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Letter to the editor **15 April 2016**

CAP reiterates call to ban antibiotics in animal feed

The Consumers Association of Penang (CAP) would like to respond to the points raised by the deputy director-general of the Department of Veterinary Services (DVS) Datuk Dr Quaza Nizamuddin Hassan Nizam in the article by Fazleena Aziz 'DVS monitors use of antibiotics in animal feeds' dated 17 March 2016.

In his statement Dr Quaza said that: 'A low dosage (of antibiotics) is mixed in animal feed to prevent infection, help digestion and stomach absorption to improve growth performance and quality of livestock products'.

It is precisely this routine use of antibiotics in animal feed as a growth promoter and in the prevention of disease and infection that is creating antibiotic resistance which can be transferred to humans. This global public health threat had prompted many countries including the European Union to ban the routine use of antibiotics in animal feeds. Antibiotics should never be abused to prevent disease and to promote growth in animals. They should only be used to manage and treat infections.

Dr Quaza added that the DVS 'is constantly monitoring and controlling the use of antibiotics in animal feed, as part of the national monitoring system'.

This is hardly reassuring. As far as CAP is aware there is no routine monitoring of antibiotics used in veterinary medicine unlike the monitoring of antibiotics used in human medicine in public hospitals in Malaysia.

While drugs used in humans or animals are registered with the Drug Control Authority, animal feed containing drugs is **exempted** from registration requirements. CAP is wondering, how in the absence of any regulatory control of antibiotics in animal feeds the DVS is able to monitor and control its use.

Over the years CAP has in its surveys found the indiscriminate use of antibiotics in commercial poultry and pig farms and the sale of antibiotics in shops selling animal feed. The most recent was in January 2016 in Kedah and Perlis, CAP found Erythromycin to be widely available in shops selling animal feed. CAP was informed that the antibiotic is recommended to be routinely fed to animals as a growth promoter.

Dr Quaza adds that since 2010 'only 0.13 per cent of five out of 3,750 livestock food samples (sic) showed positive signs of permitted antibiotics.' The fact that there are antibiotics residues in our meats is mind boggling when they should not be there in the first place. As well, Dr Quaza has conveniently sidestepped the problem of antibiotic resistant bacteria in our meats and food animals which was CAP's main focus.

The serious problem of antibiotic resistant bacteria in our meats and farm animals is revealed in a preliminary study carried out by DVS itself in 2012. It showed:

- Livestock (chicken): Thirty-eight isolates of different species of *Salmonella* were taken from chicken cloacal swabs for antimicrobial susceptibility testing. These cloacal swabs were from a SALT* supervised and certified farm located in central Malaysia.

The study found 13.5% Tetracycline-resistant *Salmonella*; 5.4% Polymixin B and Erythromycin-resistant *Salmonella*; and 2.7% Chloramphenicol, Penicillin G and Trimethoprim-resistant *Salmonella*.

*SALT (Skim Amalan Ladang Ternakan) was introduced in 2003 by DVS, to ensure farms practising Good Animal Husbandry Practices (GAHP) produce safe and wholesome food of good quality, in sustainable and environmentally friendly conditions. It is awarded to farms that meet the criteria of GAHP, animal health management, bio-security, good infrastructure and prudent use of drugs.

- Food samples: Forty-three isolates of different species of *Salmonella* were tested from food samples such as beef, mutton and chicken. Some 62.8% of *Salmonella* was isolated from imported products (44.2% beef and 18.6% chicken).

- More than half of the domestic chickens harvested from the SALT- certified farm in this study were found to be resistant to Ampicillin, Sulphonamide and Tetracycline. The situation was even worse with imported chicken: the study found that 87.5% of bacteria were Ampicillin-resistant; 75% were Nalidixic Acid-resistant; and 50% were Streptomycin and Sulphonamide-resistant.

It is clear from this preliminary DVS study that there are problems with the SALT-certification scheme. The evidence shows that the SALT certified farms are deficient and not up to standard.

These findings have grave implications for public health. Antibiotics which are purportedly life-saving drugs for the treatment of many human infections have become ineffective or useless by virtue of the fact that food animals harbour these antibiotic resistant bacteria.

The DVS study also has implications for multidrug resistance. There are indications that resistance has spread across several classes of drugs. This essentially means that if a person becomes ill, doctors will either have fewer drug options for his/her treatment or treatments with more expensive drugs will have to be used.

To place this within context, currently according to the Ministry of Health – (MOH), there are 97 different drugs registered for use in poultry, pig farms, cattle and goat farms. Some of these fall under *WHO's Critical Important Antimicrobials Criteria*. These drugs identified by WHO are critically important for human health and their use needs to be restricted in the veterinary sector.

In fact more than half of the antibiotics registered with the MOH for food animals are **not** recommended for veterinary use by WHO. They include Ampicillin, Amoxillin, Cefadroxil, Chlortetracycline, Oxytetracycline, Doxycycline, Sulfadiazine, Sulfadimethoxine, Erythromycin, Spiramycin, Neomycin, Gentamicin and Flumequine.

With respect to the contamination of burger patties with *Listeria monocytogenes*, Dr Quaza supposes that this contamination could be water and soil-related and not from livestock. CAP was in fact referring to the matter of multidrug-resistant strains of *Listeria monocytogenes* in frozen patties taken from supermarkets and other retail outlets.

CAP's statement is supported by research conducted in Malaysia:

- Researchers examined the susceptibility of *L. monocytogenes* isolated from raw beef, chicken and vegetarian patties to 11 different antibiotics. Thirteen out of 41 bacteria samples or isolates were not resistant to any of the antibiotics, while 28 were resistant to at least one and 19 were resistant to at least two antibiotics. Tetracycline followed by Erythromycin resistance were the most common forms of resistance.

- Live chickens sold at wet markets in Selangor tested positive for *Campylobacter*. Most frequently observed resistance was to Cephalothin, Tetracycline, Erythromycin, Enrofloxacon and Gentamicin. More than a third of bacteria samples showed multidrug resistance.

The above studies are contained in a CAP-TWN Memorandum entitled 'Antibiotic Use and Antibiotic Resistance in Food Animals in Malaysia: A Threat to Human and Animal Health' dated 10 October 2013,

which was sent to the Ministry of Agriculture on 28 November 2013. A copy of the memorandum was also handed to the Minister of Agriculture, YB Dato' Seri Ismail Sabri bin Yaakob, when he visited CAP to launch CAP's Urban Farming Project on 29 June 2015. CAP is still awaiting the Ministry's response.

Contrary to what Dr Quaza asserts human and agricultural activities have greatly impacted our soils (and waters) with veterinary drugs and antibiotic resistant bacteria. In a recent study (2014):

- Broiler manure and agriculture soil samples from Selangor, Negeri Sembilan, and Melaka were shown to be contaminated with antibiotics. Broiler manure had high concentration of at least six drugs which were detected in every soil sample.

  This indicates that the antibiotics given to animals are at high concentration and excreted. It shows that the soils are contaminated by veterinary drugs through animal manure.

- A 2007 study showed antibacterial resistance in *E. coli* from clinical, marine, river, food and animal sources revealed multiple drug resistance, with higher rates of resistance against Tetracycline, Kanamycin, Chloramphenicol, Gentamicin, Ampicillin – drugs important in human and animal health and used in feed additives.

Increasingly the environment is contaminated not just with drugs but multidrug resistant bacteria which show higher rates of resistance against drugs used in human and animal health, and feed additives.

It raises questions regarding the effectiveness of veterinary supervision (or if there is indeed any) of antibiotic use in farm animals and the challenges that the DVS faces in dealing with problems of antibiotic resistance containment.

In November last year *The Lancet* reported the emergence of a Colistin resistance gene that is readily passed between common bacteria carried by both pigs and people in China. This means that resistance can be transferred between bacteria and across bacterial species. Colistin (or polymyxins) is now the last resort drug for infections caused by multidrug resistant bacteria such as *E.coli*. This gene now makes Colistin ineffective.

Colistin is often given to farm animals to prevent infections and promote growth. The nightmare is that this gene (MCR-1) is creating a 'pan resistant' superbug capable of defeating every antibiotic available. The threat to public health worldwide is enormous.

There is now evidence to suggest it has now spread beyond China to at least a dozen countries and Malaysia.

As can be seen, the DVS national monitoring and control of the use of antibiotics in farm animals and meat products leaves much to be desired.

CAP reiterates its call to the Malaysian Government to ban the use of antibiotics in animal feed in light of the catastrophic threat to public health from antibiotic resistance both nationally and globally.

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