

OCENA EKONOMSKEGA VPLIVA ZIMSKIH IZGUB ČEBELJIH DRUŽIN V AVSTRIJI, ČEŠKI REPUBLIKI IN REPUBLIKI MAKEDONIJI

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Izvleček

Medonosna čebela (*Apis mellifera* L.) ima velik ekonomski pomen tako za opravevanje, kot tudi za pridelavo čebeljih pridelkov (med, čebelji vosek, cvetni prah, propolis, matični mleček in čebelji strup). Število čebeljih družin se s časom spreminja. Nedavna poročila o izgubah čebeljih družin so pokazala različne stopnje odmiranja le teh v številnih regijah in državah sveta. Za tovrstne izgube ni enotnega razloga temveč gre za kombinacijo različnih vzrokov, kot so: parazitska pršica *Varroa destructor*, virusi, *Nosema* spp, bakterijske bolezni, fitofarmacevtska sredstva, različne čebelarske prakse ter ostali stresni dejavniki. Glede na to, da ekonomski vidik izgub čebeljih družin še ni bil ocenjen, je bila razvita metodologija za ocenjevanje finančnega vidika vpliva izgub čebeljih družin, ki temelji na podatkih, pridobljenih iz COLOSS ankete o izgubah čebeljih družin za leto 2016/17 (COLOSS standard questionnaire survey of honey bee winter losses for 2016/2017). Analiza, ki temelji na metodologiji, razviti v Republiki Makedoniji, je bila opravljena za oceno ekonomskega učinka izgub čebeljih družin. Dodatno so bili v primerjalno analizo vključeni še podatki iz Avstrije in Češke. V Makedoniji je bilo zbranih 321 vprašalnikov (13,6% čebeljih družin na nacionalnem nivoju), v Avstriji je bilo zbranih in analiziranih 1656 vprašalnikov (9,5% čebeljih družin) in na Češkem 1191 vprašalnikov (3,1% čebeljih družin). Ocena ekonomskih izgub je zajemala vrednost čebeljih družin, potencialno izgubo pridelka in izgubo zaradi prilagoditve vpeljane čebelarske prakse. V Avstriji in na Češkem je bila ocena izpeljana glede na povprečne informacije o trgu in produkciji čebeljih pridelkov, v Makedoniji pa so bili podatki pri anketiranih čebelarjih z dodatkom k COLOSS standardnemu vprašalniku. Preliminarni rezultati prikazujejo skupne finančne izgube v EUR zaradi zimskih izgub čebel (propadle, šibke in razdeljene družine) v vseh treh državah. Rezultati bodo pripomogli k osveščanju o pomenu medonosnih čebel za javnost in kmetijski sektor, ter bodo izboljšali strategije za ohranjanje medonosnih čebel ter krepitev čebelarstva.

Ključne besede: ekonomski vpliv, izgube čebeljih družin, metodologija, Avstrija, Češka, Makedonija.

ECONOMIC IMPACT ASSESSMENT OF HONEY BEE WINTER COLONY LOSSES IN AUSTRIA, CZECH REPUBLIC AND THE REPUBLIC OF MACEDONIA

Abstract

Honey bees (*Apis mellifera* L.) are of great importance because of their role in pollination as well as for production of bee products such as honey, wax, pollen, propolis, royal jelly and bee venom. The colony population fluctuates over time and recent monitoring reports show different levels of colony losses in many regions and countries all over the world. The cause of this kind of loss is not a single one, but rather a combination of various factors such as the parasitic mite *Varroa destructor*, viruses, *Nosema* spp., bacterial diseases, pesticides, management practices and other stress factors. Having in mind that the

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economic aspect of honey bee colony losses has not been estimated so far, a pioneer effort was made for developing a methodology that estimates the economic impact of honey bee colony losses, based on the data from the COLOSS standard questionnaire survey of honey bee winter losses for 2016/2017. Based on the methodology developed in the Republic of Macedonia, an analysis was made in order to perform economic impact assessment of honey bee colony losses and in addition Austria and Czech Republic data were included in the comparative assessment. For the Republic of Macedonia, information from 321 questionnaires, with coverage of 13.6% from the national number of honey bee colonies was analyzed. In Austria, data from 1,656 completed questionnaires was included in the analysis which represents 9.5% from the national number of bee colonies, while in Czech Republic, 1,191 questionnaires were analyzed with coverage of 3.1% out of the total number of colonies. The estimation of the economic losses was taking into consideration the value of the colonies, potential production losses and losses from applied adjustment beekeeping practices. For Austria and Czech Republic, the assessment was performed based on the average national market and production information. In addition, for the Republic of Macedonia, market and financial data were collected from the surveyed beekeepers, based on the upgrade made on the COLOSS standard questionnaire. Accordingly, the preliminary results show the total economic losses in EUR from the winter honey bee colony losses (for lost, weak and split colonies) in all three countries. This will help demonstrating the importance of honey bees for the public and agricultural sector and will support the policies for preservation of the honey bees and strengthening the beekeeping sector.

Key words: economic impact, honey bee colony losses, methodology, Austria, Czech Republic, Republic of Macedonia.

