

EVALUATION OF EXPERIMENTAL FIPRONIL BAITS FOR CONTROL OF PHARAOH'S ANTS IN CZECH REPUBLIC

V. RUPEŠ¹, J. CHMELA² AND C. J. BOASE³

¹National Institute of Public Health, Prague, Czech Republic

²District Institute of Public Health, Olomouc, Czech Republic

³The Pest Management Consultancy, Cowslip Pightle, Haverhill, Suffolk, UK

The Pharaoh's ant *Monomorium pharaonis* (L.) (Hymenoptera: Formicidae) is a widespread urban pest, being most common in large, heated buildings. Fipronil is a novel phenyl-pyrazole insecticide, effective against insects of urban importance including termites and cockroaches, being active by both oral and contact routes. Laboratory and field tests have been carried out in Czech Republic, to assess the effectiveness of fipronil as a bait formulation for Pharaoh's ant control.

Small colonies of Pharaoh's ants, each consisting of queens, workers, and immature stages, were established in 150 mm diameter petri dishes, and supplied with laboratory diet. Replicate nests were offered either fipronil formulations made from various food bases (A or B), or commercial hydramethylnon bait. At intervals the mortality of the ants was assessed:

Table 1. Ant numbers following treatment of laboratory nests.

Formulation	ai conc. %	pretreatment	weeks after introduction of bait						
			1	2	3	4	6	10	15
fipronil A	0.001	900	107	7	0	0	-	-	-
fipronil B	0.001	1000	1000	950	700	750	800	950	910
hydramethylnon	0.95	750	510	255	245	310	290	640	775
untreated	0	675	675	675	775	875	1000	-	-

To determine efficacy under field conditions, ants in infested housing blocks were monitored before and after treatment. Commercial hydramethylnon baits were applied at 5 per apartment following label recommendations, while fipronil baits were applied at ca.10 bait portions/apartment. Each treatment was applied to a block of ca.20 infested apartments.

Table 2. % of ant monitoring tubes positive for ants following field treatments.

Bait	ai conc. %	pretreatment	weeks after treatment					
			2	4	7	11	15	33
fipronil A	0.001	65	3	0	0	0	0	0
fipronil B	0.001	36	28	22	7	8	6	15
hydramethylnon	0.95	55	53	19	29	19	17	25
untreated	0	67	56	65	75	77	67	-

In conclusion, fipronil bait efficacy is influenced by the choice of food base. However, in a suitable bait base, even low fipronil rates appear very effective and fast acting against Pharaoh's ants, showing greater activity than commercial reference products. Development continues, in order to finalise the fipronil formulation.