DIVERSITY OF INSECT PESTS FROM COLZA CROPS IN WESTERN ROMANIA

DIVERSITATEA SPECIILOR DE INSECTE PREZENTE IN CULTURILE DE RAPITA DIN VESTUL ROMANIEI

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Abstract. *In the last time the colza crops is attack by numerous insect coleopterans: (Meligethes aeneus – blossom beetle, Ceutourhychus napi Gyll. – rape stem weevil), hymenopterans (Athalia rosae – colossed sawfly) and heteropteres (Euryderma ornata L – red cabbage bug). The damages caused by these various between 25 and 50%. The failing information at national and local level can be another raison for importance of colza cropping. The success of this crop through quantitative and qualitative yields depends of theoretically and practical knowledge in plant protection field. The observations were made in Experimental Field from BUASCVMT, during 2005 and 2006 years. The studied breeds were following: Ontario, Savannah, Belini, Potomac, Ader, Culvert, Tennessee, Milena, Attila and L.G (for 2005) and supplementary: Remy, Rodeo, Triangle, Ader, Alure (for 2006). It were organized varieties with different sowing densities especially of Alaska breed (8-9 IX-$d_1$12.5 cm, d_2 25 cm, d_3 37.5 cm; 21 IX-$d_1$12.5 cm, d_2 25 cm, d_3 37.5 cm and 2X-$d_1$12.5 cm, d_2 25 cm, d_3 37.5 cm). For Attila breed were studied the presence of insects in different sowing time (I – 1- 10 IX; II – 10 – 20 IX and III – 20 – 30 IX). A great variability was observed at Milena, Ontario and L.G (Eurydema ornata, Psylliodes crysocephala, Calocoris norvegicus, Meligethes aeneus, Athalia rosae, Ceuthorrynchus quadridens, and Epicometis hirta). The breeds L.G and Potomac were the most affected by the pests, while Ader, Culvert, and Tennessee were more repellent to them. The presence of insect pests in great number in varieties LG and Savannah caused significantly yield diminution 000 (-277; -1755).*

Rezumat. *În ultima perioadă cultura de rapiță este supusă unui real asediu prin prezența a numeroase specii de coleoptere (Meligethes aeneus – gândacul lucios al rapiței, Ceutourhychus napi Gyll – gărgărița tulpinilor de rapiță), hymenoptere (Athalia rosae – viespea rapiței) şi heteroptere (Euryderma ornata L). Pagubele cauzate de acestea variază între 25% - 50%. În aceste condiții şi dacă mai adăugăm lipsa informațiilor la nivel local şi național în acest sens, reuşita culturilor de rapiță, precum şi obținerea unor recolte asigurate cantitativ şi calitativ, depind de cunoştințele teoretice şi practice sub aspectul protecției plantelor. Observațiile au fost realizate în Câmpul experimental al USAMVBT, pe parcursul anilor 2005 şi 2006. Soiurile studiate au fost următoarele: Ontario, Savannah, Belini, Potomac, Ader, Culvert, Tennessee, Milena, Attila şi L.G (2005) şi suplimentar soiurile: Remy, Rodeo, Triangle, Ader, Alure (2006). De asemenea au fost organizate variante cu diferite densități de semănat la soiul Alaska (8-9 IX-$d_1$12,5 cm, d_2 25 cm, d_3 37,5 cm; 21 IX-$d_1$12,5 cm, d_2 25 cm, d_3 37,5 cm şi 2X-$d_1$12,5 cm, d_2 25 cm, d_3 37,5 cm) şi cu diferite epoci de semănat la soiul Attila (epoca I – 1- 10 IX; epoca II – 10 – 20 IX şi epoca III – 20 – 30 IX). O variabilitate mare a speciilor dăunătoare a fost observată la soiurile Milena, Ontario şi L.G. Cei mai importanți dăunători prezenți au fost: Eurydema ornata, Psylliodes crysocephala, Calocoris norvegicus, Meligethes aeneus, Athalia rosae, Ceuthorrynchus quadridens, Epicometis hirta. Varietățile L.G şi Potomac au fost cele mai afectate, în timp ce varietățile Ader, Culvert şi Tennessee au atras mai puține specii. Prezența dăunătorilor în număr mare în variantele LG şi Savannah au determinat scăderi foarte semnificative de producție 000 (-277; -1755).*

Key words: *insect pests, diversity, colza crop, varieties*
Cuvinte cheie: *insecte dăunătoare, diversitate, cultură rapiță, varietăți*

INTRODUCTION

Much utilization was allocated to this plant over time, but the main one is the importance in industry like oils car, lubricants, and paints). Colza is a good honey -bearing plant and an excellent green fodder, too. The pests witch frequented the colza fields, from our country are numerous and majors because the damages and the loss caused to seed and green material.

MATERIAL AND METHODS

For comparative studies were used some colza varieties *Ontario, Savannah, Belini, Potomac, Ader, Culvert, Tennessee, Milena, Attila* şi *L.G* (for 2005) and supplementary: Remy, Rodeo, Triangle, Ader, Alure (for 2006). It was organized varieties with different sowing densities especially of *Alaska* breed (8-9 IX-$d_1$12.5 cm, d_2 25 cm, d_3 37.5 cm; 21 IX-$d_1$12.5 cm, d_2 25 cm, d_3 37.5 cm and 2X-$d_1$12.5 cm, d_2 25 cm, d_3 37.5 cm). For Attila breed were studied the presence of insects in different sowing time (I – 1- 10 IX; II – 10 – 20 IX and III – 20 – 30 IX).

The harvest of trials was carried out in May 24, May 30 and June 15 (for 2005), this period correspond the flowering and silicve forming. The experience was organized to 100 m^2 lengthiness and width 90 m^2. There are a net partition among different varieties and densities (only to Alaska variety). The observations were made in Experimental Field from BUASCVMT, during 2005 and 2006 years.

RESULTS AND DISCUSSION

The results were similar for 2005 year and 2006, too.

Through comparison of entomophauna present to different varieties of colza (graphic 1, table 2), a great variability was observed at Milena, Ontario and L.G.

Thus, the follow pest *Eurydema ornata*-red bug of cabbage, *Psylliodes crysocephala*-blue flea of colza, *Calocoris norvegicus*-green bug of colza, *Meligethes aeneus*-shiny beetle of colza, *Athalia rosae*-colza hornet, *Ceuthorrynchus quadridens*-weevil of colza stem, *Epicometis hirta*-shaggy beetle, were observed. The breeds L.G and Potomac were the most affected by the pests, while Ader, Culvert, and Tennessee were more repellent to them (table 1).

For 2006, the most attacked varieties by pests were following: Savannah, Milena, Ontario, Attila, and L.G (table 3).

Nearly these there were present other pests, too. These were unspecific ally to colza cultures, without economically importance. The breeds L.G and Potomac were the most affected by the pests, while Ader, Culvert, and Tennessee were more repellent to them.

In flowering period were predominates the species from Phyllotreta. In silicval forming period were prevalent the follow species: *Eurydema ornata, Psylliodes crysocephala* and *Ceuthorrynchus quadridens*.

Regarding to behaviour of the Alaska breed at different densities, depending on the pests attack, it can be concluded that the sowing at a higher density (12.5 cm) attracted more important pests than that at a lower one (25.0 cm, 37.5 cm) (graphic 2).

Sowing time influenced the presence of pests in colza culture (especially to Alaska variety). On the plots, where colza was cultivated earlier (September 8-9, September 21), the pest species were more numerous and had a greater variability than those present at the colza cultivated later on (October 2). The similar situation was registered for 2006 (table 4).

Table 1

Diversity of pest species from colza crop in 2005

ORDER	FAMILY	SPECIES
Heteroptera	*Pentatomidae*	*Eurydema ornata*
		Eurydema oleraceum
		Calocoris norvegicus
	Miridae	*Lygus pratensis*
	Scutelleridae	*Eurygaster austriaca.*
	Miridae	*Lyxus junci*
Coleoptera	*Chrysomelidae*	*Phyllotreta atra*
		Psylliodes crysocephala
	Nitidulidae	*Meligethes aeneus*
	Scarabeidae	*Epicometis hirta*
	Curculionidae	*Ceuthorrynchus quadridens*
	Cantharidae	*Cantharis fusca*
	Chrysomelidae	*Phytodecta fornicata*
	Coccinelidae	*Coccinela sp.*
Hymenoptera	*Tenthredimidae*	*Athalia rosae*
	Cephidae	*Cephus pygmaeus*
Lepidoptera	*Noctuidae*	*Mamestra brassicae*
Diptera	*Anthomyiidae*	*Delia floralis*

Table 2

The main pests in some colza varieties, in 2005

Variety	***Species***					
	Euryderma ornata	*Meligethes aeneus*	*Psylliodes crysocephala*	*Athalia rosae*	*Ceuthorynchus quadridens*	*Calocoris norvegicus*
Milena	55	5	31	3	18	16
Savannah	26	3	23	1	19	5
Potomac	22	3	51	6	8	8
Belini	4	0	55	4	4	9
Ontario	62	5	6	8	13	19
L.G.	97	2	16	4	4	14
Ader	19	2	0	3	0	1
Culvert	10	0	15	1	4	0
Tennessee	21	0	10	0	0	12
Attila	43	5	32	4	0	12

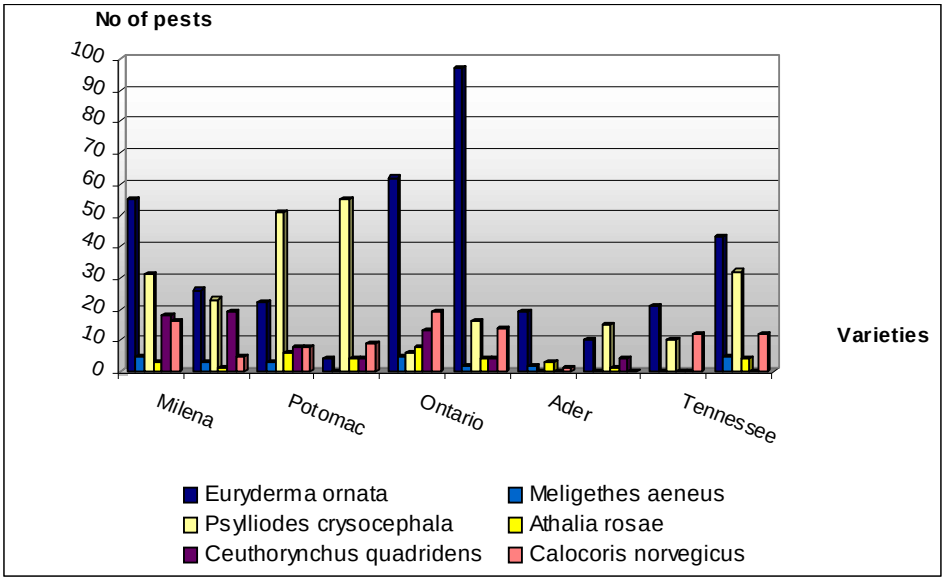

Figure 1 The presence of main pests in different varieties of colza

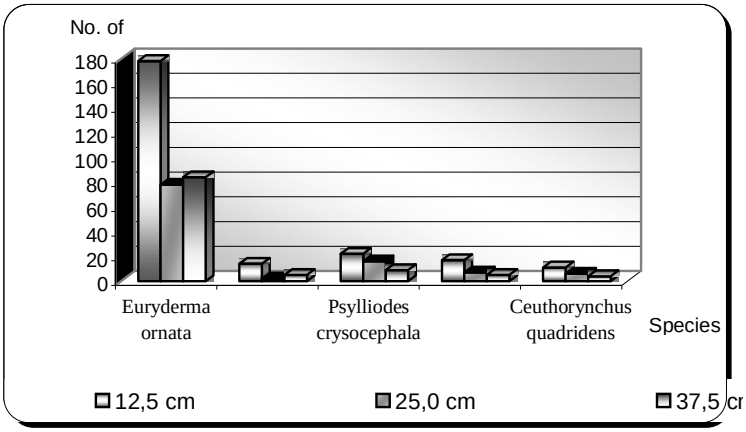

Figure 2 Influence of sowing density to Alaska variety on presence of main pests

The presence in great number of pests in LG and Savannah varieties caused significantly diminutions of yield *000 (-277; -1755*) (table 5).

Table 3

The main pests in some colza varieties, in 2006

Variety	Species					
	Euryderma ornata	*Meligethes aeneus*	*Psylliodes crysocephala*	*Athalia rosae*	*Ceuthorynchus quadridens*	*Calocoris norvegicus*
Savannah	10	2	14	1	11	2
Coulvert	6	1	0	1	2	0
Belini	3	1	21	0	2	4
Milena	38	3	17	1	11	9
Potomac	10	2	31	2	5	6
Attila	23	3	20	1	0	2
Remy	0	4	2	1	2	0
Rodeo	3	2	0	1	0	1
Triangle	6	0	1	2	1	11
LG	63	0	10	0	2	9
LG	26	13	22	3	14	11
Ader	10	0	1	1	0	1
Alure	3	1	2	1	2	3
Tennesse	11	0	5	0	1	9
Ontario	41	3	2	6	9	11

Table 4

Presence of main pests in different sowing density to Alaska variety

Sowing density	Species						
	Euryderma ornata	*Meligethes aeneus*	*Psylliodes crysocephala*	*Athalia rosae*	*Ceuthorynchus quadridens*	*Calocoris norvegicus*	*Epicometis hirta*
1 – 10 IX	106	2	10	12	9	7	3
10 – 20 IX	34	4	16	2	7	8	8
20 – 30 IX	23	4	6	10	5	5	1

Table 5

The yield significance in some colza varieties, in 2005 year

No	Variety	Yield (Kg/ha)	%	Difference (Kg/ha)	Significance
1	ATTILA	4808			
2	ADER	5332	110	524	X
3	MILENA	5837	121	1029	XXX
4	ONTARIO	5486	114	678	X
5	BELINI	6166	128	1358	XXX
6	SAVANNAH	3053	63	-1755	000
7	TENNESSE	4517	93	-291	
8	LG	4531	94	-277	
9	COULVERT	5958	123	1150	XXX

CONCLUSIONS

A great variability of pests was observed at Milena, Ontario and L.G

The major pests in colza cultures were the following: *Eurydema ornata, Psylliodes crysocephala, Calocoris norvegicus, Meligethes aeneus, Athalia rosae, Ceuthorrynchus quadridens, and Epicometis hirta.*

The breeds L.G and Potomac were the most affected by the pests, while Ader, Culvert and Tennessee were more repellent to them.

The sowing at a higher density (12.5 cm) attracted more important pests than that at a lower one (25 cm, 37.5 cm).

On the plots, where colza was cultivated earlier, the pest species were more numerous and had a greater variability than those present at the colza cultivated later.

The presence in great number in LG and Savannah varieties caused significantly diminutions of yield *000 (-277; -1755).*

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