nutrients implements and operates the Qualifying Activities;</p> <p>(c) any claim, allegation, action or prosecution in respect of any improper or wrongful use or possible infringement of any intellectual property rights of any third party which comes to Asia-Pacific Special Nutrients' attention; and</p> <p>(d) any other matter that may materially affect the interests of Biotech Corp or the biotechnology industry.</p> <p>(xii) The award of the BioNexus Status is personal to Asia-Pacific Special Nutrients and cannot be assigned, pledged or otherwise transferred, in whole or in part, to any other entity.</p>	
14.	LTPP1604617	Majlis Bandaraya Petaling Jaya	Licence for trades, business and industries to store pharmaceutical products at Lot 18B, Jalan 241, Seksyen 51A, 46100 Petaling Jaya, Selangor Darul Ehsan	18.12.2015	01.01.2016 to 31.12.2016	Licence must be displayed at the premises.	Complied
15.	MALLB20150526A	Ministry of Health Malaysia	Wholesaler's licence	27.10.2015	01.01.2016 to 31.12.2016	For products to which the Control of Drugs and Cosmetics Regulations 1984 apply, the holder of this licence is allowed to sell by wholesale registered products as set out in the register of products provided under Regulation 9(1).	Complied

6. BUSINESS OVERVIEW (Cont'd)

No.	Licence no. / Certificate no. / Reference no.	Issuing authority	Subject matter / Purpose	Issue / Renewal date	Expiry date / Validity period	Major conditions imposed	Status of compliance
16.	063470	Health Department, State of Selangor	Pharmacist's poisons licence (Type A licence) issued to Gerard Choo Thean Yoon with the business address of Lot 18B, Jalan 241, Seksyen 51A, 46100 Petaling Jaya, Selangor Darul Ehsan to import, store and deal generally in all poisons by wholesale only ^(b)	03.09.2015	01.01.2016 to 31.12.2016	Subject to the provisions of the Poisons Act 1952 and of any regulations made under it and such other terms and conditions specified in it.	Complied
17.	B 000291	Fisheries Development Authority of Malaysia	Licence to deal, import, export and process fish at Lot 18B, Jalan 241, Seksyen 51A, 46100 Petaling Jaya, Selangor Darul Ehsan	05.05.2016	May 2017	Dealing and processing shall be conducted at the place specified in the licence only.	Complied
18.	AMH(B)(C)2015109-2016	Feed Board	Licence to import feed additives specified in the licence under the Feed Act 2009	31.12.2015	31.12.2015 to 31.12.2016	Any importation of feed or feed additives must be for the purposes declared by the Feed Board.	Complied
19.	AMH(G)022016125-2016(10)	Feed Board	Certificate of Registration of Seller of Feed or Feed Additive issued to Lim Hang Chern of Asia-Pacific Special Nutrients with business address at Lot 18A, Jalan 241, Seksyen 51A, 46100 Petaling Jaya, Selangor Darul Ehsan	22.04.2016	22.04.2016 to 21.04.2017	-	N/A
20.	JPV:PSTT/100-3/1/33	Ministry of Agriculture and Agro-Based Industry	Notification on the status of import and sale of feed additives under the Feed Act 2009 ^(e)	05.08.2016	31.12.2016	(i) The notification must not be used when licence or registration certificate has been issued. (ii) The notification does not exempt the applicant from the requirements of other relevant act.	Complied
21.	JPV/PBS(Z)/600-8/8/5 Jld 1 (18)	Ministry of Agriculture and Agro-Based Industry	Approval to be registered as a local agent / importer of veterinary vaccine	03.09.2013	-	If the result of appraisal by the Department of Veterinary Services on the vaccine / biologic storage and distribution facilities of the company fail or not satisfactory, the Department of Veterinary Services reserves the right to cancel the registration of the company and the said vaccine / biologic.	Complied

6. BUSINESS OVERVIEW (Cont'd)

No.	Licence no. / Certificate no. / Reference no.	Issuing authority	Subject matter / Purpose	Issue / Renewal date	Expiry date / Validity period	Major conditions imposed	Status of compliance
Link Ingredients							
22.	LTPP1611778	Majlis Bandaraya Petaling Jaya	Licence for trades, business and industries for food ingredients distributor warehouse at Lot 18B, Jalan 241, Seksyen 51A, 46100 Petaling Jaya, Selangor Darul Ehsan	29.01.2016	29.01.2016 to 31.12.2016	Licence must be displayed at the premises.	Complied
23.	LTPP1604615	Majlis Bandaraya Petaling Jaya	Licence for trades, business and industries for food store and to display non-illuminated advertisement at Lot 4, Lorong 51A/227B, 46100 Petaling Jaya, Selangor Darul Ehsan	18.12.2015	01.01.2016 to 31.12.2016	Licence must be displayed at the premises.	Complied
24.	JPV: PSTT/100-3/1/33	Ministry of Agriculture and Agro-Based Industry	Notification on the status of import and sale of CGM under the Feed Act 2009 ^(e)	05.08.2016	31.12.2016	(i) The notification must not be used when licence or registration certificate has been issued. (ii) The notification does not exempt the applicant from the requirements of other relevant act.	Complied
Vet Food Agro Diagnostics							
25.	LTPP1604616	Majlis Bandaraya Petaling Jaya	Licence for trades, business and industries for research laboratory at Lot 18B, Jalan 241, Seksyen 51A, 46100 Petaling Jaya, Selangor Darul Ehsan	18.12.2015	01.01.2016 to 31.12.2016	Licence must be displayed at the premises.	Complied

Notes:

- (a) The Ministry of Health Malaysia had vide an electronic mail dated 29 October 2014 confirmed that Rhone Ma Malaysia is not required to submit to the authority a copy of authentic invoice and certificate of analysis for each group of imported goods upon receipt of each consignment. However, Rhone Ma Malaysia must keep a copy of the said invoice and certificate of analysis which are subject to inspection by the authority. Rhone Ma Malaysia has complied with this condition.
- (b) Pursuant to Section 26(2) of the Poisons Act 1952, this licence may only be granted to a person who is a licensed pharmacist.
- (c) This notification states that the company is in the process of completing the documentation for the application of licence or registration certificate under the Feed Act 2009.

6. BUSINESS OVERVIEW (Cont'd)

- (d) *Biotech Corp had vide a letter dated 18 August 2010 informed Asia-Pacific Special Nutrients that the Minister of Finance had approved the following extension in the scope of BioNexus activities with effect from 21 June 2010:*
- (i) *commercialisation of microbial and enzyme based products for veterinary and agricultural use and its related R&D activities;*
 - (ii) *provision of contract research services; and*
 - (iii) *out licensing of in-house developed IP.*
- (e) *Biotech Corp had vide a letter dated 17 May 2012 informed Asia-Pacific Special Nutrients that the Minister of Finance had approved the following additional Qualifying Activities with effect from 16 April 2012:*
- “Provision of contract manufacturing activities subject to it being consequential to contract research services rendered by the company”.*
- (f) *Biotech Corp had vide a letter dated 12 May 2011 informed Asia-Pacific Special Nutrients that the Minister of Finance had approved Asia-Pacific Special Nutrients' application to reduce the required amount of knowledge workers to be employed from 100% to 40% of total workforce.*
- (g) *Asia-Pacific Special Nutrients had on 5 May 2016 written to Biotech Corp to inform Biotech Corp that Asia-Pacific Special Nutrients has been carrying out trading activities and paid taxes on income generated from such trading activities since 2013. Asia-Pacific Special Nutrients also sought permission from Biotech Corp to (1) maintain the status quo of Asia-Pacific Special Nutrients and continue to make all relevant income tax payment in relation to the income generated from trading activities; or (2) transfer the trading activities currently undertaken by Asia-Pacific Special Nutrients to another subsidiary under the Group by end of 2017.*
- Biotech Corp had vide a letter dated 24 May 2016 informed Asia-Pacific Special Nutrients that Biotech Corp has no objection for Asia-Pacific Special Nutrients to transfer the trading activities currently undertaken by Asia-Pacific Special Nutrients to either an existing subsidiary or a newly incorporated subsidiary within the Group by either of the following stipulated timeline:*
- (i) *six (6) months after Rhone Ma Holdings has been listed on Bursa Securities; or*
 - (ii) *eighteen (18) months commencing on 5 May 2016, the date of the letter from Asia-Pacific Special Nutrients to Biotech Corp,*
- whichever is later.*

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6. BUSINESS OVERVIEW (Cont'd)

6.18 Property, Plant and Equipment

6.18.1 Properties Owned by Our Group

No.	Registered owner	Title / Location	Description / Existing use	Tenure	Land area / Gross floor area sq. ft.	Audited NBV as at 31 August 2016 RM'000	Market value as at 28 March 2016 [^] RM'000	Revaluation surplus [^] RM'000	Date of issuance of certificate of completion and compliance	Encumbrances
1.	Rhone Ma Malaysia	PN 33666, Lot 603 Seksyen 32, Bandar Petaling Jaya, Petaling, Selangor Lot. 18A, Jalan 241 Seksyen 51A, 46100 Petaling Jaya, Selangor Darul Ehsan	A piece of industrial land erected with an individual-designed warehouse complex which comprises a three (3)-storey office building, a single-storey warehouse annexed, a guardhouse and a pump house	Leasehold expiring on 2 September 2072	27,082 / 12,836	5,619	6,200	581	8 June 2015	Charged to Public Bank Berhad ⁽⁶⁾
2.	Rhone Ma Malaysia	PN 33667, Lot 604 Seksyen 32, Bandar Petaling Jaya, Petaling, Selangor Lot. 18B, Jalan 241 Seksyen 51A, 46100 Petaling Jaya, Selangor Darul Ehsan	A piece of industrial land erected with an individual-designed warehouse complex which comprises a three (3)-storey office building, a single-storey warehouse annexed, a guardhouse and a pump house	Leasehold expiring on 2 September 2072	27,082 / 24,982	5,956	7,300	1,344	8 June 2015	Charged to HSBC Bank Malaysia Berhad and HSBC Amanah Malaysia Berhad

6. BUSINESS OVERVIEW (Cont'd)

No.	Registered owner	Title / Location	Description / Existing use	Tenure	Land area / Gross floor area sq. ft.	Audited NBV as at 31 August 2016 RM'000	Market value as at 28 March 2016 [^] RM'000	Revaluation surplus* RM'000	Date of issuance of certificate of completion and compliance	Encumbrances
3.	Rhone Ma Malaysia	GRN 212778, Lot 16008, Bandar Nilai Utama, Seremban, Negeri Sembilan Lot 16008, Bandar Nilai Utama, Seremban, Negeri Sembilan	A piece of vacant industrial land	Freehold	165,323	3,070	6,500	3,430	N/A	Charged to Public Bank Berhad ^(a)
4.	Rhone Ma Malaysia	H.S.(D) 133802, PT 73996, Mukim Kapar, Klang, Selangor PT 73996, Mukim Kapar, Klang, Selangor	A piece of vacant industrial land	Freehold	94,561	5,286	6,800	1,514	N/A	Charged to OCBC Bank (Malaysia) Berhad

Notes:

[^] The Independent Valuers had conducted a valuation on the properties on 28 March 2016.

* The revaluation surplus is calculated based on the market value as at 28 March 2016 minus the net book value as at 31 August 2016. The revaluation surplus has not been incorporated in the financial statements of the Group for the FPE 31 August 2016.

(a) It should be noted that PIVB is a wholly-owned subsidiary of Public Bank Berhad. Public Bank Berhad, has in its ordinary course of business, granted credit facilities to our Group. However, PIVB is of the view that the aforementioned extension of credit facilities does not result in a conflict of interest situation as the total credit facilities granted to our Group are not material when compared to the net assets of Public Bank Berhad as at 31 December 2015. Kindly refer to Section 10.5.1 of this Prospectus for further information on the declaration of conflict of interest by PIVB.

6. BUSINESS OVERVIEW (Cont'd)

6.18.2 Properties Rented by Our Group

No.	Tenant	Landlord	Location	Description / Existing use	Approximate rented area sq. ft.	Rental payable per annum RM	Tenure of tenancy
1.	Link Ingredients	Orinoco Corporation Sdn Bhd	Lot 4 Lorong 51A/227B, 46100 Petaling Jaya, Selangor Darul Ehsan	A semi-detached factory used as a warehouse	12,500	288,000	01.08.2014 to 31.07.2017
2.	Link Ingredients	Mac Pack Warehousing Sdn Bhd	Lot 28326, Jalan Pelabuhan Utara, 42000 Port Klang, Selangor Darul Ehsan	Storage space in a warehouse ^(a)	3,000	36,000	Since 01.09.2015, valid until and unless terminated
3.	Rhone Ma Malaysia	Marine Supplies & Warehousing Sdn Bhd	Lot 19, Lebuh Sultan Muhammed 2, Bandar Sultan Sulaiman, 42000 Pelabuhan Klang, Selangor Darul Ehsan	Storage space in a warehouse ^(b)	4,000	86,400	Since 01.04.2011, valid until and unless terminated

Note:

(a) Provision of warehousing services by third party logistics company.

None of the existing use of the abovementioned properties breached any laws, regulations, rules and requirements in relation to land and buildings.

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6. BUSINESS OVERVIEW (Cont'd)

6.18.3 Plant and Equipment

As at 31 August 2016, the material plant and equipment used and owned by our Group are as follows:

Machinery	Description	No. of units	Audited NBV as at 31 August 2016 RM'000
Paddle blender	Blending and mixing of powder	1	254
Ribbon blender	Blending and mixing of powder	1	6
Cube blender	Blending and mixing of powder	1	4
Mixing vessel	Mixing of liquid	2	3
Auger filling machine	Filling	1	45
Total		6	312

Save as disclosed above, all other plant and equipment of our Group are individually immaterial to the operations of our Group to be disclosed separately. Our Directors are of the opinion that our Group has sufficient capacity to carry out our operations, the details of which are set out in Section 6.3 of this Prospectus.

6.18.4 Material Capital Expenditures and Divestitures

Save as disclosed below, there is no other material capital expenditure incurred by our Group for the past three (3) financial years up to the FYE 31 December 2015, FPE 31 August 2016 and up to the LPD:

	FYE 31 December			FPE 31 August 2016 RM'000	As at the LPD RM'000
	2013 RM'000	2014 RM'000	2015 RM'000		
Freehold land	-	-	5,286	-	-
Renovation	-	55	-	-	-
Motor vehicles	-	742	384	79	79
Office equipment	-	-	100	20	20
Laboratory equipment	948	165	-	579	579
Product applicator and vaccination equipment	-	-	85	-	-
Production equipment	-	85	20	-	-
Total	948	1,047	5,875	678	678

The material capital expenditure was primarily financed by a combination of bank borrowings and internally generated funds.

6. BUSINESS OVERVIEW (Cont'd)

Save as disclosed below, there are no other material capital divestitures made by our Group for the past three (3) financial years up to the FYE 31 December 2015, FPE 31 August 2016 and up to the LPD:

	FYE 31 December			FPE 31 August 2016 RM'000	As at the LPD RM'000
	2013 RM'000	2014 RM'000	2015 RM'000		
Investment property	1,400	3,971	-	-	-
Laboratory equipment	553	-	-	-	-
Motor vehicles	-	-	176	-	-
Total	1,953	3,971	176	-	-

6.18.5 Material Plans to Construct, Expand or Improve Facilities

As at the LPD, our Group has no immediate plans to construct, expand or improve on existing facilities, save for the following:

Description	Estimated expenditure amount RM'000	Amount already paid as at the LPD RM'000	Method of financing	Estimate timeframe for completion from the date of Listing	Estimated increase in capacity after completion
Construction and commissioning of a new GMP-compliant plant	20,000	661	Utilisation of IPO proceeds, internally generated funds and / or bank borrowings	Within twenty four (24) months	Approximately four (4) times of existing maximum production capacity
Construction of a new warehouse with three (3)-storey office	8,500	38	Utilisation of IPO proceeds, internally generated funds and / or bank borrowings	Within twenty four (24) months	Approximately 50,000 sq. ft. of gross floor area

6.19 Regulatory Requirements and Environmental Issues

As at the LPD, our Group has complied with all material regulatory requirements and environmental issues which may materially affect our Group's operations and / or utilisation of assets. In addition, there are no environmental proceedings or investigations to which we are or might become a party to.

6.20 Seasonality

Generally, our Group's business is not subjected to any cyclical or seasonal trend.

6.21 Interruptions in Business

We have not experienced any interruption in our business, which had a significant effect on our operations for the past twelve (12) months preceding the LPD.

6. BUSINESS OVERVIEW (Cont'd)

6.22 Future Plans, Strategies and Prospects**6.22.1 Future Plans and Strategies****(i) Construction of a New GMP-Compliant Plant**

Currently, our Group has a GMP-compliant plant located at Petaling Jaya, Selangor Darul Ehsan. As part of our business expansion plans for the provision of end-to-end animal health solution and our efforts to increase our production capacity to cater to the increasing demand for our in-house manufactured products, we intend to construct a new GMP-compliant plant on a piece of vacant land in Nilai, Seremban, Negeri Sembilan Darul Khusus which was acquired in 2009.

As at the LPD, we have appointed a consultant for the overall project management in relation to the construction of the new GMP-compliant plant. We are currently in the designing stage which is expected to be finalised and approved by our management team and appointed GMP consultant in the fourth (4th) quarter of 2016 and the submissions to the relevant authorities will be made thereafter. The construction of the GMP-compliant plant is expected to commence in the second (2nd) quarter of 2017, subject to obtaining approval from the relevant authorities which amongst others, includes approval for the planning permission and building plans from Majlis Perbandaran Nilai and approval for the layout plans from NPRA. The construction of the new GMP-compliant plant is estimated to be completed within eighteen (18) months from the commencement date of the construction.

The new GMP-compliant plant is intended to manufacture powder-based products. As disclosed in Section 6.3 of the Prospectus, the current maximum production capacity of our production equipment for the manufacturing of powder-based products is approximately 636.93 tonnes per year and actual production utilisation of our production equipment for the manufacturing of powder-based products for the FYE 31 December 2015 is approximately 96.49%. Upon full commissioning and commencement of operations of the new GMP-compliant plant, our maximum production capacity for powder-based products is estimated to increase by approximately four (4) times the existing maximum production capacity based on our management long-term aspiration for the new production output in view that the production of our powder-based products have increased by approximately 91.11% from 321.60 tonnes in the FYE 31 December 2013 to 614.60 tonnes in the FYE 31 December 2015.

The total estimated cost to be incurred for the new GMP-compliant plant is approximately RM20.00 million which includes cost of construction (including cost of furnishing and fitting) amounting to approximately RM13.00 million and cost of purchase of the machineries and equipment amounting to approximately RM7.00 million. We intend to utilise RM11.00 million of our IPO proceeds to fund the estimated cost of construction and RM7.00 million of our IPO proceeds to fund the estimated cost of purchase of the machineries and equipment. The remaining funds required for the construction of the GMP-compliant plant will be financed through internally generated funds and / or bank borrowings.

Any difference arising from the utilisation of proceeds for the purchase of machineries and equipment will be adjusted accordingly with our working capital requirements.

6. BUSINESS OVERVIEW (Cont'd)

(ii) Construction of a Warehouse with Three (3)-Storey Office

Our Group intends to build a warehouse with three (3)-storey office with a total estimated gross floor area of approximately 50,000 sq. ft. on a piece of vacant industrial land in Kapar, Klang, Selangor Darul Ehsan to cater to our increasing storage needs for both animal health products and food ingredients. This is in line with the expected increase in our business volume from both existing and new customers. In addition, we intend to use the warehouse as our main distribution centre to facilitate import of the products which will then be distributed to our customers.

As at the LPD, we have appointed a consultant for the overall project management in relation to the construction of the new warehouse with three (3)-storey office. We are currently in the designing stage which is expected to be finalised in the fourth (4th) quarter of 2016 and the submissions to the relevant authorities will be made thereafter. The construction of the new warehouse with three (3)-storey office is expected to commence in the first (1st) quarter of 2017 subject to obtaining approval from the relevant authorities which amongst others, includes approval for the planning permission and building plans from Majlis Perbandaran Klang. The construction is estimated to be completed within eighteen (18) months from the commencement date of the construction.

The total estimated cost to be incurred for the construction of warehouse with three (3)-storey office including the cost of furnishing and fitting is approximately RM8.50 million. We intend to utilise RM6.50 million of our IPO proceeds to part finance the construction of warehouse with three (3)-storey office. The remaining funds required will be financed through internally generated funds and / or bank borrowings.

(iii) Expansion of Product Range

The continuous expansion of our Group's product range remains as one of our future plans moving forward. Our Group aims to develop and introduce new pharmaceuticals and feed additives through our in-house R&D capabilities. Our new product development committee comprising members from various departments such as marketing, regulatory, laboratory and GMP is responsible to develop new products based on market needs. Once a new product is proposed, our R&D team will conduct active ingredient testing, formulation study and solubility test before finalising the formula for commercialisation. Meetings will be held every six (6) months or whenever required to discuss and follow-up on the development progress of new products. The number of products to be developed and introduced each year will depend on the R&D and product registration process.

Further, we intend to expand our existing range of animal health products and food ingredients from third party international animal health products manufacturers and third party food ingredients producers. We will conduct market research and identify new product categories to be launched within the animal health and nutrition market as well as food ingredients market in response to the latest market trends and our customers' preferences.

6. BUSINESS OVERVIEW (Cont'd)

(iv) Business Expansion in Regional Markets

Currently, our Group exports our animal health products to regional markets such as Brunei, Indonesia, the Philippines, Singapore, Thailand and Vietnam. Our Group intends to further our reach in the regional markets focus on Indonesia, the Philippines, Thailand and Vietnam by identifying and appointing local distributors to market and distribute our animal health products focused mainly on our in-house developed products.

In order to expand our market presence and create awareness for our animal health products and services in the regional markets, we will participate in exhibitions and conventions, organise seminars and visit potential customers or distributors in the regional markets. The expansion of our business in regional markets is expected to broaden our customer base geographically and reduce our reliance on the local market.

6.22.2 Prospects of Our Group

We are an end-to-end animal health solution provider that is able to provide a customised animal health solution with our extensive range of animal health services and products to meet the needs and requirements of our customers. Further, our business operations are supported by our in-house R&D centre which provides us the platform to expand our product range and continuously develop new products as well as to improve our existing products. Through our in-house R&D centre and GMP-compliant plant, we are able to develop and manufacture our in-house products that conform to the standards required by the relevant authorities. In addition, our Group is led by an experienced management team that will provide the basis for our Group's continuing growth and success. Further details on our competitive advantages and key strengths are set out in Section 6.1.4 of this Prospectus.

Moving forward, our Group's future plans and strategies will focus on the expansion of our manufacturing activities by constructing and operating a new GMP-compliant plant in Nilai, Negeri Sembilan Darul Khusus which will increase our production capacity by approximately four (4) times of the existing maximum production capacity. In addition, we will focus on the expansion of our product range which includes in-house developed products and products from third party international animal health products manufacturers. We also intend to expand our market presence in the existing regional markets as part of our future plans. Further details on our future plans and strategies are set out in Section 6.22.1 of this Prospectus.

According to the IMR Report, the total revenue of the animal health and nutrition market in Malaysia stood at RM1.42 billion for 2015 and is expected to grow to RM1.84 billion for 2020. Further, the total revenue of the food ingredients market in Malaysia stood at RM6.54 billion for 2015 and is expected to reach RM8.02 billion for 2020. Further details on the industry prospects and outlook are set out in Section 7 of this Prospectus.

Our Directors believe that the prospects of our Group are favourable given the competitive advantages and key strengths of our Group as well as the continued expansion of our Group's capacity and operations through our future plans which would provide us the platform to grow and sustain our business amidst the favourable outlook of the animal health and nutrition market and food ingredients market in Malaysia.

7. INDUSTRY OVERVIEW

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Protégé
ASSOCIATES

BRAND | FINANCE | MARKET

17 October 2016

The Board of Directors
Rhone Ma Holdings Berhad
Lot 18A & 18B,
Jalan 241, Seksyen 51A,
46100 Petaling Jaya,
Selangor

Dear Sirs,

Executive Summary of the Strategic Analysis of the Animal Health and Nutrition Market and An Overview of the Food Ingredients Market in Malaysia

This Executive Summary of the Independent Market Research Report titled 'Strategic Analysis of the Animal Health and Nutrition Market and An Overview of the Food Ingredients Market in Malaysia' ("IMR report") is prepared by Protégé Associates Sdn. Bhd. ("Protégé Associates") for inclusion in the Prospectus of Rhone Ma Holdings Berhad ("Rhone Ma Holdings" or "the Company") in relation to the proposed listing of and quotation for the entire issued and paid-up share capital of Rhone Ma Holdings on the Main Market of Bursa Malaysia Securities Berhad.

1 MALAYSIA ECONOMIC OVERVIEW

The Malaysian economy registered a commendable growth in 2015 against a backdrop of challenging developments such as a slowing world trade, heightened volatility in the international financial markets and the collapse of energy price. Malaysia's real gross domestic product ("GDP") expanded by 5.0 percent in 2015. The growth is mainly driven by the continued expansion in domestic demand.

The Malaysian economy is expected to grow by between 4.0 to 4.5 percent in 2016. The services sector is expected to remain the largest contributor to the economy by accounting for more than half of Malaysia's real GDP in 2016.

2 THE LIVESTOCK INDUSTRY IN MALAYSIA

The animal health and nutrition market in Malaysia is part of the larger livestock industry. Animal health and nutrition products are a critical part of a livestock farm's operations in ensuring proper nutrition, health and hygiene of the livestock. Therefore, demand for animal health and nutrition products are mainly attributed to the growth in the livestock industry.

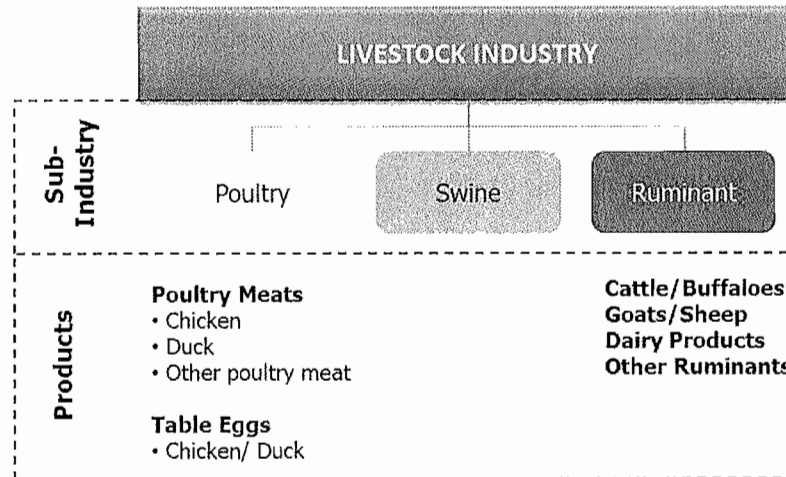
In order to understand the animal health and nutrition market better, it is imperative to:

- Obtain a deeper insight into the livestock industry in Malaysia; and
- Understand the position of the market within the context of the livestock industry.

The Malaysian livestock industry is an important component of the country's agriculture sector as it contributes directly towards the production of food commodities. Meat, eggs and dairy products derived from the livestock industry contribute significantly as a major source of protein-rich food for the population. The Malaysian livestock industry is also critical in ensuring national food security and self-sufficiency.

The livestock industry can be categorised into various sub-industries according to the types of livestock as follows:

7. INDUSTRY OVERVIEW (Cont'd)

Figure 1: Livestock Industry Segmentation

Source: Extracted from IMR report

The main factors supporting the steady growth of the livestock industry in Malaysia are listed as follows:

Figure 2: Factors Supporting Livestock Industry Growth in Malaysia

Factor	Description
Suitable climate and geography	<ul style="list-style-type: none"> • Malaysia's climate increases the efficiency of livestock production while vast availability of land provides the needed space for livestock. Together, they lead to high agricultural feasibility. • The high feasibility, and hence relative cost advantage of local agriculture production (including livestock production), is a direct benefit in sustaining the growth in the livestock industry.
Growing demand for local consumption	<ul style="list-style-type: none"> • The vast majority of Malaysia's livestock production is used for local consumption. • This is due to the relatively high cost of imported meat products and the government's plan for food sufficiency. • In addition, the growing population, increasing affluence and a greater desire for variety in food has also contributed to the growth in local consumption.
Changes in eating trends	<ul style="list-style-type: none"> • The country's continued modernisation has also led to a change in eating trends. Consumers now have preference for Western cuisine that usually has a big serving of meat, as opposed to the rice, noodles and vegetables of local fare. • Economic progress and growing per capita income has facilitated this shift. As a result, Malaysia's per capita consumption of livestock products has increased steadily in the past decade. • In 2009, consumption of major meat types (beef, mutton, pork and poultry meats) stood at 54.8kg per capita. In 2015, per capita consumption grew by 21.4 percent to 66.5kg.
Government support and policies	<ul style="list-style-type: none"> • The government is supportive of the livestock industry and the agriculture sector as a whole, and aims for the livestock industry to continue growing. • The agriculture sector grew by 2.4 percent per annum during the Tenth Malaysia Plan ("10MP") period from 2011 to 2015. This is forecasted to improve to 3.5 percent per annum during the Eleventh Malaysia Plan ("11MP") period from 2016

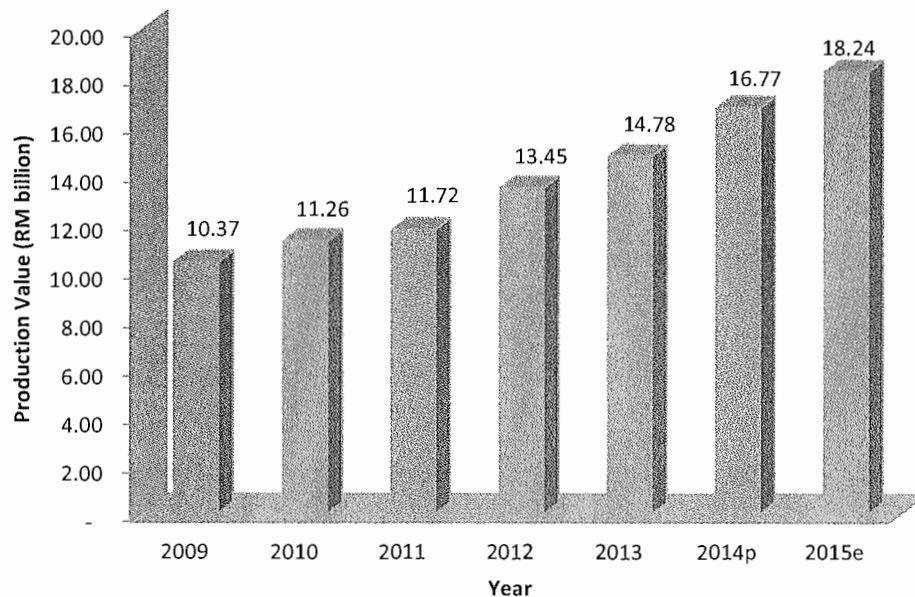
7. INDUSTRY OVERVIEW (Cont'd)

Factor	Description
	<p>to 2020, contributing 7.8 percent to GDP in 2020. The livestock, fisheries and farming segments are among the focuses to achieve this ambition.</p> <ul style="list-style-type: none"> • The National Agro-Food Policy ("NAP"), a replacement of the Third National Agricultural Policy, covers the period from 2011 to 2020 and addresses the issue of food supply in Malaysia. This 10-year policy also targets to make agro-food industry a competitive and sustainable industry. Livestock industry is also listed as one of the targeted sectors for development. • In addition, the Economic Transformation Programme ("ETP") aims to catalyse growth in agriculture industry, targeting to increase its gross national income ("GNI") contribution by RM28.9 billion to reach RM49.1 billion in 2020.

Source: Extracted from IMR report

The above factors have led to, and will continue to drive the steady growth of the Malaysian livestock industry. As illustrated in Figure 3, Malaysia's production value of livestock from 2009 to 2015 has been rising.

Figure 3: Production Value of Livestock in Malaysia, 2009-2015



Notes:

1. p denotes provisional;
2. e denotes estimate.

Source: Extracted from IMR report

From the above chart, it can be surmised that the historical performance of the livestock industry in Malaysia has been growing on upward trajectory. This is based on the increase in production value – at a compound annual growth rate ("CAGR") of 9.9 percent from 2009 to 2015.

7. INDUSTRY OVERVIEW (Cont'd)



2.1 POULTRY, SWINE AND RUMINANT SUB-INDUSTRIES

Further understanding can be obtained by an analysis of the 3 livestock sub-industries i.e. the poultry, swine and ruminant sub-industries.

2.1.1 Poultry Sub-Industry

The poultry sub-industry can be segmented into its various product types, such as various poultry meats and table eggs. Further information on the various types of poultry products (meat and eggs) are depicted in the following table:

Figure 4: Poultry Sub-Industry Overview (by Product Types)

Type	Details
Chicken	<ul style="list-style-type: none"> In 2014, there were 23 parent stock farm companies producing more than 772 million broiler day-old chicks (broiler is the variety reared for meat) annually in Peninsular Malaysia. In 2015, there were 24 parent stock farm companies producing more than 792 million broiler day-old chicks annually in Peninsular Malaysia. These broiler chicks are reared in more than 2,000 chicken broiler stock farms throughout Malaysia. In terms of domestic consumption, 30.0 percent of broiler chickens are used for further processing (into processed food such as frozen chicken and nuggets, etc), while the remaining 70.0 percent is sold as dressed or live birds at markets. Malaysia is still substantially dependent on imported genetic assets –grandparent and parent stocks for broiler production. The majority of broiler chickens cultivated in Peninsular Malaysia are of the Ross or Cobbs variant, accounting for 98.8 percent and 91.2 percent of the total broiler population in 2014 and 2015 respectively. Malaysia is a net exporter of chicken broiler stocks. In 2014, Malaysia exported 49.7 million chickens as live birds. This represented about 6.9 percent of the total 724.7 million birds produced from the broiler growing farms in Peninsular Malaysia. In 2015, Malaysia exported 54.9 million chickens as live birds. This represented about 7.4 percent of the total 737.6 million birds produced from the broiler growing farms in Peninsular Malaysia.
Duck	<ul style="list-style-type: none"> Duck farming in Malaysia is mostly conducted by small to medium commercial operations. In 2012, the production of meat ducks is estimated at 20.9 million ducks, of which 5.9 million are exported to Singapore.
Others	<ul style="list-style-type: none"> The cultivation of ostriches and quails for meat is existent but uncommon in Malaysia due to the low demand for such poultry meats. There are a number of small enterprises venturing into ostrich meat farming. Consumption of quail meat is not new, but it is still uncommon among Malaysians. The raising of swiftlets and the subsequent harvesting of their nests has been growing due to the high value of <i>birds' nests</i> in Asian communities, especially in

7. INDUSTRY OVERVIEW (Cont'd)

Type	Details
	China.
Table eggs	<ul style="list-style-type: none"> In 2014, there were 370 layer farms in Peninsular Malaysia producing 10.30 billion chicken eggs worth RM4.06 billion. In 2015, the 370 layer farms in Peninsular Malaysia produced 11.30 billion chicken eggs. The majority of local chicken layer stocks are of the Lohmann Brown, Hisex-Brown Dekalb and Novogen variants. In 2014, Malaysia exported 33.0 million eggs to Hong Kong, 8.1 million to Timor-Leste, 7.15 million to Macau, 0.65 million to Maldives, 0.32 million to Brunei Darussalam and 0.11 million to Thailand. In 2015, Malaysia exported 48.1 million eggs to Hong Kong, 12.0 million to Timor-Leste, 9.4 million to Macau, 0.3 million to Maldives and 0.3 million to Brunei Darussalam. The production of nutrition-enhanced eggs, including cholesterol-lowered and Omega-3 fatty acid-enhanced is also on the rise.

Source: Extracted from IMR report

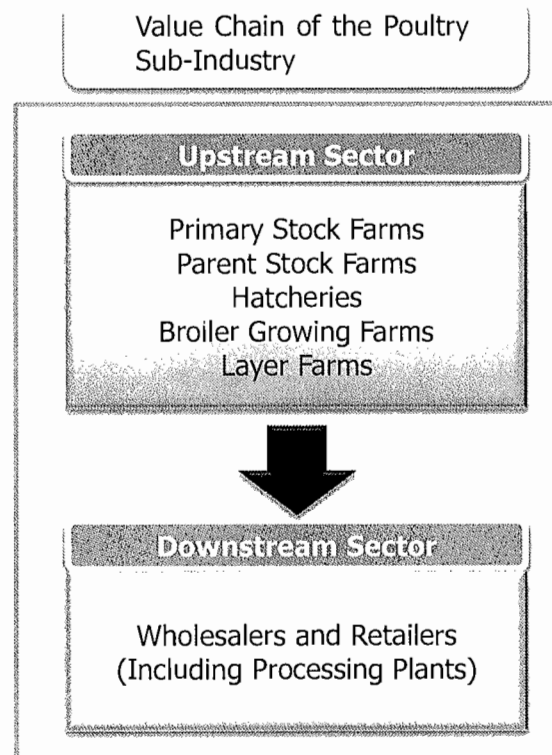
The poultry sub-industry, which includes all the product categories above, is the dominant segment within the Malaysian livestock industry. It has the highest production value, the most commercialised and developed farms and has attained complete self-sufficiency for the domestic consumption of the country.

The main reasons for the strength of the poultry sub-industry include the following:

- Popularity of poultry meat and eggs for the large section of the Malaysian population.
- Historically controlled prices for chicken during 1998 to 2008 made it more affordable to consumers – presently, chicken prices are controlled only during festive seasons.
- Increase in popularity of food franchise outlets (KFC, Nando's, Kenny Rogers and McDonald's) serving significantly, if not solely, meals with chicken as its main ingredient.

Value Chain of Poultry Sub-industry

Figure 5: Value Chain of the Poultry Sub-Industry



Source: Extracted from IMR report

Upstream Sector

The upstream sector involves all the early phases in the poultry farming including the breeding, production and raising of poultry. Chicken farming begins with the primary (grandparent stock) farm operators, which involves the production of day-old chicks for use in parent stock farms. The next stage of chicken farming involves the operation of parent stock (multiplication) farms. The parent stock farms are often tied with hatcheries, where the day-old chicks are sold to multiplication farms or sold to broiler growing farms or layer farms.

Primary and Parent Stock Farms

There are 4 primary stock farm operators in Peninsular Malaysia that were involved in the production of day-old chicks for parent stock farms as of 1 September 2013. The 4 primary stock farms are owned or operated by integrators in the poultry and poultry products industry that are involved in various upstream and downstream activities.

7. INDUSTRY OVERVIEW (Cont'd)



Moving down the supply chain, there are more than 100 parent stock farms in Malaysia that are operated by parent stock companies. Out of the total, approximately one third of these parent stock companies are owned by integrators.

The standing population of female broiler parent stock in Peninsular Malaysia has been steadily increasing from 5.90 million in 2013 to 6.68 million in 2014. Meanwhile, the standing population of layer parent stock increased from 0.48 million in 2013 to 0.50 million in 2014. The standing population of parent stock for ducks on the other hand increased to 0.19 million in 2013 from 0.16 million in 2012. In 2015, the standing population of female broiler parent stock and layer parent stock stood at 4.90 million and 0.48 million respectively.

Hatcheries

There are a total of 53 hatcheries in Peninsular Malaysia as of September 2011. More than half of these hatcheries are operated by integrators, while the others are operated by non-integrators and other enterprises.

The supply of day-old chicks increased from 653.1 million in 2011 to 772.4 million in 2014. On the other hand, the production of broiler chicken expanded from 614.5 million in 2011 to 724.7 million in 2014. In 2015, number of day-old chicks and broiler chicken stood at 792.9 million and 737.6 million respectively.

Broiler Growing Farms

In 2014, there were 2,403 broiler growing farms in Peninsular Malaysia. These farms cumulatively produced around 724 million birds in 2014. In 2015, the 2,403 broiler growing farms in Peninsular Malaysia cumulatively produced around 737 million birds.

Layer Farms

In 2014, there were 5 layer parent stock farms in Peninsular Malaysia. These farms collectively produced more than 38.9 million layer day-old chicks during the year. In 2015, the 5 layer parent stock farms in Peninsular Malaysia collectively produced more than 47.9 million layer day-old chicks. The predominant layer breeds used in the farms consist of Lohmann Brown, Hisex-Brown Dekalb and Novogen, in which all 3 produce brown-shelled eggs.

7. INDUSTRY OVERVIEW (Cont'd)



There were approximately 370 layer farms in 2014, producing more than 10,307 million eggs in the same year. In 2015, the 370 layer farms produced 11,308 million eggs. Majority of the eggs sold through wholesalers are fresh in-shell eggs, in addition to 2 egg processing plants that operate to sell eggs in liquid forms for use in bakeries or confectionary plants.

Downstream Sector

The downstream sector is also known as the wholesale sector and it primarily involves meat processing, and the distribution of the processed parts and products within the poultry and poultry products industry value chain.

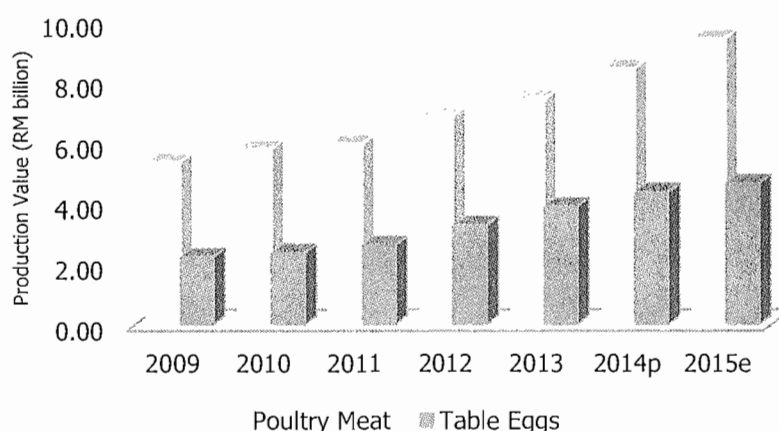
There were a total of 317 licensed broiler wholesalers (including processing plants and distributors) and 860 licensed retailers in Peninsular Malaysia as of 1 September 2013.

Around 70.0 percent of live broiler chickens are sold directly to wholesalers while the remaining is sent to processing plants, which in turn sells the dressed broiler meat to restaurants, hypermarket chains, or to wholesalers and retailers. The processing of the birds can range from the primary processing or dressing of the carcasses to the manufacturing of a series of products including frankfurters, cocktail sausages, burgers and nuggets.

Production Segments in Malaysia

In terms of production value, a steady growth has been recorded from 2009 to 2015 as illustrated in Figure 6.

Figure 6: Production of Poultry Products by Value, 2009-2015



Notes:

1. *p* denotes provisional;

7. INDUSTRY OVERVIEW (Cont'd)



2. e denotes estimate.

Source: Extracted from IMR report

Due to the strong demand, the poultry sub-industry has also seen greater investments, development and increasingly a trend of integration and consolidation. In this regard, consolidation trends indicate that smaller farms are likely to merge with larger integrated farms. These larger farms are large private or public entities with greater production capacity and able to provide the smaller farms with the benefits of economies of scale. The trend in consolidation is driven mainly by the increase in price competition and lower profitability that is common for small farms.

In terms of development and modernisation, Malaysia's poultry sub-industry utilises intensive farming and production techniques that may include automated feeding and egg collection systems as well as better environment and quality control.

2.1.2 Swine Sub-Industry

The swine sub-industry is the second largest contributor to Malaysia's livestock industry. Pork is mostly consumed fresh without further processing in Malaysia. Further information on the swine sub-industry is as follows:

Figure 7: Swine Sub Industry Overview

Type	Details
Swine	<ul style="list-style-type: none"> Total swine population in Malaysia stood at over 1.8 million in 2014. In Peninsular Malaysia, there are approximately 540 farms in 2013. In 2015, total swine population in Malaysia stood at over 1.8 million. In Peninsular Malaysia, there are approximately 525 farms in 2016. Malaysia produced an estimated 215,675 tonnes of pork in 2014, with self-sufficiency of 95.7 percent. In 2015, Malaysia produced an estimated 215,760 tonnes of pork, with self-sufficiency of 94.6 percent. The export of pork is negligible and has been rendered unfeasible since the Nipah virus outbreak. Prior to the outbreak, Malaysia exported live pigs to neighbouring Singapore, who has since ceased all pig imports from Malaysia. The swine farming sub-industry has managed to recover strongly after the Nipah virus outbreak in 1998 that resulted in the culling of swine stocks, and the closure of almost 1,000 farms. Following the outbreak's aftermath, the government undertook a drastic restructuring of the industry to make it more environmentally friendly and less susceptible to similar health scares. The restructuring has contributed to the swine sub-industry's recovery in 2000 and its subsequent growth since then. The production value of pork improved more than one fold from RM1.13 billion in 2000 to RM2.46 billion in 2015.

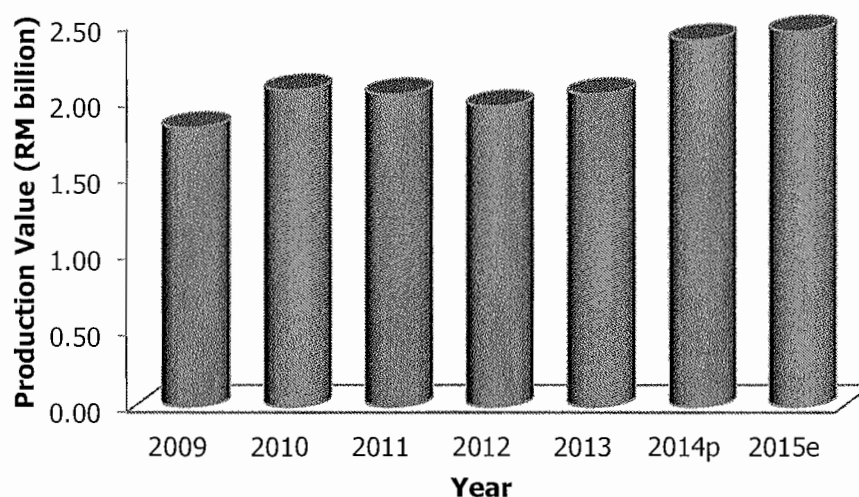
Source: Extracted from IMR report

7. INDUSTRY OVERVIEW (Cont'd)



The main reason contributing to the significance of the swine sub-industry is the demand from Malaysia's non-Muslim population that consumed 19.0kg and 18.7kg of pork per person in 2014 and 2015 respectively. This has contributed to its production value of around RM2.00 billion since 2010 – as illustrated below:

Figure 8: Production Value of Pork in Malaysia, 2009-2015



Notes:

1. *p* denotes provisional;
2. *e* denotes estimate.

Source: Extracted from IMR report

2.1.3 Ruminant Sub-Industry

The ruminant sub-industry is the smallest sub-industry within the Malaysian livestock industry. Further information on the ruminant sub-industry is as follows:

Figure 9: Ruminant Sub Industry Overview (by Product Types)

Type	Details
Cattle and buffaloes	<ul style="list-style-type: none"> • Cattle-farming in Malaysia was originally established as a side business for Malaysia's smallholder farmers. Its cultivation has persisted with this tradition, drawing little commercial investment or government aid in the past. • In 2014, beef production in Malaysia was valued at RM1.26 billion. In 2015, beef production in Malaysia was valued at RM1.41 billion.
Goats and sheep	<ul style="list-style-type: none"> • The farming of goats and sheep persist on a small scale basis; only a few enterprises operate goat and sheep farming on a commercial scale. • In 2014, mutton production in Malaysia was valued at RM149.0 million. In 2015, mutton production in Malaysia was valued at RM143.2 million. The market for mutton consumption is a niche market, but remains one with good potential for

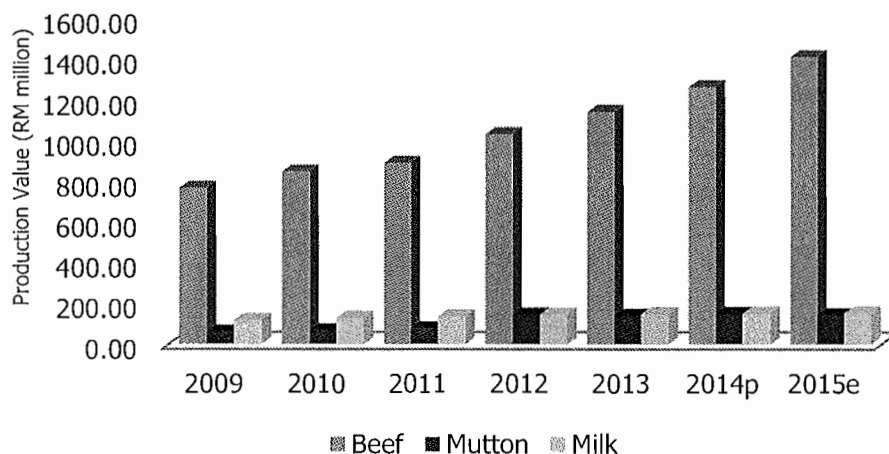
7. INDUSTRY OVERVIEW (Cont'd)

Type	Details
	growth especially halal mutton.
Dairy products	<ul style="list-style-type: none"> Some of the cattle farmed in Malaysia are milk breeds reared for local raw milk supply. In 2014, Malaysia produced RM150.5 million worth of milk. In 2015, Malaysia produced RM152.1 million worth of milk.
Other ruminants	<ul style="list-style-type: none"> Other ruminants cultivated on a small scale basis in Malaysia include deer.

Source: Extracted from IMR report

The main reason that the ruminant sub-industry lags behind the poultry and swine sub-industries – in terms of production value, development and self-sufficiency, is due to the non-commercialised nature of this industry. Cultivation of ruminants, such as cattle, buffaloes and goats is usually done as a side activity by smallholder farmers. Even so, there has been steady growth in the production value of the ruminant sub-industry as illustrated in the following figure.

Figure 10: Production Value of Ruminant Products in Malaysia, 2009-2015



Notes:

1. *p* denotes provisional;
2. *e* denotes estimate.

Source: Extracted from IMR report

This growth may be further impacted through government's support to increase the self-sufficiency of beef in Malaysia. The Agriculture National Key Economic Areas ("NKEA") under the ETP aims to promote the integration and rearing of an additional 300,000 heads of cattle in large oil palm plantations by 2020. This programme is also projected to create an additional 3,600 jobs opportunity and contribute an additional RM150 million of GNI by 2020.

7. INDUSTRY OVERVIEW (Cont'd)

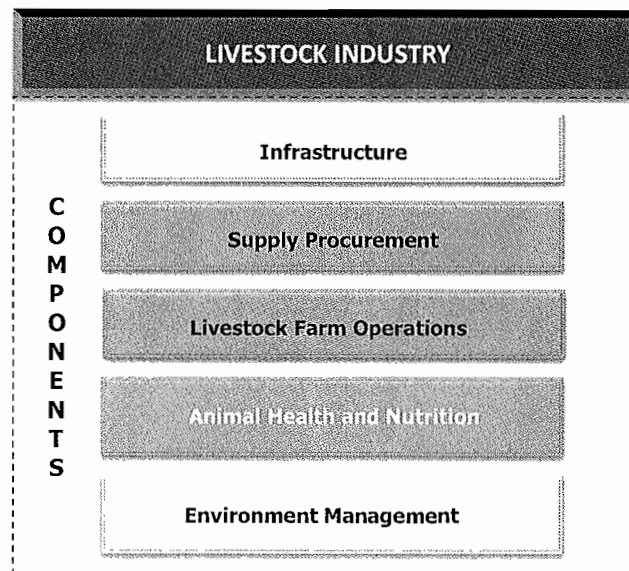
3 THE ANIMAL HEALTH AND NUTRITION MARKET IN MALAYSIA

3.1 INTRODUCTION TO THE ANIMAL HEALTH AND NUTRITION MARKET

Animal health and nutrition is a vital function of livestock farming operations. It serves the livestock industry in achieving 2 main objectives i.e. ensuring that animals are untainted and safe for human consumption, free of disease, and of an acceptable level of quality and taste. It also helps to increase a farm's yield by decreasing mortality rates and ensure that animals stay healthy during its growth to marketable size.

The following depicts the position of the animal health and nutrition market vis-à-vis the other components in the livestock industry.

Figure 11: Position of the Animal Health and Nutrition Component within the Livestock Industry in Malaysia



Source: Extracted from IMR report

The roles of the various component areas of the livestock industry, which include infrastructure, supply procurement, livestock farm operations, animal health and nutrition and environment management are described as follows:

7. INDUSTRY OVERVIEW (Cont'd)



Figure 12: Types and Roles of the Component Areas of the Livestock Industry in Malaysia

Type	Roles
Infrastructure	<ul style="list-style-type: none"> • Infrastructure for the livestock industry includes land, utilities and logistics and production facilities. <ul style="list-style-type: none"> ○ Land comprises a suitable location with appropriate geological and geographical conditions (water, climate, soil). ○ Requirements for utilities and logistics include accessibility of electricity, water and transportation. ○ Production facilities include the coops, pens, harvesting and feeding facilities of the livestock farm.
Supply procurement	<ul style="list-style-type: none"> • Supply procurement is the purchase of: <ul style="list-style-type: none"> ○ Parent stocks or young broiler and layer stocks. ○ Feed that includes premixed formulae or feed ingredients and additives. For livestock farms that have more sophisticated capabilities or integration, they may also formulate and mill their own animal feed for better quality control.
Livestock farm operations	<ul style="list-style-type: none"> • This category comprises the core activities involved in a livestock farm i.e. the day-to-day operations of rearing livestock including feeding, cleaning, harvesting and distribution. • Marketable livestock products are harvested and packaged before they are distributed to end-user markets.
Animal health and nutrition	<ul style="list-style-type: none"> • The 4 main processes within the animal health and nutrition component include: <ul style="list-style-type: none"> ○ Disease prevention and control – Uses biologicals and environment maintenance products, such as anti-toxins and vaccines, to prevent the onset of diseases. ○ Therapeutic treatment – Uses veterinary pharmaceuticals like antimicrobial which include antibiotics and other medicines to mitigate the effects of disease outbreaks. ○ Feed formulation – The process of determining the mixture of animal feed which includes the necessary amount of animal feed additives. ○ Feed milling – Produces animal feed in bulk through mixing of macronutrients and micro-ingredients, including animal feed additives.
Environment management	<ul style="list-style-type: none"> • Environment management at livestock farms is vital for environmental sustainability as well as commercial sustainability. • Managing the natural and man-made environment of a farm is crucial in ensuring the quality and quantity of its harvest. • The processes of environment management include: <ul style="list-style-type: none"> ○ Land preparation - Preparation of an environment conducive to acting as a habitat for cultivated species. Different species thrive in different environments, and thus a suitable environment is required to ensure or improve farm yield. ○ Production facility management - Managing the cleanliness, hygiene and safety of animal pens, feeding and harvesting facilities. Vital to ensure the safety of products as food, and prevent the onset of diseases to ensure safety and production yield. ○ Waste management - Ensuring the environmental sustainability as well as cleanliness and food safety of products through proper and lawful waste management methods.

Source: Extracted from IMR report

7. INDUSTRY OVERVIEW (Cont'd)

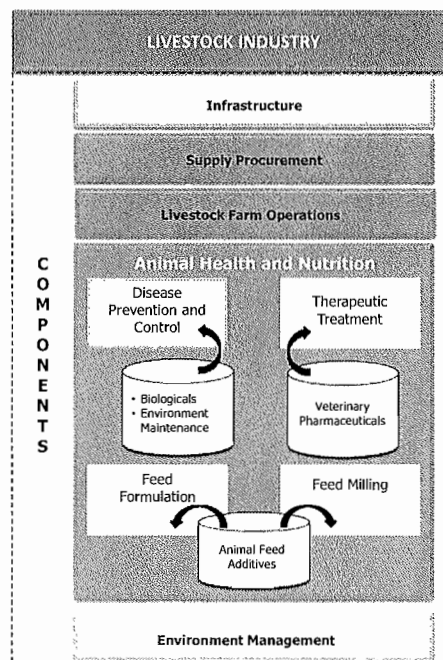


The animal health and nutrition market component impacts directly on the productivity, growth and profitability of the livestock industry, by ensuring that livestock are healthy and free of disease which in turn leads to increases in yield and reduction in mortality.

3.2 SEGMENTATION OF THE ANIMAL HEALTH AND NUTRITION MARKET

The following illustrates the processes and their respective product inputs in the animal health and nutrition market.

Figure 13: Animal Health and Nutrition Processes and Required Product Inputs



Note:



Denotes product that correlates to the respective process.

Source: Extracted from IMR report

The following table will provide further insight into the animal health and nutrition products and their respective functions.

7. INDUSTRY OVERVIEW (Cont'd)

Figure 14: Animal Health and Nutrition Products and Their Respective Functions

Process	Products	Functions
Disease Prevention and Control	Biologicals <ul style="list-style-type: none"> Defined as substances administered as a single dose early in the animal's life, or as fixed doses periodically throughout the animal's life Include anti-toxins and vaccines Methods of use include administration to each animal in fixed doses (not added to feed) 	To prevent disease outbreaks among livestock animals through stimulating an animal's immune system to develop more antibodies to counter various pathogens.
	Environment Maintenance <ul style="list-style-type: none"> Include cleaning agents and disinfectants 	To ensure the cleanliness and health of livestock animals through maintaining hygiene level at livestock farms.
Therapeutic Treatment	Veterinary Pharmaceuticals <ul style="list-style-type: none"> Defined as therapeutic medicines and dietary supplements Include anti-parasiticides, anti-infectives, antibiotics, vitamins, minerals and proteins Methods of use include administration in fixed doses using injectables, oral medication or water soluble liquids put through animal watering systems 	To cure disease in animals upon infection and to supplement the nutritional needs in the livestock's daily diet. <i>Note: Antibiotics used as pharmaceuticals are administered in higher doses than those used as feed additives.</i>
Feed Formulation and Feed Milling	Animal Feed Additives <ul style="list-style-type: none"> Defined as substances added in small or micro quantities to animal feed Include antibiotics and non-antibiotic additives (microbials, prebiotics, probiotics, vitamins and minerals and anti-mould additives) 	To provide specific health or nutrition effects. Examples include: <ul style="list-style-type: none"> Promoting growth Ensuring balanced nutrition Increasing livestock appetite Enhancing digestion and absorption of nutrients Controlling intestinal health Keeping feed safe from harmful parasites, pollutants and mould

Source: Extracted from IMR report

Other than the variety of product types, the Malaysian animal health and nutrition market also includes a range of value-added services. These services are provided by market players to aid farmers in managing the health and nutrition of their livestock. The types of services include veterinary services, feed milling and feed formulation services, farm cleaning services and others.

7. INDUSTRY OVERVIEW (Cont'd)



3.2.1 Biological Products

Biological products are a group of products that provide protection to livestock in the disease prevention and control process. Biological products are substances used to stimulate the animal's immune system to develop antibodies, hence providing immunity to disease. They are generally administered as a single dose early in the animal's life, or as fixed doses periodically throughout the animal's life. The most common example of a biological product is the vaccine. Other examples include serums, plasmas, toxins and anti-toxins, toxoids, antigens, etc.

Trends Affecting the Biological Products Segment in Malaysia

Demand for livestock products has been increasing for the past few years, as evidenced by the expansion in consumption per capita of livestock products from 54.8kg per capita in 2009 to 66.5kg per capita in 2015. As the demand is set to continue increasing, the need for downside risks mitigation would see increasing importance accordingly. This includes prevention of infectious animal disease outbreaks that would affect food safety or pose threats to human life.

The use of biological products is of key importance in controlling and effectively eradicating infectious livestock diseases. Moreover, the preventive measures of using biological products by livestock farmers are also more cost effective than curative measures, which are more costly to implement.

3.2.2 Environment Maintenance Products

Environment maintenance products are the other group of products that provide protection to livestock in the disease prevention and control process. Environment maintenance products such as cleaning agents and disinfectants, etc, are developed to maintain the hygiene level of farms through elimination and prevention of modern pathogens, including viruses, bacteria, fungi, etc. These products are mostly external liquids used for farm cleaning.

Trends Affecting the Environment Maintenance Products Segment in Malaysia

The environment maintenance products are essential in ensuring the cleanliness and health of livestock animals through maintaining hygiene level at a livestock farm. Maintaining a clean environment decreases the number of bacteria and other pathogens that can be spread

7. INDUSTRY OVERVIEW (Cont'd)



through unsanitary conditions. This would help increase a farm's yield by decreasing mortality rates and ensure that animals stay healthy during its growth to marketable size.

Similar to the rest of the world, Malaysia has undergone the industrialisation of its livestock industry, and livestock are now raised in modern farms that produce a large number of animals through maximising the land area within the farm. This leads to a continued demand for environment maintenance products to clean the farms to ensure that the quality of livestock produced is at the highest levels. With the demand for livestock products on the rise, demand for environment maintenance products will also rise in tandem.

3.2.3 Veterinary Pharmaceutical Products

Veterinary pharmaceuticals are substances used in the diagnosis, cure, mitigation, treatment or prevention of disease and dietary deficiencies in animals. Veterinary pharmaceuticals are administered in fixed dosage using injectable, oral medication or water-soluble liquids put through animal watering systems.

Trends Affecting the Veterinary Pharmaceutical Products Segment in Malaysia

The veterinary pharmaceutical products play an important role in the diagnosis, cure, mitigation or treatment of diseases. Together with the biologicals and environment maintenance products, the 3 product segments would help to decrease mortality rates and ensure that animals stay healthy during its growth to marketable size thus generating better pay off for livestock farmers.

On another note, the nutritional needs of farm animals with respect to energy, protein, minerals and vitamins have been refined in recent decades and thus, ensuring that all livestock have their nutritional needs met is essential in protecting the animals from dietary deficiencies. For instance, the demand for electrolytes and other dietary supplement products may increase during periods of hot weather in order to help hydrating the animals.

The historical performance of the livestock industry in Malaysia has shown an upward trajectory in its growth. This is based on the increase in production value – at a CAGR of 9.9 percent from RM10.37 billion in 2009 to RM18.24 billion in 2015. As the livestock industry is set to continue growing, likewise the demand of veterinary pharmaceutical products will undergo a correlating growth due to the need to ensure the health of livestock.

7. INDUSTRY OVERVIEW (Cont'd)



3.2.4 Animal Feed Additives

Animal feed additives are substances added in small quantities to animal feed to provide specific health or nutrition effects in a relatively concentrated manner. These feed additives, which are similar to vitamins and supplements, are added to the basic feed. As the basic feed which is derived from agricultural products may not meet the dietary needs for livestock, such animal feed additives are usually added to ensure that nutrition for livestock is sufficient, in addition to boosting appetite, enhancing digestion and absorption of nutrients and controlling intestinal health. In addition, certain additives are also added to ensure the hygiene of the feed i.e. to keep feed safe from harmful parasites, pollutants and mould.

Animal feed additives can come in the form of in-feed antibiotics for growth promotion and illness prevention purposes, or non-antibiotic additives such as microbials, prebiotics, probiotics, vitamins and minerals and anti-mould additives.

Trends Affecting the Animal Feed Additives Segment in Malaysia

A positive aspect of the health concerns arising from the use of antibiotic animal feed additives is the growing use of non-antibiotic alternatives. The global livestock industry has accepted the need for new methods and products, such as using organic, non-chemical and environmentally-friendly compounds and this is leading to the new developments of such products to meet the growing need from the livestock industry.

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7. INDUSTRY OVERVIEW (Cont'd)

4 MARKET DYNAMICS ANALYSIS

4.1 MARKET DYNAMICS INDICATORS

Figure 15: Market Dynamics Scorecard for the Animal Health and Nutrition Market in Malaysia

Market Indicators	Dynamics	Measurement	Trends
2015 Market Revenue (RM billion)		1.42	Increasing
2015 Market Growth Rate (%)		5.3	Increasing
2020 Forecast Market Revenue (RM billion)		1.84	Increasing
Forecast Period Market CAGR (2015 – 2020) (%)		5.4	-
Types of Market Players	Around 80 market players with varying sizes. These include domestic manufacturers, distributors and local subsidiaries of international manufacturers		Stable
2016 Demand Conditions	Mostly positive impact on the industry – providing drive and impetus for growth		Stable
2016 Supply Conditions	Mostly positive impact on the industry with minimal restraints on growth		Stable
Threat of Substitution		Nil	Stable
Reliance and Vulnerability on Imports		Moderate	Stable
Government Policy and Regulatory Stance	Pro-Industry with a focus on further development domestically		Stable

Source: Extracted from IMR report



4.2 MARKET REVENUE AND GROWTH FORECAST

Due to the derived demand for animal health and nutrition products from the Malaysian livestock industry, the market has been steadily growing alongside the growth in the livestock industry. In addition, the animal health and nutrition market in Malaysia is also expected to continue on this growth trajectory.

In 2015, the total revenue of the animal health and nutrition market in Malaysia stood at RM1.42 billion, of which RM532.3 million was contributed by the animal feed additives segment. The market revenue and growth forecast for the animal health and nutrition market in Malaysia from 2013 to 2020 is shown in Figure 16 below.

Figure 16: Market Revenue and Growth Forecast for the Animal Health and Nutrition Market in Malaysia, 2013-2020

Year	Market Revenue (RM billion)	Growth Rate (%)
2013	1.28	-
2014	1.34	5.5
2015	1.42	5.3
2016	1.49	5.6
2017	1.58	5.5
2018	1.66	5.6
2019	1.75	5.5
2020	1.84	5.0

CAGR (2015 – 2020): 5.4 percent

Note: All figures are rounded; the base year is 2015.

Source: Extracted from IMR report

Moving forward, the animal health and nutrition market in Malaysia is anticipated to grow primarily in tandem with the livestock industry. Scientific advancement of animal health and nutrition products, are expected to bring greater growth to the market. By 2020, the animal health and nutrition market in Malaysia is expected to grow to RM1.84 billion, representing a CAGR of 5.4 percent from 2015 to 2020.

5 COMPETITIVE ANALYSIS

The local animal health and nutrition market is highly competitive with around 80 members participated in the Malaysian Animal Health and Nutrition Industries Association. These market players include domestic product manufacturers, distributors and subsidiaries of international product manufacturers. These market players may also be involved through multiple participation forms.

- **Domestic product manufacturers** consist of local market players who manufacture and distribute proprietary products and brands of animal feed additives. Larger manufacturers are involved in the entire animal health and nutrition value chain from the development and manufacture of health and nutrition products to the marketing and distribution of the said products to end-users. Many of the larger manufacturers also distribute other brands – usually those of global manufacturers – in the local market to livestock farmers and feed millers.
- **Distributors** consist of market players involved in the distribution of animal health and nutrition products to local livestock producers. This category of market players may distribute the products of both local and foreign producers. Larger and more established market players are able to procure distributorship of renowned global animal health and nutrition products producers, and act as the sole agency of these brands in the country. Distributors typically distribute more than 1 brand and type of products. Larger distributors are distinguishable from smaller players by the size of their product portfolio.
- **Subsidiaries of international product manufacturers** consist of local subsidiaries of multinational companies manufacturing animal health and nutrition products. These market players usually have sole distributorship of their parent brands in the local market. Typically, they only distribute parent brands of animal health and nutrition products.

7. INDUSTRY OVERVIEW (Cont'd)



5.1 KEY MARKET PLAYERS

The following lists some of the key market players within the Malaysian animal health and nutrition market, their principal activities and latest financial results. The list of key players is not exhaustive and each player's product offerings may not exactly coincide with others'. These key market players are selected based on the following criteria:

- Primarily involved in the biological products, veterinary pharmaceutical products, as well as animal feed additives segments; and
- Registered an annual turnover of over RM30 million based on the latest publicly available financial results of the respective players.

Figure 17: Key Market Players in the Animal Health and Nutrition Market in Malaysia

Company Name	Principal Activities	Latest Financial Results
Age D'or Sdn Bhd ("ADSB")	<ul style="list-style-type: none"> • A subsidiary of the Age D'Or Group, Singapore. • Markets and distributes fine chemicals, performance chemicals, animal health and nutrition products, and pharmaceuticals for humans in Singapore, Brunei, Malaysia, Indonesia, Vietnam, Philippines, Sri Lanka, Bangladesh and Switzerland. • Portfolio of animal health and nutrition brands include Archer Daniels Midland Co. and Lohmann Animal Health International (US), DSM and Intervet (Holland), Janssen Animal Health BVBA (Belgium), Farmcare GB Ltd (UK), and Shandong Lukang Pharma Co Ltd (China). • Portfolio of animal feed additives includes enzymes, vitamins, antioxidants, pigments, anti-coccidia agents and others. • Provides after-sale advisory services to feed millers, livestock farmers, veterinary practitioners, zoological gardens, bird parks, fish farms and government agencies. 	<p>Financial Year: 2014</p> <ul style="list-style-type: none"> • Revenue: RM37.0 million • Profit before tax: RM0.7 million • Profit after tax: RM0.5 million
Agritech Enterprise Sdn Bhd ("Agritech")	<ul style="list-style-type: none"> • Involved in the trading and distribution of animal health and nutrition products as well as animal feed additives; • Distributor for Ceva and Cenzone products in Malaysia; • Also a distributor of veterinary vaccines for Boehringer Ingelheim, USA. 	<p>Financial Year: 2015</p> <ul style="list-style-type: none"> • Revenue: RM61.1 million • Profit before tax: RM10.2 million • Profit after tax: RM7.4 million

7. INDUSTRY OVERVIEW (Cont'd)



Company Name	Principal Activities	Latest Financial Results
		Financial Year: 2014 <ul style="list-style-type: none"> • Revenue: RM50.8 million • Profit before tax: RM8.8 million • Profit after tax: RM6.5 million
Asia Veterinary Sdn Bhd ("AsiaVet")	<ul style="list-style-type: none"> • Importation of animal raw materials, nutritional, and medicaments and distribution to local and overseas livestock industries. • Products include commodities, feed additives, minerals and vitamins. 	Financial Year: 2014 <ul style="list-style-type: none"> • Revenue: RM167.1 million • Profit before tax: RM1.6 million • Profit after tax: RM0.8 million
Danberg (M) Sdn Bhd ("Danberg")	<ul style="list-style-type: none"> • Involved in the trading and distribution of animal feed additives and other animal health and nutrition management products. 	Financial Year: 2015 <ul style="list-style-type: none"> • Revenue: RM127.8 million • Profit before tax: RM8.2 million • Profit after tax: RM7.0 million Financial Year: 2014 <ul style="list-style-type: none"> • Revenue: RM99.4 million • Profit before tax: RM5.5 million • Profit after tax: RM3.3 million
Pacific Vet Group (M) Sdn Bhd ("Pacific Vet")	<ul style="list-style-type: none"> • A distributor for the larger Pacific Vet Group, US ("PVG") which is principally involved in developing, manufacturing and distribution of animal health products in the Philippines, Malaysia, Indonesia, Japan, Korea, Thailand and US. • Pacific Vet supplies and distributes poultry and swine animal health products to integrators and producers in Malaysia. • In addition to PVG's line of products, Pacific Vet also distributes products of other brands including Bedson, Brookside Agra, Church & Dwight, Hamilton-Wallace, International Ingredient, KiotechAgil, Mosaic, Prince Agri, Quatchem and Vetanco. • PVG's brands include FloraMax, Optimizer, 	Financial Year: 2014 <ul style="list-style-type: none"> • Revenue: RM34.4 million • Profit before tax: RM5.5 million • Profit after tax: RM4.1 million

7. INDUSTRY OVERVIEW (Cont'd)

Protégé
ASSOCIATES

GRAND | FINANCE | MARKET

Company Name	Principal Activities	Latest Financial Results
	Sporulin, EarlyBird and FloraStart.	
PeterLabs Holdings Berhad ("Peterlabs")	<ul style="list-style-type: none"> Principally involved in the manufacturing, trading and distribution of animal health and nutrition products that include feed additives, environment maintenance products as well as veterinary pharmaceuticals and biologicals. Distributor of Osmosis Nutrition products, a proprietary brand of animal health products manufactured by its subsidiary company, Osmosis Nutrition Sdn Bhd ("Osmosis Nutrition"); Also acts as a distributor for international brands such as Cenavisa (Spain), Choong Ang Biotech Co Ltd (Korea), Hangzhou King Techina Technology Co Ltd (China), In Vivo NSA (France), Novus International Inc (US), Kiotech Internatinal PLC (UK), Zeus Biotech Ltd and Natural Remedies Pvt Ltd (India), and Bluewave Marine Ingredients (Ecuador). Products include anthelmintics, anti-microbials, disinfectants, injectable products, mold inhibitor and toxin binder, multi-nutrient and supplement, food premix, pre-probiotic/enzymes/acidifier, topical dressings and cleansing agents. 	<p>Financial Year: 2015</p> <ul style="list-style-type: none"> Revenue: RM73.5 million Profit before tax: RM5.2 million Profit after tax: RM3.5 million Animal Health Products Segmental Revenue: RM73.5 million <p>Financial Year: 2014</p> <ul style="list-style-type: none"> Revenue: RM54.9 million Profit before tax: RM4.1 million Profit after tax: RM3.0 million Animal Health Products Segmental Revenue: RM54.9 million
Rhone Ma Holdings Group	<ul style="list-style-type: none"> Principally involved in the animal health and nutrition market through Rhone Ma Malaysia Sdn Bhd ("Rhone Ma Malaysia"), Asia-Pacific Special Nutrients Sdn Bhd ("Asia-Pacific Special Nutrients") and Vet Food Agro Diagnostics (M) Sdn Bhd ("Vet Food Agro Diagnostics"); Rhone Ma Malaysia is involved in marketing, trading, distribution and manufacturing of animal health products and the provision of veterinary advisory services; Asia-Pacific Special Nutrients is a Bionexus-status company and was established to undertake research and development activities related to animal health, food safety and agriculture and trading in animal health products; Vet Food Agro Diagnostics is involved in the provision of diagnostic laboratory analyses and consultation services to the veterinary, agriculture and food industries; Vaccines distributed by Rhone Ma Holdings Group include avian vaccines, swine vaccines, canine 	<p>Financial Year: 2015</p> <ul style="list-style-type: none"> Revenue: RM106.7 million Profit before tax: RM17.0 million Profit after tax: RM13.0 million Animal Health Products Segmental Revenue: RM82.8 million <p>Financial Year: 2014</p> <ul style="list-style-type: none"> Revenue: RM91.5 million Profit before tax: RM21.1 million

7. INDUSTRY OVERVIEW (Cont'd)



Company Name	Principal Activities	Latest Financial Results
	<p>vaccines, feline vaccines, and equine vaccines;</p> <ul style="list-style-type: none"> • Pharmaceuticals include antimicrobials, health supplements, anticoccidials and non-antimicrobial; • Feed additives include antimicrobials, antifungal, nutritional supplements, anticoccidials, mycotoxin binder, mould inhibitor, supplements for gut health and growth performance enhancement, anthelmintic and premix for nutritional supplements for sow and pigs; • Also supply disinfectants and pet shampoo; • Products are supplied to various industries, including livestock and companion animals; • Rhone Ma Holdings Group is also involved in the distribution and supply of food ingredients through Link Ingredients Sdn Bhd ("Link Ingredients"). 	<ul style="list-style-type: none"> • Profit after tax: RM17.6 million • Animal Health Products Segmental Revenue: RM69.3 million
Ritma Prestasi Sdn Bhd ("Ritma")	<ul style="list-style-type: none"> • Subsidiary of Teo Seng Capital Bhd. • Involved in distribution of animal health products for farm and pet animals. • Distributor for Bayer Animal Health (Germany), Himalaya Animal Health (India), Innovad (Belgium), Lohmann Animal Health (Germany) and Vetpharm (Singapore) in Malaysia. • Products include anti-parasites, antibiotics, disinfectants, feed additives, Herbal solutions, pesticides, supplements and vaccines. 	<p>Financial Year: 2014</p> <ul style="list-style-type: none"> • Revenue: RM46.9 million • Profit before tax: RM5.4 million • Profit after tax: RM4.0 million
SCC Holdings Berhad ("SCC")	<ul style="list-style-type: none"> • Principally involved in sales, marketing and distribution of non-antibiotic animal health products to feed mills and farms. • Also involved in sales, marketing and distribution of food service equipment. • Distributes various types of animal feed additives including antimicrobial, anti-mould and anti-fungi, toxin binders, prebiotics and probiotics, natural growth promoters and phytobiotics. • Distributor for Anitox products in Malaysia. 	<p>Financial Year: 2015</p> <ul style="list-style-type: none"> • Revenue: RM60.4 million • Profit before tax: RM8.8 million • Profit after tax: RM6.4 million • Animal Health Products Segmental Revenue: RM32.1 million <p>Financial Year: 2014</p> <ul style="list-style-type: none"> • Revenue: RM42.2 million • Profit before tax: RM9.0 million • Profit after tax: RM6.6 million

7. INDUSTRY OVERVIEW (Cont'd)

Company Name	Principal Activities	Latest Financial Results
		<ul style="list-style-type: none"> • Animal Health Products Segmental Revenue: RM15.7 million
Sunzen Biotech Berhad ("Sunzen")	<ul style="list-style-type: none"> • A Bionexus-status company. • Principally involved in developing, manufacturing and marketing of animal health products. • Product portfolio includes feed additives, nutritional feed supplements, veterinary pharmaceutical, vaccines and other health products for livestock and companion animals. • Also the sole distributor of Pfizer's animal health products in Malaysia, Singapore and Brunei. • Feed additive products include acidifiers, anti-coccidials and antibiotic feed supplement. 	<p>Financial Year: 2015</p> <ul style="list-style-type: none"> • Revenue: RM32.2 million • Loss before tax: RM0.3 million • Loss after tax: RM0.4 million • Animal Health Products Segmental Revenue: RM32.2 million <p>Financial Year: 2014</p> <ul style="list-style-type: none"> • Revenue: RM37.3 million • Profit before tax: RM1.4 million • Profit after tax: RM1.1 million • Animal Health Products Segmental Revenue: RM37.3 million

Notes:

- 1) List is arranged alphabetically and does not denote ranking;
- 2) Segmental revenues of animal health products are only available for Peterlabs, Rhone Ma Holdings Group, SCC and Sunzen.

Source: Extracted from IMR report



5.2 MARKET SHARE ANALYSIS

Rhone Ma Holdings Group's Share of the Animal Health and Nutrition Market

For the FYE 31 December 2015, Rhone Ma Holdings Group generated total revenue of RM82.8 million, or 77.6 percent of the Group's revenue from the provision of animal health products, comprising RM60.0 million from vaccines and pharmaceuticals (including disinfectants) and RM22.8 million from animal feed additives. This is equivalent to 5.9 percent share of the animal health and nutrition market in Malaysia in 2015 which was valued at RM1.42 billion.

In 2015, the total revenue of the animal health and nutrition market in Malaysia was estimated at RM1.42 billion, of which an estimated of 62.4 percent or RM883.4 million was contributed by the biological, environment maintenance and veterinary pharmaceutical products segment, while the remaining 37.6 percent or RM532.3 million was contributed by the animal feed additives segment.

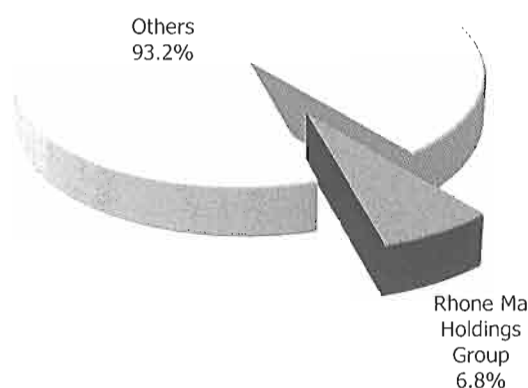
Rhone Ma Holdings Group's Share within the Biological, Environment Maintenance and Veterinary Pharmaceutical Products Segment

For the FYE 31 December 2015, Rhone Ma Holdings Group generated revenue of RM60.0 million, or 56.2 percent of the Group's total revenue of RM106.7 million from the provision of vaccines and pharmaceuticals. This is equivalent to 6.8 percent share of the biological, environment maintenance and veterinary pharmaceutical products segment, based on Rhone Ma Holdings Group's vaccines and pharmaceuticals revenue of RM60.0 million against market revenue of RM883.4 million in 2015.

7. INDUSTRY OVERVIEW (Cont'd)



Figure 18: Rhone Ma Holdings Group’s Market Share within the Biological, Environment Maintenance and Veterinary Pharmaceutical Products, 2015

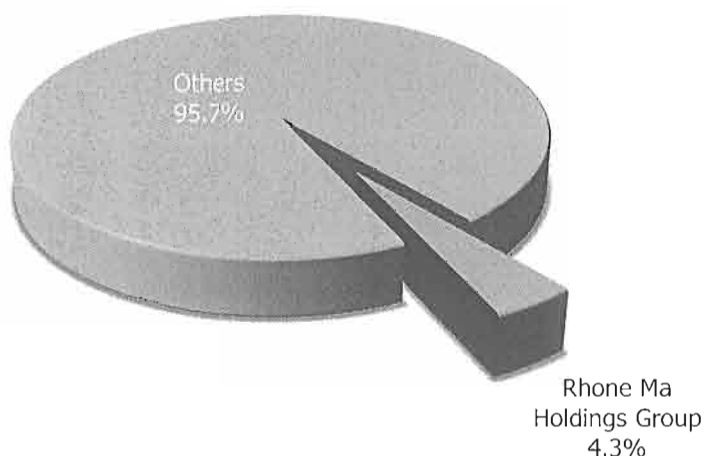


Source: Extracted from IMR report

Rhone Ma Holdings Group’s Share within the Animal Feed Additives Segment

For the FYE 31 December 2015, Rhone Ma Holdings Group generated revenue of RM22.8 million, or 21.4 percent of the Group’s total revenue of RM106.7 million from the provision of animal feed additives. This is equivalent to 4.3 percent of the animal feed additives segment during the year, based on Rhone Ma Holdings Group’s animal feed additives revenue of RM22.8 million against market revenue of RM532.3 million in 2015.

Figure 19: Rhone Ma Holdings Group’s Market Share within the Animal Feed Additives Segment, 2015



Source: Extracted from IMR report

7. INDUSTRY OVERVIEW (Cont'd)

6 DEMAND AND SUPPLY CONDITIONS

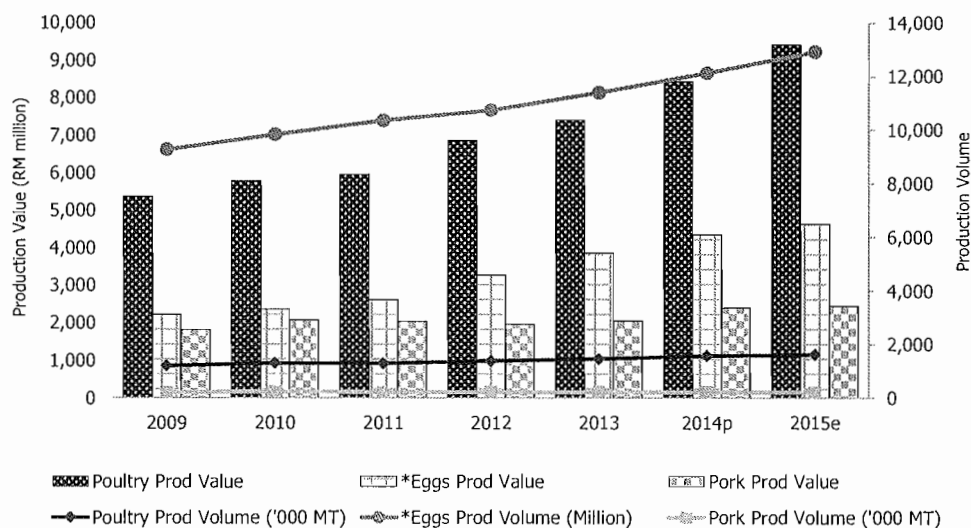
6.1 DEMAND CONDITIONS

Derived Demand from Livestock Industry Leading to Correlating Growth Patterns

Demand for animal health and nutrition products are derived from the needs of the livestock industry in maintaining the animals' health quality and quantity. Therefore, growth in the livestock industry will lead to a correlating growth pattern for the animal health and nutrition market in Malaysia.

The Malaysian livestock industry is expected to continue growing throughout the period for the 11MP (2016-2020). The government has targeted an average annual growth rate of 3.5 percent for the agriculture sector during this period and the livestock industry is one of the focus areas in achieving the said ambition. Continued growth is likely in line with the historical performance of the industry over the last few years. The following figure details the historical growth in value and volume for the poultry (meat and eggs) and swine sub-industry – which are the 2 main sub-industries for the Malaysian livestock industry.

Figure 20: Production Value and Volume for the Poultry and Swine Sub-Industries, 2009 - 2015



Notes:

1. *Prod Value – denotes production value in RM million*
Prod Volume ('000 MT) – denotes production volume in thousand metric tonnes
Prod Volume (million) – denotes production volume in million units

7. INDUSTRY OVERVIEW (Cont'd)



2. *p* denotes provisional; *e* denotes estimate;

* Eggs production value and volume include chicken and duck eggs.

Source: Extracted from IMR report

Scientific Advancement of Animal Health and Nutrition Products

While demand is usually an externally driven event and led by the purchasers/consumers/users of various markets, in certain instances demand may be due to internal forces – e.g. the development of new and innovative products. Within the animal health and nutrition market, scientific advancement of non-antibiotic feed additives is one such internal force that will propel market demand and growth.

As non-antibiotic feed additives only regained prominence since the 1970s due to the EU's gradual ban of the in-feed antibiotics, this segment is still in its early technological development lifecycle. Scientific research and development in the area of non-antibiotic feed additives is still far from the maturity stage, and the market for such products is far from saturation. As opposed to in-feed antibiotics, whose efficacy is in decline due to diminishing disease pressure in the modern farming environment, and whose product development and differentiation has been limited, non-antibiotic feed additives represent a technology on the rise.

Disease Outbreaks Affecting Livestock Industry

Disease outbreaks affecting livestock result in culling which reduces the number of livestock animals and thus leading to lesser demand for animal health and nutrition products within a short period of time, before livestock population can be increased again. While this has only a moderate effect and is restrained to a short time period, it nonetheless affects demand within the market. For instance, during the Nipah virus outbreak in 1998, there was large-scale culling of swine stocks, leading to greatly decreased livestock populations. The avian flu outbreak and the H1N1 swine flu pandemic in 2009 to some extent scared consumers off consumption of chicken and pork respectively. In the latter outbreak, pork was still safe for consumption, but the outbreak's origin from the swine negatively altered consumer perception of pork consumption. In either case, local livestock production was hampered, leading to falling demand for animal health and nutrition products. Similar outbreaks in the future could have similar effects on livestock demand and supply, as well as the demand for animal health and nutrition products.

6.2 SUPPLY CONDITIONS

Established Market Players with Proven Track Record

The animal health and nutrition market in Malaysia is matured, with established market players contributing in their various roles – whether as domestic product manufacturers, distributors or subsidiary of international product manufacturers. This aids the market in ensuring a continuous supply of animal health and nutrition products that meets the standard of quality and the needs of the local livestock industry.

Government Focus on Biotechnology Provides Financial Incentives

According to the Malaysian Biotechnology Information Centre (“MABIC”) and the Malaysian Industrial Development Authority (“MIDA”), the Malaysian government provides tax incentives for companies in the biotechnology sector. This may likely benefit domestic product manufacturers as financial incentives allow the companies to carry out greater research into the animal health and nutrition products, and hence this supply condition contributes positively towards the market.

High Capital Requirements and Technological Expertise Required for Manufacturing

A negative supply condition that may act to deter growth of the market is the high capital requirements and technological expertise required for manufacturing of animal health and nutrition products.

Animal health and nutrition products manufacturing is a capital-intensive activity requiring substantial investment in technological research and development, machinery and equipment, manufacturing and logistics facilities and others. Such investments are necessary prior to the set-up of a manufacturing facility and regularly throughout the company’s lifecycle in order to keep up with changing trends in the global and local market. The need for high technology research and development coupled with the suitable technical expertise for such initiatives is especially pertinent. These factors may become a barrier to entry for new entrants. However, due to the fact that there are around 80 market players, this negative supply condition will only minimally impact the market, as it affects mainly new entrants into the market.

7 KEY ISSUES

7.1 MARKET CHALLENGES

Fluctuations in Feed Ingredient Prices

The animal health and nutrition market is subjected to prices fluctuations on corn and soybean meal, the 2 being the main ingredients used in the feed milling and premix of feed with additives. Fluctuation on feed ingredient prices could adversely affect the market players' results of operations and profit margins. While the market players generally attempt to pass along increased feed ingredient prices to its customers in the form of price increases, there may be a time delay between the increased prices to the market players and the market players' ability to increase the prices of their products. Consequently, their results of operations and financial condition may be affected.

As the trading of feed ingredients is generally dominated in USD, a weaker Malaysian Ringgit against the USD may drive up the local translated prices of feed ingredients thus weighing on the cost of imports of the market players. Nonetheless, its impact could be cushioned should the prices of feed ingredients reduce. On global front, USDA expects the current price levels of corn and soybean meal to remain or lower amid prolonged high level of production, coupled with strengthening of USD that may soften the demand of importing nation.

Fluctuations in Crude Oil Prices

In addition to fluctuations in prices of feed ingredients, the animal health and nutrition market is also subjected to price fluctuations on crude oil as petrochemicals such as benzene, cellulose acetate, propylene glycols, ethanoic anhydride, etc, are raw materials of veterinary pharmaceutical and biological products, such as vaccines and pharmaceuticals. A combination of external factors such as geopolitical instability, economic cycle, catastrophic risk and global demand for crude oil may lead to price volatility. Any increase in crude oil price could adversely affect the market players' operations and profit margins as a result of increased cost of raw materials. While market players typically pass along increased cost to its customers in the form of price increases, there may be a time delay between the increased prices to the market players and the market players' ability to increase the prices of their products.

7. INDUSTRY OVERVIEW (Cont'd)

**Implementation of Goods and Services Tax**

The Goods and Services Tax ("GST") is a multi-stage taxation system across the value chain from manufacturing to sales. The GST came into effect on 1 April 2015, and there is a 6.0 percent tax rate on materials/products input unless specifically exempted or zero-rated. Market players within the animal health and nutrition market may face the challenge in striking the right balance between getting the desired margins and securing the desired volume of demand when determining the pricing of their products.

7.2 SUBSTITUTE PRODUCTS

There are currently no substitutes to animal health and nutrition products as a whole. The veterinary pharmaceutical, biological and environment maintenance products consist of all products used in disease prevention and control and therapeutic treatment of the livestock. Therefore, there is no substitution to the products as a whole category.

There is no substitution to animal feed additives as a whole category but the use of animal feed additives is optional to farmers.

7.3 RELIANCE AND VULNERABILITY ON IMPORTS

The Malaysian animal health and nutrition market features many imported products, distributed by local distributors or subsidiaries set up by international market players. However, there is no risk related to this reliance on imports as all market players usually have a portfolio of products to cater to the market. For examples, Rhone Ma Holdings Group has a portfolio of over 300 types of products, including but not limited to vaccines, pharmaceuticals and feed additives sourcing mainly from multiple foreign producers. Having such extensive products range helps to reduce their reliance on any single product.

7.4 BARRIERS TO ENTRY

Barriers to entry are factors that affect the entry of new players into the market. The animal health and nutrition market in Malaysia faces 3 main barriers to entry that are as follows:

- **Strong track record of incumbent market players** – The animal health and nutrition market is highly competitive, comprising many large and reputable local manufacturers, as well as internationally renowned brands distributed by local agents. New market entrants will have to compete against established market players who are experienced, and already have a wide range of animal health and nutrition products. These established market players has also obtained the required licenses for the manufacture, import, sale and use of animal feed and feed additives as stated under the Feed Act 2009.
- **High capital requirements and strong technical competencies** – Potential entrants to the animal health and nutrition market in Malaysia will need to possess strong financial resources and backing as investments into plants, machinery and human resources (those with research and technical competencies) will be necessary.
- **Established high adoption rate of animal health and nutrition products** – The use of animal health and nutrition products in livestock farming is not new in Malaysia. Any new market entrants will thus have to penetrate a market where established market players have a firm foothold and a loyal clientele.

7.5 GOVERNMENT REGULATIONS

Government regulations that are related to the animal health and nutrition market in Malaysia include:

- Feed Act 2009
- Animals (Amendments) Act 2013
- Poisons Act 1952
- Sale of Drugs Act 1952
- Price Control (Labelling by Manufacturers, Importers, Producers or Wholesalers) Order 1980

8 MARKET OUTLOOK AND FUTURE PROSPECTS

In 2015, the total revenue of the animal health and nutrition market in Malaysia stood at RM1.42 billion. By 2020, this is expected to grow to RM1.84 billion, representing a CAGR of 5.4 percent from 2015 to 2020. As a relatively mature market, the ability of the animal health and nutrition market to maintain a consistent growth performance is a positive sign.

The market outlook is well supported by trends of steady growth within Malaysia's livestock industry. This will be further aided by the scientific advancements expected within the animal health and nutrition market that will enable better products to enter the marketplace. The market is also expected to expand at a slightly accelerating pace moving forward as livestock farmers gradually switch to the use of higher-value non-antibiotic feed additives from in-feed antibiotics.

On the supply side, the existence of established market players with a proven track record ensures the continued supply of proven brands and high quality products within the market. The Malaysian government's focus on biotechnology as a growth sector for the Malaysian economy has also led to financial incentives which benefit domestic animal health and nutrition products manufacturers, as they continue to conduct research into the growth segment of animal health and nutrition products.

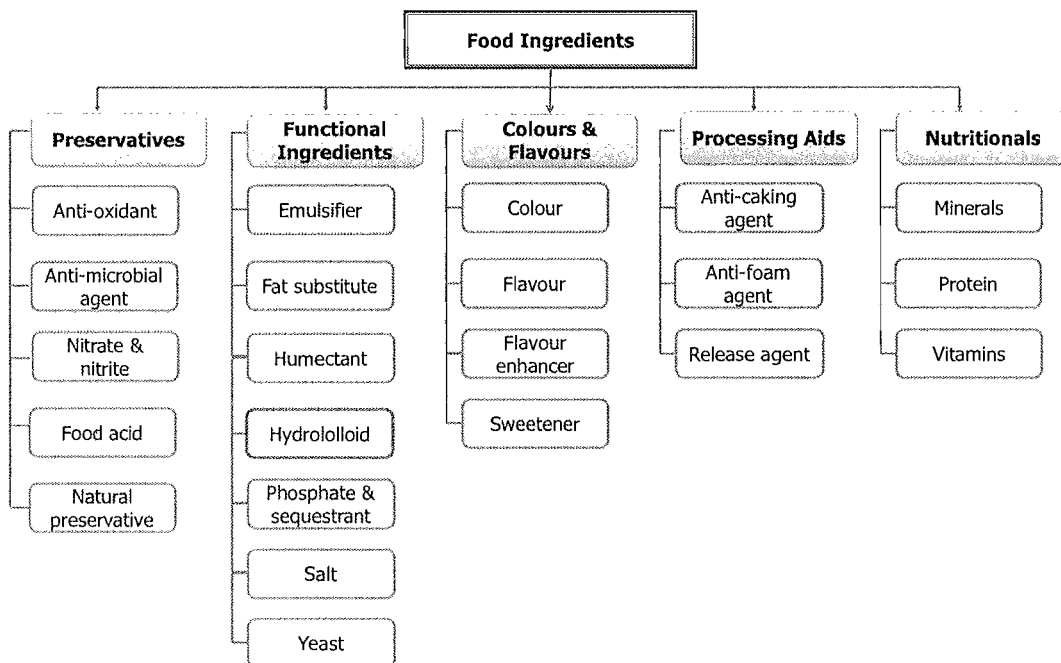
Market growth may be limited in the event of disease outbreaks leading to a reduction in livestock animal quantity. Market growth may also be impacted as the high capital requirements and requirement for technical skills may limit new entrants from participating in the manufacture of animal feed additives locally. However, this is not expected to be a significant issue as there are already around 80 market players in the animal health and nutrition market in Malaysia today, based on number of members in the Malaysian Animal Health and Nutrition Industries Association.

9 OVERVIEW OF THE FOOD INGREDIENTS MARKET IN MALAYSIA

9.1 INTRODUCTION TO FOOD INGREDIENTS

Food ingredients, also known as food additives, refer to any substances that are used to improve the appearance, quality or nutritional value of food and beverages. The key uses of food ingredients include to facilitate food processing, maintain product consistency, extend shelf life, ensure microbiological safety, improve or maintain nutritional value, or enhance the flavour, colour and texture of the finished product.

Figure 21: The Different Types of Food Ingredients



Including starch and gluten

Source: Extracted from IMR report

The 5 main groups of food ingredients are preservatives, functional ingredients, colours and flavours, processing aids and nutritional. The population growth and changing consumer preferences due to various factors such as increasing personal income, leisure time, health

7. INDUSTRY OVERVIEW (Cont'd)



concerns and urbanisation, has led to an increasing demand for food ingredients. For example, low calorie sweeteners are gaining importance as they do not produce acids by oral bacteria, and therefore prevent the propagation of dental caries. Diabetic and obese people also prefer low calorie sweeteners as it provides them the same sweet taste of sugar while natural colours are gaining popularity as more consumers associate natural products with superior health and quality attributes.

9.2 MARKET REVENUE AND GROWTH FORECAST

The demand for food ingredients is largely determined by the volume and product trends within the processed food market. As the consumption of processed food has expanded in the last few decades and the trend is likely to persist moving forward, the food ingredients market is also expected to grow in tandem.

The food industry is also not especially vulnerable to economic changes in the world; its criticality to human sustenance dictates the inelasticity of its demand, despite economic conditions. As such, the industry is not prone to drastic upward and downward trends but is more likely to continue on a steady growth path.

Protégé Associates estimates that the food ingredients market revenue in Malaysia is valued at RM6.54 billion in 2015 and is expected to grow at a CAGR of 4.2 percent between 2015 and 2020 period. In 2020, the food ingredients market in Malaysia is expected to be valued at RM8.02 billion.

Figure 22: Market Revenue and Growth Forecast for the Food Ingredients Market in Malaysia, 2013-2020

Year	Market Revenue (RM million)	Growth Rate (%)
2013	5,997	-
2014	6,255	4.3
2015	6,542	4.6
2016	6,824	4.3
2017	7,103	4.1
2018	7,402	4.2
2019	7,713	4.2

7. INDUSTRY OVERVIEW (Cont'd)



Year	Market Revenue (RM million)	Growth Rate (%)
2020	8,021	4.0

CAGR (2015 – 2020): 4.2 percent

Note: All figures are rounded; the base year is 2015.

Source: Extracted from IMR report

9.3 COMPETITIVE ANALYSIS

The various industry participants in the food ingredients market in Malaysia include foreign and local manufacturers, foreign subsidiaries, local traders and distributors. End-users mainly consist of food processing companies.

The major manufacturers of food ingredients are specialists in their product categories. They include global chemical manufacturers and major food processors that manufacture various food ingredients as part of their overall activities. There are also some manufacturers that concentrate on producing only food ingredients. Large foreign manufacturers usually set up subsidiaries or local offices to handle the sales, marketing and distribution of their products. These subsidiaries only sell products manufactured by their parent companies. Distributors or traders sell products from local and foreign manufacturers. Some distributors are also involved in some extent of food ingredients manufacturing aside from distributing the products of other manufacturers.

Tier 1

Tier 1 market players typically consist of international players who are well capitalised and have extensive distribution networks. They include global chemical manufacturers, major food processors that manufacture food ingredients as part of their overall activities as well as manufacturers that concentrate on producing only food ingredients. Large foreign manufacturers usually set up subsidiaries or local offices to handle the sales, marketing and distribution of their products. These subsidiaries only sell products from their respective parent companies and these products are branded according to the product and brand portfolio of their parent entity.

7. INDUSTRY OVERVIEW (Cont'd)

**Tier 2**

Tier 2 market players comprise foreign and local medium-sized manufacturers, foreign trading houses as well as large local traders. The traders in this category typically have a wide distribution network of branches spread across the country, especially in major food processing states such as Penang, Johor, Sabah and Sarawak established to better cater to their clients. Some of these traders also have their own manufacturing facilities. Some traders only cater to the food industry while a large majority also supply chemicals to other industries such as the pharmaceutical and paint industries.

Tier 3

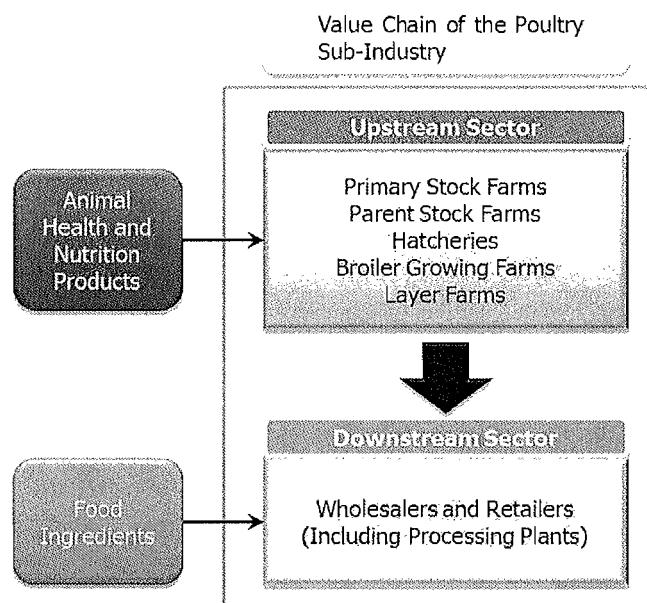
The companies in this tier are usually local traders and operate on a smaller scale compared to the traders in Tier 2. Most of them are generally active as traders and do not participate in food processing activities.

9.3.1 Market Players Comparison

Both animal health and nutrition products and food ingredients are essential components within the poultry sub-industry. As illustrated in Figure 23 below, animal health and nutrition products are supplied to the upstream of the poultry sub-industry for the purpose of ensuring that animals are untainted and safe for human consumption, free of disease, and of an acceptable level of quality. On the other hand, food ingredients are required for meat processing at the downstream of poultry sub-industry, whether to preserve the meat, enhance its flavour or provide additional nutrition.

7. INDUSTRY OVERVIEW (Cont'd)

Figure 23: Provision of Animal Health and Nutrition Products and Food Ingredients within the Poultry Sub-Industry



Source: Extracted from IMR report

Rhone Ma Holdings Group, through Link Ingredients, participates in the food ingredients market as a Tier 3 participant. For the FYE 31 December 2015, Rhone Ma Holdings Group registered total revenue of RM22.0 million from the distribution and supply of food ingredients. Therefore, Protégé Associates has identified the following Tier 3 companies that are comparable to Rhone Ma Holdings Group based on the following criteria:

- Registered an annual turnover of over RM10.0 million based on the latest publicly available financial results; and
- Is not involved in food processing activities.

The list of players is not exhaustive and each player's product offerings may not exactly coincide with others.

Meilun Food Chemical Sdn Bhd ("Meilun")

Meilun is principally involved in the trading and distribution of food ingredients, cleaning chemicals, pharmaceutical chemicals, fabric and dyes and other chemicals. Its product range within the food ingredients category includes a variety of preservatives, functional ingredients, colouring and flavours, processing aids and food nutritionals. For the FYE 30 June 2014, Meilun posted revenue of RM63.7 million.

7. INDUSTRY OVERVIEW (Cont'd)



Rhone Ma Holdings Group

Rhone Ma Holdings Group participates in the food ingredients market through its subsidiary, Link Ingredients. Link Ingredients is principally involved in the distribution and supply of food ingredients. Link Ingredients' product offerings encompass starch and modified starch, sweetener, vegetable protein, soluble protein, bulking agent, vegetable powder, phosphate and food additive.

For the FYE 31 December 2015, Rhone Ma Holdings Group posted revenue of RM22.0 million from the distribution and supply of food ingredients.

Spectra Chemicals (M) Sdn Bhd ("Spectra")

Spectra is principally involved in the trading and distribution of industrial chemicals, food ingredients and related equipment. Its food ingredients products include colourings, starch, etc. For the FYE 31 December 2012, Spectra posted revenue of RM33.0 million.

9.4 MARKET SHARE ANALYSIS

For the FYE 31 December 2015, Rhone Ma Holdings Group generated RM22.0 million, or 20.6 percent of the Group's revenue of RM106.7 million, from the distribution and supply of food ingredients. This is equivalent to less than 1.0 percent share of the food ingredients market based on Rhone Ma Holdings Group's food ingredients revenue of RM22.0 million against market revenue of RM6.54 billion in 2015.

9.5 DEMAND AND SUPPLY CONDITIONS

9.5.1 Demand Conditions

Changing Eating Habits Caused by Fundamental Societal Changes

Malaysia has undergone rapid modernisation in the past few decades, attributable to the vast industrialisation of its economy over the period. Based on the Population and Housing Census of Malaysia in 2010, the proportion of urban population in Malaysia has been increasing from 50.7 percent (in 1991), to 62.0 percent (in 2000). In 2010, urban population in Malaysia further expanded to 71.0 percent.

7. INDUSTRY OVERVIEW (Cont'd)



As urbanisation continues, previously rural citizens are anticipated to take on higher-value jobs in the city, such as those related to skilled work, thus commanding higher incomes. More and more Malaysians move from the low income strata to the middle and high income strata, triggering a greater willingness to spend on food.

Dual income households have also increased as an increasing number of women take up jobs to supplement the household income, thus leaving them with less time to shop for food and prepare meals. As convenience becomes increasingly vital to the busy lifestyles of urban Malaysian consumers, the demand and necessity of processed foods such as ready meals and frozen foods is expected to increase significantly moving forward, thereby also positively impacting the growth of the food ingredients market in Malaysia.

Growth of the Halal Food Industry

Recognised as a modern and progressive country with strong ties with the Muslim world, Malaysia is well positioned to be an international halal food hub in the branding, processing and marketing of halal food to the global Muslim population. With a global Muslim population of about 1.6 billion representing about 23.0 percent of the world's population in 2010, it is estimated that the Muslim population will reach 2.8 billion by 2050. Henceforth, Malaysia's role in halal manufacturing and food processing bodes well for local demand for food ingredients, particularly halal ones.

Malaysia's Growing Population

As the population grows, the amount of food consumed, including processed food increases as well. Malaysia's population stood at 28.6 million in 2010 and is projected to reach 38.6 million in 2040. As the country's population is set to continue growing, it is anticipated to benefit the food ingredients market over the forecast period.

Increasing Importance of Healthy Eating among Consumers

The progressively hectic lifestyles of consumers have shifted their food consumption patterns towards more convenient and quick to prepare foods, which are perceived to be less nutritious than meals conventionally prepared from fresh products. Paradoxically however, consumers are also becoming more aware of the value of healthy eating habits, and how healthy eating can enhance their quality of life. There is more emphasis on getting health benefits through natural properties of the food. Thus, consumers are drawn to food that are

7. INDUSTRY OVERVIEW (Cont'd)



"fresh" or "natural" as they have less additives and preservatives, and are more nutritious and healthier.

As such, the rise in health awareness has stimulated interest in other types of food, which act in competition to processed products. Most notable of these is the category of naturally healthy foods, such as whole grains, oats, soy, cranberries and green tea. These products can also leverage the health benefits of their nutrients as a selling point, and therefore will have some negative impact on the demand for processed food and the food ingredients market, albeit small.

9.5.2 Supply Conditions

Favourable Government Policies

The Malaysian Government has plans to develop its food processing industry with a particular emphasis on halal food products. In this respect, the Government has announced policies to help develop and further improve this sector. During the period of the Third Industrial Master Plan from 2006-2020, the import of raw materials has been declared duty free to enable the food industry to meet specific market demand.

Regulatory Constraints

The use of food ingredients in Malaysia is bound by regulatory and legal positions relating to their usage. All food ingredients are carefully regulated by federal authorities such as the Ministry of Health and various foreign/international organisations including the Food and Drug Association USA, Food Standards Agency UK, the European Commission and others, to ensure that food are safe to consume and are accurately labelled.

The law in Malaysia requires that processed food products have labels to inform the consumer, by including details of the product contents, ingredients and nutritional details, as well as the product description, storage and usage details. The use of particular words, such as "natural", or phrases, such as "natural ingredients only" are regulated and can only be used with proper proof that these statements are not misleading.

7. INDUSTRY OVERVIEW (Cont'd)



9.6 SUBSTITUTE PRODUCTS

As a category, food ingredients are highly difficult to substitute. Non-usage is not an option for food manufacturers given the variety of benefits these ingredients can augment to their process or final product.

9.7 GOVERNMENT POLICIES AND REGULATIONS

9.7.1 Industry Policies

Third Industrial Master Plan ("IMP3") 2006-2020

During the period of IMP3, the food processing industry will be expanded and diversified towards making Malaysia a regional food production and distribution hub, with particular emphasis on halal foods. For the entire IMP3 period, the total investment in the industry is set at RM24.6 billion and exports are targeted to grow at an average annual rate of 7.8 percent to reach RM24.20 billion by 2020.

9.7.2 Regulations

The food industry in Malaysia is subjected to the Food Act 1983 and Food Regulations 1985. The Food Act 1983 was amended in 2001 and 2006 resulting in Food (Amendment) Act 2001 and Food (Amendment) Act 2006. These legislations apply to all food sold in the country, either locally produced or imported, covering a wide range of aspects from compositional standards to food additives, nutrient supplements, contaminants, packages, containers, food labelling, procedures for taking samples, food irradiation, provision for food not specified in the regulations, and penalties.

9.8 RELIANCE AND VULNERABILITY TO IMPORTS

Malaysia imports more than half of its food ingredients requirements, making it vulnerable to external factors such as currency exchange rate fluctuations and uncertainty in its long-term supply. The deficit between domestic demand and local production is expected to continue as economic factors limit Malaysia's capabilities in enhancing domestic supply to fully meet its total food ingredient requirements.

9.9 MARKET PROSPECT

The future growth of the food ingredients market is expected to be driven heavily by demand factors. Firstly, changing eating habits caused by fundamental societal changes such as increasing urbanisation and dual income households has made convenience an increasingly vital factor in the busy lifestyles of urban Malaysian consumers. Due to this reason, the demand and necessity of processed foods such as ready meals and frozen foods is expected to increase significantly moving forward, thereby also positively impacting the growth of the food ingredients market.

Secondly, the demand for halal food from growing Muslim population is encouraging new and existing food processors to look into expanding into this segment of the food industry.

On the supply side, the Government is encouraging food processing companies to expand and diversify their product range in 4 identified growth areas which include food ingredients apart from convenience foods, functional foods and halal foods.

The food ingredients market is forecasted to expand at a steady pace throughout the forecast period of 2015 to 2020. In 2020, it is expected to value at RM8.02 billion, growing at a CAGR of 4.2 percent between 2015 and 2020.

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7. **INDUSTRY OVERVIEW (Cont'd)**



Protégé Associates has prepared this report in an independent and objective manner and has taken adequate care to ensure the accuracy and completeness of the report. We believe that this report presents a true and fair view of the industry within the boundaries and limitations of secondary statistics, primary research and continued industry movements. Our research has been conducted to present a view of the overall industry and may not necessarily reflect the performance of individual companies in this industry. We are not responsible for the decisions and/ or actions of the readers of this report. This report should also not be considered as a recommendation to buy or not to buy the shares of any company or companies.

Thank you.

Yours Sincerely,

A handwritten signature in black ink, appearing to read "SEOW CHEOW SENG". The signature is stylized with a large circular flourish and a sharp, angular end.

SEOW CHEOW SENG

Managing Director

Protégé Associates Sdn Bhd