

## Hrvatska diatomejska zemlja – potencijalni izvor ekološki prihvatljivih insekticida u zaštiti uskladištenih proizvoda

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### Sažetak

Dijatomejska zemlja (DZ) je geološki sediment prirodnog praha fosiliziranih ostataka tijela jednostaničnih algi (dijatoma). Ova istraživanja imala su za cilj odrediti potencijalnu insekticidnu učinkovitost hrvatske DZ za suzbijanje skladišnih štetnika, te usporediti njenu učinkovitost s uzorcima DZ iz Grčke i Srbije. Ispitivana su dva uzorka hrvatske DZ: 1.uzorak M-6,9 s lokaliteta Markuševac (Medvednica) i 2. uzorak PD-2 s lokaliteta Podsusedsko dolje (Medvednica). Uzorci se razlikuju po boji; M-6,9 je zelen, a uzorak PD-2 je žute boje. Ovi uzorci do sada nisu primjenjivani kao insekticidi nigdje u svijetu. Kao standardni DZ uzorci u istraživanjima za usporedbu aktivnosti testiranih hrvatskih uzoraka DZ korišteni su: SilicoSec, njemačka riječna DZ registrirana kao insekticid za zrno; američka morska DZ Celite 209 i Celatom MN 23. SilicoSec, Celite 209 i Celatom MN 23 pripadaju u grupu najučinkovitijih DZ u svijetu. Hrvatski 1. uzorak M-6,9 veličine čestica < 45 mikrona, pokazao je vrlo dobru insekticidnu učinkovitost protiv skladišnih štetnika. Glavni zaključak je, da Hrvatska ima potencijalne izvore DZ za vlastitu proizvodnju ekološki prihvatljivih insekticida, stoga je važno otkriti nova nalazišta s boljim izvorima DZ. To bi mogao biti novi hrvatski proizvod.

Ključne riječi: diatomejska zemlja, insekticid, skladišni štetnici

## Croatian diatomaceous earth – the potential source of ecological acceptable insecticides in stored product control

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### Abstract

Diatomaceous earth (DE) is geological deposit of natural dust composed of fossilized bodies of unicellular algae (diatoms). This investigation aimed to determine potential insecticide effectiveness of Croatian DE against stored pests and make comparison with the effectiveness of DE samples from Greece and Serbia. Two samples of Croatian DE were determined: 1. sample M-6.9 from the locality Markuševac (Medvednica), and 2. sample PD-2 from Podsusedsko Dolje (Medvednica). The samples were different in colour; M-6.9 was grey and PD-2 was yellow. These DEs have not been used as insecticides anywhere in the world so far. As standard DEs, to compare activity of tested Croatian DE samples, SilicoSec, the German fresh water DE that was registered as grain insecticide, the USA marine DE Celite 209 and Celatom MN 23 were included into the experiment. SilicoSec, Celite 209 and Celatom MN 23 belong into a group of the most effective DEs in the world. The Croatian 1. sample M-6.9 with particle size < 45 microns showed good insecticide effectiveness against stored pests. The main conclusion is that Croatia has potential source of DEs for own ecological acceptable insecticides production and it is important to find new localities with better sources of DEs. It can be the new product from Croatia.

Key words: diatomaceous earth, insecticide, stored pests