INSECTICIDAL EFFECT OF HERBAL AND AROMATIC EXTRACTS: MYTH OR REALITY?

EFECTUL INSECTICID AL EXTRACTELOR DIN PLANTE MEDICINALE ŞI AROMATICE: MIT SAU REALITATE?

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Abstract. *The concern of the people for obtaining rich harvests and with the least expensive means has been and is continuous. The man of the past centuries, being more connected to nature than the present man and having the popular knowledge about the natural phenomena and about the plant species from the spontaneous flora, often used different plants in the control of the pests from the agricultural crops. Modern man, forced to return to nature, has devoted himself to the study of plants with combat potential, the first fruits of his work being then materialized in a series of synthetic products called pyrethroids, after the plant that provided them with information and substance: Piretrum cinerareifolium.*

Key words: control, pests, medicinal plants

Rezumat. *Preocuparea oamenilor pentru obţinerea de recolte bogate şi cu mijloace cât mai puţin costisitoare a fost şi este continuă. Omul secolelor trecute, fiind mai legat de natură decât omul actual şi având cunoaşterea populară despre fenomenele naturii şi despre speciile de plante din flora spontană a utilizat adesea diferite plante în combaterea dăunătorilor din culturile agricole. Omul modern, nevoit să se reîntoarcă către natură, s-a aplecat temeinic asupra studiului plantelor cu potenţial de combatere, primele roade ale muncii sale fiind apoi concretizate într-o serie de produse de sinteză numite substante piretroide, după planta care le-a furnizat informaţia şi substanţa: Piretrum cinerareifolium.*

Cuvinte cheie: combatere, dăunători, plante medicinale

INTRODUCTION

In our country there have been several attempts to use plant extracts on insects, including the team of Ecobici Monica and collaborators, who conducted in 2005 experiments with plant powders on the species *Acanthoscelides obsoletus*

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Say bean weevil, *Coleoptera*, *Bruchidae* (Ecobici *et al.,* 2005; Bekele *et al*, 1997; Ghizdavu and Porca, 2001).

MATERIAL AND METHOD

To verify the effect that plant extracts can have on pests, we selected the Colorado beetle *Leptinotarsa decemlineata* as a harmful species and created a working protocol as follows:

- 5 experimental variants, of which one control variant;
- Each experimental variant consisted of 10 adult individuals and 10 larvae;
- 4 species of medicinal plants were used: mouse tail (*Achillea millefolium*); cuckoo's beak (*Primula veris*); wormwood (*Arthemisia absintium*) and oregano (*Origanum vulgare*);
- The extracts were of 60% concentration and obtained by static maceration;
- Spray administration;
- Monitoring at 2h, 12 h, 24 h, 48 h, 72 h and 7 days (fig.1).

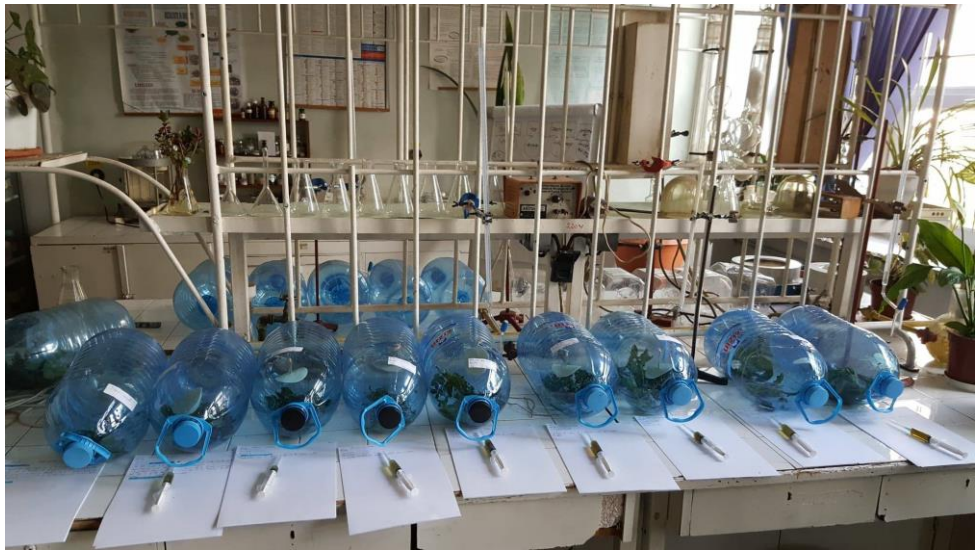

Fig.1 Monitoring

RESULTS AND DISCUSSIONS

In order to interpret as accurately as possible the information resulting from the laboratory experiments and to generate conclusions, which would later represent the basis for the field experiences, the following information was recorded (tab.1):

-the first recorded adults mortality;

-total dead adults;

-% adult mortality;

-eggs laid;

-the first recorded larva mortality;

- total dead larva;

- % larva mortality.

Table 1

Centralization of the effects of plant extracts on developmental stages on *Leptinotarsa decemlineata* Say

Nr. crt.	Monitored parameters	Blank	Achillea extract	Primula extract	Arthemisia extract	Origanum extract
1	the first recorded adults mortality	1 after 4 days	1 after 2 days	1 after 2 hours	1 after 12 hours	1 after 3 days
2	total dead adults;	1	10 after 6 days	5 after 6 days	1	10 after 6 days
3	% adult mortality;	10	100	50	10	100
4	eggs laid;	1	-	-	-	-
5	the first recorded larva mortality ;	1 after 4 days	1 after 8 hours	1 after 3 days	10 after 24 hours	2 after 2 hours
6	total dead larva;	1	10 after 3 days	5 after 4 days	10	10 after 3 days
7	% larva mortality.	10	100	50	100	100

CONCLUSIONS

1. In adults and larvae under observation, a series of behavioral changes were registered:

-Agitation / lethargy;

-Various neuro simptoms;

-Canibalism;

-Sterility.

2. In the case of mouse tail and sovarf extracts, a mortality of 100% was recorded in adults after 6 days; and in the case of larvae the mortality of 100% was registered after 3 days.

3. In the case of wormwood extract, in adults the mortality was insignificant (1 adult - 10%) but the mortality of the larvae was 100% after only 24 hours.

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