

SEASONAL FLIGHT OF *ANOMALA SOLIDA* ER. (COLEOPTERA, SCARABAEIDAE) ESTABLISHED BY PHEROMONE TRAPS

ALBENA MIRCHEVA¹, MITKO SUBCHEV¹, IVAN SREDKOV², MIKLÓS TÓTH³

¹ *Institute of Zoology, Bulgarian Academy of Science, 1 Tzar Osvoboditel Blvd,
1000 Sofia, Bulgaria*

² *Institute of Agriculture, 2500 Kyustendil, Bulgaria*

³ *Plant Protection Institute, Hungarian Academy of Science,
POB 102, H-1525 Budapest, Hungary*

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Abstract: Investigations on seasonal flight of *Anomala solida* Er. (Coleoptera, Scarabidae) were organized in neighbouring cherry and apple orchards in the Institute of Agriculture, Kyustendil, in 2000 and 2001. For the monitoring of the flight of the pest, VARb2 (CSALOMON[®]) funnel traps, baited with the synthetic sex pheromone of the species - (R, Z)-5-(-)-(oct-1-enyl)oxacyclopentan-2-one (R-buibuilactone), were used. As established by the catches of the males in traps, in the both years the flight of *A. solida* started at the beginning of June. The peak of the flight was in the middle of the June in 2000, and somewhat later - the last decade of June, in 2001. In the both years the last catches of *A. solida* were registered at the end of July. This is the first use of pheromone traps for seasonal monitoring of *A. solida* reported.

Anomala solida Er. (Coleoptera, Scarabidae) is a polyphagous pest which is reported to cause damages mainly in the southeastern part of Europe and in Balkan peninsula in particular [1-5]. In Bulgaria the species has one generation per year and can be found in all regions of the country. Imago of *A. solida* feeds on the leaves of orchard trees and other plant cultures, and larva damages on the underground parts of strawberry, potato and ground-nut [6].

Recently (R, Z)-5-(-)-(oct-1-enyl)oxacyclopentan-2-one (R-buibuilactone) was found to be very effective sex attractant for males of *A. solida* [7].

Here we report on our results on seasonal monitoring of *A. solida* in Bulgaria.

MATERIALS AND METHODS

Investigations on seasonal flight of *A. solida* were organized in neighbouring cherry and apple orchards in the Institute of Agriculture, Kyustendil, in 2000 and 2001. For the monitoring of the flight of the pest,

VARb2 (CSALOMON[®], Budapest, Hungary) (Mircheva et al., this volume) funnel traps were used. The traps were baited with 1 mg of the synthetic sex pheromone of the species - (R, Z)-5-(-)-(oct-1-enyl)oxacyclopentan-2-one (R-buibuilactone) applied onto PVC dispenser. For killing the beetles caught, a piece of insecticide Molyirto (Chemotox[®] Compack de RT, Budapest, Hungary) was put in the container of the traps used.

For our investigations, two traps were hung on the branches of trees at a height of about 1.5 m. The traps were at a distance of about 20 m. The traps were installed on May 30 and June 1 respectively in 2000 and 2001. They were inspected, the beetles caught checked and removed at 2-3 days interval till two weeks after the last catches.

Species identification was done after the end of the flight in laboratory. In addition to this a sample of 100 beetles was checked for sex. In 2000 the beetle were also separated in two groups – *A. (s.str.) solida* and *A. solida* ab. *flexuosa*.

RESULTS AND DISCUSSION

As established by the catches of the males in traps, in the both years the flight of *A. solida* started at the beginning of June – June 5, 2000 and June 3, 2001. The peak of the flight was in the middle of the June in 2000, and somewhat later - the last decade of June, in 2001. In the both years the last catches of *A. solida* were registered at the end of July – July 27 and July 31 respectively (Fig. 1). All the beetles of the sample of 100 individuals checked were males.

No other scarabaeid species, besides the target one, were caught in the traps during our field work.

The check of the sample of 100 beetles caught confirms that the sex pheromone of *A. solida* attracted only males. It is interestingly to note that the ratio of *A. (s.str.) solida* beetles to *A. solida* ab. *flexuosa* beetles caught in 2000 was about 1:5.

This is the first use of pheromone traps for seasonal monitoring of *A. solida* reported.

In Bulgaria the flight of *A. solida* was reported to begin at the end of June and lasted till the end of July [6]. For the region of Belogradchik and Berkovica (West Bulgaria) June and July, were reported as a flight period for *A. solida*[8]. In both cases no information about the peak of the flight was given. In such a way our investigations precise the term of the flight of *A. solida* in Bulgaria.

We found only one report dealing with the ratio of *A. (s.str.) solida* and *A. solida* ab. *flexuosa* in Bulgaria [9]. In this paper the author stated that *A. solida* ab. *flexuosa* occurred together with *A. (s.str.) solida* in Rhodopes region in some cases in higher number than the latter typical form. The latter finding coincide well with our results about the ratio between the two forms.

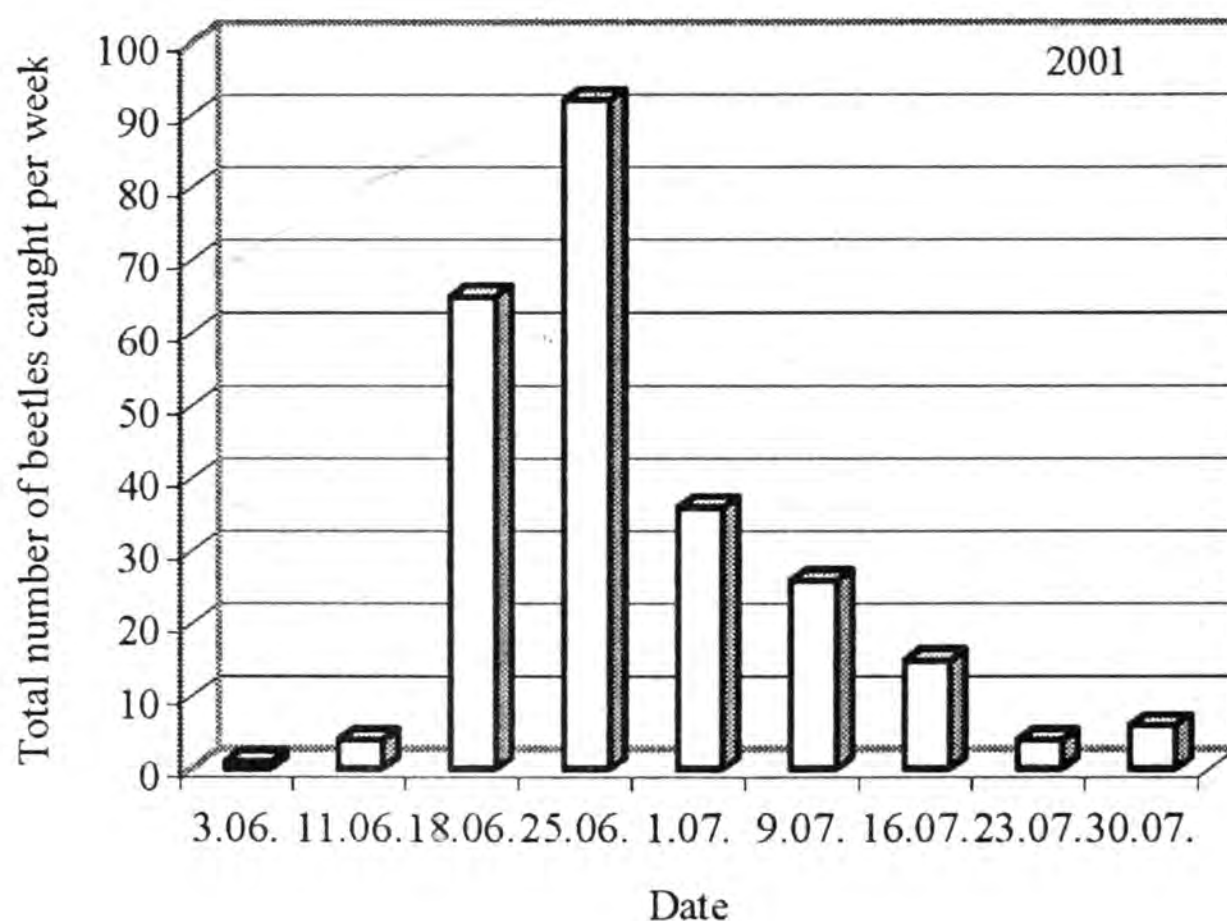
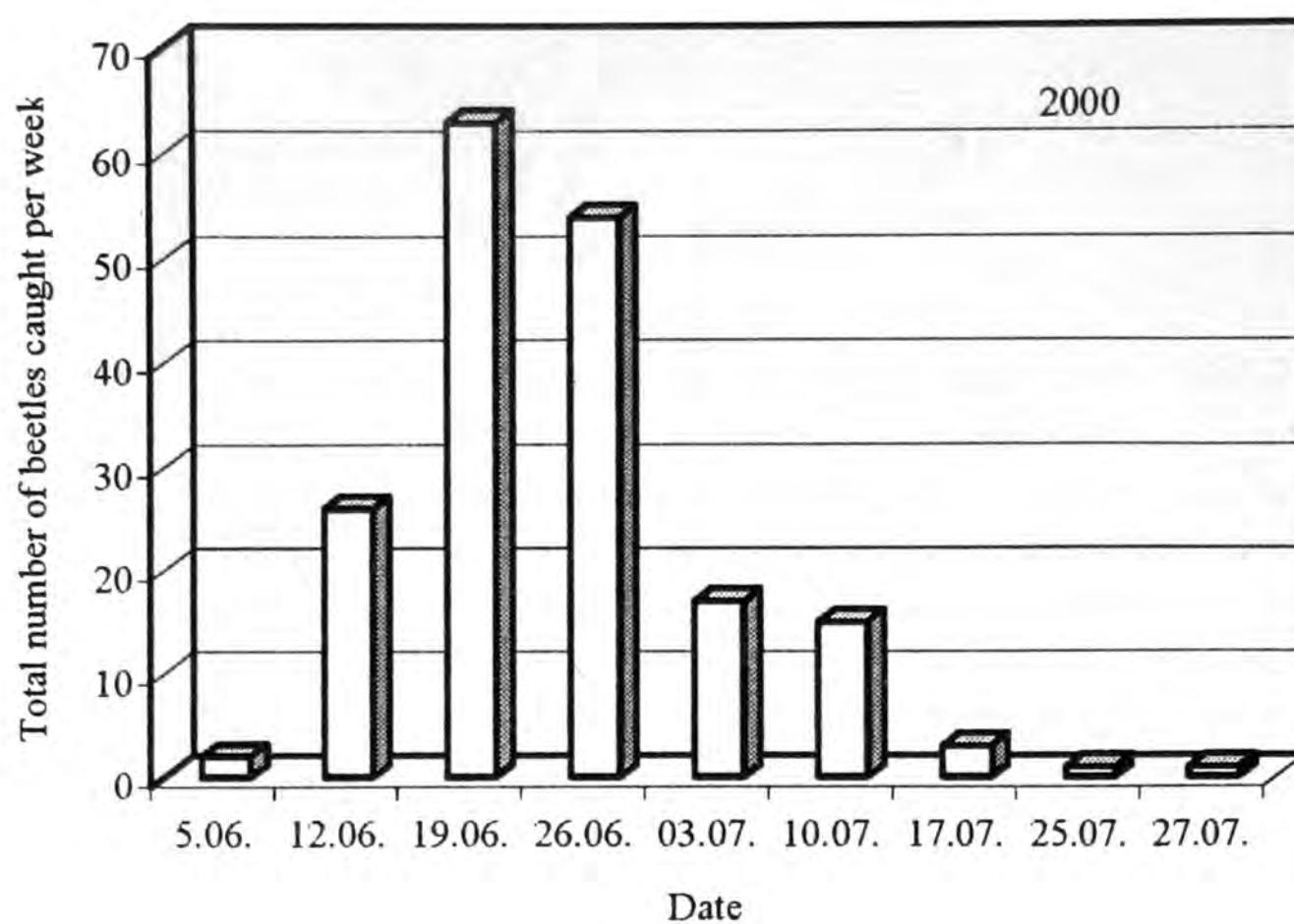


Fig. 1. Seasonal flight of *A. solida* in 2000 and 2001, Institute of Agriculture, Kyustendil.

We conclude that the VARb2 (CSALOMON[®]) funnel traps, baited with (R, Z)-5-(-)-(oct-1-enyl)oxacyclopentan-2-one (R-buibuilactone), are very effective species-specific tool for detection and seasonal monitoring of *A. solida*.

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