

## FLUFENOXURON – A NEW HIGH PERFORMANCE RESIDUAL INSECTICIDE FOR PUBLIC HYGIENE PEST AND VECTOR CONTROL

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Flufenoxuron (trademark Motto) is a new high performance residual insecticide developed by Shell Research Limited for public hygiene pest and vector control. Flufenoxuron is an acylurea insect growth regulator which kills insect pests through interference with chitin formation. Although not an adulticide, a very high proportion of the eggs laid by an adult that has been exposed to this insecticide are non-viable.

Flufenoxuron has been tested against a wide range of pest species including ants, cockroaches, fleas and mosquitoes and has been shown to provide greatly extended control at exceptionally low dose rates. Because of its novel mode of action flufenoxuron can give outstanding performance against pest strains which have developed resistance to other insecticides and it has been shown to be effective in both residual spray and bait formulation treatments.

In field trials in the U.K. against *Blattella germanica* flufenoxuron (500g/l suspension concentrate) applied at only 7.5mg a.i./m<sup>2</sup> in moderate to heavily infested apartments gave 100% control for more than 80 weeks. Against the cat fleas (*Ctenocephalides felis*) applied at 15mg a.i./m<sup>2</sup> flufenoxuron gave 100% control for up to 42 weeks.

Flufenoxuron is also extremely stable and compatible with the high performance pyrethroid insecticide alphacypermethrin (Fendona). A one pack mixture of these two insecticides, (formulated as a suspension concentrate containing 60/30g/l of alphacypermethrin/flufenoxuron) applied at a rate of 15/7.5mg a.i./m<sup>2</sup> in apartments infested with *B. germanica* and *B. orientalis* has given rapid and extended control (58 weeks) of both species.

In continuous feeding studies against *B. germanica* flufenoxuron has been shown to be 1000 times more active than diflubenzuron and nearly 8000 times more active than triflumuron. When used as a bait formulation, flufenoxuron gave total kill of 1st instar *B. germanica* at 0.001% (a.i.) and of 2nd instars at only 0.0001% (a.i.).

In preliminary field trials, a multipurpose flufenoxuron bait (0.5% a.i.) applied at a rate equivalent to 2.5mg a.i./m<sup>2</sup>, has given 100% control of *B. orientalis* and Pharaoh's ant (*Mono-morium pharaonis*) for more than 30 weeks.

Flufenoxuron is odourless, non-repellent and of exceptionally low mammalian toxicity. It is therefore suitable for use in domestic and institutional premises, public buildings and industry.