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ORGANOPHOSPHATE TOXICITY IN WILD TURKEYS[1]

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Abstract: An accidental poisoning of wild turkeys (*Meleagris gallopavo silvestris*) by O,O-Diethyl O-[p-(methylsulfinyl) phenyl] phosphorothioate is reported. Diagnosis was achieved by history, clinical observations, postmortem lesions, diagnostic therapy and pesticide analysis.

CASE REPORT

On the morning 23 March 1972, two wild turkeys were found dead and one was found ill on a golf course on Jekyll Island, Georgia. The birds were promptly submitted for necropsy by personnel of the Georgia Department of Natural Resources. Necropsy revealed excessive fluid in the lungs and froth-filled tracheas. Congestion and swelling were noted in the livers and kidneys of both turkeys. Crops and gizzards were filled with blades of grass and dead insects. The accompanying history indicated that the golf greens recently had been treated for mole crickets, *Gryllotalpa* sp., with an unknown pesticide.

The sick turkey had severe dyspnea and was discharging a large amount of thin mucus from the mouth and nares. Eyelids were closed due to distention of the infraorbital sinuses with mucus. Because of the pulmonary edema observed in the two dead birds, and corresponding clinical signs in the sick turkey, diagnostic therapy for organophosphate toxicosis was initiated on the live bird. Intravenous injections of 0.3 mg atropine sulfate and 40 mg of pralidoxime chloride[2] were made, and the mucus was aspirated from the infraorbital sinuses. Administration of atropine sulfate and aspiration of mucus were repeated once 18 hrs later. Within 24 hrs of the initial treatment, breathing was markedly improved, with total recovery by 72 hrs.

Histopathology of tissues from the two dead turkeys revealed severe congestion of cardiac muscle, liver and kidney. Lung airways were filled with serous fluid and erythrocytes.

Further investigation by Georgia Department of Natural Resources personnel revealed that the golf greens had been treated with Dasanit® (O,O-Diethyl O-[p-(methylsulfinyl) phenyl] phosphorothioate).[3] Gas chromatograph analyses of the crop contents, by use of the flame photometric detector, revealed concentrations of 1,190 and 812 ppm, respectively, of this compound in the two dead birds.

DISCUSSION

The levels of Dasanit® found in the ingesta undoubtedly were elevated. Median lethal concentrations in feed that produced subacute poisoning in bobwhite quail (*Colinus virginianus*) and ringneck pheasants (*Phasianus colchicus*) were 35 and 148 ppm, respectively.[1] Acute oral toxic concentration for mallard ducks (*Anas platyrhynchos*) ranged from 0.595 to 0.944 mg/kg, with neurologic signs

[1] This study was supported through the Federal Aid in Wildlife Restoration Act (50 Stat. 917).
[2] Protopam ® Chloride, Ayerst Laboratories Inc., New York, N.Y. 10017.
[3] Chemagro Corp., Kansas City, Missouri 64120.

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prevailing.[2] Signs and lesions in the turkeys, however, were related primarily to the respiratory tract, which may have been due to a lower dose than would cause neurologic signs.

The application of Dasanit® to golf greens for mole cricket control was not a recommended use for this product. In addition, the package label bears the standard warning that the product is toxic to fish and wildlife, and that birds feeding in treated areas may be killed. Because of these and other hazards, the user is charged with assuming all risks in the application of organophosphate pesticides. Therefore, public awareness of these risks, plus emphasis on proper use of these compounds are essential to avoid accidental poisonings to wildlife such as described herein.

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