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Influence of extremely low temperatures during winter 2016-17 on the populations of pine processionary moth in the Republic of Macedonia

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This paper presents results concerning the impact of extremely low winter temperatures on the mortality of caterpillars of pine processionary moth, *Thaumetopoea pityocampa* in the 2016/2017 generation. Also, the dynamics of pine processionary moth populations and the impact of reduction factors in the period 2007-2017 were monitored. The abundance of its populations is determined by the number of caterpillar nests per tree and per hectare.

Population density of the pine processionary moth varies during this research period. The number of individuals in the populations from the generations from 2007 to 2010 is growing, and then rapidly decreasing. This is as a result of the control measures taken in 2010, when aviosuppression with Rimmon E-10 was carried out. Afterwards the abundance of *T. pityocampa* is brought to normal limits in all regions.

From 2011 progradation trend has been recorded as a result of the huge number of individuals from the previous years who were in the pupae stage during the winter diapause. Population density is increasing in the several subsequent years. In conjunction with this the percentage of defoliation increases almost at all sites in Republic of Macedonia from 2011-2015.

Based on the results obtained in this period and predominantly due to the very high population density, recommendations are given with measures for gradual regulation of pine processionary moth populations in the black pine cultures in 2015 and 2016.

The abundance of pine processionary moth populations because no corrective measures were taken, continued to grow in 2016 and in the winter 2016/2017 there was a pronounced retrogradation. The density of the populations came to a latency due to enormous number of dead larvae from the second and third larval stage from the extremely low temperatures that were present for a long period of in January 2017.

This research has identified 100% mortality of caterpillars of pine processory moth in the black pine cultures in the regions near Prilep, Sveti Nikole, Shtip, Kochani and Negotino.

Keywords: pine processionary moth, *Thaumetopoea pityocampa*, black pine (cultures) forests, extremely low temperatures, abundance, population dynamics, mortality.

Distribution of *Hymenoscyphus fraxineus* on *Fraxinus* spp. in Serbia

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The problem of Ash decline has been for the first time observed in early 1990's in Poland. In the coming year disease has spread throughout Europe and produced serious damages in naturally established and planted ash stands. The disease has been identified in neighboring countries in 2005 in Romania, in Slovenia (2006), Croatia (western part 2009, eastern 2012) and Bosnia and Herzegovina (eastern part 2009 and central 2013, eastern 2014). In Serbia, the presence of *H. fraxineus* was monitored since 2011. Although decline of ash trees was present, symptoms were usually disguised with the presence of other disturbing abiotic (extreme drought 2012 and 2013, extreme wed 2014) and biotic (*Phytophthora* spp., *Stereonychus fraxini* – defoliation, etc.) factors. The first *H. fraxineus* resembling cultures were obtained in late autumn 2015. Ten cultures from three localities were identified as *H. fraxineus* after morphological and molecular analyses. Presence of *H. fraxineus* was confirmed for both *Fraxinus excelsior* and *F. angustifolia*, which were previously known as susceptible hosts.