

CHALLENGES AND SOLUTIONS FOR MALACCA TO BECOME A WORLD-  
CLASS FEED PRODUCER IN POULTRY

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(B061910323)



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## APPROVAL


I/We hereby declare that I/We have read and go through this dissertation/report/thesis and certify that, this dissertation/report/thesis is satisfactory in the sense of scope and quality as a partial fulfilment of the requirement for the award of Bachelor's Degree of Technology Management (Technology Innovation)

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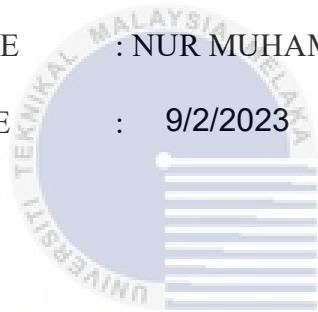
I hereby declare that the work in this study is the result of my own research  
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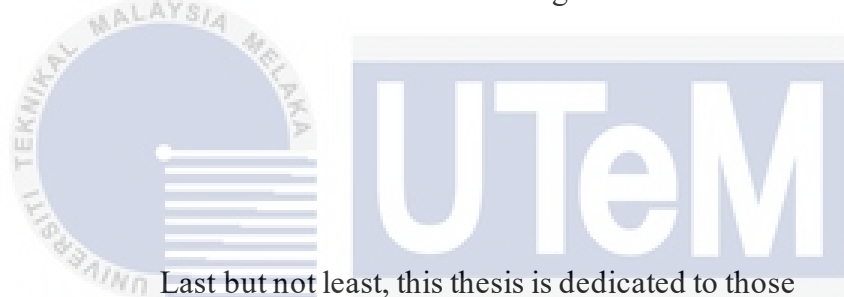
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## DEDICATION

This thesis is dedicated to my family,  
for the immense support and motivation throughout the whole process.

This thesis is also dedicated to my supervisor  
Professor Madya Dr. Mohd Syaiful Rizal bin Abd Hamid,  
who had been a tremendous and wonderful guide and motivator all the way.



Last but not least, this thesis is dedicated to those

اونيورمريتى تىكنيكال ليسيا ملاك  
who believe in the power of knowledge.

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Bismillahirrahmannirrahim,

In the name of Allah, The Most Gracious, The Most Merciful. Praise to Allah S.W.T who blessed me the strength and dedication to complete this (fyp). Peace and prayers be upon His Final Prophet and Messenger Muhammad.

First and foremost, the highest gratitude and deep appreciation to my supervisor, Professor Madya Dr. Mohd Syaiful Rizal bin Abd Hamid for the immense patience and dedication in guiding and supporting me in completing this thesis. The knowledge, moral support, and guidance has helped me throughout the whole process.

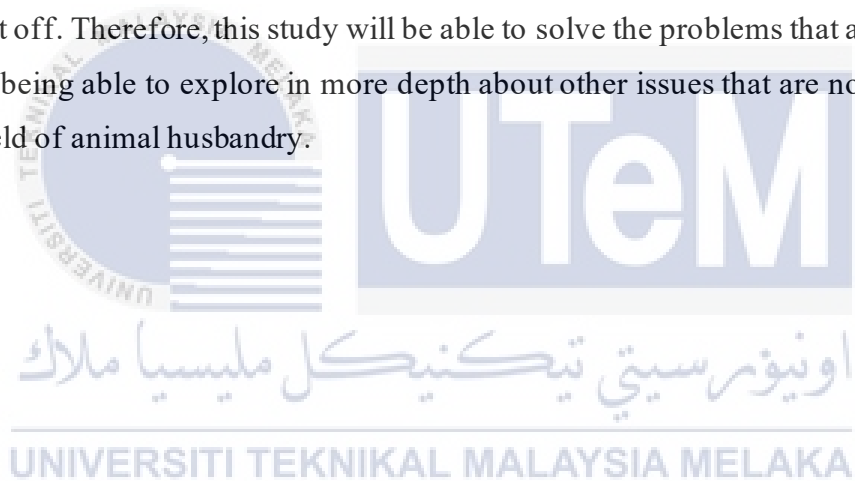
Last but not least, my heartfelt and deepest gratitude would be to the pillars of my strength, which are my family who never fails to support and motivate me in whatever I do in my life. Without their love, guidance, and support, I would have not come this far in my life journey.

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Thank you.

## ABSTRACT

Livestock is one of the main needs nowadays in the field of food. this is because food is one of the human needs. therefore, the issue of the food supply has always been of concern to many. However, there are problems that arise because excessive demand causes foodstuffs to decrease which will lead to price increases. Therefore, the authorities have imported livestock to meet the needs of customers. With problems that arise, then remedial measures should also be taken to avoid the food supply being cut off. Therefore, this study will be able to solve the problems that arise in addition to being able to explore in more depth about other issues that are not known in the field of animal husbandry.



## ABSTRACT

Haiwan ternakan merupakan salah satu keperluan utama pada masa kini dalam bidang makanan. Hal ini kerana makanan merupakan salah satu daripada keperluan manusia. Oleh itu, isu bekalan makanan ini sentiasa menjadi perhatian ramai. Namun begitu, terdapat masalah yang timbul kerana permintaan yang terlampau tinggi menyebabkan bahan makanan berkurangan akan menyebabkan kenaikan harga. Oleh itu, pihak berwajib telah mengimport haiwan ternakan untuk memenuhi kehendak pelanggan. Dengan masalah yang timbul, maka langkah penyelesaian juga harus dibuat untuk mengelakkan bekalan makanan terputus. Oleh itu, kajian yang dilakukan ini akan dapat menyelesaikan masalah yang timbul di samping dapat meneroka dengan lebih mendalam tentang isu-isu lain yang tidak diketahui dalam bidang penternakan.

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# CHAPTER 1

## INTRODUCTION

### 1.1 Introduction

The agriculture sector is the third most important generator of economic growth in Malaysia. Livestock refers to animals raised by humans either for food or trade. Animals defended for food include cows, goats, chickens, ducks, etc. Animals defended for trade such as crocodiles and the like (Rusmiza, Suraya: 22). Livestock is an agricultural activity that breeds livestock. Livestock began with animal husbandry (the cultivation of animals so that they could be preserved and used by humans) in a process that began around 13,000 BC. Various types of animals began to be domesticated at different times and places in history. Apart from the livestock mentioned above, animals such as horses, buffaloes, camels, llamas, alpacas and rabbits are also farmed in some parts of the world. Livestock also includes aquaculture to raise aquatic animals such as fish, shrimp, and shellfish. Insect farming is also done in some places, such as beekeeping, silkworms, and even crickets that are used as food in Thailand. Most farm animals are herbivores or plant eaters, but some are omnivores such as pigs or chickens. Ruminants such as cows and goats can digest cellulose, so they can be fed grass in the wild. In addition, animals can be given high -energy and protein foods, such as grains and artificial foods. Non -ruminant animals cannot eat grass so must eat from other sources.

The main livestock products are meat, milk, and eggs, which are common foods for humans. Livestock products can also be used in industries, such as the wool of livestock such as sheep to make clothes, leather for the manufacture of shoes, bags and wallets and finally fat for the process of making soap and butter. In addition, livestock waste can also be used as a source of fertilizer, thus returning some of the minerals and organic matter used by livestock to the system and helping to regenerate their own food. Animal energy can also be used, for example horses as a means of transportation and buffaloes for plowing are widely used, especially in countries that do not use many machines such as in India and Malaysia before. Livestock can also be used in recreational activities, such as karapan cows in Madura and jawi pacu in Tanah Datar. There are also farm animals that are kept for special purposes, such as producing vaccines and antiserum (which contain antibodies) for medical purposes.

## **1.2 Case study background**

The livestock industry in Malaysia is an important sector in the development of agriculture in the country. The industry involves livestock activities such as cattle, buffaloes, goats, sheep, pigs, broiler chickens and ducks, laying hens and ducks, dairy cows and even the latest swiftlets. This sector has provided our country with adequate supply for the supply of chicken meat, chicken eggs, pigs and swiftlets. However, for the supply of beef and mutton, our country is still dependent on imported meat, especially from India, Australia and several other countries. Various incentives and regulations related to the livestock sector have been implemented to ensure that this sector will continue to grow in the future.

However, obstacles in the livestock industry also exist. An example of an obstacle that bothers farmers is the theft of livestock. This has happened in Melaka and was published in Harian Metro on 25 June 2021. There are 7 individuals who are masterminds for the theft of livestock have been arrested by the police. According to existing records, police found that cases of livestock theft were on the rise throughout June when 16 cows were reported missing. Statistics from January to June 24 show that a total of 16 cases of livestock theft were reported missing involving 38 cows and 10 goats with a total loss estimated at RM274,000. Therefore, the police and the authorities have advised farmers to always monitor the movement of livestock so as not to exceed the area outside the barn and not to allow livestock to roam to prevent the animals from being stolen.

The next obstacle is due to the nature of the animal owner himself. This is because they let their animals roam and interfere with road use. Due to the problem, many livestock have died as a result of being hit by road users. For example, Sinar Harian once broadcast on 19 June 2022 in Kampar, Perak. A total of 7 cows that were left to roam, died after being hit by two vehicles. This can also have a detrimental effect on offenders if they do not wear a helmet and wear a seat belt or use a motorcycle. This is because they can get serious injuries that lead to paralysis or worse that is the loss of limbs or loss of life. Therefore, road users can make a complaint if there are livestock on the road because it can threaten the lives of other road users.

The last hurdle is the environmental disaster that is taking place. As found in Astro Awani news dated 6 January 2022 located in Kuantan, Pahang. According to Dr Kamaliah Ghazali who is the Director of the Veterinary Services Department, she said a total of 17,403 livestock and pets were reported dead due to floods in Pahang. The statistics of livestock that died due to floods were chickens which held the highest number of deaths at 14,849 followed by ducks (1,100), turkeys (412), cows (307), rabbits (210), goats (132), sheep (64), buffaloes. (4) and others (305). The total loss is estimated to be more

than RM1.4 million and involves 100 owners and breeders, most of whom are in the districts of Kuantan, Bentong and Pekan.

### **1.3 Problem statement**

Poultry farming is a critical component of the world's food supply, providing an economical source of protein to meet the growing demand for food. However, poultry farming is also susceptible to various diseases that can have a significant impact on the industry and food security. In this essay, we will discuss the most common poultry diseases, their causes, and prevention measures that can be taken to reduce the risk of outbreaks.

One of the most significant poultry diseases is Newcastle disease (ND), also known as Avian Paramyxovirus (APMV-1). ND is a highly contagious viral disease that affects the respiratory, nervous, and digestive systems of birds (OIE, 2021). The virus can spread through the air, contaminated feed, water, and equipment. ND is one of the most severe diseases affecting poultry, and it can result in significant economic losses for farmers, including high mortality rates, reduced growth, and decreased egg production.

Another common poultry disease is Infectious Bronchitis (IB), which is caused by a coronavirus (OIE, 2021). IB affects the respiratory system of birds and causes coughing, sneezing, and difficulty breathing. The virus is spread through the air and contaminated feed and water. IB is particularly harmful to young birds and can result in decreased growth, reduced egg production, and increased mortality.

Avian Influenza (AI) is another viral disease that can have significant impacts on the poultry industry. AI is caused by the Influenza A virus and can spread through the air, contaminated feed and water, and infected birds (OIE, 2021). The virus can cause severe

respiratory problems, and in some cases, it can lead to high mortality rates in birds. AI is a highly contagious disease that can spread rapidly, leading to widespread outbreaks and significant economic losses for farmers.

Fowl Cholera, caused by the bacterium *Pasteurella multocida*, is a disease that affects the respiratory, digestive, and nervous systems of birds (OIE, 2021). The bacterium can spread through contaminated feed, water, and equipment, and it can lead to severe illness and high mortality rates in birds.

In conclusion, poultry farming is vulnerable to various diseases that can have a significant impact on the industry and food security. It is essential for farmers to take measures to reduce the risk of outbreaks, including maintaining good hygiene and sanitation practices, providing high-quality feed and water, and implementing regular vaccination programs. By taking these measures, farmers can protect their birds and prevent economic losses caused by poultry diseases.

**Jenis Ternakan: Ayam kampung (Backyard)**

Jenis Penyakit : AI dan ND

Lokasi surveilan : Premis (ladang)

Jumlah sampel perlu diambil bagi setiap premis yang dipilih: 10

Jenis sampel: Calitan kloaka

Tahap keyakinan: CI: 95%, Prevalence 5%

Negeri	Daerah	Bil. Premis	Bilangan premis perlu disampel	Jumlah sampel
<b>SELANGOR</b> Jumlah premis:84 Jumlah premis perlu disampel: 42 Populasi ternakan: 452,62	Klang	14	7	70
	K. Langat	1	1	10
	K. Selangor	3	2	20
	H. Selangor	7	4	40
	Hulu Langat	0	0	0
	Gombak	0	0	0
	Petaling	0	0	0
	Sepang	0	0	0
	S. Bernam	59	28	280
<b>MELAKA</b> Jumlah premis:5,436 Jumlah premis perlu disampel: 59 Populasi ternakan: 109,432	Alor Gajah	4,824	52	520
	Jasin	66	1	10
	M. Tengah	546	6	60
<b>N.SEMBILAN</b> Jumlah premis:1,561 Jumlah premis perlu disampel: 58 Populasi ternakan: 99210	Seremban	67	2	20
	Jelebu	1,225	46	460
	Rembau	8	0	0
	K. Pilah	195	7	70
	Jempol	8	0	0
	Tampin	42	2	20
	P. Dickson	16	1	10
<b>JOHOR</b> Jumlah premis: 8,338 Jumlah premis perlu disampel: 59 Populasi ternakan:2,066,645	J. Bahru	70	0	0
	Pontian	550	4	40
	Batu Pahat	534	4	40
	Muar	653	5	50
	Ledang	103	1	10
	Segamat	4,500	31	310
	Kluang	993	7	70
	Mersing	365	3	30
	Kota Tinggi	335	2	20
Kulaijaya	235	2	20	

**Figure i The 2018 National Animal Diseases (NAD) Index**



**Jenis Ternakan: Ayam komersil (myGAP dan bukan myGAP)**  
 Jenis Penyakit : AI, ND & Salmonellosis  
 Lokasi surveilan : Premis (ladang)  
 Jumlah sampel perlu diambil bagi setiap premis yang dipilih: 10  
 (Sebanyak 5 calitan diletakkan dalam 1 botol, jadi 10 sampel =2 botol)  
 Jenis sampel: Calitan kloaka dan calitan persekitaran di dalam reban  
 Tahap keyakinan: CI: 95%, Prevalence 5%  
 (Nota: Tiada data populasi ternakan)

Negeri	Daerah	Bil. Premis bukan myGAP	Bil. Premis myGAP	Bil premis perlu disampel	Jumlah sampel
<b>SELANGOR</b> Jumlah premis: 216 + 17 = 233 Jumlah premis perlu disampel: 53	Klang	15	0	3	30
	K. Langat	62	0	13	130
	K. Selangor	49	15	15	150
	H. Selangor	24	1	6	60
	Hulu Langat	4	1	1	10
	Gombak	11	0	3	30
	Petaling	7	0	2	20
	Sepang	29	0	7	70
	S. Bernam	15	0	3	30
<b>MELAKA</b> Jumlah premis: 191 + 41 = 232 Jumlah premis perlu disampel: 53	Alor Gajah	106	25	30	300
	Jasin	77	15	21	210
<b>N.SEMBILAN</b> Jumlah premis: 225 + 28 = 253 Jumlah premis perlu disampel: 53	M. Tengah	8	1	2	20
	Seremban	31	4	7	70
	Jejebu	23	0	5	50
	Rembau	21	6	6	60
	K. Pilah	16	2	4	40
	Jempol	20	3	5	50
	Tampin	27	11	8	80
	P. Dickson	87	2	18	180
	J. Bahru	5	5	1	10
<b>JOHOR</b> Jumlah premis: 184 + 221 = 405 Jumlah premis perlu disampel: 55	Pontian	29	41	10	100
	Batu Pahat	70	81	20	200
	Muar	9	17	4	40
	Ledang	12	10	3	30
	Segamat	3	7	1	10
	Kluang	45	48	13	130
	Mersing	1	0	0	0
	Kota Tinggi	3	4	1	10
	Kulaijaya	7	8	2	20

**Figure ii The 2018 National Animal Diseases (NAD) Index**

The next problem is the increasingly expensive supply of poultry animal feed for the daily use of livestock (Ronald Kiandee:2022). The purpose of preparing foodstuffs and formulating animal feed is to supply the animal with the necessary nutritional needs. This is because different animals need different nutrients according to their respective needs. There are several types of nutrients needed by farm animals such as protein, carbohydrates, fats, minerals, vitamins and water. Usually the diet for livestock will contain as much as 80-90% energy, 10-20% protein, 3-4% minerals and vitamins. The classification of food sources for energy is Corn, wheat, wheat pollard, rice bran, broken rice, cassava, sago, brown sugar (molasses), DDGS, gluten meal and for protein is soy, pkc, DDGS, blood meal, fish meal, meat and bone meal (mbm) and for mineral sources are DCP (Dicalcium phosphate), meat and bone meal (mbm). According to online Daily News, Director General of Agriculture, Datuk Zahimi Hassan mentioned that the price of chicken bran has increased since the COVID-19 pandemic, from RM80 per bag to RM120 to RM125 depending on the brand and quantity marketed. Therefore, the Ministry of Agriculture and Food Industry (MAFI) is focusing on increasing the production of chicken bran based on oil palm kernels (PKC), in addition to increasing corn cultivation, to reduce dependence on chicken bran imports. This is because Malaysia now imports almost 100 percent of grain corn or about two million tons a year from countries such as Argentina, Brazil and the United States (US). Zahimi said the implementation of grain corn cultivation for animal feed through a pilot project in 2018 until this year. A total of 280 hectares of grain maize in Perlis, Kedah, Pahang, Perak and Sarawak were opened with the involvement of about 50 farmers and private companies. Malaysia will enter a consolidation phase and move towards efforts to produce 30 percent of the country's grain maize needs to reduce imports of maize supplies for Malaysia's food needs. This is in line with the blueprint of the National Grain Corn Industry which has three phases, namely Phase 1: Pilot Project (2018 to 2022), Phase 2: Consolidation Phase (2023 to 2027) ,and Phase 3: Expansion Phase (2028 to 2032).

## **Research question**

The research explores the following key questions:

- i. What are the challenges faced in the effort to develop poultry farming in Melaka?
- ii. What are the solutions to overcome the challenges in poultry farming in be?
- iii. What is the potential of the Melaka becoming poultry producer to reduce the imports from foreign countries?

## **Research objective**

The core objectives that this research is meant to achieve include:

- i. To point out the challenges in the effort to develop poultry farming in Melaka.
- ii. Analyze the steps that can be done to improve the poultry farming sector in Melaka.
- iii. Determine whether the existing poultry farming is able to reduce imports from foreign countries.

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## **1.5 Scope of research**

This study will examine whether Melaka is able to become a world -class producer in the food industry in poultry farming supplies. This is because the supply of poultry farming in Malaysia is still low and we have imported almost some of the livestock from abroad. Therefore, this study will be able to analyze the issues that occur in the poultry farming industry regarding the supply chain of poultry farming in Melaka in particular.

Research related to the challenges faced in the poultry farming supply chain in Melaka will be the main goal. This is because researchers want to know the impact that will occur due to the challenges faced by farmers in their efforts to develop the poultry farming industry. Therefore, this study can to some extent understand the problems that occur and its impact on poultry farming operators in addition to creating solution measures that can be taken to solve existing problems in the poultry farming industry.

In addition, this qualitative study will be able to explain in detail about the ability of Melaka to become a world -class producer in the food industry in the poultry farming supply chain by identifying problems and measures to overcome such problems as guidelines. Therefore, further studies are needed to identify in more depth the issues of problems faced in the poultry farming supply chain in Melaka.

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## **1.6 Structure of thesis**

This research consists of 5 chapters which are all arranged and described as follows

Chapter 1 presents an overview of the themes involved in this subject introduction in the field of animal husbandry, research background describing the development and progress of the theme, problem statement why this research is being done, research questions that will guide to achieve research objectives, and finally, scope research that helps to narrow down.

Chapter 2 presents an overview of the positive effects if Melaka becomes a world-class poultry producer state as well as appropriate measures in overcoming the ongoing problems to ensure Melaka becomes a livestock producer state.

Chapter 3 describes methods and approaches for studying problems and coping measures. Emphasis is placed on qualitative methods as the proposed method to collect data from poultry farms in Malaysia.

Chapter 4 discusses and analyzes the data according to questions and objectives of the study. The data collected is based on surveys conducted with farmers related to other issues that arise.

Chapter 5 Outlines the conclusions of the research, where findings from the study have been summarized. In addition, this chapter also covers research limitations and recommendations for future studies.



## CHAPTER 2

### LITERATURE REVIEW

#### 2.1 Introduction

In this chapter, the literature and previous studies on the impact of being a world - class producer in the food industry in the poultry animal supply chain will be reviewed. Literature and before the research presented in this chapter provides more information on the problem -solving steps to become a producer in the food industry, an overview of the poultry farming supply chain. The information in this section will help to contextualize the research question. At the end of this chapter, a summary has been made and used as a framework learn.

#### 2.2 The Effect of Being a Producer in the Food Industry in the Poultry Supply Chain

##### Reduce dependence on food imports from foreign countries

The definition of import is a business activity of buying and importing, that is, either importing goods or services or commodities originating from abroad into the country through a legitimate trade process. The person or entity carrying out the import activity is referred to as the importer. Usually a country conducts import activities because there is a need for certain products in the country that cannot be met on its own, or used to replenish reserves. In addition, import activities are carried out to strengthen the balance of payments and reduce the potential outflow of foreign

exchange abroad. In the view of Susilo Utomo (2008: 101), the meaning of import is the activity of entering goods originating from abroad into the customs area in the country carried out by representatives of both countries, both by individuals and companies. The second view on import is Astuti Purnamawati (2013: 13), import is the act of buying goods from abroad according to government regulations, which are paid in foreign currency.

According to data obtained from livestock statistics for 2019/2020 states that the import of livestock in 2018 was 2,478,966 decreased to 1,673,302 in 2019. This is because in the 12th Malaysia Plan, Malaysia has reviewed its approach to agriculture by modernizing the sector to increase farmers' incomes and develop the sector. According to Datuk Seri Mustapa Mohamed who is a Minister in the Prime Minister's Department (Economy) wants to modernize agriculture, get more technology and encourage young people to participate in this sector. This is because the agriculture sector contributes about 11 per cent of employment and 7.1 per cent of Malaysia's Gross Domestic Product (GDP) in 2019. Therefore, strengthening Malaysia's agro-food system will enable the economy to achieve other priority areas such as shared prosperity, with introduce measures designed to increase farmers' incomes, create employment opportunities in agriculture and increase agro exports. This could build an agricultural sector that is more responsive to the country's contemporary food economy, including developing capacity to supply more high value food for the region and Malaysia as it can be a leader in supplying 'healthy and safe' products to the region, and invest more much in the human capital needed to transform the agro-food complex while training and attracting the next generation of agro-food system entrepreneurs in various fields.

## **2.3 Problem solving steps to become a producer in the food industry**

### **2.3.1 Vaccination**

The main problem that often exists in poultry farm animals is in the health factor. This is because poultry are easily infected with diseases because they are always in groups and are able to turn the disease into an infectious disease. In addition, the negligent attitude of the breeder is also one of the factors for the disease to appear among the livestock, such as not washing the poultry breeding area, not carrying out observation and health activities of the poultry and not taking care of the needs of the poultry.

Therefore, the Department of Veterinary Services of the Ministry of Agriculture and Agro-Based Industry Malaysia has introduced a regular procedure to vaccinate livestock with the Salmonella Double Adjuvant Vaccine (SALVAC). Vaccination is a method of preventing and controlling disease by increasing immunity in animals. The effectiveness of vaccination is highly dependent on the management process and the use of the vaccine. Failure to comply will lower the potency of the vaccine, which will result in an insufficient immune response to protect the animal from infection. This vaccine is a biological substance that is used to increase the level of immunity against a disease. Vaccines contain agents that mimic disease-causing organisms that have been weakened or inactive. The agent stimulates the body's immune system to recognize the agent as a foreign substance thereby protecting the host from infection. Vaccines were used to treat Anthrax, fowl cholera and later rabies. However, this does not mean that a good vaccine alone is enough to ensure livestock are in good condition, this is because vaccines alone cannot guarantee disease control or prevention if the vaccination process fails. For that purpose, the Department of Veterinary Services of the Ministry of Agriculture and Agro-based Industry Malaysia has introduced the Veterinary Act, 1953 which provides the licensing authority for those who handle vaccines. This is because a good vaccination management system