

**Legislative Council Panel on Health Services**

**PROPOSED NEW REGULATION TO CONTROL THE FEEDING OF  
DRUGS AND CHEMICALS TO FOOD ANIMALS**

**INTRODUCTION**

This paper seeks Members' views on the proposed legislative control on the feeding of drugs and chemicals to food animals.

**BACKGROUND**

2. Feeding drugs and chemicals to food animals can leave residues in meat, offal and other animal parts. It is necessary to ensure that these food items remain safe for human consumption. However, there is currently no specific legislation to regulate the feeding of drugs and chemicals to food animals and the quality of animal feed supplied.

3. The need to control the feeding of drugs and chemicals to food animals has become apparent with the occurrence of clenbuterol poisoning in the past few years. At the moment, the problem is controlled through measures implemented with the agreement of the food animal industry and the Mainland authorities. These procedures were presented to the Panel on 16 October 2000 (Paper CB(2)57/00). The percentage of pork and offal samples found positive of Clenbuterol residues decreased from 6.6% in 1998 (out of a total of 3,100 food surveillance samples) to 1.1% in the first nine months of 2000 (out of a total of 3,011 samples). The recent cases of clenbuterol poisoning in early October demonstrate that control over the use of this chemical in farms needs to be strengthened.

4. Sections 52 and 54 of the Public Health and Municipal Services Ordinance make it an offence to sell food which is not of the nature, substance or quality demanded by the purchaser or unfit for human consumption. The Ordinance, however, imposes no specific safety standards on residues of drugs and chemicals (except for the prohibition of the use of four hormones as listed in the Harmful Substances in Food Regulations) in meat and other food products of animal origin, e.g. eggs and milk. Food and Environmental Hygiene Department (FEHD) has to prove to the court on each occasion that the presence of residues of particular drugs and chemicals in meat or other animal food products is indeed to the prejudice of a purchaser in order to prosecute the sellers of the products. This is costly and time-consuming. Above all, the law does not provide for the tracing back of the responsibility to the origin of the problem, i.e. the farm level.

5. The Antibiotics Ordinance specifically excludes feeding antibiotics to animals from its control. The Pharmacy and Poisons Ordinance prevents the use of unregistered pharmaceuticals but does not regulate their usage as feed additives once registered.

## **THE PROPOSAL**

6. We propose to introduce a new regulation under the Public Health (Animals and Birds) Ordinance to control the feeding of drugs and chemicals to food animals. The new regulation will provide for the following:

- (a) to stipulate a list of prohibited chemicals, and a list of other drugs and chemicals together with the respective "Maximum Residue Limits" (MRL) in meat and tissues;
- (b) to create offences for keeping food animals that contain prohibited chemicals, or for sending for human consumption animals that contain residues of other drugs and chemicals exceeding the MRL. Food animals refer to animals (warm-blooded vertebrates, except man, and reptiles) or birds as defined in the main Ordinance commonly kept for the purpose of providing food to humans, including pigs, cattle, goats and poultry. Agriculture, Fisheries and Conservation Department (AFCD) will issue guidelines for food animal keepers on how to comply with the proposed Regulation;
- (c) to prohibit the possession by food animal keepers of prohibited chemicals and animal feed containing prohibited chemicals and to prohibit the supply of these to food animal keepers;
- (d) to require animal feed suppliers to list the names and respective amounts of chemicals contained in their products, the instructions for use and the withholding period. This is to ensure farmers have a clear idea of what they are feeding to their food animals;
- (e) to require farmers to identify their food animals by tattoo or tags where practicable to enable AFCD to trace back to the farm of origin;
- (f) to require certification by the competent veterinary authority of the exporting countries/places to safeguard that the imported food animals do not contain prohibited chemicals or residues of other drugs and chemicals in excess of MRL. At present, a similar procedure already applies to pigs, cattle and goats as an administrative arrangement agreed with the Mainland authorities; and

- (g) to empower Director of Agriculture, Fisheries and Conservation (DAFC), acting on laboratory data or other information, to suspend temporarily the import and sale of food animals and animal feed suspected of contamination to allow for further investigation and to order recall of food animals / feed. Other information may include advice received from an overseas veterinary authority stating that there is good reason to believe that food animal or feed may be contaminated with a chemical (e.g. the Belgian dioxin case). The main Ordinance provides for appeals against decision of any person entrusted with power including DAFC to be referred to the Chief Executive in Council unless court proceedings have already been taken place.

### **Prohibited Chemicals**

7. We intend to prohibit seven chemicals (see Table - below) and specify Maximum Residue Limits in meat and tissues for 37 antibiotics and antibacterial compounds (see Annex) initially.

Beta-agonists  
Clenbuterol  
Salbutamol

Antibiotics  
Avoparcin  
Chloramphenicol

Synthetic Hormones  
Dienoestrol  
Diethylstilboestrol  
Hexoestrol

8. Clenbuterol and salbutamol have been used in livestock to increase the amount of lean meat and reduce the amount of fat. Residues of these chemicals can remain in meat and edible offal for some time and cause acute poisoning in man. Since 1998 there have been 45 such incidents in Hong Kong involving 100 people, all resulted from consumption of tainted offal.

9. The antibiotic avoparcin has been used as a growth promotant in livestock feed. It has been shown to induce cross-resistance to the antibiotic vancomycin in enterococci, the drug of choice for life-threatening infections with these bacteria. The

European Union has banned the use of avoparcin in animals. The manufacturer of the drug has also withdrawn it from sale.

10. Chloramphenicol is banned for use in livestock in most countries. In man this drug can cause irreversible depression of bone marrow leading to severe anaemia, even at very low doses. Any residues of this drug in food represent an unacceptable health risk to the public.

11. Synthetic oestrogenic compounds have been used to encourage growth and to improve carcass quality. Use of these chemicals in livestock is banned in most countries because they can cause cancer in man.

### **Agricultural and Veterinary Chemicals with Maximum Residue Limits**

12. There is always a need to administer suitable chemicals to livestock to ensure their health and well being to maximize production. These chemicals should not normally leave a significant amount of residues in meat and offal and pose a public health risk if they are administered according to recommended dose rates and withheld from animals for a prescribed period before slaughter.

13. The Codex Alimentarius Commission (Codex), the internationally recognised authority on matters relating to food standards, has set Maximum Residue Limits (MRLs) for a number of these chemicals. The European Union and some other developed countries have also developed MRLs on other chemicals of concerns based on scientific assessment of the risk arising from the consumption of residues.

14. We primarily refer to the Codex in compiling the control list. Where Codex values are not available, we consider values developed by others, including the European Union, the Mainland, USA, and Australia.

15. To facilitate more effective enforcement against sellers of meat containing prohibited chemicals or residues of other drugs and chemicals exceeding the "Maximum Residue Limits", the Harmful Substances in Food Regulations of the Public Health and Municipal Services Ordinance would also be amended simultaneously to incorporate the above-mentioned safety standards. With stipulation of prohibited chemicals and specific standards on residues of other drugs and chemicals in the legislation, more effective law enforcement could be carried out as the authority would no longer rely solely on section 52 or section 54 of the Public Health and Municipal Services Ordinance as described in paragraph 4 above.

### **Phased Implementation**

16. Subject to further study, we will then bring in control on other drugs and chemicals including anthelmintics, growth promotants, pesticides and environmental contaminants.

### **Consultation**

17. We started consultation on the proposed regulation in August. This has involved farmers, food animal traders and importers, animal feed traders and importers, veterinarians and public health professionals. Special briefing sessions have been held for farmers. There is widespread support for the introduction of tighter control over the use of drugs and chemicals in feeding food animals. Farmers generally agree with the need for the tighter control under the new Regulation as long as it is a fair system and they are given clear guidelines.

### **ADVICE SOUGHT**

18. Members are invited to comment on the legislative control proposed in paragraphs 6 - 16 above.

**Agriculture, Fisheries and Conservation Department /  
Environment and Food Bureau**

**November 2000**

### Maximum Residue Limit (MRL) of Agricultural and Veterinary Chemicals

Drug	Food animal species	Tissue	MRL
<b>Amoxicillin</b>	All food animals	Muscle	50 µg/kg
		Liver	50 µg/kg
		Kidney	50 µg/kg
		Milk	4 µg/kg
<b>Ampicillin</b>	All food animals	Muscle	50 µg/kg
		Liver	50 µg/kg
		Kidney	50 µg/kg
		Milk	4 µg/kg
<b>Bacitracin</b>	Bovine, Porcine, Poultry	Muscle	500 µg/kg
		Liver	500 µg/kg
		Kidney	500 µg/kg
	Bovine	Milk	500 µg/kg
<b>Benzylpenicillin</b>	All food animals	Muscle	50 µg/kg
		Liver	50 µg/kg
		Kidney	50 µg/kg
		Milk	4 µg/kg
<b>Carbadox</b>	Porcine	Muscle	5 µg/kg
		Liver	30 µg/kg
<b>Ceftiofur</b>	Bovine	Muscle	1000 µg/kg
		Liver	2000 µg/kg
		Kidney	6000 µg/kg
		Milk	100 µg/kg
	Porcine	Muscle	1000 µg/kg
		Liver	2000 µg/kg
<b>Chlortetracycline</b>	All food animals	Muscle	100 µg/kg
		Liver	300 µg/kg
		Kidney	600 µg/kg
		Milk	100 µg/kg

<b>Drug</b>	<b>Food animal species</b>	<b>Tissue</b>	<b>MRL</b>
<b>Cloxacillin</b>	All food animals	Muscle	300 µg/kg
		Liver	300 µg/kg
		Kidney	300 µg/kg
		Milk	30 µg/kg
<b>Colistin</b>	Bovine, Porcine, Poultry	Muscle	150 µg/kg
		Liver	150 µg/kg
		Kidney	200 µg/kg
		Milk	50 µg/kg
<b>Danofloxacin</b>	Bovine	Muscle	200 µg/kg
		Liver	400 µg/kg
		Kidney	400 µg/kg
	Porcine	Muscle	100 µg/kg
		Liver	50 µg/kg
		Kidney	200 µg/kg
	Poultry	Muscle	200 µg/kg
		Liver	400 µg/kg
		Kidney	400 µg/kg
<b>Dicloxacillin</b>	All food animals	Muscle	300 µg/kg
		Liver	300 µg/kg
		Kidney	300 µg/kg
		Milk	30 µg/kg
<b>Dihydrostrepto-mycin</b>	Bovine, Porcine, Poultry	Muscle	500 µg/kg
		Liver	500 µg/kg
		Kidney	1000 µg/kg
	Bovine	Milk	200 µg/kg
<b>Dimetridazole</b>	Porcine	Muscle	5 µg/kg
		Liver	5 µg/kg
		Kidney	5 µg/kg
	Poultry	Muscle	5 µg/kg
		Liver	5 µg/kg
		Kidney	5 µg/kg
<b>Doxycycline</b>	Bovine, Porcine, Poultry	Muscle	100 µg/kg
		Liver	300 µg/kg
		Kidney	600 µg/kg

<b>Drug</b>	<b>Food animal species</b>	<b>Tissue</b>	<b>MRL</b>
<b>Enrofloxacin</b>	Bovine	Muscle	100 µg/kg
		Liver	300 µg/kg
		Kidney	200 µg/kg
	Porcine, Poultry	Milk	100 µg/kg
		Muscle	100 µg/kg
		Liver	200 µg/kg
<b>Erythromycin</b>	Bovine, Porcine, Poultry	Kidney	300 µg/kg
		Muscle	400 µg/kg
		Liver	400 µg/kg
	Bovine	Milk	40 µg/kg
<b>Flumequin</b>	Bovine, Porcine, Poultry	Muscle	500 µg/kg
		Liver	500 µg/kg
		Kidney	3000 µg/kg
<b>Furaltadone</b>	Porcine, Poultry	Muscle	0 µg/kg
<b>Furazolidone</b>	Bovine, Porcine, Poultry	Muscle	0 µg/kg
		Liver	0 µg/kg
		Kidney	0 µg/kg
<b>Gentamicin</b>	Bovine, porcine	Muscle	100 µg/kg
		Liver	2000 µg/kg
		Kidney	5000 µg/kg
	Bovine	Milk	200 µg/kg
	Poultry	Muscle	100 µg/kg
		Liver	100 µg/kg
		Kidney	100 µg/kg
<b>Ivermectin</b>	Bovine	Liver	100 µg/kg
	Porcine	Liver	15 µg/kg
<b>Josamycin</b>	Poultry	Muscle	200 µg/kg
		Liver	200 µg/kg
		Kidney	400 µg/kg



<b>Drug</b>	<b>Food animal species</b>	<b>Tissue</b>	<b>MRL</b>
<b>Kitasamycin</b>	Porcine, Poultry	Muscle	200 µg/kg
		Liver	200 µg/kg
		Kidney	200 µg/kg
<b>Lincomycin</b>	Bovine, Porcine, Poultry	Muscle	100 µg/kg
		Liver	500 µg/kg
		Kidney	1500 µg/kg
	Bovine	Milk	150 µg/kg
<b>Metronidazole</b>	Porcine, Poultry	Muscle	0 µg/kg
		Liver	0 µg/kg
		Kidney	0 µg/kg
<b>Neomycin</b>	Bovine, Porcine, Poultry	Muscle	500 µg/kg
		Liver	500 µg/kg
		Kidney	10000 µg/kg
	Bovine	Milk	500 µg/kg
<b>Oxolinic acid</b>	Bovine, Porcine, Poultry	Muscle	100 µg/kg
		Liver	150 µg/kg
		Kidney	150 µg/kg
<b>Oxytetracycline</b>	All food animals	Muscle	100 µg/kg
		Liver	300 µg/kg
		Kidney	600 µg/kg
		Milk	100 µg/kg
<b>Sarafloxacin</b>	Poultry	Muscle	10 µg/kg
		Liver	80 µg/kg
		Kidney	80 µg/kg
<b>Spectinomycin</b>	Bovine, Porcine, Poultry	Muscle	500 µg/kg
		Liver	2000 µg/kg
		Kidney	5000 µg/kg
	Bovine	Milk	200 µg/kg
<b>Streptomycin</b>	Bovine, Porcine, Poultry	Muscle	500 µg/kg
		Liver	500 µg/kg
		Kidney	1000 µg/kg
	Bovine	Milk	200 µg/kg

<b>Drug</b>	<b>Food animal species</b>	<b>Tissue</b>	<b>MRL</b>
<b>Sulfonamides</b>	All food animals	Muscle	100 µg/kg
		Liver	100 µg/kg
		Kidney	100 µg/kg
		Milk	100 µg/kg
<b>Tetracycline</b>	All food animals	Muscle	100 µg/kg
		Liver	300 µg/kg
		Kidney	600 µg/kg
		Milk	100 µg/kg
<b>Tiamulin</b>	Porcine	Muscle	100 µg/kg
		Liver	500 µg/kg
	Poultry	Muscle	100 µg/kg
		Liver	1000 µg/kg
<b>Trimethoprim</b>	Bovine, Porcine, Poultry	Muscle	50 µg/kg
		Liver	50 µg/kg
		Kidney	50 µg/kg
		Milk	50 µg/kg
<b>Tylosin</b>	Bovine, Porcine, Poultry	Muscle	200 µg/kg
		Liver	200 µg/kg
		Kidney	200 µg/kg
		Milk	50 µg/kg
<b>Virginiamycin</b>	Porcine	Muscle	100 µg/kg
		Liver	300 µg/kg
		Kidney	400 µg/kg