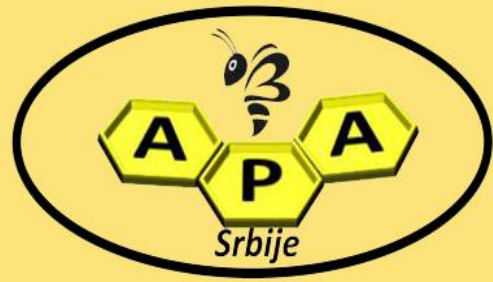


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# ZBORNİK RADOVA

## AKTUELNOSTI U PČELARSTVU I APITERAPIJI

SA MEĐUNARODNIM UČEŠĆEM

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## ETINIOZA – NOVA PARAZITSKA BOLEST U NAŠEM OKRUŽENJU

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Mala buba košnice ili *Aethina tumida* se relativno skoro pojavila u patologiji pčelarske proizvodnje. *Aethina tumida* je insekt iz reda *Coleoptera*, familije *Nitidulidae* i roda *Aethina*. *A. tumida* potiče iz Afrike gde parazitira kod afričkih pčela (*Apis mellifera scutellata*), koje su razvile efikasan zaštitni mehanizam prema njima. Tokom devedesetih ona se proširila po svetu i do sada je ustanovljena subsaharskoj, centralnoj i Južnoj Africi, severnoj Americi (SAD, Kanada), centralnoj Americi, Aziji (na Filipinima i u Koreji), Australiji, a od 2015. i u Evropi, na jugu Italije u Kalabriji i na Siciliji. Odrasli insekti su tamno smeđe do crne boje i dugi oko 5–6 mm. Odlični su letači i mogu da prevale ogromne udaljenosti, do 20km godišnje. Odrasle jedinke

mogu da žive do 6 meseci i mogu se posmatrati skoro bilo gde u košnici, iako se najčešće nalaze na zadnjem delu donje ploče košnica. *A. tumida* ima potpuno razviće: jaje, larva, lutka, adult. Ciklus razmnožavanja sastoji se od dva dela. Prvi je u pčelinjoj zajednici, a drugi u okolnom zemljištu. Odrasla ženka ulazi u košnicu da bi tu snele beličasta jaja veličine 1.4 x 0.26 mm. Tokom života ženka može da snese oko 1.000 jaja koje najčešće polaže u prostorima između ramova i zida košnice. Inkubacioni period je 2-6 dana. Izlegle larve imaju veliku glavu i izraštaje po telu koji ih štite od pčela.

Larve za 10-14 dana rastu do prepupalnog oblika koji napuštaju košnicu i odlaze u zemljište ispred košnica (na razdaljini 30-180 cm) gde se ukopavaju najčešće na dubinu od 1-10 cm a mogu se naći i na 75cm dubine. Ako je podloga nepodesna za zarivanje, udaljavaju se veoma daleko, čak i do 80 metara od košnice. Tu obrazuju lutku. Razvoj u zemlji traje do sedam dana nakon čega se legu novi adulti koji nakon nedelju dana dostižu polnu zrelost. Oni izleću i prva dva dana su izuzetno aktivni (dok ne nađu košnice u koje će se useliti) nakon čega se povlače u tamna mesta košnica.

Adulti i larve se hrane medom, polenom i hranom za pčele. One buše ćelije i defeciraju u med. To sve uzrokuje i potpomaže fermentaciju i komercijalnu neupotrebljivost meda. Fermentisani med kaplje iz ćelija koje su paraziti otvorili i stvara muljevit film unutar košnice

Dijagnozu postavljamo tokom pregleda košnica, a zatim pregledom zemljišta oko košnica na prisustvo larvi *A. tumida*.

Suzbijanje se vrši hemijskim tretmanom obolenja obuhvata koji sačinjava dva segmenta – tretiranje košnica i tretiranje zemljišta oko košnica. Pri tome se oba postupka moraju primenjivati istovremeno. U košnicama se koriste trake impregnirane *coumaphos*-om ili emulzionim koncentratom 40% permetrina. Ova koncentracija permetrina se koristi i za tretiranje zemljišta oko košnica.

**Ključne reči:** etinoza, *Aethina tumida*, epizootiologija, Zapadni Balkan

## ETHINIOSIS – A NEW PARASITIC DISEASE IN OUR ENVIRONMENT

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The small hive beetle or *Aethina tumida* appeared relatively recently in the pathology of beekeeping. *Aethina tumida* is an insect of the order Coleoptera, family Nitidulidae and genus *Aethina*. *A. tumida* comes from Africa, where it parasitizes African bees (*Apis mellifera scutellata*), which have developed an effective protection mechanism against them. During the nineties, it spread around the world and until now it has been established in sub-Saharan, central and South Africa, North America (USA, Canada), Central America, Asia (in the Philippines and Korea), Australia, and since 2015 in Europe, in the south of Italy in Calabria and Sicily. Adult insects are dark brown to black in color and about 5–6 mm long. They are excellent flyers and can cover huge distances, up to 20km per year.

Adults can live up to 6 months and can be seen almost anywhere in the hive, although they are most often found on the back of the hive's bottom plate. *A. tumida* has complete development: egg, larva, pupa, adult. The breeding cycle consists of two parts. The first is in the bee colony, and the second is in the surrounding soil. The adult female enters the hive to lay whitish eggs measuring 1.4 x 0.26 mm. During her lifetime, the female can lay about 1,000 eggs, which she usually lays in the spaces between the frames and the hive wall. The incubation period is 2-6 days. Hatched larvae have a large head and growths on the body that protect them from bees.

In 10-14 days, the larvae grow to the pre-pupal form, which leave the hive and go to the soil in front of the hives (at a distance of 30-180 cm), where they usually burrow to a depth of 1-10 cm and can be found at a depth of 75 cm. If the substrate is unsuitable for burrowing, they move very far, even up to 80 meters from the hive. There they train the doll. Development in the ground lasts up to seven days, after which new adults are laid, which reach sexual maturity after a week. They hatch and are extremely active for the first two days (until they find hives to move into), after which they retreat to the dark areas of the hives.

Adults and larvae feed on honey, pollen and bee food. They pierce the cells and defecate in the honey. All this causes and supports the fermentation and the commercial unusability of the honey. Fermented honey drips from the cells that the parasites have opened and creates a slimy film inside the hive

The diagnosis is made during the inspection of the hives, and then by inspecting the soil around the hives for the presence of *A. tumida* larvae.

Control is carried out by chemical treatment of the disease, which consists of two segments - treatment of beehives and treatment of the soil around the beehives. Both procedures must be applied simultaneously. Tapes impregnated with coumaphos or emulsion concentrate 40% permethrin are used in hives. This concentration of permethrin is also used to treat the soil around the beehives.

Key words: ethinosis, *Aethina tumidam*, epizootiology, Western Balkans