

RODENT CONTROL IN STORED PRODUCTS

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Abstract

Rats and mice inflict losses in a wide range of stored commodities. In most countries, the pest complex comprises one or more of the cosmopolitan species Rattus norvegicus, Rattus rattus and Mus musculus, as well as members of the indigenous rodent fauna.

The most obvious loss inflicted by rodents is the consumption of the commodities in store. However, to gain access to this food, rodents often damage the fabric of buildings and packaging materials. The cost of making good this damage often exceeds the value of direct food losses. The pests also foul with droppings, urine and hairs much of the stored produce they do not eat, and the cost of either cleaning or rejecting contaminated foodstuffs must be included in the toll they exact.

Rodent control in stores calls for an integrated approach. A high standard of housekeeping does much to reduce infestation levels and aid inspection. A wide range of proofing measures may be applied to exclude rodents from stores. Usually, however, there is a need to apply rodenticides, mainly as baits, at some stage of an integrated program.

Among the target species mentioned above, R. rattus and M. musculus are relatively tolerant to the warfarin-type anticoagulants and populations of all three species resistant to these compounds now exist in many temperate and a few tropical countries. The second-generation anticoagulants, therefore, are widely used against rodents infesting stored products.

Among the second generation anticoagulants (difenacoum, brodifacoum, bromadiolone and flocoumafen), brodifacoum is the most potent, having a low LD₅₀ to all three cosmopolitan species. Complete kills in one-day feeding tests support the claim to 'single-feed' action. This high potency is a prerequisite in most stored-products situations where there is often abundant alternative food.

The results of a series of replicated field trials conducted on farms in the U.K., encompassing a wide range of storage facilities and stored commodities, showed that brodifacoum baits eradicated rat infestations more quickly, used less bait and required fewer site visits than other compounds tested.