



CONSERVATION
TE PAPA ATAWHAI

CONSERVATION ADVISORY SCIENCE NOTES

No. 2

QUESTIONS ON BRODIFACOUM

(Short Answers in Conservation Science)

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Department of Conservation, P O Box 10-420, Wellington, New Zealand



ISSN 1171-9834

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Reference to material in this report should be cited thus:

Eason, C.T., 1992.

Questions on brodifacoum.

Conservation Advisory Science Notes No. 2, Department of Conservation,
Wellington. 2p.



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14 July 1992

Ref: 20/4/5
Enquiries to: Dr C. Eason

Dr Theo. Stephens
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HAMILTON

Dear Dr Stephens

BRODIFACOUM

I have listed your questions in relation to brodifacoum below, and my response is to be found beneath each question.

1. *What happens to brodifacoum when it enters natural water?*

Brodifacoum is most unlikely to occur in water even after aerial application of Talon baits. Unlike 1080; brodifacoum is extremely insoluble in water (<10 mg/litre water at pH.7). When baits disintegrate brodifacoum will remain in the soil where it will be slowly degraded by soil micro-organisms over a period of 3-6 months. In studies conducted by ICI less than 2% of brodifacoum added to soil leached more than 2 cm in a study where four soil types were tested.

Since brodifacoum remains absorbed to soil when baits disintegrate, only the erosion of soil itself would see any brodifacoum reaching water, and even then brodifacoum would remain absorbed to organic material and settle out in the sediment.

2. *For how long might the water supply be contaminated after application?*

Brodifacoum will not migrate from the land to the water supply, hence the chances of any long-term contamination of the water supply are negligible. If baits were sown directly into streams or rivers, localised short-term contamination might occur, however,

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brodifacoum released from baits would bind to organic matter in the sediment rather than run down the streams into the water supply.

3. *Does brodifacoum decomposition generate toxic by-products?*

Brodifacoum itself is highly toxic. Microbial degradation of brodifacoum will result in non-toxic metabolites.

4. *How long should stock be absent from poisoned areas to ensure that there is no brodifacoum in meat which could affect its export value?*

The breakdown of baits will be weather dependent. Stock should not be returned whilst there are intact or partially degraded baits on the ground. At least 1 month or until an inch of rain has fallen is an approximate guide. It is most important that stock do not become contaminated by sub-lethal doses, since brodifacoum residues will persist in the livers of animals for up to 6 months

If there is any doubt whether or not partially degraded baits still contain significant amounts of brodifacoum they should be sent to our toxicology laboratory for analysis before returning stock

5. *When can the water supply be considered safe for domestic consumption?*

As mentioned above, the chances of any significant contamination of water supplies are negligible. Domestic water supplies should be safe at all times. If concerns remain amongst residents, water samples could be analysed at our laboratory. However, I would consider water analysis of limited value since the chances of finding brodifacoum would be extremely remote. Of greater value would be the analysis of baits prior to returning stock (see above).

Yours sincerely



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