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Laboratorijska procjena insekticidne učinkovitosti biljnih ekstrakata u suzbijanju žitnog kukuljičara (*Rhyzopertha dominica* Fab.)

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SAŽETAK

Cilj istraživanja je razvoj prirodnih insekticida bez negativnog utjecaja na okoliš.

Laboratorijski je procijenjena insekticidnost biljnih ekstrakata na bazi mažurana i suncokreta u suzbijanju žitnog kukuljičara *Rhyzopertha dominica* (Fab.) apliciranjem na četiri različite površine (staklo, keramičke ploče, obrađeno drvo i sirovo drvo), u svrhu moguće praktične primjene u skladišnim objektima.

Biljni ekstrakti su aplicirani kistom na površinu od 78,54 cm² po uzorku, te je učinkovitost procijenjena mortalitetom odraslih jedinki *R. dominica*, nakon 4, 24 i 48 sati. Svi tretmani su postavljeni kroz tri ponavljanja s 20 jedinki *R. dominica* po tretmanu, starosti 7-21 dan.

Najveća učinkovitost pri najkraćoj ekspoziciji (4 sata) je zabilježena s ekstraktom mažurana na staklenoj površini s mortalitetom od 58,33%, zatim na keramičkim pločama (40,00%), a najmanja učinkovitost na obrađenoj drvenoj površini (5,00%) i neobrađenoj drvenoj površini (3,33%). Produljenjem ekspozicije mortalitet se nije statistički značajno mijenjao. Ekstrakt suncokreta postigao je najveću učinkovitost tek nakon 48 sati ekspozicije na staklenoj površini s mortalitetom od 56,67%, na keramičkim pločama (41,67%), na obrađenoj drvenoj površini (16,67%) i na neobrađenoj drvenoj površini (1,67%).

Potrebno je provesti daljnja istraživanja uporabom preciznije tehnike apliciranja kao i na drugim vrstama skladišnih površina.

Istraživanja su provedena u sklopu istraživačkog projekta Hrvatske zaklade za znanost IP-11-2013-5570.

Ključne riječi: mažuran, suncokret, biljni ekstrakt, *Rhyzopertha dominica*, insekticidna učinkovitost

Laboratory evaluation of insecticidal efficiency of plant extracts in lesser grain borer (*Rhyzopertha dominica* Fab.) suppression

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SUMMARY

The aim of research was to develop a natural insecticide which has no negative impact on the environment.

Laboratory assessment of insecticidal efficiency of marjoram and sunflower extracts in suppression of lesser grain borer *Rhyzopertha dominica* (Fab.) was conducted applying on four different storage surfaces (glass, ceramic plates, treated wood and raw wood), for possible practical application purposes in storage facilities.

Plant extracts were applied with a brush on a surface of 78.54 cm² per sample, while the effectiveness was estimated through mortality of *R. dominica* adults, after 4, 24 and 48 hours. All treatments were placed in three repetitions with 20 adults of *R. dominica* (7-21 days old) per sample.

The highest efficiency at the lowest exposure (4 hours) was observed by marjoram extract on glass surface with a mortality rate of 58.33%, followed by ceramic plates (40.00%), while the lowest efficiency was observed on treated wood (5.00%) and raw wood (3.33%). Extending the exposure mortality was not significantly different. Sunflower extract achieved maximum efficiency only after 48 hours on glass surface with a mortality rate of 56.67%, on ceramic plates (41.67%), on treated wood (16.67%) and on raw wood (1.67%).

It is necessary to carry out further research using more precise techniques of application as well as on other surfaces.

This research was conducted as a part of Croatian Science Foundation research project IP-11-2013-5570.

Key words: marjoram, sunflower, plant extract, *Rhyzopertha dominica*, insecticidal efficiency