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EXPERIMENTAL RESULTS REGARDING SPECIFICITY OF PHEROMONES FOR *DIABROTICA VIRGIFERA VIRGIFERA* LECONTE

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Abstract

Immediately, after identification of pest, Western Corn Rootworm (Diabrotica virgifera virgifera LeConte) in Europe, involved countries have asked assistance from F.A.O. and international cooperation starting immediately an international cooperation regarding pest monitorising in East and Central Eastern countries by using pheromones traps. Traps are of different types, but recommended and most spread in this purpose are of type Csalomon, from Hungary. In order to verify efficacy of different types of traps and pheromones lures in order to decrease cost price of operations connected with monitorising we decide to try in field pheromones lures and traps especially for cussing the most suitable for Republic Moldova, the country in which the pest wasn't present but the situation have to be under control. Results obtained show us that pheromone lure from Republic Moldova is suitable for forecast and warning WCR and that in the same time Csalomon type trap is the most adequate to this purpose.

INTRODUCTION

The WCR (*Diabrotica virgifera virgifera*) was first observed in Europe in the vicinity of Surcin airport, near Belgrade, (Yugoslavia), on a small maize plot (0.5 ha) in July 1992. With the largest area of maize grown in the Central and Eastern Europe area, over the last years (more or less than 3,000,000 ha) and the detection of the pest 10 years ago, closed to Hungary and Yugoslavia, *Diabrotica* in Romania is the pest well established in the South-Western and Western part of the country and after 13 years, from the first registration, the pest is present in almost more than half of the country. It is considered that, in Romania, now, continuous maize is cultivated on ±50% of the area cultivated with maize. This area is greater for small farmers (1-2 ha) which have almost 50-55% of the land, generally in hills and mountain area or either in the plains. The survey of the pest till now it was done with Csalomon type trap + Hungarian lure (C_u), but it is possible to be done with other traps type as ICRR-CN (Institute of Chemistry Raluca Ripan-Cluj Napoca) (figure 1), and Romanian lures, made in Romania for different purposes.

Permanent surveying of pest in GTFS/RER/017/ITA, Regional Program on IPM for WCR in Central and Eastern Europe, in corn monoculture has shown that area of economic pest activity, was limited, on small fields with maize monoculture, especially in South-Western of Romania, in counties Arad, Timis and Caras-Severin [1, 2, 3, 4]. The pest is under Romanian reglementations regarding WCR, Low no. 37/1 March, 2006 – referring to the reorganization of plant protection and phytosanitary quarantine activities and Ministerial Order (M.A.P.D.R.), no. 102/February 21, 2006 - referring to emergency measures to prevent spreading, in Romania of the pest *Diabrotica virgifera* Le Conte. Romania applies the rules of EPPO in which WCR is listed in Annex IAI of the EC Directive 2000/29/EC and as an EPPO A2 pest, in Romania was included on Quarantine list and EU Commission directive 2003/766.

In order to verify efficacy of different types of traps and pheromones lures in order to decrease cost price of operations connected with monitorising we decide to try in field pheromones lures and traps especially for cussing the most suitable for Republic Moldova, the country in which the pest wasn't present but the situation have to be under control.

MATERIAL AND METHODS

Experience was done at Pesac (county Timiş), in an area with large pest population, in a monoculture maize field. During the experiment there were used the following variants: Csalomon type trap + Hungarian lure (C_h); Csalomon type trap + lure from Republic Moldova (C_m); trap type ICRR-CN + Hungarian lure (R_h); and trap type ICRR-CN + lure from Republic Moldova (R_m). In trial was used two types of traps:

a) Type Csalomon, Hungarian product, recommended by F.A.O. for monitorising WCR pest in Europe.
b) Type I.C.R.R. Cluj - Napoca, traps used in warning and forecast network in Romania.

In order to establish daily flight of pest adults, recording of captures were done 3 times/day, during a week, in maximum flight period of pest. Traps were situated at departure of 50 m one from other in each monitorising points. For interpreting results was calculated report of capture between those two types of traps and lures regarding number of adults registered in a certain time period.

RESULTS AND DISCUSSION

After 6 hours, it was obtained the following results: at C_u were caught 224 adults, at C_m 178 adults, at R_m 126 adults and at R_r 60 adults. Results obtained regarding captures registered during a week of registering captures with specificity of pheromones lures are presented in table 1.

Csalomon type trap + lure from Republic Moldova (C_m) has captured 838 adult/all period, Csalomon type trap + Hungarian lure (C_h) has captured 740 adult/all period, trap type ICRR-CN + Hungarian lure (R_h) has captured 311; and trap type ICRR-CN + lure from Republic Moldova (R_m) 207.

Result obtained show us that pheromone lure from Republic Moldova is suitable for forecast and warning WCR and that in the same time Csalomon type trap is the most adequate to this purpose.

A **B**

Fig. 1. Pheromone traps types: A-Csalomon; B-ICRR-CN

Table 1

Specificity pheromones for *Diabrotica virgifera virgifera*

Data	Variant (C_h)	Variant (C_m)	Variant (R_m)	Variant (R_h)	TOTAL
13 VII 2007	226	178	60	124	588
14 VII 2007	292	350	61	90	793
16 VII 2007	137	195	43	68	443
17 VII 2007	50	33	20	15	118
18 VII 2007	11	44	13	9	77
19 VII 2007	24	38	10	5	77
TOTAL	**740**	**838**	**207**	**311**	**2096**

CONCLUSIONS

1. Pheromones lure conditioning from Republic Moldova is the most efficient.
2. Csalomon trap type is the most adequate purposed scope.

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