

TABLE 1. Summary of recapture data on Tree Sparrow #1370-59030.

Winter	Date of 1st fall captures	# recaptures	Date of last spring capture
1976-1977	15 Nov.	15	8 Apr.
1977-1978	—	0	—
1978-1979	16 Nov.	5	22 Feb.
1979-1980	3 Dec.	2	2 Jan.
1980-1981	3 Dec.	2	7 Feb.
1981-1982	10 Nov.	4	5 Feb.
1982-1983	7 Dec.	2	13 Feb.
1983-1984	2 Dec.	4	8 Feb.

9-year period. Information on recapture dates is summarized in Table 1.—ELIZABETH W. BROOKS, 18 Washington Rd., Pittsford, New York 14534. Received 19 Jan. 1985; accepted 29 June 1985.

Diazinon Poisoning of Brown-headed Cowbirds.—We report here 2 separate cases of poisonings of Brown-headed Cowbirds (*Molothrus ater*) in Connecticut following the application of diazinon to lawns. Diazinon is a broad spectrum insecticide that is highly toxic to insects and also to birds (Hudson et al. 1984, Schlinke and Palmer 1971). Although field poisonings of ducks and geese have been reported (Schobert 1974, Stone 1979, Stone and Knoch 1982, Zinkl et al. 1978), we are unaware of documented accidental poisonings of passerine birds.

Methods.—In East Hartford, Connecticut on 29 September 1983, chlorpyrifos, an organic phosphate insecticide (Dursban 2.32 granular insecticide), was applied at a rate of 0.9 kg per 90 sq m to the infield of a baseball field that had been recently covered with sod infested with Japanese beetles (*Popillia japonica*). Diazinon 14% granular insecticide was applied on 30 September at a rate of 0.45 kg per 135 sq m to the infield and to the outfield which had been planted with grass about 1 month earlier. The ballfield was extensively watered following the application of diazinon. Hearts, livers, gizzards, and intestines dissected from 3 male and 3 female Brown-headed Cowbirds which had been frozen shortly after they were found dead at the ballfield on 5 October and 6 soil samples (3 from the infield and 3 from the outfield) taken to a depth of 2.5 cm were obtained on 14 October and analyzed for organochlorine and organophosphate insecticides by standard procedures using gas-liquid chromatography (Lawrence 1982).

In the second incident, diazinon liquid spray was applied by a commercial pest control company to a private yard in Meriden, Connecticut, on 4 September 1984 for the control of lawn insects. One male and one female cowbird were frozen about 24 h after death on 9 September 1984. Organs listed in the previous paragraph were examined for organochlorine and organophosphate insecticides.

Results and discussion.—About 5 dozen male and female Brown-headed Cowbirds which had been roosting in trees adjacent to the ballfield died in East Hartford. Diazinon was the only insecticide found in their tissues (Table 1). Analyses of soil samples taken in the infield revealed residues of diazinon and chlorpyrifos ranging from 2.06 to 11 ppm and 0.22 to 2.16 ppm, respectively. In the outfield, diazinon residues ranged from 3.09 to 31.05 ppm. Chlorpyrifos and other insecticides were not detected.

In Meriden, Brown-headed Cowbirds were observed dying beneath their roosting sites 4 days after diazinon had been applied to the lawn. Two dozen dead birds were collected. Diazinon was detected in the tissues of those examined (Table 1).

Insecticidal poisoning of passerine birds is often difficult to document because non-flocking small birds often disperse and may die in wooded or tall grassy, weedy areas.

TABLE 1. Diazinon residues in tissues of Brown-headed Cowbirds that died in East Hartford and Meriden, Connecticut.

Tissue	Residue level (ppm)			
	East Hartford ^a		Meriden ^b	
	Males	Females	Males	Females
Heart	22.8	1.39	0.90	0.35
Gizzard	34.1	9.63	0.06	0.03
Liver	13.1	2.04	0.04	0.11
Intestine	36.0	4.66	0.04	0.04

^a Residues based on analysis of pooled tissues from three birds of each sex.

^b Residues based on analysis of tissues from one bird of each sex.

Similar to geese and ducks that are poisoned on golf courses (Schobert 1974, Stone 1979, Stone and Knoch 1982, Zinkl et al. 1978), Brown-headed Cowbirds in urban or suburban areas in the fall may be observed as they die in relatively large numbers on lawns beneath their roosting sites. This species may thus be a good indicator of effects of acutely toxic insecticides on smaller perching birds. Clearly, these poisoning incidents illustrate a potential hazard of diazinon applications to lawns. Birds may be poisoned by ingesting contaminated food, by drinking adulterated water, or by having their skin come into contact with residues.

Passerines may be increasingly exposed to fast-acting, short-lived insecticides applied to lawns. Organophosphate insecticides have replaced the more persistent organochlorines. Furthermore the number of commercial applicators licensed to apply insecticides to lawns has increased (e.g., in Connecticut there are 712 licensed in 1984 compared to 425 in 1981).

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