

6th Session of the Meeting of Parties

Prague, Czech Republic, 20 – 22 September 2010

Resolution 6.15

Impact on Bat Populations of the Use of Antiparasitic Drugs for Livestock



The Meeting of the Parties to the Agreement on the Conservation of Populations of European Bats (hereafter “the Agreement”),

Recalling paragraph 8 of Article III of the Agreement text (“Each Party shall, wherever appropriate, consider the potential effects of pesticides on bats when assessing pesticides for use,...”);

Recalling paragraph 23 of the Conservation and Management Plan agreed at the first Meeting of Parties to EUROBATS (EUROBATS.MoP1.Report.Annex K), which states “The impact of pesticides such as antiparasitic drugs should be carefully assessed and the appropriate advice given to land managers to avoid possible deleterious effects on bats”.

Further recalling that this concern has been incorporated into subsequent Conservation and Management Plans compiled at EUROBATS Sessions of the Meeting of Parties;

Recognising that a number of these antiparasitic drugs (Endectocides, mainly avermectins and milbemycins) can have serious impact on the insect fauna associated with the dung of treated animals;

Further recognising that such impacts on the insect fauna will have impacts on bat species that prey particularly on such insects;

Noting that the use of these drugs is of conservation concern for a wide range of fauna and flora;

Further noting EU Directive 2001/82/EC of the Council of 6 November 2001 requiring that any new such product must be tested for its impacts on dung fauna;

Noting that for most purposes less toxic products or non-chemical treatments may be available;

Concerned that firm data on the direct effects on bats are not available;

Urges Parties and Range States to take a precautionary approach with respect to the use of antiparasitic treatments and in doing so to consider the following recommendations:

1. Limit the impact of antiparasitic treatments through the use of products of least toxicity to non-target species, but appropriate for the purposes of treatment and through timing of treatment and animal husbandry practices;
2. Avoid the use of antiparasitic sustained-release bolus treatments as far as practicable;
3. Adopt or encourage the development of efficient non-chemical methods to control livestock parasites;
4. Keep the home range of young bats of key species free of avermectins as far as practicable (e.g. up to 1.5 km of important maternity roosts of horseshoe bats);
5. Avoid as far as practicable treatment with avermectins of grazing animals in land managed for conservation;
6. Maintain an up-to-date list of antiparasitic drugs used for livestock and their relative toxicity;
7. Raise awareness of the concerns with land managers, livestock managers and veterinarians;
8. Encourage research to reduce impact of treatments;
9. Adopt the more detailed management recommendations provided in Annex 1.

Management Recommendations to reduce the impact on bat populations of the use of antiparasitic drugs for livestock.

1. Key bat species most likely to be affected by the use of antiparasitic drugs with high toxicity to invertebrate fauna of livestock dung.

Species:

Rhinolophus ferrumequinum

Rhinolophus hipposideros

Rhinolophus mehelyi

Eptesicus nilssonii

Eptesicus serotinus

Myotis blythii

Myotis myotis

Myotis punicus

Nyctalus leisleri

Nyctalus noctula

Pipistrellus pipistrellus

2. Management Recommendations

Three major groups of mechanisms exist to reduce the impact of antiparasitic drugs on dung fauna.

The first group includes all the "best agricultural (management) practices", and concerns all the actions that can be taken at the farm level to reduce the infestation pressure. This involves a good knowledge and understanding of the field conditions, the medical history of the animals and the parasite cycles. So, several practices can avoid a high parasite pressure and hence reduce the use of drugs:

- Pasture rotation,
- Hygiene of herd, in the environment (e.g. isolation of zones of high-parasite risk) and the cowshed,

- Monitoring of the climatic conditions to predict parasite infestations,
- Control of the parasites' vectors (mechanical/biological control),
- Mowing of some pastures.

Further investigation of these measures could be very useful to avoid the use of drugs and hence the consequent environmental toxicity and the development of resistance.

The second group of mechanisms involves the "targeted monitoring of animal health". This category will provide optimal conditions for the animals to stay healthy. So, selection of naturally more resistant animals, food supplements, mixed grazing (cow/sheep; cow/horse; sheep/horse), low stock rate (<1LU[Livestock Unit]/ha) and non-chemical treatments will encourage a lower infestation pressure, a faster gain of immunity and hence better health of the animals. The aim of these mechanisms is to strengthen the animals so they can stay healthy.

The third and last group of mechanisms concerns only the choice and the use of chemical veterinary medicinal products. It is very important at this point to understand that to choose a drug to treat an animal is only the 3rd solution in the good parasite management of a herd. So, different issues have to be considered:

- Drugs less toxic for dung fauna should be chosen;
- Monitoring of the herd through faecal egg counts or pepsinogène dosage;
- Oral formulations should be chosen in preference to all others;
- Application by bolus should be avoided;
- Chemical treatment should be timed to cause minimum impact (not applied between the 1 March and 31 August);
- The way the drug should be administered is described in the product packaging. These instructions should be followed strictly!
- If treated, animals should be kept indoors for about one month after treatment.

In general, application by bolus should be avoided. For example treatment with sustained-release bolus containing ivermectin can cause risks for Diptera (especially Muscidae and Scathophagidae) for up to four months after application. Impacts are less on adult scarabaeid beetles, but increased in larvae; larvae of *Onthophagus*, *Euoniticellus*, *Copris*, *Onitis* and *Aphodius* may be affected for more than 140 days.

Avoid the use of antiparasitic drugs of high toxicity to invertebrate fauna of livestock dung. Moxidectin (a milbemycin) is a product with similar activity to ivermectin (an

ivermectin), but having almost no effect on Diptera and Coleoptera. On the other hand, the organophosphate Dichlorvos, mainly applied to horses, is particularly dangerous with the main period of impact for the first ten days after application. Restrict the use of avermectins (doramectin, ivermectin or eprinomectin) to housing of the livestock or in the autumn (when the main dung insect breeding season is over). Treat livestock with any appropriate non-ivermectin product or moxidectin. Many problems can be avoided where animals can be kept indoors for about four weeks after treatment (as is common particularly in northern latitudes).

Graze ivermectin-treated livestock in fields close to others containing untreated animals. Problems may be particularly acute where treatment is applied over a wide area at the same time and where treatments cannot be applied while animals are kept indoors (and this may be particularly applicable to Mediterranean countries). At least some beetle species will avoid dung of treated animals, so where untreated dung is within range of the beetles, the beetles will be able to maintain themselves.

Treat livestock only when necessary and avoiding treatment of older animals if they are not susceptible to the parasite of concern (this may include assessment of parasite burdens before treatment, e.g. by faecal egg count assays or FAMACHA);

In general, treatment with antiparasitic drugs should be timed to cause minimum impact. Alter (if appropriate from an animal health perspective) the timing of ivermectin treatment to avoid the period when residues in the dung coincide with key foraging periods of the vertebrates);

Keep the home range of young bats of key species free of ivermectins as far as practicable (e.g. up to 1.5 km of important maternity roosts of horseshoe bats);

As far as possible do not treat grazing animals in land managed for nature conservation with products more toxic to invertebrate fauna of dung;

Maintain an up-to-date list of antiparasitic drugs used for livestock treatment and their relative toxicity.

The use of non-chemical treatments (e.g. diatomaceous earth, herbal supplements) is being increasingly accepted and should be encouraged.

Carry out further investigation of alternative treatments to reduce impact. Such measures might include pasture rotation, biocontrol, targeted treatment to limit resistance, hygiene, breeding, vaccines, 'management'.