

Poznatky o agregačním feromonu lýkožrouta vrcholkového a možnostech jeho využití v ochraně lesa

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Použitá literatura:

- Baader E.J., *Comparative Studies on Semiochemicals in Pityogenes-Spp (Col., Scolytidae) and their Potential Usage in Pest-Management Systems*, Journal of Applied Entomology-Zeitschrift fur Angewandte Entomologie 107 (1): 1-31 (1989).
- Bakke A., *Aggregation pheromone components of the bark beetle Ips acuminatus*. Oikos 31(2), 184-8 (1978).
- Brattli J.G., Andersen J., Nilssen A.C., *Primary attraction and host tree selection in deciduous and conifer living Coleoptera : Scolytidae, Curculionidae, Cerambycidae and Lymexylidae*, Journal Of Applied Entomology 122 (7): 345-352 (1998).
- Cognato A.I., Sperling F.A.H., *Phylogeny of Ips DeGeer species (Coleoptera: Scolytidae) inferred from mitochondrial cytochrome oxidase I DNA sequence*, Molecular Phylogenetics and Evolution 14(3), 445-460 (2000).
- El-Sayed A.M., The Pherobase, <http://www.pherobase.com/database/species-Ips-acuminatus.html> [24/1 2005].
- Franklin A.J., Debruyne C., Grégoire J.-C., *Recapture of Ips typographus L. (Col., Scolytidae) with attractants of low release rates: localized dispersion and environmental influences*, Agricultural and Forest Entomology, 2 (4): 259 (2000).
- Gehrken U., *Winter survival of an adult bark beetle Ips acuminatus Gyll.*, Journal of Insect Physiology 30(5), 421-9 (1984).
- Guerard N., Dreyer E., Lieutier F., *Interactions between Scots pine, Ips acuminatus (Gyll.) and Ophiostoma brunneo-ciliatum (Math.): estimation of the critical thresholds of attack and inoculation densities and effects on hydraulic properties in the stem*, Annals of Forest Science 57 (7): 681-690 (2000).
- Herard F., Mercadier G., *Natural enemies of Tomicus piniperda and Ips acuminatus (Col., Scolytidae) on Pinus sylvestris near Orleans, France: Temporal occurrence and relative abundance, and notes on eight predatory species*, Entomophaga 41 (2): 183-210 1996.
- Hutacharern C., Ungwijarnpanya S., *Chemical control of insect attacking freshly felled pine*, Thai Journal of Agricultural Science 17(3), 177-87 (1984); Chem. Abstr. 102, 19556 (1985).

Chararas C., *Primary and secondary attraction in three Scolytidae species (Ips) and the mechanism of colonization.* Comptes Rendus des Seances de l'Academie des Sciences, Serie D: Sciences Naturelles 290(4), 375-8 (1980).

Knížek, M., Zahradník P., *Kůrovci na jehličnanech*, Lesnická práce 3/2004, příloha str. I-VIII a citace tam uvedené.

Kohnle U., Kopp S., Francke W., *Inhibition of the attractant pheromone response in Ips acuminatus (Gyll.) by I. sexdentatus (Boerner) (Coleoptera, Scolytidae)*, Journal of Applied Entomology 101(3), 316-19 (1986).

Kohnle U., Vite J.P., Erbacher C., Bartels J., Francke W., *Aggregation response of European engraver beetles of the genus Ips mediated by terpenoid pheromones*, Entomologia Experimentalis et Applicata 49(1-2), 43-53 (1988).

Kostal V., Tamura M., Tollarova M., Zahradnickova H., *Enzymatic capacity for accumulation of polyol cryoprotectants changes during diapause development in the adult red firebug, Pyrrhocoris apterus*, Physiological Entomology 29 (4): 344-355 (2004).

Krehan H., Steyrer G., Perny B., Preier P., *Die Insektenfamilie der Borkenkäfer, deren Biologie, Bedeutung und deren Schäden*. BFW, Institut für Forstschutz, Wien; <http://baw.ac.at/400/2168.html>?<http://baw.ac.at/400/2248.html> (24/1 2005).

Levieux J., Cassier P., *The Transportation of Conifers Pathogenous Fungi by the European Xylophagous-Beetler*, Année Biologique 33 (1): 19-37 (1994).

Lieutier F., Garcia J., Yart A., Vouland G., Pettinetti M., Morelet M., *Ophiostomatales (Ascomycetes) Associated With Ips-Acuminatus Gyll (Coleoptera, Scolytidae) In Scots Pine (Pinus-Sylvestris L) In South-Eastern France, And Comparison With Ips-Sexdentatus Boern*, Agronomie, 11(9), 807-817 (1991).

Loefquist J., Byers J., *Combatting spruce bark beetles and composition therefor*, Patent Int. Appl. WO 8911221 A1 19891130 (1989), Chem. Abstr. 112, 231332 (1990).

Loyning M.K., Kirkendall L.R., *Mate discrimination in a pseudogamous bark beetle (Coleoptera: Scolytidae): Male Ips acuminatus prefer sexual to clonal females*, Oikos 77 (2): 336-344 (1996).

Loyning M.K., *Reproductive performance of clonal and sexual bark beetles (Coleoptera : Scolytidae) in the field*, Journal of Evolutionary Biology 13 (5): 743-748 (2000).

Moser J.C., Perry T.J., Bridges J.R., Yin H.F., *Ascospore Dispersal Of Ceratocystiopsis-Ranaculosus, A Mycangial Fungus Of The Southern Pine-Beetle*, Mycologia 87 (1): 84-86 (1995).

Rudnev D.F., Kononova N.E., *Effectiveness of insecticides in the control of bark beetles and other pests damaging trees and wood*, Nauk. Pratsi, Ukr. Nauk. Doslidnii Inst. Zakhistu Roslin 11, 124-35 (1962).

Seybold S.J., Blumenburg M., Titze J., Francke W., *The Origin and Activity of Isoprenoids in Pines and Pine Bark Beetles*, Chemické listy 97, s319-s322 (2003).

Stauffer C., Lakatos F., Hewitt G.M., *The phylogenetic relationships of seven European Ips (Scolytidae, Ipinae) species*, Insect Molecular Biology 6(3), 233-240 (1997).

Švestka M., *Vývoj a využití feromonu lýkožrouta vrcholkového – Ips acuminatus*, Thayensia (Znojmo) 2001, 4: 153-159.

Švestka M., Wiesner Ch., *Výsledky výzkumu vývoje a využití feromonu lýkožrouta vrcholkového - Ips acuminatus v ochraně lesa*, Zprávy lesnického výzkumu 44: 12-17 (1999).

Švestka M., Zhodnocení pokusu a závěr k protokolu o pokusu s přípravky na ochranu rostlin č. 04/10/01 až /05, VÚLHM Znojmo, 2004.

Vite J.P., Bakke A., Renwick J.A.A., *Pheromones in Ips (Coleoptera: Scolytidae): occurrence and production*, Can. Entomol. 104, 1967-1975 (1972).

VÚLHM, *Bark Beetle Occurrence in Spruce Stands*,

http://www.silvarium.com/en/info/zelenazprava_12.html.

Zahradník P., Knížek M., *Lýkožrout vrcholkový Ips acuminatus (Gyll.)*, Lesnická práce 12/1999, příloha I; http://www.silvarium.cz/lesprace/99/12/_priloha1.html