

THE ROLE OF ANTICOAGULANTS AND ZINC PHOSPHIDE  
IN HAWAIIAN AGRICULTURE

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Abstract:

Rats cause millions of dollars of damage in Hawaiian sugarcane fields. Since the early 1900's, a succession of acute rodenticides has been used to reduce rat populations in sugarcane fields. Anticoagulants were widely used in the 1950's and 1960's, but their use declined after the registration of zinc phosphide in 1971. Since 1971, zinc phosphide-treated oats have been the bait most commonly used by Hawaiian sugarcane growers. Until recently, two grain and three pelleted zinc phosphide baits were registered for use in sugarcane. However, the two local registrants of the grain bait no longer support their respective registrations. The EPA registration labels allow use only within the interior of fields, but current efforts by the DWRC to expand use to fields perimeters could reduce reinvasion of fields by rats and ultimately reduce pesticide usage. Extensive use of zinc phosphide baits during the past 20 years may have contributed to a relative increase in Norway rat populations within sugarcane fields, and a more effective bait is needed for this species.

Zinc phosphide is the only rodenticide registered for controlling rat populations in macadamia orchards. This toxicant appears to be effective against roof rats, the main depredating species. However, rats rapidly reinvade orchards following the application of control measures, and multiple applications may be needed during the crop cycle to keep pest populations in check. Registration of an additional toxicant would provide an alternative means of reducing pest populations throughout the extended crop cycle.

Roof rats prey on the eggs and young of a several threatened and endangered bird species in Hawaii. Both forest-nesting and ground-nesting birds are victimized. The lack of any available registrations for using rodenticides in forests or noncrop wild areas in Hawaii complicates the task of reducing the impact of rats on native birds.