RESEARCH REGARDING THE BIOLOGY AND ECOLOGY OF THE *EURYTOMA SCREINERII* SCHR. AT S.C.D.P. VÂLCEA

CERCETĂRI PRIVIND BIOLOGIA ŞI ECOLOGIA SPECIEI *EURYTOMA SCHREINERI* SCHR. LA S.C.D.P. VALCEA

***BANCĂ Gh.*[1]*, MITREA I.*[1]**
e-mail: mitreaion@yahoo.com

Abstract. *Eurytoma screineri Schr. is one of the most dangerous species encountered in the plum orchards in Romania. Pest is present in all areas of culture of plum, damage can reach 90% of the fruit. Within the integrated pest control, knowing the biology and ecology is an essential component without which cannot be made the schemes for control treatment. In the climate of Romania Eurytoma schreiner Schr. has one generation per year hibernating as larva in plum stones. In the climatic conditions at S.C.D.P. Valcea, the larvae transform to pupae takes place in late March and early adult emergence occurred in the third decade of April, after the temperature exceeded 15*^{0} *C.*
Key words: *Eurytoma schreineri* Schr., biology, ecology

Rezumat. *Eurytoma screineri Schr. este una dintre cele mai periculoase specii întâlnită în livezile de prun din România. Dăunătorul este prezent în toate zonele de cultură a prunului, pagubele produse putând ajunge până la 90% din producţia de fructe. În cadrul combaterii integrate cunoaşterea biologiei şi ecologiei dăunătorilor este o verigă esenţială, fără de care nu pot fi realizate schemele pentru tratamentele de combatere. In conditiile climatice din România Eurytoma schreineri Schr. are o singura generaţia pe an, iernând în stadiul de larvă în sâmburii de prun. În condiţiile climatice de la S.D. Vâlcea, transformarea larvelor în pupe are loc la sfârşitul luni Martie, iar apariţia primilor adulţi a avut loc în a treia decadă a lunii Aprilie, după ce temperatura a depăşit 15*^{0} *C.*
Cuvinte cheie: *Eurytoma schreineri* Schr., biologie, ecologie

INTRODUCTION

Plum is one of the most important fruit species grown in the county Valcea (59.7%). It is a valuable species because trees have relatively low requirements to ecological conditions, requiring a relatively simple agricultural technique with a constant high productive potential (Mitrea, 2005).

The production potential can be reduced by 20-30% or sometimes totally compromised because of disease and pest attack (Gava, 1999).

Eurytoma screineri Schr. is one of the most dangerous species found in the plum orchards in Romania (Copaescu, 1987).

[1] University of Craiova, Romania

Description: wasp measuring 4-6 mm long, is black with whitish piliferous, rare on head and thorax, abdomen with a strong luster.

The head is large, wide, oval eyes, brown. Antenna is composed of 13 articles.

Pedunculate abdomen is short and smooth, with metallic luster.

Ovipositor is yellow, the legs are brown.

The egg is oval and measures 0.3 mm, with an elongated pedicel at one end, in excess of 2 times the length of the egg.

Larva is apod and encephalon white, with body bulging in the middle and thin at the ends, white brain capsule - yellow and brown mandibles.

White pupa, with yellow legs and wings, attached to the body (Perju et al. 1980).

MATERIAL AND METHODS

Research and observations on the biology of wasps plum stones were performed in SDCP Valcea, under natural conditions, using growth cages.

To determine the biological reserve we have collected 20 seeds from 5 trees, which were analyzed macroscopically.

Climatic conditions for the period of research, were generally favorable for development of the seeds plum stone sawfly.

Research regarding the morphology of the seeds wasp plum stone were performed on biological material collected from plum orchard at SDCP Valcea and examined under laboratory conditions.

The moment of adults emergence, has been surveilled by placing the growing cages under the crown of the trees. Also ha been established the duration of transforming larvae into pupae, incubation period and duration of larval development.

On the inside of the growth cages were placed attacked stones, harvested in autumn. Biological material from the growth cages was examined daily.

RESULTS AND DISCUSSIONS

Experiences on the biology and ecology of the species *Eurytoma schreiner* Schr. (wasp plum stone) were performed in 2010, on Stanley variety.

For monitoring pest development stages were collected randomized 100 seeds, from under the crown of the trees. Stones that were examined contained larvae of wasp plum stones, then were monitorized the larvae which came into diapause.

Following our observations, it was found that of the 100 stones collected, 90 showed symptoms of wasps plum stones attack.

The data presented show that, in 2010 from the examined larvae 77% were alive and 23% dead.

According to collected data it came out that from all the examined attacked stones have passed diapause 37.7% of the total number of seeds attacked examined.

The transformation of the larvae into pupa took place in early spring, when average daily temperature began to exceed 10°C. According to our research, this period coincided with plum buds swelling. To determine adult flight, during

spring, there were made observations in growth cages, and results are presented in Table 1.After finishing the pupa stage, 47% of adults have died and 53% of adults flew from seeds attacked.

Table 1

Evolution of the development stages of *Eurytoma schreiner* Schr. species at S.C.D.P. Vâlcea

Examined seeds	Attacked seeds	Larva			Pupa	Adults	
		Dead	Alive	Diapause		Alive	Dead
100	90	21	69	34	13	7	6

The phenology of the wasps plum stones

In order to establish schemes for treatments in an integrated control of wasp plum stones a very important role it's represented by the study of the pest phenology (Georgescu et.al. 1998).

Following our observations made on the biology of wasps plum stones it came out that in 2010, beginning of the transformation of the larvae into pupa occurred later (7. IV. in 2010), because in March and early April prevailed lower temperature than the normal average temperature, which had an negative influence effect on insect development (table 2).

Low temperatures in the first decade of April 5.7°C, determine the appearance of the first adults of wasp plum stones in the second decade of April, on April 25.

The beginning of eggs laying it is largely influenced by the action of several factors, such as climatic conditions, food, etc. (Talmaciu et. al., 2006). Thus, in 2010 the beginning of laying eggs has been recorded on April 25. During the observations there has been discovered eggs layed even on the day of mating individuals. Embryonic development lasted 26 days. Hatching larvae occurred in the second half of May.

Table 2

Phenology of the *Eurytoma schreineri* Schr. species at S.C.D.P. Vâlcea, 2010

Development stages	Cronology
Begining of the pupa stage	7. IV
Mass pupating	15-27. IV
Ending of the pupa stage	3. V
Transforming pupa in adults	21. IV
Appearance of male	25. IV
Appearance of female	26. IV
Ending of the adults appearance	20. V
Beginning of laying eggs	25. IV
Ending of laying eggs	18. V
Hatching larvae	20. V
Last stage larvae	13.VI

CONCLUSIONS

In the climatic conditions of S.C.D.P. Valcea *Eurytoma schreiner* Sch. species, has a single generation.

The percentage of viable larvae of the wasp plum stones was 77% and 37% of them entered in diapause, and after finishing the pupa stage 53% of adults were living.

Regarding the phenology of *Eurytoma schreiner* species Sch. we draw the following conclusions:

- the beginning of transforming larvae into pupa began early in the first decade of April;
- adult emergence phased over 26 days (25.IV – 20. V);
- beginning of laying eggs recorded in the third decade of April, and hatching larvae occurred in the third decade of May

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