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THE DEVELOPMENT OF INSECTICIDAL BAIT
FOR THE CONTROL OF PORINA (Wiseana Spp.)

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Porina (Wiseana spp) damage in the field (left) and a porina caterpillar in its subterranean burrow (right).

ABSTRACT

Investigations in the development of chipped wheat baits for porina control were carried out in the laboratory and the field. In the laboratory porina readily accepted untreated chipped wheat in the presence of white clover (Trifolium repens L.) or perennial ryegrass (Lolium perenne L.). They also accepted equally, three different sizes of wheat baits, and fed at temperatures between -2°C and 25°C . Porina accepted insecticidally treated baits in the presence of untreated wheat or white clover, however did not readily accept fungus (Metarrhizium anisopliae (Metsch.) Sorok.), infected wheat in the presence of the latter two foods. Baits were removed by porina from around their burrow mouths when applied to the surface of turfs held under controlled conditions. The number of baits removed per active porina was related to the density applied.

Field trials demonstrated that insecticidally treated baits, of the smallest size (528 chips/g. dry weight), being the most cost-efficient, gave comparable mortalities to conventional spray applications. After 10 days fenitrothion spray (0.9 Kg ai/ha) gave 95% control of porina populations, and with fenitrothion treated baits (0.13 Kg ai/ha) applied at 1 chip/6.25 cm² the control achieved was 83%. At a lower bait density (1 chip/25 cm²) a significant increase in mortality was seen between 10 and 30 days. The addition of a molluscicide onto a treated bait increased its efficiency by 10%. Applying baits infected with the fungus Metarrhizium resulted in 53% mortality of porina.

The optimal bait density was shown to be one wheat chip/12.5 cm², and the optimal dosage of fenitrothion 0.4% ai/g. dry weight of wheat. The cost of bait treatment, including application costs, for porina control was \$15/ha, compared to \$46/ha for spraying.

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