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EXPOSURE OF CAPTIVE BOBWHITES TO AN AT-PLANTING APPLICATION OF TERBUFOS (COUNTER® 15G) TO CORN

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ABSTRACT

Terbufos is a highly toxic, organophosphate insecticide that is commonly applied to corn fields during planting. Quail use crop field edges during April, when corn is planted in North Carolina, and consequently may be exposed to at-planting insecticides. Therefore, we attempted to quantify the hazards to quail from an at-planting, banded application of Counter® 15G using penned northern bobwhite quail. Eight, 7.5 × 7.5m pens were placed in cornfields immediately after planting. Six field pens received Counter 15G at 22.7g per 100m of cornrow. Pens were placed such that a 2.5 × 7.5m section was located in standing wheat. The remainder of each pen extended past the "turnrows" into a section of regular rows in each cornfield. Two quail of each sex were placed in each pen. Behavior of quail using cornfields was observed from blinds and categorized as feeding, loafing, dusting and other. Blood serum, for determining cholinesterase (ChE) activity, was collected from a sub-sample of quail ($n = 3$) from each pen prior to and at 1.5, 8.5 and 15.5 days following exposure. Change in (ChE) activity from pre-exposure levels was determined and averages for birds from each pen were compared between treatments using a one-way analysis of variance. In quail exposed to terbufos, serum ChE activity declined 21% relative to pre-exposure levels at 1.5 days ($P = 0.04$; $df = 1,4$), but not at later dates sampled ($P > 0.08$). No mortality was observed. Observations of quail in pens revealed no unusual behaviors or changes in behavioral patterns over the course of the study. Our results suggest that Counter® 15G is unlikely to cause mortality or significant behavioral changes in wild quail inhabiting farms.

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