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Insect Control Activity of Some Essential Oils

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ABSTRACT

The role of essential oil as antimicrobial, antifungal and anthelmentic activities are well known. This paper reveals the role of some essential oils to control the insect in the form of attraction and repellents ovicides, insecticides has been described and discussed.

Key words: Insect control activity, Essential oils.

INTRODUCTION

It is well known fact that the production and use of essential oils did not become common until second half of the sixteenth century.In 19th century gradually the use of essential oils in medicinal drugs become quite popular as perfumes,beverages,food stuffs etc.

The led to the investigations of essential oils and elucidation of their compounds for the use in solving various day to day problems of life. One such problem has been to control insects which are considered as serious foe towards mankinds. Thus it has struck as a sound rational to use essential oils in controlling insects. The essential oils as such have been investigated against several insects. Among the physiologically active substance in insect known today the attractants are the chemical substances which excite or lure the opposite sex for purpose of mating. In 1959 these chemicals were[1,2] named as pheromones these attractants possesses potential utility in controlling insects by being employed to lure large numbers of one sex to their death in bated traps. The plants also produce such attractants and a comprehensive review on the subject is available in literature[3].The same is true for essential oil also. An investigation of vogel[4] has revealed the mixture of twelve terpenoids in the flowers of catasetum cycnoches and stanhopea. Which were attractive to male Euglossa bees indicative of being sex attractants due to highly excited behaviour of these insects.

MATERIAL AND METHODS

The essential oils four plants Abutilon indicum Bothriochloa pertusa Muraya exotica Micromeria capitellate Vitex nugundo. The oil was extracted with chloroform from aqueous portion and purified by distillation under reduced pressure. The oil so obtained was tested for its insects controlling activity and results are shown in given table as follows.

RESULTS AND DISCUSSION

From above observation it seems clear that essential oil as whole is quite effective in checking eggs of above insects.

All essential oils are quite effective against above insect except Muraya exotica which is less effective in initial as well as latter stage. Possibilities of above compounds to check the insects growth is quite suitable.

Table 1: Effect of Various Essential oils on Different Insects

Name of plant	Compound of oil	Dose/ insect	Name of Insect	Insect	% Mortality
1.Abvtilonn indicum	1.Linaloo	1%	1. Callasobrychus	Egq	100
	2. D-limonenc	50mg	Maculatus	Adults	80
	3. Citral			Adults	40
	4. Geraniol	25mg	Sitruphilus	Egq	100
	5. α & β pincm	Oryzac		Adults	75
2.Bothriocloa pertusa	1.β-carophylley oxide	1%		Adults	45
	2.α-thujan	50mg	2.C.maculatus	Egq	100
	3.α,β pincne	25mg		Adults	85
3.Muraya exolica	-	1%		Adults	45
		50mg	S.Oryzac	Egq	95
	25mg			Adults	75
4.Micromeria Capiteate	β-pinc			Adults	75
	Cadinenc	1%	3. C.maculatus	Egq	60
	Linalool	50µg		Adults	10
	D-limone	25µg		Adults	10
	Citral		S.Oryzac	Egq	55
	P-cymence			Adults	10
	A-3 carene			Adults	10
	D-α Thu		4. C.maculatus	Egq	100
	Elemol			Adults	85
	Methyl charicol			Adults	50
5.Vitex negundo elemol	1.1%		S.Oryzac	Egq	100
	1:8 Cincolcoxide	50µg		Adults	85
	Terpin nol	25µg		dults	60
	Farnesol		5. C.maculatus	Egq	100
	Borneol			Adults	90
	Á-pinenc			Adults	80
	Cuminol		S.Oryzac	Egq	100
	Carophnxlline oxide			Adults	90
				Adults	85

REFERENCES

1. Karlson.Buttenandt, A., *Ann. Rev Entomol*, **4**: 39 (1959).
2. Karlson. P & Luscher, M., *Nature London*, **183**: 55 (1959).
3. Green, N., Beroza, M, & Hall, S.A., *Adv Pest Cont Res* **3**: 129 (1960).
4. Vogel, S., Oesterr. Botan. Z.,**110**: 308 (1963)
5. Bowers,W.S., and Bodenstein W.G.,Nature London, **232**: 259 (1971).
6. Guenther,E.The essential oils 1955 3rd ed.vol I Publisher,D. Van Nostrands Company Inc. NewYork pp 147-154