

11th Meeting of the Advisory Committee

City of Luxembourg, Luxembourg, 8 – 10 May 2006

Report of Intersessional Working Group on Impact on bat populations of use of antiparasitic drugs for livestock



Members

The following delegates were registered as members of the group as at AC10 (Bratislava, April 2005): Tony Hutson - UK (Convenor), Stefania Biscardi – Italy, Colin Catto – UK, Aurora Dibra – Albania, Marie-Jo Dubourg-Savage – France, Christine Harbusch – Germany, Peter Lina – Netherlands, Jacques Pir – Luxembourg, Roger Ransome – UK, Christine Rumble – UK, Dino Scaravelli – Italy, Abigel Szodoray-Paradi – Romania, Libuse Vlasakova – Czech Republic.

Confirmation of continued membership has not been received from Stefania Biscardi or Aurora Dibra. Christine Rumble (UK, Defra) is replaced by Jane Goodwin, Colin Catto (UK, Bat Conservation Trust) is replaced by Katie Parsons.

1. Through its Conservation and Management Plan, Eurobats identified that ‘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’. This was agreed at its first, second and fourth Meeting of Parties [MoP1 (Annex K (CMP), para 23), MoP 2.14 (Annex A, para 23) and MoP 4 (Record, Annex 12a, para 6b)].
2. An Intersessional Working Group (IWG) was formed by the Eurobats’ Advisory Committee (Lithuania 2004) to investigate the impact on bat populations of the use of antiparasitic drugs (endectocides) for livestock, in conjunction with work being carried out under the Bern Convention.
3. These drugs are used for the control of external and internal parasites of a wide range of domesticated farm animals. Concern has been raised that the drugs persist into the faeces of the livestock and affect the normal insect dung fauna which is an important element of the diet of a number of species of bat.

4. The main agreed activities of the group were

- 1) to establish current practices throughout Europe via a questionnaire,
- 2) to carry out a literature review,
- 3) to identify the bat species most likely to be affected by the use of these drugs,
- 4) to identify any international initiatives or the presence of wider conservation concerns about the use of these drugs,
- 5) to identify any future action that Eurobats should pursue regarding the effect on bats of the use of these drugs.

5. *Questionnaire*

A questionnaire and covering note were distributed at the end of 2005 (Annex 1). The questionnaire seeks to identify for individual range states the regulation of the use of such drugs, the drugs approved for use, the animals they are applied to, and the practices relating to application of the drugs.

Responses have been received so far from 16 range states and these are currently being entered into a database for analysis.

It is apparent that this was not an easy issue to address (see discussion below). Further responses would still be welcome.

6. *Bibliography and literature review*

This is still being compiled.

7. *Bat species most likely to be affected*

Comparing bat dietary studies with information on dung fauna, an account of the bat species most likely to be affected by the impact of drugs on their insect prey has been compiled and is presented in Annex 2.

8. *Related international initiatives and other wider conservation concerns*

Although the Bern Convention had discussed the issue in 1998 and considered draft recommendations of a group of experts, there has been no follow-up through the convention. These discussions can be found in T-PVS (98) 18: pp. 83-86, Annexe 5, *Presentation relative a l'usage des endectocides et leur effets sur l'entomofaune* (by Mr le professeur Jean-Pierre Lumaret, Universite Paul Valery Montpellier, France); p. 87,

Annexe 6, *Draft recommendation of the Group of Experts on the consequences of the use of endectocides on non-targeted invertebrates*).

No other such international initiative has been identified. A suggestion to consult the European Invertebrate Survey have not been followed up yet.

National concerns amongst conservation organisations with remit for other groups of animals or plants or for wider conservation have been varied (see discussion below).

9. *General results to date*

Many range states have had considerable difficulty in obtaining information on the drugs used in their country and in the methods of application. A small number of states do not use such drugs, either for reasons of cost or for difficulties of control. Where they are used the main problem is a bewildering range of products used on a wide range of animals and via a wide range of methods of application. It would seem that practices vary widely geographically and perhaps particularly north to south (depending partially on whether animals are kept indoors over winter).

In the UK, both the Royal Society for the Protection of Birds (RSPB) and Buglife – The Invertebrate Conservation Trust have expressed particular concern about the widespread use of such drugs. A recent PhD, carried out with part-funding from the RSPB, suggested that because of the way the drugs were used there was not a major issue in the area studied and that the impact could be reduced by appropriate timing and methods of application and animal husbandry. This study related to one product in one area. There are a few other recent or current studies in UK (e.g. Norfolk Wildlife Trust). Nothing is yet published from these studies. The UK government has recently suspended the licence for the use of cypermethrin in sheep dip through concerns for run off affecting aquatic invertebrates. English Nature has published a case study of the effects of such drugs on the greater horseshoe bat (*Rhinolophus ferrumequinum*).

In general, application by bolus should be avoided. Where animals can be kept indoors for about two weeks after treatment (as is common particularly in northern latitudes) most problems can be avoided. 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. 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).

10. *Proposed future activities for Eurobats*

There needs to be further discussion, including a meeting of the IWG during AC11 in Luxembourg, to decide on the degree of importance of the issue and any geographical variation in that, and on the possible role of Eurobats in developing practice that would remove any threat that these drugs place on bat populations. An alternative is that Eurobats may be able to input into wider concerns e.g. through the (?revised) CBD/CMS joint work programme.

A.M.Hutson

April 2006

Annex 1

Impact on bat populations of the use of antiparasitic drugs for livestock (background)

Through its Conservation and Management Plan, Eurobats identified that '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'. This was agreed at its first, second and fourth Meeting of Parties [MoP1 (Annex K (CMP), para 23), MoP 2.14 (Annex A, para 23) and MoP 4 (Record, Annex 12a, para 6b)].

An Intersessional Working Group (IWG) was formed by the Eurobats' Advisory Committee (Lithuania 2004) to investigate the impact on bat populations of the use of antiparasitic drugs (endectocides) for livestock, in conjunction with work being carried out under the Bern Convention.

These drugs are used for the control of external and internal parasites of a wide range of domesticated farm animals. Concern has been raised that the drugs persist into the faeces of the livestock and affect the normal insect dung fauna which is an important element of the diet of a number of species of bat.

It is the intention of the IWG to produce a report in 2006 for the next Eurobats' Advisory Committee meeting and its 5th Session of the Meeting of the Parties.

We attach a brief questionnaire asking about the use of such drugs in your country and should be most grateful if you would complete this questionnaire and return it to the Eurobats Secretariat by the end of November 2005.

IWG Use of Antiparasitic Drugs (EUROBATS AC 10)

Questionnaire on the use of antiparasitic drugs for livestock

1. Country

2. Respondent (name, address, e-mail)

3. Are antiparasitic drugs used for livestock in your country?*

Yes

No

- compulsory?

- routinely and widely?

- only under special circumstances?

- specify:

4. The application of which substances is approved for use?

5. Which livestock species are treated, and at what age?

Species:

Age:

Species:

Age:

Species:

Age:

Species:

Age:

6. The drug is administered:

- orally

 bolus tablet liquid gel

- through injection

-externally

 spray dip pour-on (drench)

7. During which months is the drug administered?

8. What is the average frequency of drug application?

9. Are the animals in- or outdoors when treated?

 indoors outdoors

10. Are there official guidelines that apply to the use of livestock drugs in your country?

Name of regulation:

Brief statement about the scope of the regulation:

11. Are there guidelines that apply to their use within the boundaries of nature reserves?

12. Can you suggest treatment methods other than antiparasitic drugs?

13. Are you familiar with recent studies on antiparasitic drugs for livestock carried out in your country?

References (including reports):

14. Please, comment on specific problems about gathering of information concerning drugs usage in your country.

15. Further comments

Please complete and return this form to the EUROBATS Secretariat by the end of 15 December 2005.

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Annex 2

Bat species most likely to be affected by impact of drugs on insect prey

Compiled by Christine Harbusch

1. Insect species occurring in herbivore dung (according to Strong 1992, Lumaret 1996):

Coleoptera: Scarabaeidae: **Aphodius** (rufipes,), **Geotrupes** ssp., Onthophagus, Copris, Onitis (European species ?)

Diptera: **Scatophagidae**: Scathophaga, Lucilia

Cyclorrhapha : Muscidae: Musca ssp.

Sepsidae

Sphaeroceridae

Nematocera - species ?

2. Bat species likely to be affected by the use of antiparasitic drugs in livestock on pasture:

Species	Insect prey taxa	References
Rhinolophus ferrumequinum	Aphodius, Geotrupes, Scathophagidae, Muscidae	Beck 1995, Beck et al 1997, Gloor et al 1995, Ransome 1996, Roué & Barataud 1999
R. hipposideros	Diptera (Muscidae, Sphaeroceridae, Scathophagidae), Coleoptera (Scarabaeidae)	Roer & Schober 2001, Roué & Barataud 1999
R. mehelyi	Scarabaeidae, Muscidae	Sharifi & Hemmati 2001
Eptesicius serotinus	Aphodius, Geotrupes	Beck 1995, Catto 1994, Gerber et al. 1996, Harbusch 2003, Kervyn 2001
Nyctalus leisleri	Aphodius, Scathophaga stercoraria	Bogdanowicz & Ruprecht 2004
Nyctalus noctula	Aphodius, Geotrupes	Beck 1995
Myotis myotis	Aphodius, Geotrupes	Güttinger et al. 2001, Roué & Barataud 1999
M. blythii	Scarabaeidae	Roué & Barataud 1999
Eptesicus nilssonii	Aphodius	Gerell, R. & J. Rydell 2001
Plecotus auritus	(Scarabaeidae)	Beck 1995
Plecotus austriacus	Aphodius	Beck 1995
Myotis nattereri	Aphodius	Bauerova & Cerveny 1986
M. punicus	Scarabaeidae (sp.?)	Topál & Ruedi 2001
M. mystacinus	Nematocera, Cyclorrhapha	Tupinier & Aellen 2001
M. emarginatus	Brachycera, Coleoptera (sp.?)	Topál 2001, Roué & Barataud 1999

Species	Insect prey taxa	References
M. nattereri	Brachycera (Muscoidea) Coleoptera (sp.?)	Baagoe 2001
P. pipistrellus	Muscidae	Schober & Grimmberger 1998
M. schreibersii	Brachycera (ssp.?)	Roué & Barataud 1999

Bold : bat species with regular and important use of relevant prey item

normal : species consumes taxa irregularly or only in few numbers; or insect species/family was not defined

Species probably not concerned:

P. kuhlii - no relevant prey item found in feces

P. nathusii - no relevant prey item found in feces

P. pygmaeus - no relevant prey item found in feces -perhaps Scatophagidae, Muscidae?

P. maderensis - no data found - to be pursued

P. savii - no data found - to be pursued

M. dasycneme - no relevant prey item found in feces

M. daubentonii - no relevant prey item found in feces

M. capaccinii - no relevant prey item found in feces

M. brandtii - few data, no relevant prey item found in feces

M. bechsteinii - no relevant prey item found in feces

V. murinus - no relevant prey item found in feces

B. barbastellus - no relevant prey item found in feces

R. euryale - no data found - to be pursued

R. blasii - no data found - to be pursued

N. azoreum - no data found - to be pursued

N. lasiopterus - no data found - to be pursued, but probably affected (Scarabaeidae?)

E. bottae - no data found - to be pursued

Pl. teneriffae - no data found - to be pursued

T. teniotis - no data found - to be pursued, probably not affected

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