

VETERINARY DRUG RESIDUES IN HONEY

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Introduction

There are a number of aspects to this subject and I will comment on them in turn. Firstly, there is the fact of drug use and the extent of its use. There are the underlying commercial aspects from the beekeeper's point of view. There is the legal aspect and there are consumer perceptions. The overriding issue is the importance of bees to the environment.

The European Union imports about half of the honey it consumes. Honey is a global commodity, albeit a small one. Consequently beekeepers are subject to the vagaries of the world price. In this situation one must expect that EU beekeepers will do all they can to exclude imports and keep the price as high as possible. The suspension of the importation of Chinese animal products because of the presence of chloramphenicol, an Annex IV substance, has had this effect.

In this lecture I am not going to discuss the anti-varroa drugs. Maximum Residue Limits (MRLs) have been set for them and they are mostly oil-soluble, any residues mainly occurring in the beeswax, not the honey.

Veterinary drug use.

As a result of the chloramphenicol problem UK packers have been checking every container load of honey, from whatever source for chloramphenicol, streptomycin, tetracyclines and sulphonamides. Nearly all Chinese honey contained chloramphenicol and was destroyed or returned or is sequestered, so results on Chinese honeys that arrived before the suspension have not been included.

The results are not representative of the honey from each country but they are representative of the honey offered for export to the UK.

The results show that beekeepers in the European Union use antibiotics no more and no less than beekeepers in exporting countries. We all have to work together to resolve this issue. EU beekeepers cannot escape from their responsibility, pretend the analyses are wrong or try to blame imports. EU beekeepers must face up to the situation they have, in part, created. We are all in this together. While the presence of a residue such as a tetracycline at an extremely low, parts per billion level is not a public health issue, one has to consider what effect this has on consumer perceptions. The UK Food Standards Agency set an Action Level of 50 parts per billion for tetracyclines, streptomycin and sulphonamides, above which consignments must be rejected and indeed are rejected.

NOTE: The views expressed in this lecture are solely those of the author and do not represent the views of The British Honey Importers and Packers Association, The European Federation of Honey Packers and Distributors nor the International Honey Commission.

Beekeeping Economics

As far as I can find in the literature, no proper study has been made of the economic effect of using antibiotics versus not using them. There is much anecdotal evidence that a prophylactic dose will help a colony to increase more quickly in the spring but no numerical data. I suggest it is important to quantify the benefits, if there are any, from using antibiotics in order to provide a basis for arguments that either we should use antibiotics and obtain MRLs for them, or we should abandon the use of them. I do not believe use will stop voluntarily until beekeepers can be convinced that the use is of no advantage. This research should be funded by the EU, largely because of the importance of beekeeping to the environment, to pollination and biodiversity and to rural social groups.

The Legal Position

Streptomycin, tetracyclines and sulphonamides are regarded as safe for use in animals and MRLs, often of several hundred parts per billion, have been set for their occurrence in beef, lamb and pork meats. There is no issue of public health. The lack of MRLs for antibiotics in honey is because the antibiotic manufacturers have not seen the apiculture market commercially interesting enough to submit data to the European Medicines Evaluation Agency (EMA) and obtain Marketing Authorisations. This applies not only to bees but also to other so-called 'minor species' such as rabbits and deer.

There are two ways of moving towards an easier regime in relation to antibiotic residues. One is to work with the manufacturers to provide data to the EMA. The manufacturers have a federation, FEDESA and FEEDM is looking at the possibility of working with them and other interested parties. The other possibility is to encourage the Commission to bring in changes in the legal framework and to speed up this process. The Commission is aware that the present legal situation is not satisfactory but other matters are being given priority.

Consumer Perceptions

No survey of consumer perceptions has been carried out in the EU in recent years. Most of us in the industry think consumers regard honey as a pure, natural product free from any residues at all. Beekeepers, packers, retailers and importers need to have a common approach to this aspect. Would honey sales go down if consumers knew of the possibility of these residues in honey, even though there is no risk to health? It must be remembered that the table of results shown above is in parts per billion, one part in a thousand million. These are vanishingly low concentrations. How much does the consumer care?

Conclusion

We are in the early decades of a disaster. Mankind is sending species to extinction at a speed not seen since the extermination of the dinosaurs 65 million years ago. We do

not yet know the full consequences of destroying the natural world at this speed but it is clearly important to do everything possible to maintain biodiversity. Pollination is an essential part of the ecology and bees are the most important pollinators. It is therefore extremely important that beekeeping is supported in every country of the world, not just in the EU.

It follows that beekeeping economics must be thoroughly researched and understood and the results disseminated to the beekeepers. The EU Commission should finance such studies under the VIth Framework. Part of the study should determine the commercial consequences of beekeeping with and without antibiotic use. If such use offers significant economic advantages to beekeepers, who are usually on low incomes in rural areas, then such use must be made legal. If there is no economic advantage, the practice could cease. The EU Commission should also pay for training of beekeepers in the countries which export to the EU as well as beekeepers in member states. Consumer perception and the possible effects on honey consumption is an important factor when considering legalising drug use.

FEEDM is pursuing the possibility of MRLs being set at least as a temporary measure. It is to be hoped that COPA-COGECA and any other interested parties will be able to co-operate in achieving the best conclusion for all concerned.

The principle of subsidiarity seems to have been applied to Action Levels. The effect is that, for example, the limit of detection (LOD) is used to reject honey containing chloramphenicol but the LOD used in UK is 0.3 ppb, in Belgium 0.05 ppb and in Germany it varies from one Land to another, from 0.05 ppb to 0.3 ppb. In Germany the Action Level on sulphonamides is the LOD, around 10 ppb, while in UK it is 50 ppb. This level also applies to streptomycin in UK but in Germany a limit of 20 ppb is imposed on the basis that it is a pesticide (against fireblight).

Commercial laboratories no longer publish their methods of analysis but report limits of detection lower than the EU Commission official reference laboratory. The reference laboratory should publish its methods and the limits of detection of those methods should be accepted by the authorities. Action Levels must be above those limits of detection. Also the Commission Reference Laboratories should be developing methods for the other Annex IV substances as a matter of urgency.