

# Researches Regarding the Attack Produced by *Cydia amplana* Hb. in U.P. II Badacin Şimleul Silvaniei Forestry Department

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## Abstract

During the years with low or abundant fructification in oak stands, acorns production is affected by various lepidopterans species like: rusty oak moth *Cydia amplana* Hb. This species is widespread in Europe and in our country is encountered in oak forest in thinning stands or isolated trees. In one acorn grows one larva but it can be spotted together with larvae of *Balaninus glandium* Marsh., the damage being very high by destroying the fructification organs. The purpose of this research was the monitoring of *Cydia amplana* Hb. frequency attack in the 2011-2012 on acorn. Therefore in 2011 in Măgura canton from all the acorns analyzed 3.6% of them were attacked by *Cydia amplana* In the Giurtelec canton of 763 acorns analyzed, 35 were attacked by *Cydia amplana* Hb. (representing 4.6% of the total acorn analyzed). In Cehei canton from three monitoring points were analyzed 913 acorns. In 2012 in the Măgura canton from all the acorns analyzed 41 were attacked by *Cydia amplana* Hb. In the Giurtelec canton 45 acorns were attacked by *Cydia amplana* (representing 5.9% of total acorns analyzed). In Cehei canton 91 of the acorns harvested were attacked by *Cydia amplana* Hb. (representing 10% of total acorn analyzed).

**Keywords:** *acorn, attack, caterpillar, Cydia, moth.*

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**Introduction.** In the natural regeneration of oak trees a great importance has the seed reserves existing in the litter. Among the species of insects that attack the acorn the most common are *Curculio glandium* Marsh. (acorn weevil) and *Cydia (Laspeyresia) amplana* Hb. (rusty oak moth). These species attack acorns before dissemination (Oltean, 2005). Among the most important pests of the sessile oak (*Quercus petraea*) and pedunculate oak (*Q. robur*) is *Cydia amplana* (Harapin and Jurc, 2000). Besides the oak species may also attack the sweet chestnut *Castanea sativa* (Kollar *et al*, 2009). **Aims and objectives.** The purpose of this research was the monitoring of *Cydia amplana* frequency attack in the 2011-2012 on acorn.

**Materials and methods.** The researches were conducted in Şimleul Silvaniei Forestry District

in oak trees nursery from UP II Badacin. In each stand three checkpoint were located, at the base of the slope, at mid-slope and at the top of slope were three trees were randomly selected. Under each tree in late September were collected some fallen acorns and taken in the laboratory, sectioned in order to determine if they are attacked. The species identification was made by external morphology of larva or by the acorn shaped hole.

**Results and Discussions.** In 2011 in Măgura canton was reported that from 752 acorns attacked, 27 were attacked by *Cydia amplana*. The acorn moth had the highest frequency at the base of the slope with a value of 4.6% in 2011 and 5.4% in 2012. In 2012 it was reported that 4.3% acorns were attacked by *Cydia amplana*, with an increase of 0.7% since 2011 (Tab. 1). This is explained by

**Tab. 1** Health status of the acorns in 2011 and 2012

Checkpoint	Măgura canton forest stands					
	Year 2011			Year 2012		
	Total acorns examined	Acorns attacked		Total acorns examined	Acorns attacked	
	No.	%	No.	%		
Base of the slope	216	10	4.6	325	19	5.9
Middle of the slope	303	8	2.7	298	5	1.7
Top of the slope	233	9	3.9	330	17	5.2
Average	752	27	3.6	953	41	4.3
Giurtelec canton forest stands						
Base of the slope	254	17	6.7	163	14	8.6
Middle of the slope	273	7	2.6	322	21	6.5
Top of the slope	236	11	4.7	274	10	3.7
Average	763	35	4.6	759	45	5.9
Cehei canton forest stands						
Base of the slope	333	27	8.1	273	28	10.2
Middle of the slope	306	12	3.9	355	32	9.0
Top of the slope	274	11	4.0	280	31	11.1
Average	913	50	5.5	908	91	10.0

the fact that adults of this species fly especially in areas bordering the forest stand, in the clearings, the flying very being low in the compact stands (phenomenon encountered in *Totricidae* family). In Giurtelec Canton, in 2011 the frequency of attacked acorns by *Cydia amplana* was 4.6% of the total acorn analyzed. It is found that in this district there is a small increase of 1% in 2011 and 1.6% in 2012 in the frequency of the moth from Măgura canton. A highest frequency is indicated also at the base of the slope by 6.7% attacked acorns in 2011 and 8.6% in 2012.

In Cehei canton in 2011 from 913 acorns 50 were attacked by *Cydia amplana*. It is noted that in this district there is a slight increase of 1.9% from Măgura and 0.9% from Giurtelec cantons in 2011 and of 5.7% from Măgura and 4.1% from Giurtelec cantons in 2012. Due to the breeding ability in time and space insects adapt to a wide range of environmental conditions (Holland *et al*, 2006). After a study conducted by Kollar *et al* between 2005-2008 in Slovakia this non-native species, seems to have the ability to attack various species of oak or ornamental chestnut trees. Thereby special attention should be paid to these alien species in order to prevent the invasion and their gradations (Kollar *et al.*, 2009). Lately due to climate change, the species are reported in new

countries so these invasions need special attention (Sparks *et al.*, 2007).

**Conclusion.** The acorn moth highest frequency is at the base of the slope and the lowest attack was reported in the middle of the slope. This is explained by the fact that adults of this specie fly especially in areas bordering the forest stand, in the clearings, flying being very low in the compact stands (phenomenon encountered in *Totricidae* family).

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