Trapping of *Epicometis (Tropinota) hirta* (Coleoptera, Scarabaeidae) – a review

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Pest status - The hairy scarab *Epicometis (Tropinota) hirta (*Coleoptera, Scarabaeidae, Cetoniinae) causes damages to soft fruits like strawberries and a variety of other orchard fruits in warmer regions of Central and Eastern Europe. The adults feed on the flowers and also on ripening fruits. Chemical control is near to impossible. We started our research with the aim of developing semiochemical-baited traps with high capture capacity, which could be used through mass trapping for decreasing the po density of the pest.

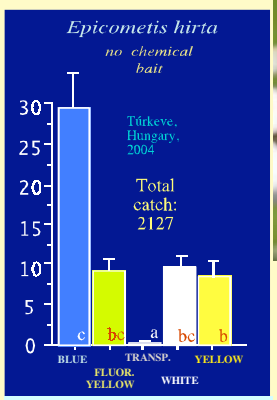

Fig 1. Mean catches of *E. hirta* in unbaited funnel traps of different colour. Data from [**1**]. Columns with same letter not signif. different at P=5% by ANOVA, Games-Howell.

Visual attractive stimuli - *E. hirta* is strongly attracted to visual stimuli of bright colours. When comparing catches of coloured funnel traps, highest responses were always recorded in light blue traps (Fig 1) [**1,2**].

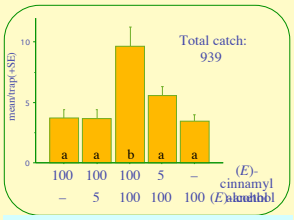

Fig 2. Mean catches of *E. hirta* in transparent traps baited with (*E*)-cinnamyl alcohol and (*E*)-anethol. Data from [**2**]. Significance: see Fig 1.

Chemical attractant stimuli - Through screening of commonly occurring floral compounds we recorded clear responses to (*E*)-cinnamyl alcohol and (*E*)-anethol [**3**]. The two compouns synergized their effect when presented together (Fig 2) [**1,3**].

Later, the addition of 4-methoxyphenethyl alcohol to the (*E*)-cinnamyl alcohol + (*E*)-anethol mixture proved to be synergistic (Fig 3) [**4**].

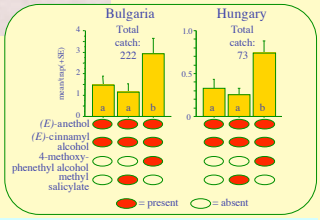

Fig 3. Effect of addition of 4-methoxyphenethyl alcohol or methyl salicylate on mean catches of *E. hirta* in transparent traps baited with the blend of (*E*)-cinnamyl alcohol and (*E*)-anethol. Data from [**4**]. Significance: see Fig 1. (Methyl salicylate was tested as it evoked high antennal responses in previous EAG studies – not shown here)

Trap development - A funnel trap codenamed **VARb3k** and comprising of both visual and chemical attractive cues (light blue colour and blend of synthetic floral compounds, resp., Fig 4) was developed. The **VARb3k** trap catches both females and males and can catch up to one thousand beetles without saturating [**1,2**].

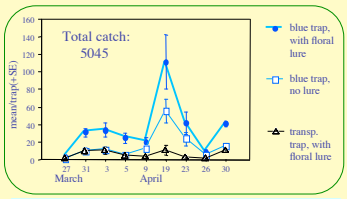

Fig 4. Relative importance of visual (blue colour) and chemical (floral lure) stimuli on mean catches of *E. hirta*. Data from [**4**].

Response of *Tropinota squalida* (Coleoptera, Scarabaeidae, Cetoniinae) **-** This same **VARb3k** trap proved to be also effective in catching the close relative *T. squalida* [5], for which the preference for white colour has previously been reported [**6**]. *T. squalida* causes damages similar to *E. hirta* more to the south, in Mediterranean countries and the Middle East.

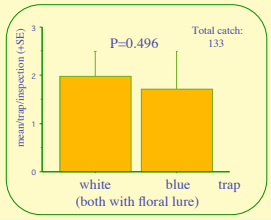

Fig 5. Mean catches of *T. squalida* in white or blue traps baited with the floral lure. Data from [**5**]. *P* value derived from Student *t* test.

Mass trapping - Applying the **VARb3k** trap at 12-15 trap/ha density proved to be effective in decreasing beetle numbers in strawberries and apples [**7**]. Testing in other cultures also yielded promising results.

References cited:

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