

Aggregation attractants for the sugarbeet weevils *Bothynoderes punctiventris* and *Conorrhynchus mendicus* (Coleoptera, Curculionidae, Cleoninae): application opportunities)

Miklós Tóth¹, Lorenzo Furlan², Giovanni Campagna³, Zoltán Imrei¹,
Ivan Sivcev⁴, Ivan Tomasev⁵, István Ujváry⁶

¹ Plant Protection Institute, HAS, Budapest, Hungary; ² Department of Agronomy, Entomology, Padova University, Agripolis, Italy

³ COPROB, Minerbio, BO, Italy

⁴ Institute for Plant Prot. & Environ., Belgrade, Rep. of Serbia and Crna Gora

⁵ Min. Agric. For., Rep. of Serbia, Phytosan. Stn. Plant Prot. Subotica, Rep. of Serbia and Crna Gora

⁶ Institute of Biomolecular Chemistry, CRC HAS, Budapest, Hungary

B. punctiventris
caught in a TAL
trap



Bothynoderes
(*Cleonus*)
punctiventris



Photo: L.Z.
Nagy

Conorrhynchus
(*Cleonus*)
mendicus

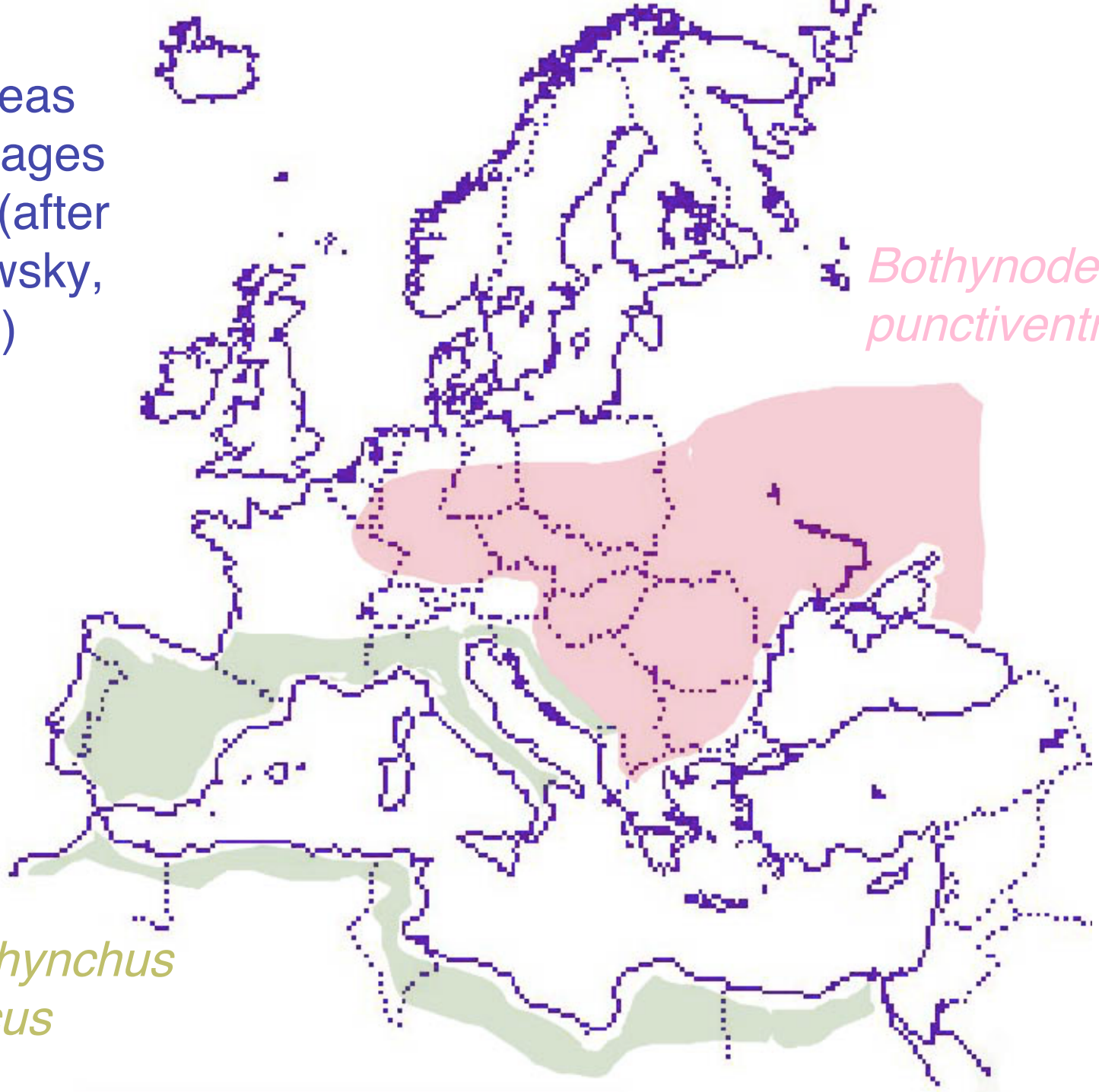


Photo: G.
Campagna



Photo: G.
Campagna

Main areas
with damages
reported (after
Balachowsky,
1966)

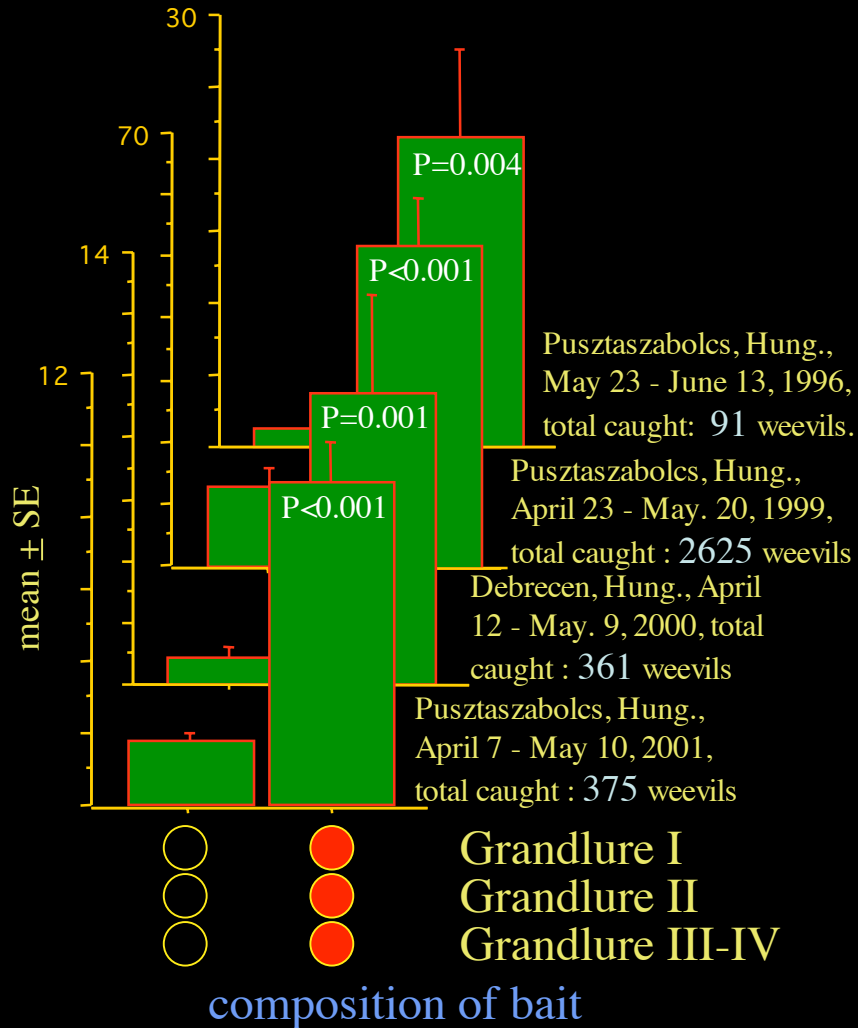


*Bothynoderes
punctiventris*

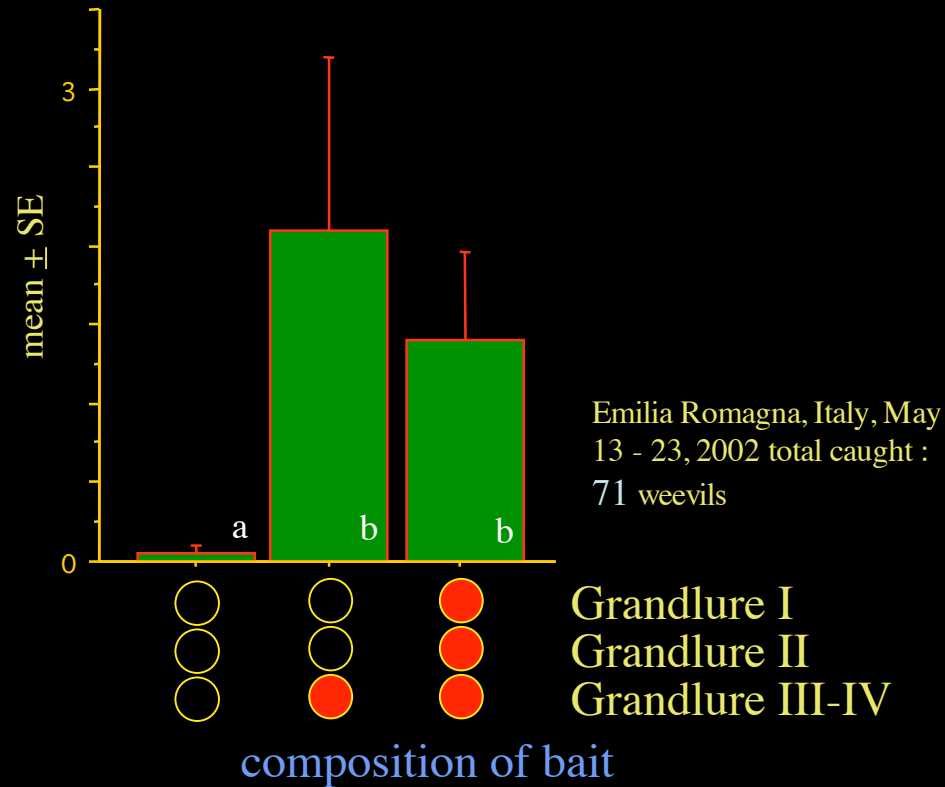
*Conorrhynchus
mendicus*

Indication of attractive activity:

Traps with a mixture of Grandlure components capture significantly more than unbaited traps!



Bothynoderes punctiventris

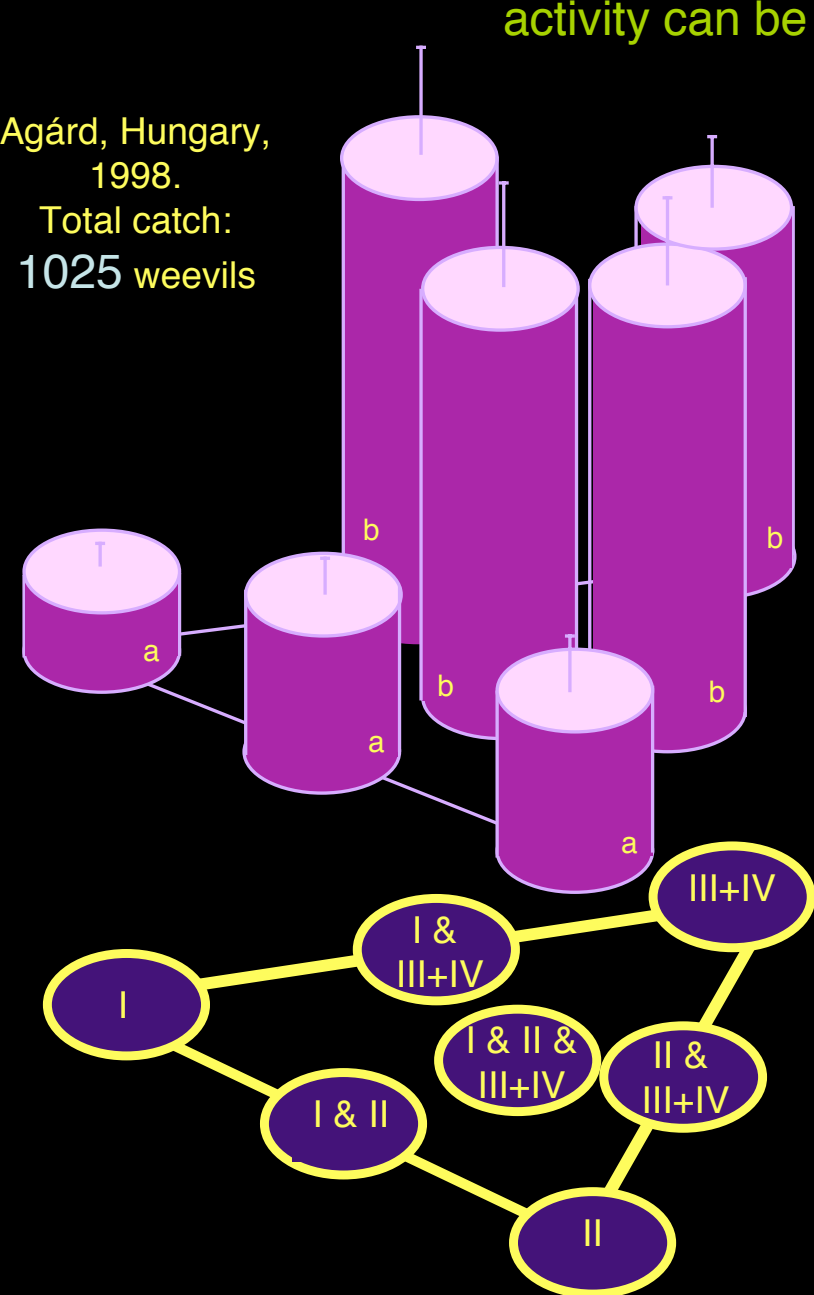


Conorrhynchus mendicus

Relative importance of Grandlure components:
activity can be attributed to Grandlure III-IV

Agárd, Hungary,
1998.

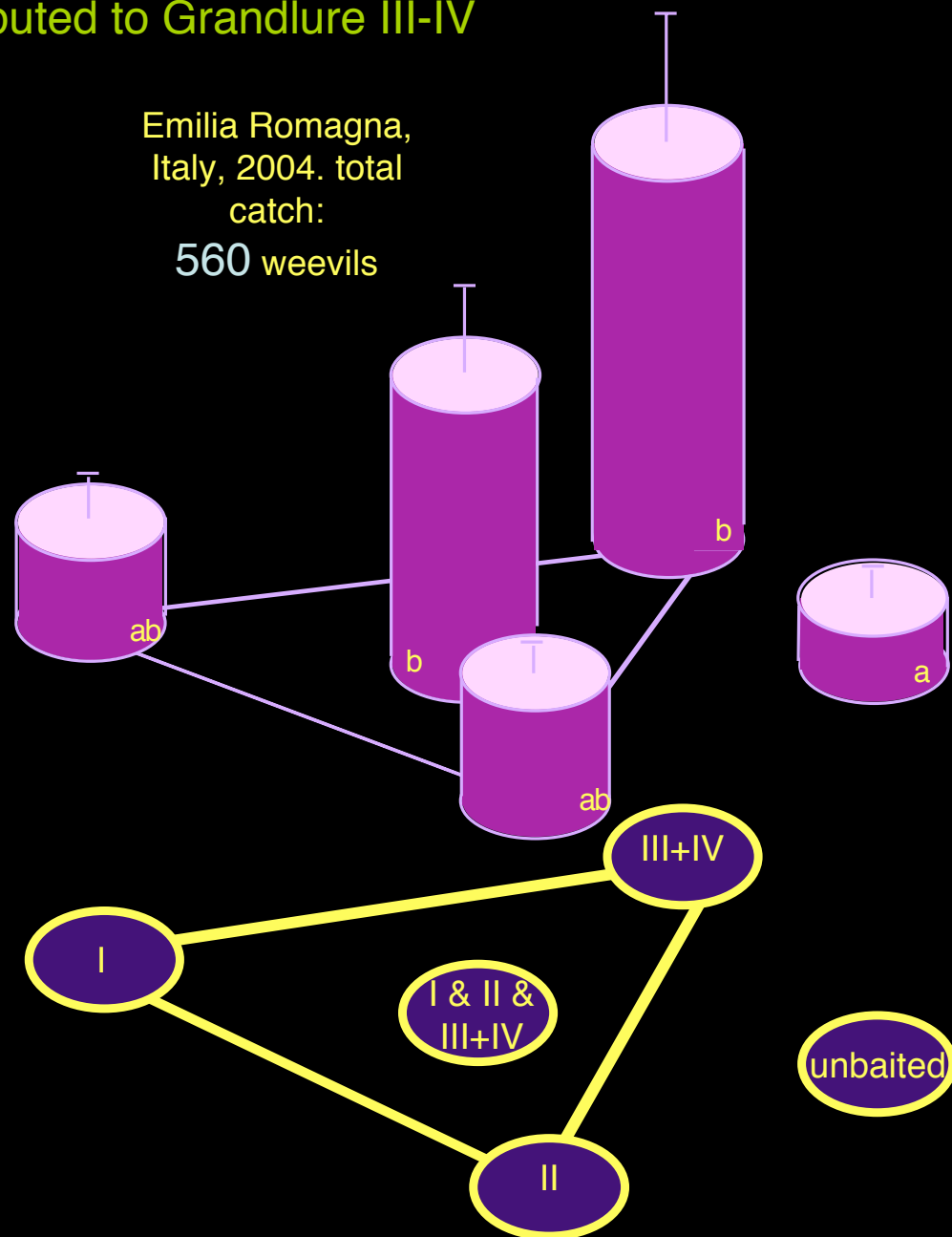
Total catch:
1025 weevils



Bothynoderes punctiventris

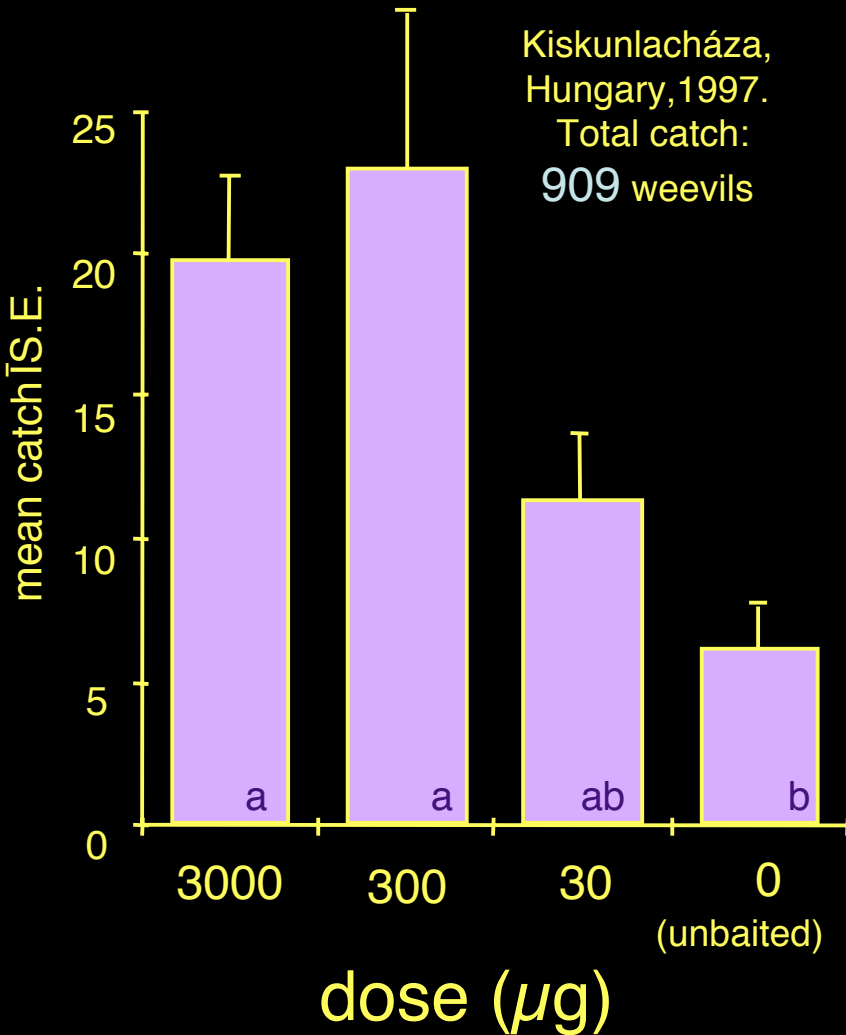
Emilia Romagna,
Italy, 2004. total
catch:

560 weevils

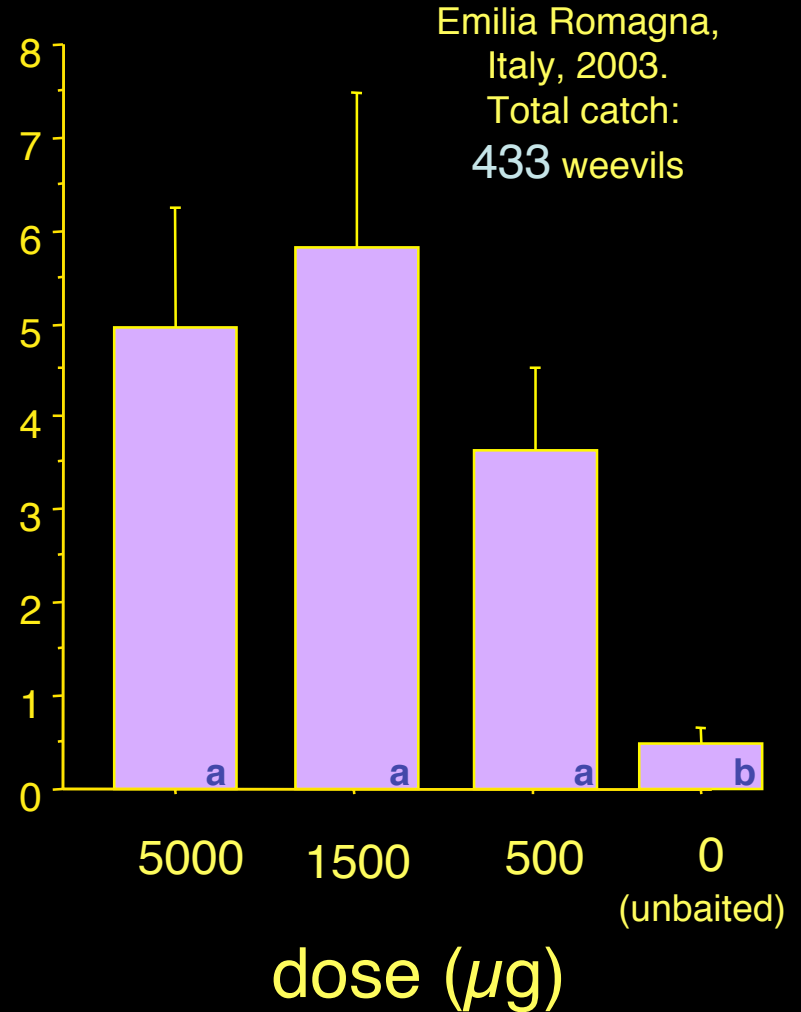


Conorrhynchus mendicus

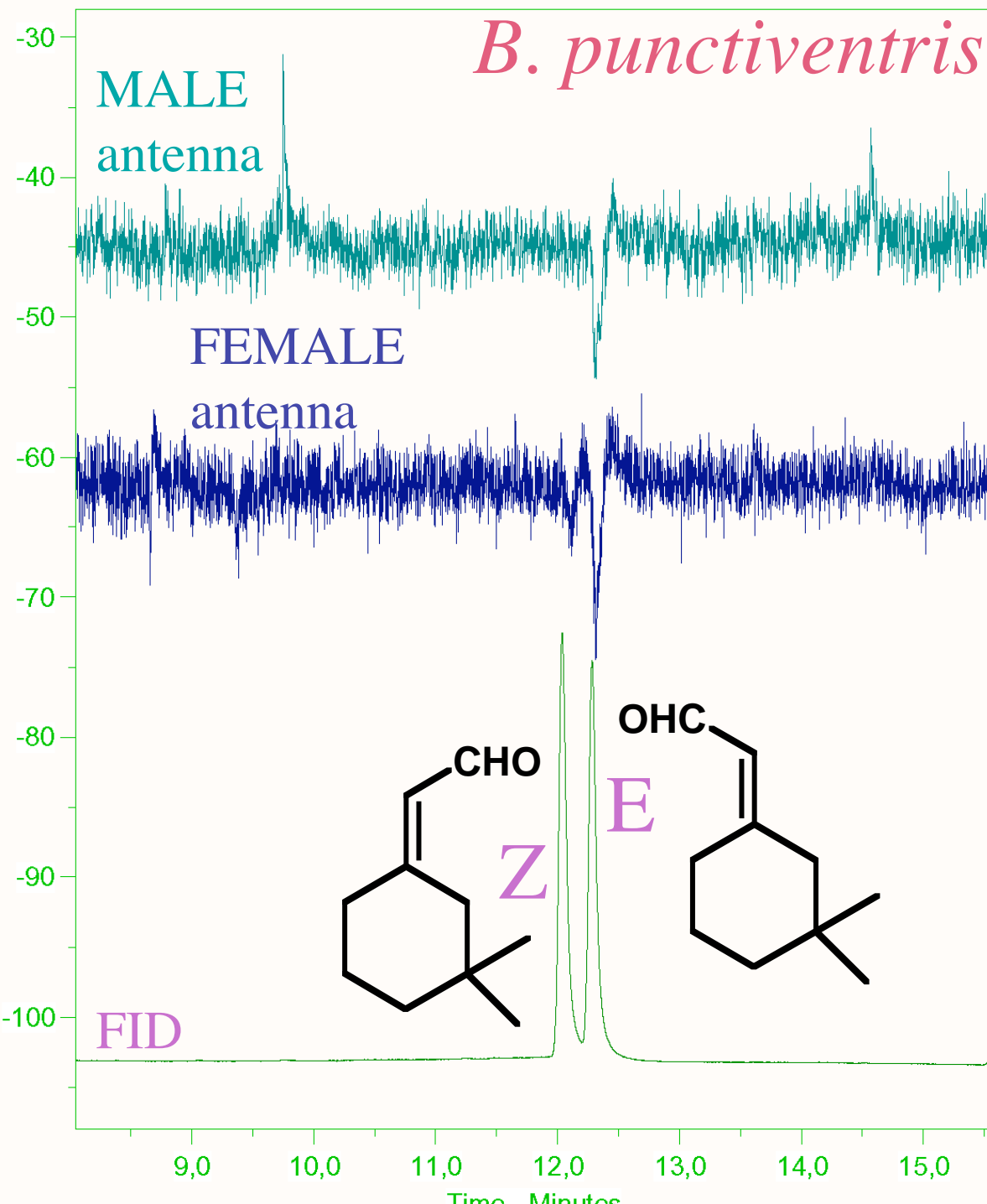
Dosage tests:
optimal dose is between 300 – 3000 μg



Bothynoderes punctiventris



Conorrhynchus mendicus



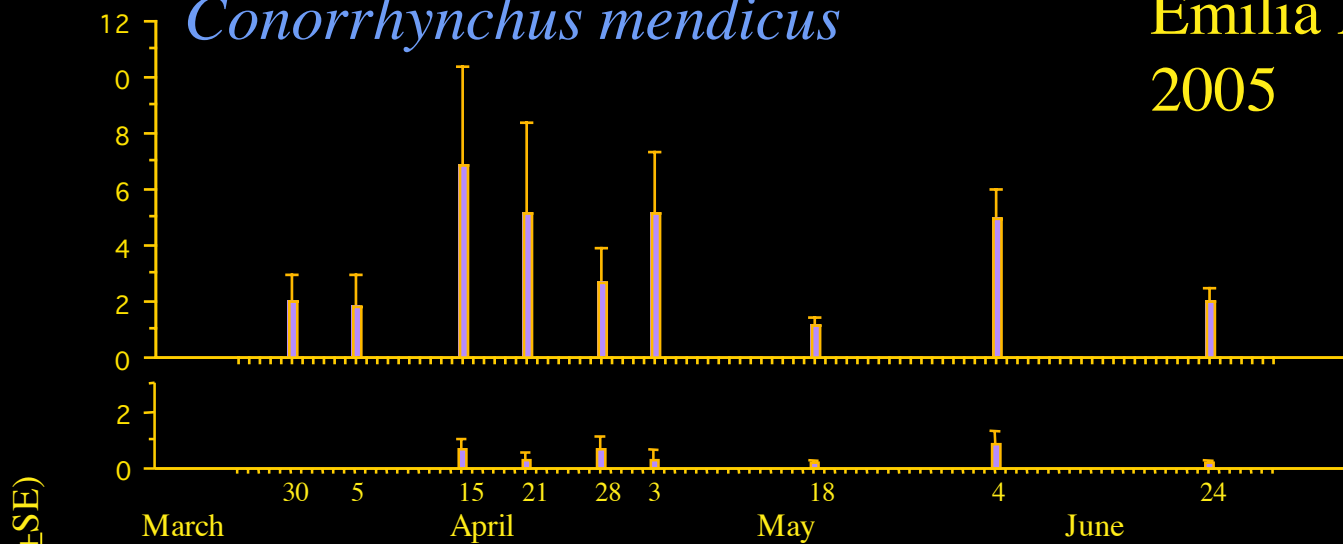
In gaschromatographic studies with parallel flame ionization and electroantennographic detection (GC-FID/EAD), both female and male antennae responded better to the (*E*)-isomer (Grandlure IV) than to the (*Z*)-isomer (Grandlure III). This suggests that the (*E*)-isomer is more important for biological activity. So far no parallel studies have been performed on *C. mendicus*.

Detection and monitoring:

traps with the attractant are ca. one magnitude more sensitive

Conorrhynchus mendicus

Emilia Romagna, Italy
2005

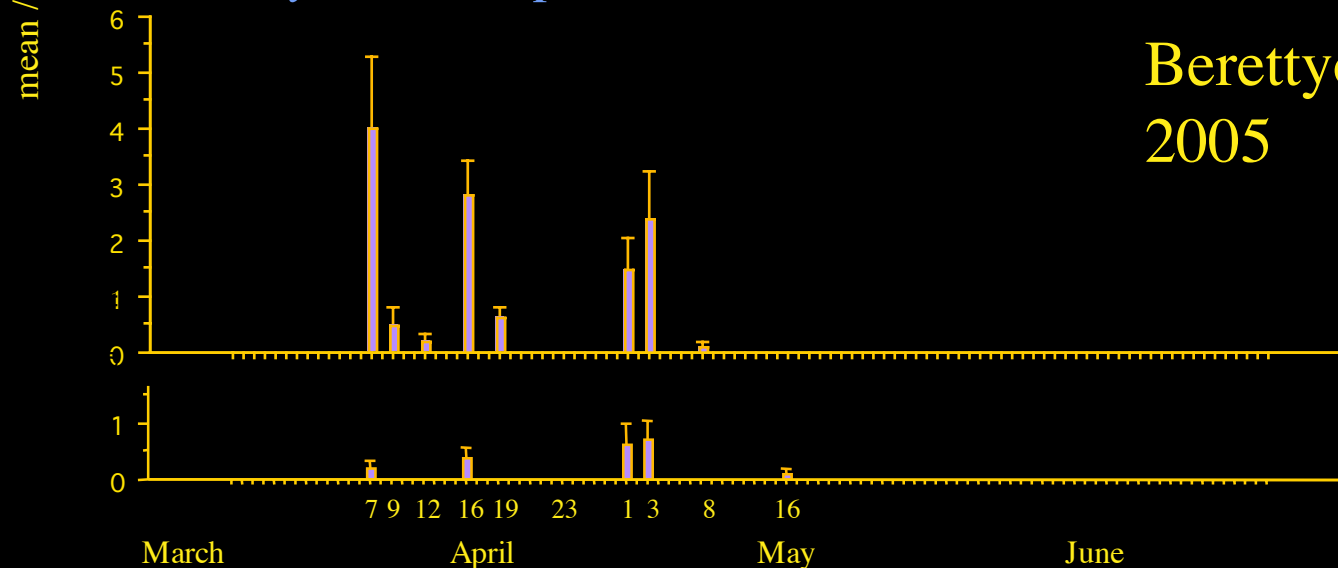


with bait
191 weevils

without bait
19 weevils

Bothynoderes punctiventris

Berettyóújfalu, Hungary
2005



with bait
121 weevils

without bait
20 weevils

First mass trapping trials on *B. punctiventris* in Serbia

| year of test | number of traps /ha | total caught | estimated number of weevils / ha (by soil samples) | % of weevils "trapped out" |
|--------------|---------------------|--------------|--|----------------------------|
| 2000 | 10 | 48910 | 112000 | 43,67 |
| 2000 | 30 | 124959 | 120000 | 104,14 |
| 2005 | 10 | 79602 | 416000 | 19,14 |
| 2005 | 30 | 157539 | 416000 | 37,87 |

Traps baited with the attractant are capable of trapping out a sizeable proportion of the overwintering population; in contrast to insecticide sprays which are effective only for some days, attractant-baited traps continue catching the insects during all the flight period.

Bothynoderes punctiventris



Conorrhynchus mendicus