



**The Roles and
Prudent use of
Antibiotics in Malaysian
Poultry Industry**

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April 18, 2018





- **Part A:**

- Roles of Antibiotics in Poultry Industry in Malaysia**

- **Part B:**

- Prudent use of Antibiotics in Poultry Industry in Malaysia**

Part A: Role of Antibiotics in Poultry Industry in Malaysia

- In Veterinary World, most virus diseases covered by vaccines,
- but very few bacterin available to content the bacteria diseases.

- Generally Vet antibiotics roles divided into:
 1. Prevention
 2. Control
 3. Treatment
 4. Antibiotic Growth Promoter

Role 1: Prevention of Bacterial Diseases

Preventive medicine was applied to apparently healthy looking chickens **after** activities which exert stress & increase the chances of diseases, such as:

- Transportation, vaccination, debeaking, changes of feed...,etc
- Very popular in both Companion Animal and Human (after surgeries...etc).
- When there is viral disease outbreak, preventive medicine is very crucial to avoid the secondary bacterial diseases.

Role2: Control of Bacterial Diseases (Flock Health vs Individual Health)

- Chickens are housed together at certain density due to limited/expensive space.
Example: broiler chicken housed at density of 0.8 bird/sf.
- Flock Health Program in poultry, and Herd Health Program in larger animals.
- Control medicine will be triggered when a significant numbers (more than 2- 5%) of birds were sick, example: 2% out of 10,000 birds is 200 birds shown illness.
- To protect the rest of healthy birds from being infected.

Role3: Treatments of Bacterial Diseases

- When majorly of birds were effected (the first two defends were failed)
- If we don't treat, the disease will spread very fast and mortalities begin to rise.
- The regime are specific: farm history and laboratory results to determine which antibiotic to be use.
- Treatment is always the last choice, because it is very costly and farmers could face losses.

Role4: Antibiotic Growth Promoter (AGP)

- Very old practice in vet industry (not allowed in egg and milk)
- Meat production there is a **withdrawal time** and therefore **not detectable anymore** residue when withdrawal time is respected.
- Designated small dose that exerts the effect to suppress the pathogens load thus promotes the growth; so that the energy from the nutrients was not wasted.
- **MUST have MRL** to ensure the food safety for the public.

MRL of Antibiotics

1. Established NOAEL “No Observed Adverse Effect Level”:
- the highest dose that does not cause adverse effects.

2. Determined ADI “Acceptable Daily Intake”:

- the amount of the residue that is considered safe for an individual to eat every day for their lifetime.

-by dividing by an ‘uncertainty’ or ‘safety factor’ e.g. by 100-1000 (the amounts of each food eaten per day and how the substance is metabolized and distributed in the various edible tissues)

Thus, MRLs are such that consumers can ingest generous amounts of animal foodstuffs every day without exceeding the ADI.

Why AGP?

Why1: To combat the constant challenges of Respiratory & GIT diseases:

In a chicken house, thousands of birds stayed on the same floor for their feed, drinks, defecate and growing till the marketable age/weight.

- Contaminated of air between the ammonia gases from the feces distress the Respiratory System.
- Contamination between drinking water/feed and fecal affecting the GIT.

Why2: Geneticists and Food Scientist were struggled to produce more meat for men.

- Fast growing in broiler chicken mainly due to the **genetic selection** for better growth rate to reduce the FCR.

Feed Conversion Rate is the kg amount of feed required to grow 1 kg b.wt.

- Based on 2kg body weight, FCR had improved drastically from:
 - 2.85 in 1990 to
 - 1.65 in 2017.....
- This also means the bird had achieved market size at **younger/baby age** (7 wks reduced to 5 weeks), average saving of 10 days in the last 27 years.

#The younger age more susceptible to diseases.

Why3: Compensating the Impaired Immunity

- Genetic studies noticed:

“when growth gene gets better, the immunity gene gets worse....”

[Similarly GMO crops, higher yield but become more susceptible to infestation]

- Broiler, sexual maturity age is around 13 weeks to have the first egg.
(human female takes 13-15 years the first estrus cycles.)
- Physically mature but not physiologically.
- Any changes of weather, feed quality, housing, management, vaccination, or fighting, etc.... could cause disease at the high mobility& mortality if the medicines are not reach on time.

Why4: Price Control-Farm Products at Festivals

- Malaysia has **unique** socio-political-economy arrangement to predetermine a ceiling-selling price during the festivals.
- Very important for the policy makers to understand the **balance** for the needs of economical use of AGP for maintenance the health status of the animal in returns to offer our Rakyat the most economical sources of protein/meat.

In Denmark: RM 80-120/kg chicken meat
(free range/antibiotic free)

In Malaysia: RM 8/kg chicken meat

- #Is there any compliments to the producer/farmers?

Part B: Prudent use of Antibiotics in Poultry Industry in Malaysia

Prudent use of antibiotics means **responsible** use of antibiotics and one of the objective is to **reduce** the usage of antibiotics.

- Action plans may include:
 - (1) Education
 - (2) Registration
 - (3) Good Farming Practice
 - (4) Good Vaccination Program
 - (5) Promote to use of the alternatives products

Via1: Education:

To create awareness and responsible use

- DVS and Vet Industry Allies (VAM, FLFAM, MAHNIA, MAFAV, WPSA, WVPA, etc.) frequently organized seminars to educate the farmers and the producers. Training and good information to farmers explaining the advantages and economical benefits of good hygiene practice, as well as the human health risk of AMR.
- Active information exchange with consumer association will also benefits the industry to prevent misunderstanding.
- To organize seminars/roadshows at school on farm-food talks, to bridge the gap for the knowledge on important of prudent use of antibiotics.

Via2: Registration:

Vet Product (drug) Registration (VPR)

- Required rules and regulation: control and punishment for the disobedience.
- VPR is important to ensure the drug used are safe and effective.
- Also required a clear policy from a competent authority.
- In Malaysia VPR initiated by NPCB/NPRA in 2007, followed by DVS in 2012.
- Result of the pressure from the industry and society that urges the government to control the abuse usage of Beta-Agonist after decades.

VPR by NPRA:

- NPRA very active agency with knowledge of pharmacokinetics and pharmacodynamics; but less exposure about what is the practice in animal husbandry (feeding, genetics, flock-health, immunity...), lesser understanding on animal diseases and animal welfare.

****Important to have representative from vet industry in the Poison Board (One Health spirit)***

Example:

- i). Setting a very limited country of references
(limit to 5-7 countries)

- ii). Many Veterinary drugs for Vet clinics, wildlife, Zoo animals...(Not for food-animals) eg: medicated shampoo have to go through a special channel which took more than 2 years to get limited quantity approval.....**

- iii). The fact that due to small market size, manufacturer do not want to invest their time to comply the strict requirements in Malaysia.

- Hence, very little drug of choice, the existing drugs would be reuse.

Such control may adversely increase the drugs usage (double dose), thus increase the drugs resistance.

Objective of VPR is to achieve the **TRACEBILITY:**

Authorities would be able to Track and Trace;

-so in cases of breaking the law, farmers or the suppliers of the product can found back and punished.

VPR by DVS

- Feed Act, launched in 2012 with Feed Regulations had covered ALL Vet Products including Vet Drugs for farm and feed.
- Requirement: 3rd party COA certified ISO/IEC 17025 laboratory. GMPs status, MRL...
- DVS had form a Tech Committee in ZOOKA with the industry to harmonize the VPR policies.
- ***Hope MOH to allow Vet Industry representatives in the Poison Board, likewise plantation industry and chemical industry have their reps in the PB too. (One-Health spirit)**

Overlapping of Rules

Example:

- Vet drug list in license B by NPRA **does not inline** with the drugs list from Feed Committee at DVS, this **confused the industry**. Indeed, an agreement in 2015 to replace license B by Feed Act to resolve this problem...(waiting)
- The registration of anticoccidial drugs needs to shift to DVS, because anticoccidial drugs are not relevant to human medicine.

Via3: Good Farming Practice

- Reducing the disease challenges could reduce the drug usage.
- Modern farming in big integrations are well equipped with GFP:
 - a) **All-in-all-out systems**: In one farm all birds should be of the same age. The house is emptied at the same time and appropriate disinfected before new batch housed.
 - b) **Good disinfection and cleaning**: Involve both dry and wet cleaning; standard procedure at entrance including changing boots and clothes, and preferably showering
 - c) **Ventilation**: Bad ventilation (high moistures and temperatures) inside the house is one of the main cause of excessive growth of bacteria diseases.
 - d) **Traffic control in the farm**: The movement of feed trucks, slaughterhouse truck and people should be control to avoid the transfer of diseases from outside in.

Via4: Good Vaccination Program

- This is another important factor to reduce the diseases in the farm.
- GVP means the right strain of vaccines were used at the right times for the farm. Each program varies depends on the nature of challenges at the farm.
- Effective vaccination thus reduce the antibiotic usage.

Via5: Use of the Alternatives Products: Acidifiers/ CE microbes-Probiotics/ Neutra-ceutical/ Prebiotics, etc.

- Results are still inferior compare with drugs in terms of the effectiveness and the cost.
- In fact, there are already local poultry farms produce antibiotics-free chicken to meet the niche market; but the cost is more than double.

The question is:

- Are we ready to pay for it?
- Or, are we chose to pay at generally affordable price but food safety still in place

Malaysian Annual Household Income per Capita

2014: RM 20,524/-

2016: RM 18,284/-

Round up:

1/. Malaysia is a net importer (85%) of raw materials for feed and for most of the farm products.

- Example MOA is working on corn plantation to reduce the importation (4 million mt worth RM 3 billion).
- Do not have advantages in farming, therefore adhere to the prudent use of antibiotics by the producers is very crucial.
- It is unfeasible if the livestock production is heavily depending on vet drugs for treatments of disease; prevention is always better.



2/. Since 2000, EU countries had ban the use of antibiotic in livestock; unfortunately they had NOT concluded any benefits of AMR in human.

AGP is still allowed in USA, but only for drugs of non-medically important or not used in human.

- Despite they realized: Fast growing in food animals are mainly due to the improved growth gene aided by advanced nutrients, good management and excellent disease control.

3/. Taking these AGP out will at this moment have a very big impact on the poultry meat production, also it does not fit in the policy of our countries to remain self-sufficiency in meat production.

- AGP still is the most cost-effective to produce animal protein for human consumption, respect the withdrawal is the key.
- 2017 Summits of World Animal Health Organization-OIE, had passed the resolution going for zero AGP.
- Of course implementation can be done in steps mimic the Europe model, with allowing still some AGP's for a couple of years as a transition period.

Are we ready to forbid AGP's and what has to be changed?



4/. Traceability of drugs abuse could be achieve via VPR, local authorities need to strengthen the surveillance/ monitoring program to curb the irresponsible users.

- Abuse use of drug was indeed the act of man themselves (public/farmer/feed millers) whom does not follow the usage recommendations, but not the fault of the drug itself.



5/. To allow the representative from veterinary industry in the Poison Board and also the Feed Board. At the same time, Veterinary Drug Prescriptions should be in place as soon as possible to give assurance to the publics.

- **Vet Medicine is rather challenging to provide cares and welfares to both the livestock/animals without neglecting the food safety for men.**
- Vets has extra task to be able to think about the logic between science and humanity together.



THANK YOU