

A NOVEL DUAL ACTION FORMULATION FOR FLY CONTROL

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The control of nuisance flies in environments as diverse as refuse tips, animal breeding units and farms relies upon the integration of good sanitation, fly exclusion and the use of insecticides currently formulated for the control of either the adult or larval stages. A new formulation developed by ZENECA Public Health combines the profiles of a premium adulticide with that of a premium larvicide.

Two active ingredients, an adulticide, such as the pyrethroid lambda-cyhalothrin or the organophosphate pirimiphos-methyl, and a larvicide, the insect growth regulator pyriproxyfen, have been combined as sugar based granules, to give optimised efficacy at a single recommended application rate. The granules not only act as a highly attractive bait source on which the adults feed but also provide a soluble support for the active components which will break down over a period of time.

The formulation can be integrated into fly management programmes as a scatter bait, in bait stations or dissolved in water and painted onto targets. Flies are attracted by both visual and chemical cues (including the *Musca sex* pheromone, Z-9-tricosene). Feeding flies are then rapidly knocked down and killed by the lambda-cyhalothrin; at an application rate of 20 mg ai/m², under laboratory conditions, KT50 and KT90 times are lower than with either methomyl or azamethiphos granules.

Over time, the granules slowly dissolve, allowing the pyriproxyfen to move into the media in which the larvae are breeding and disrupt their development. In semi-field scale trials the granules maintained complete inhibition of *Musca domestica* (housefly) and *Chrysomya megacephala* (blowfly) development for two months when applied to a manure based substrate at 100 mg ai/m².

The granules also contain a bittering agent included as a safener to help prevent accidental ingestion of the formulation by both humans and animals.

The result is a highly versatile formulation for fly control with optimised activity against both the adult and larval stages combined with an excellent environmental and toxicological profile.