COMPARATIVE EFFICIENCY of FOUR INSECT GROWTH REGULATORS to HOUSE FLY ABUNDANCE in PRACTICE

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Abstract An efficiency of diflubenzuron, cyromazin, pyriproxypfen and methopren on the house fly populations were verified on the abundance of flies over 10 weeks in a pig delivery rooms and a calf houses. The larvicidal effectiveness of diflubenzuron was in range of 35-96 %. Cyromazin caused marked reduction 34-74 % in fly populations. In field conditions methopren and pyriproxyfen reduced the flies populations by 49-67, respectively 9-41 %. Chitin inhibitors – diflubenzuron and cyromazin were more effective in controlling the house fly populations. It was positive finding because the fly populations were resistant to a number of conventional insecticides. They are likely to become increasingly important in control regimes and they are a good candidates for supplementing traditional insecticide treatments in pig and calf units.

Key Words Musca domestica control diflubenzuron cyromazin methopren pyriproxyfen

INTRODUCTION

Insect growth regulators appear highly prospective in fly control. In the majority of cases they are not poisonous neither to the noxious insects nor to non-target organisms, i.e. they do not have direct toxic effect.Instead, they affect some vital functions, such as reproduction or behaviour of pests and, in comparison with conventional pesticides, are safer to men and animals. The aim of the present study was to validate the effects of selected insect growth regulators under practical conditions in rearing of pigs and calves.

MATERIALS and METHODS

Tests on flies were conducted in pig and calf houses. The mean density of flies in the houses was determined according to the standard method of state sanitation institutes (Venglovský, 1992). The doses used in our experiments were: diflubenzuron (0,5 g/m^2), cyromazin (0.5 g/m^2), pyriproxyfen (0.1 g/m^2) and methoprene (3 g/m^2).

RESULTS and DISCUSSION

Observation of the efficiency of tested insect growth regulators under practical conditions in animal houses expressed as percentage (%) of reduction are presented in Table 1.

The first marked decrease in the number of flies in animal houses was observed in 4-5 weeks after the treatment with diflubenzuron. Cyromazin caused marked reduction in fly populations in weeks 6-8. The most reduction in fly populations by methoprene and pyriproxyfen were observed in the weeks 4 to 8, but only low reduction of flies was ensured.

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Table 1.

Date	Mean no. of flies in control / Mean no. of flies in experiment / % of reduction			
	Diflubenzuron	Cyromazin	Methomyl	Pyriproxyfen
Before application	483 / 513 / -	181 / 154 / -	87 / 93 / -	127 / 118 / -
2nd week	571 / 372 / 35	212 / 140 / 34	93 / 83 / 11	112 / 102 / 9
4th week	859 / 78 / 91	222 / 135 / 39	185 / 95 / 49	167 / 98 / 41
6th week	1068 / 42 / 96	238 / 97 / 59	210 / 72 / 66	135 / 87 / 36
8th week	906 / 86 / 90	342 / 90 / 74	263 / 87 / 67	131 / 83 / 37
10th week	827 / 77 / 91	213 / 85 / 60	197 / 69 / 65	123 / 82 / 33

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