

Deliberate Misuse of the Organophosphorous Pesticide, Fenthion-ethyl, to Poison Birds in Victoria

P. B. DU GUESCLIN, W. B. EMISON and I. D. TEMBY

Fifteen incidents of native birds being poisoned by deliberate misuse of the pesticide, fenthion-ethyl, were detected in Victoria between 1972 and 1982. A total of 1 374 birds, representing 15 different species, was found dead at the 15 poison sites. Difficulties in assessing the number of birds being killed in Victoria by this pesticide are discussed.

In Victoria, the use of poisons to kill native game and protected wildlife has been illegal for more than 30 years (Game Act 1958 — superseded, Wildlife Act 1975). Nevertheless, between 1972 and 1982, officers of the Fisheries and Wildlife Division detected 17 cases of the poisoning of birds or the intent to poison birds, by deliberate misuse of agricultural chemicals in Victoria. In 15 of the 17 cases analyses by the Department of Agriculture, Victoria, showed the presence of fenthion-ethyl [O, O-diethyl O-(3-methyl-4-methylthiophenyl) phosphorothioate] in the ingesta of samples of the birds found dead. Fenthion-ethyl is an organophosphorous pesticide sold under the trade name of Luci-Jet (Anon. 1967) and it is registered for use as a jetting and spray-race fluid for the control of blowflies and the eradication of lice and ticks on sheep. In 1981 it specifically became illegal to use fenthion-ethyl as a vermin destroyer for control of birds under Section 10A of the Agricultural Chemicals Act 1958, however, there are still no restrictions on the sale of this pesticide.

In this note we present evidence which shows that in those fifteen incidents which resulted in prosecutions, fenthion-ethyl was most often used alone on a bait, that grain was the bait most often used and that three species of cockatoos were most often the target species.

A total of 1 374 birds (representing 15 different species) was found dead at the 15 poison sites (Table 1). Over half (709) the dead birds were Australian Magpies*, a non-target species; about one-third (493) were Australian Shelducks which had been killed in one poisoning incident in which they were the target species. Although the Galah, Long-billed Corella and Sulphur-crested Cockatoo were the target species in most cases (Table 2) only a few were killed (Table 1). In most cases the birds died

TABLE 1

Birds poisoned by deliberate misuse of fenthion-ethyl in Victoria, 1972-1982.

Species	Number poisoned
Australian Shelduck <i>Tadorna tadornoides</i>	493
Maned Duck <i>Chenonetta jubata</i>	4
Wedge-tailed Eagle <i>Aquila audax</i>	1
Brown Falcon <i>Falco berigora</i>	2
Crested Pigeon <i>Ocyphaps lophotes</i>	1
Galah <i>Cacatua roseicapilla</i>	8
Long-billed Corella <i>C. tenuirostris</i>	19
Little Corella <i>C. sanguinea</i>	1
Sulphur-crested Cockatoo <i>C. galerita</i>	35
Red-rumped Parrot <i>Psephotus haematonotus</i>	4
Richard's Pipit <i>Anthus novaeseelandiae</i>	2
White-winged Chough <i>Corcorax melanorhamphos</i>	9
Australian Magpie-lark <i>Grallina cyanoleuca</i>	33
Australian Magpie <i>Gymnorhina tibicen</i>	709
Raven <i>Corvus</i> spp.	53
Totals	15 species 1 374

* Table 1 lists the scientific names of species referred to in the text.

after ingesting grain or peas treated with fenthion-ethyl; however the one Wedge-tailed Eagle, two Australian Magpies and several ravens were found dead at a poison site where a sheep skin had been treated with fenthion-ethyl. The carcasses of the eagle and ravens contained fenthion-ethyl but the magpies were not analysed, so it is possible, though not probable, that they died of other causes. Similarly, two Brown Falcons were found dead at another poison site but samples from these birds were not analysed. Analyses of samples of other bird carcasses, which had been collected along with these falcons, showed the presence of fenthion-ethyl. Because Brown Falcons do not eat grain it is unlikely they died from ingesting fenthion-ethyl treated grain, and the notes made by the investigating officer indicate that he suspected strychnine was also being used, but he could not find bait treated with this toxicant.

A recent laboratory test on the stomach contents of a dead White-bellied Sea-eagle *Haliaeetus leucogaster* revealed the presence of fenthion-

ethyl. The absence of bait or other dead birds near the sea-eagle suggested that it had been able to fly away from the poison site before dying. In this incident the poison site was not located, therefore there was no prosecution and the results are not included in Tables 1 and 2. However, this incident illustrates that we do not know what relationship exists between the number of birds found dead in the immediate vicinity of poisoned baits and the total number of birds actually killed. It is probable that some birds which ingested poisoned bait died far from the poison sites and were never found by investigating officers. In other cases poisoning was not detected for several days, by which time some carcasses had probably been removed by scavengers such as foxes, eagles and feral cats. Moreover, it is known that in some cases, individuals responsible for laying poisoned baits disposed of resulting carcasses daily (J.P. Sheridan pers. comm.). Hence the levels of mortality assessed by investigating officers probably greatly under-estimated actual mortality.

TABLE 2

Details of 15 incidents of poisoning of birds with fenthion-ethyl in Victoria, 1972-1982.

	Number of cases
<i>Bait used</i>	
Oats	11
Wheat	2
Peas	1
Sheepskin	1
<i>Poisons used</i>	
Fenthion-ethyl only	13*
Fenthion-ethyl and Strychnine	1
Fenthion-ethyl and Diazinon	1
<i>Target Species†</i>	
Australian Shelduck	1
Galah	2
Long-billed Corella	6
Sulphur-crested Cockatoo	7
Raven	3

* In one of these cases it was suspected that strychnine was also used, but this was not confirmed.

† As stated by persons responsible for laying of poisoned baits. In some cases more than one target species was identified, hence the total for this category is greater than the total number of incidents.

Although we do not know how widespread is the use of fenthion-ethyl to poison birds in Victoria, we believe that the 15 cases detected represent only a small proportion. Based on the results presented in this note, we suspect that this pesticide is extremely toxic to birds, however there are no toxicological data available for fenthion-ethyl for any avian species. Despite the relatively few proven cases (15) in Victoria involving the use of fenthion-ethyl to deliberately kill birds, the total of 1 374 dead birds was five times greater than the total of 274 birds reported as having been poisoned in 158 cases of deliberate misuse of pesticides (mainly mevinphos, alpha-chloralose and strychnine) in Scotland over the period 1973-79 (Hamilton *et al.* 1981). By way of further comparison, 106 incidents involving the misuse of pesticides (mainly mevinphos, alpha-chloralose, strychnine and endrin) in England and Wales killed 1 402 birds during the period 1971-76 (Brown *et al.* 1977).

In view of the misuse of fenthion-ethyl as documented in this note, its continued use as an agricultural pesticide in Victoria should be reviewed. Such a review should establish how toxic fenthion-ethyl is to birds, how widespread the misuse of fenthion-ethyl is, why there is so

little information available on the use of this pesticide outside of Australasia, and whether there are other equally effective jetting and spray-race pesticides available in Victoria which are less toxic to birds.

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P. B. Du Guesclin*, W. B. Emison†, I. D. Temby*

*Field Management Branch,
Fisheries and Wildlife Division,
250 Victoria Parade,
East Melbourne, Victoria 3002.

†Arthur Rylah Institute for Environmental Research,
Fisheries and Wildlife Division,
123 Brown Street,
Heidelberg, Victoria 3084.