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Studies on the Effect of Extract of *Parthenium hysterophorous* on the Common Household Pest *Periplaneta americana*

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Abstract

The effect of the extract of *Parthenium hysterophorous* on the household pest *Periplaneta americana* were observed. These weed were selected because they grow wild, and are found everywhere, causing nuisance to the farmers. The use of Parthenium for biocontrol, hence the effect of this plant was also observed. The movements of the cockroach after the application of the extracts were observed.

Introduction

Parthenium hysterophorus is a tropical American weed, has invaded most parts of India largely affecting the crop productivity. It appears both in cropland and in wastelands and cannot be is not easily eliminated. Cockroaches are not only a major pest but are vectors of various diseases causing public health hazards. Many organic chemicals are being used as a pesticide which has various side effects and are harmful to environment. The botanical or herbal product obtained from *parthenium* can serve the purpose. To search for a herbal product which will act as an alternative to manage the population of cockroaches, without harming the environment and to find out the sustainable way for controlling spread of *parthenium.*

METERIALS AND METHODS

Plant material and extraction:

The plant was collected from agriculture farms of Baramati, Pune District, India and identified in the laboratory. The plant material was stored in departmental laboratory. The 20 gm of air dried leaves of *Parthenium hysterophorus* were extracted with 200 ml. of alcohol in Soxhelet's apparatus. In order to assess the lethality of *parthenium* extract obtained from Soxhelet's apparatus.

Exposure to cockroach:

Adult cockroaches were acclimatized for a period of 10 days at room temperature. The 20 cockroaches were used for different concentration exposure in two groups. The exposure was given in an area of 171.95 cm2 and observed for four days. Different doses of 1 ml and 1.5 ml were administered for exposure. Number of surviving animals in each group was recorded over a four days period (Fig. 1, 2).

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Fig. 1 control group

Fig. 2 during experimental condition

Result and Discussion

The 20 cockroaches were selected for the toxicity test and both cockroaches divided into two groups. The first group of cockroach was exposed with 1 ml and second group with the 1.5 ml *parthenium* extract. The table 1 and fig. 1, 2 shows the toxicity effect of *parthenium* on the cockroaches.

Groups	Dose	Exposure Time in hrs			
		24 hrs.	48 hrs.	72 hrs.	96hrs.
		Cockroaches died			
Group I	1 ml.	1/10	4/10	4/10	6/10
Group II	1.5 ml.	1/10	5/10	6/10	7/10

Table 1 - The toxicity of different doses concentration given

The alcoholic extract of Parthenium hysterophorus is affecting on the cockroaches and its causes death of cockroach. In four days period, total six cockroaches in first group and seven out of ten cockroaches were dead in second group of exposure (Table 1).

Antifeedant activity was also observed in two different groups of cockroaches separately. In both the cases the cockroaches that did not receive any treatment served as control (Fig. 3).

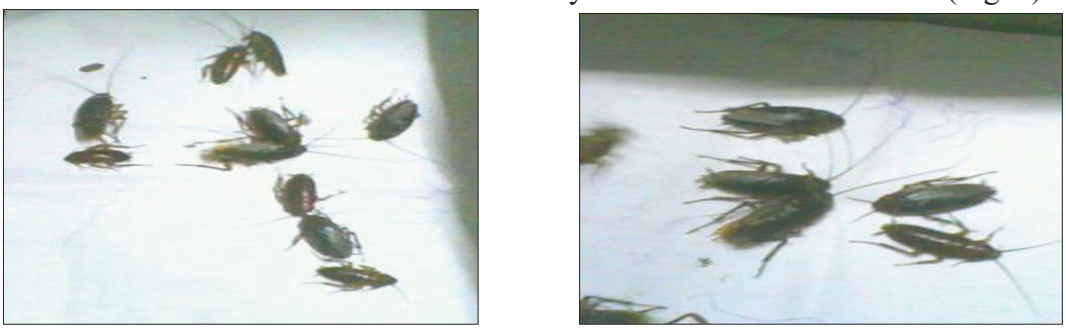

Fig. 3 During Observation period

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