STUDIES ON THE BEHAVIOR OF WHEAT VARIETIES TO PESTS ATTACK *OULEMA MELANOPA L*

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Abstract: *In Romania, a particularly important role in the new organization of agriculture is farmers' associations, which aim to ensure the concentration and specialization of production. After all the studies - Over the years, losses due to pests, diseases and weeds amount to several billion lei, which requires action at multiple levels. Insects show great plasticity in their adaptation to the conditions of existence forming an inexhaustible number of morphological and biological types. From this large number of insects is part Oulema melanopa L. (oat/cereal leaf beetle), frequently reported in cereal crops in Banat. The purpose of this research was to identify, within three years, the most sensitive wheat varieties to the attack of Oulema melanopa L species. Studies were conducted in the experimental field of the discipline Nematology and Acarology, located on the left side of the national road Timisoara-Arad. Observations were made on 16 wheat varieties, of which: 8 awned species and 8 varieties unawned (domestic and imported) from 2009 to 2011. Entomological material was collected with entomological net, by repeated scything/mowing wheat crop. A sample was composed of 50 forages (25 on one side, 25 on the other side, alternating) from top to bottom, going zigzag, large diagonal of the plot. Oulema melanopa L. larvae were collected manually.Varieties that are more resistant to the attack of Oulema melanopa L. were Calango and Soisson, of the awned, and of the unawned varieties were noted Carolinum and Feny .In recent years, Oulema melanopa L. is attacking the leaves of maize (late hybrids) where maize is located next to a plot of attacked wheat. As such, these parcels are a possibility of propagating the species and also the land will be a reserve for next year, if cultivated with wheat (simple rotation maize - wheat).*

Key words**:** *wheat, Oulema melanopa L., frequency, intensity, degree of attack*

INTRODUCTION

Population *Oulema melanopa* L. in Romania is particularly prevalent in Transylvania Plain and Banat. The first damage caused by beetle oats was recorded in 1850.

In Banat major attacks in recent years have been reported in Jebel, Liebling, Şandra and Timişoara.

In 2006-2007, Păuneţ P. and M. Tălmaciu studied in terms of the Huşi-Vaslui, biology and ecology of pests that occur in wheat and oat, including the blue beetle oats.

In terms of the west regions of the country are relatively few recent studies on oats blue beetle (*Oulema melanopa* L.).

Oulema melanopa L. becomes dangerous when there are factors that favor the development, multiplication and hence control principles should be based on removing or reducing these factors. The application of such principles aimed so that changing environmental conditions to create optimal living conditions unfavorable for plant and pest development or multiplication.

MATERIAL AND METHODS

The research was conducted at the Experimental Teaching Base of University of Agricultural Sciences and Veterinary Medicine of Banat in the period 2009-2011. (Figure 2.1).

Entomological material was collected with entomological net through repeated mowing wheat crop. (Annex 1). A sample consisted of 50 mowers (25 on one side, 25 on the other side, alternating) from top to bottom, going zigzag diagonal large plot. *Oulema melanopa* L. larvae were collected manually. (Annex 3).

Behaviour of various wheat varieties Oulema melanopa L attack was carried out in the field. Acarology discipline and Nematology, determining the frequency and intensity of the attack, according to the following scale:

1 = infestation is at a rate of 1.1 - 3% of
2 = attack is in a proportion of 4-10%
3 = attack is in a proportion of 11 to 25%
4 = attack rate is 26 - 50%
5 = attack rate is 51 - 75%
6 = attack rate is 76 - 100%

Observations were conducted on 16 varieties of wheat, of which 8 species and 8 varieties nearistate Arista (domestic and imported) during 2009-2011.

Figure 1. Experimental field

RESULTS AND DISCUSSIONS

1. Frequency of attack

The frequency of attacks (F%) is the number of plants or plant organ attacked, expressed in% of the total number of vegetative organs of plants or attack.

The variety most resistant to pests *Oulema melanopa* all three years studied, it was noted to be the species CALANGO a variety of Arista with small with large heads and strong twinning.

Among the imported varieties is the BECHȘ was attacked with an extremely strong attack by *Oulema melanopa* (80 attacked plants in total 100).

Among varieties nearistate, the most resistant variety was CAROLINUM with *Oulema melanopa* L.middle attack .

Table 1

The frequency (%) of *Oulema melanopa* L.attack at Experimenal Teaching Base in Timişoara

Nr.crt.	Wheat species	2009	2010	2011
Aristate species				
1.	DROPIA	88	90	75
2.	BECHŞ	72	80	67
3.	RENAN	51	50	52
4.	ANTONIUS	33	30	24
5.	JOSEF	20	23	15
6.	SOISSONS	11	12	17
7.	GLOSA	11	15	22
8.	CALANGO	4	5	3
Unaristate species				
9.	ARLEQUIN	27	30	30
10.	CAROLINUM	6	4	3
11.	APACHE	22	21	15
12.	AZIMUT	19	20	17
13.	PETUR	7	10	5
14.	FENY	6	6	7
15.	RUSSIJA	39	40	33
16.	ANDALOU	31	30	26

Overall, the wheat crop in the experimental field of the discipline, the attack frequency of *Oulema melanopa* L. is shown in Table 2:

Table 2

The frequency of *Oulema melanopa* L. attack of wheat crop in Timisoara

Year	Wheat	Attack frequency (F%)
2009	Didactic Experimental Timişoara	3,1
2010	Didactic Experimental Timişoara	3,9
2011	Didactic Experimental Timişoara	3,0

2. The intensity of the attack

The intensity of the attack is the percentage by which a plant is attacked or organ of the plant and crop losses to a crop-growing recorded per unit area.

Intensity attack wheat varieties differ from one year to another. Table 3. presents the results obtained in the three years of research intensity of *Oulema melanopa* L.attack.

Table 3

Intensity of *Oulema melanopa* L. attack on Experimental Teaching Base Timisoara

Year	Wheat	Attack intensity (%)
2009	Didactic Experimental Timişoara	9,4
2010	Didactic Experimental Timişoara	9,8
2011	Didactic Experimental Timişoara	6,5

From Table 3 it is observed that the highest intensity of the attack took place in 2010, was 9.8% in 2009, the intensity is very close to 2010, was 9.4% and in 2011 contested intensity of 6.5%, so a much lower intensity compared to the other two years.

3. The pest degree

Table 4

The pest degree is the extent of disease expressed as a percentage based on the frequency and intensity of attacks

Year	Wheat	Pest degree
2009	Didactic Experimental Timişoara	0,29
2010	Didactic Experimental Timişoara	0,38
2011	Didactic Experimental Timişoara	0,19

As shown in Table 4, the degree of pest differ greatly in 2010 compared with 2011.

CONCLUSIONS

1. Frequency, intensity and degree of pest are different in the three years of study. Frequency of attack in 2009 is 3.1%, in 2010 3.9% and in 2011 is 3.0%.
2. The intensity of the attack in 2009 is 9.4%, in 2010 9.8% and in 2011 is 6.5%.

Because rainfall is much lower in 2011 compared to 2009, due approximately the same average temperature, the intensity of the attack and attack frequency is lower in 2011 compared to 2009.

3. *Oulema melanopa* reserve in 2009 was very high, as in 2008, the area planted with wheat straw cultivated land was still not harvested.

Then followed two years (2010-2011) where he practiced a simple rotation wheat - corn (sorghum) - wheat.

The pest in 2009 is 0.29% in year 2010 is 0.38%. and in 2011 is 0.19%.

Regarding the behavior of wheat to attack by *Oulema melanopa* L., varieties of wheat grown and Nematology - Acarologie discipline can be considered as a collection of averages.

4. Varieties most resistant to attack *Oulema melanopa* L. were Calango and Soisson, of the Arista, and of the un/nearistate, stood Carolinum and Feny varieties.

Production is recommended to limit the use of pesticides and use of integrated battle in which an important role is the responsibility of plant resistance to pests and diseases, given the wheat crop and by the very important pest *Oulema melanopa* L.

Wheat crop and plant location are important links that limits pre-reserve *Oulema melanopa* L.

In recent years, *Oulema melanopa* L. attacking the leaves of maize (hybrids late) where maize is next to a plot to attack wheat. As such, these plots are a possibility of propagating the species and also the land will be a reserve for next year, if cultivated with wheat (simple rotation corn - wheat).

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