



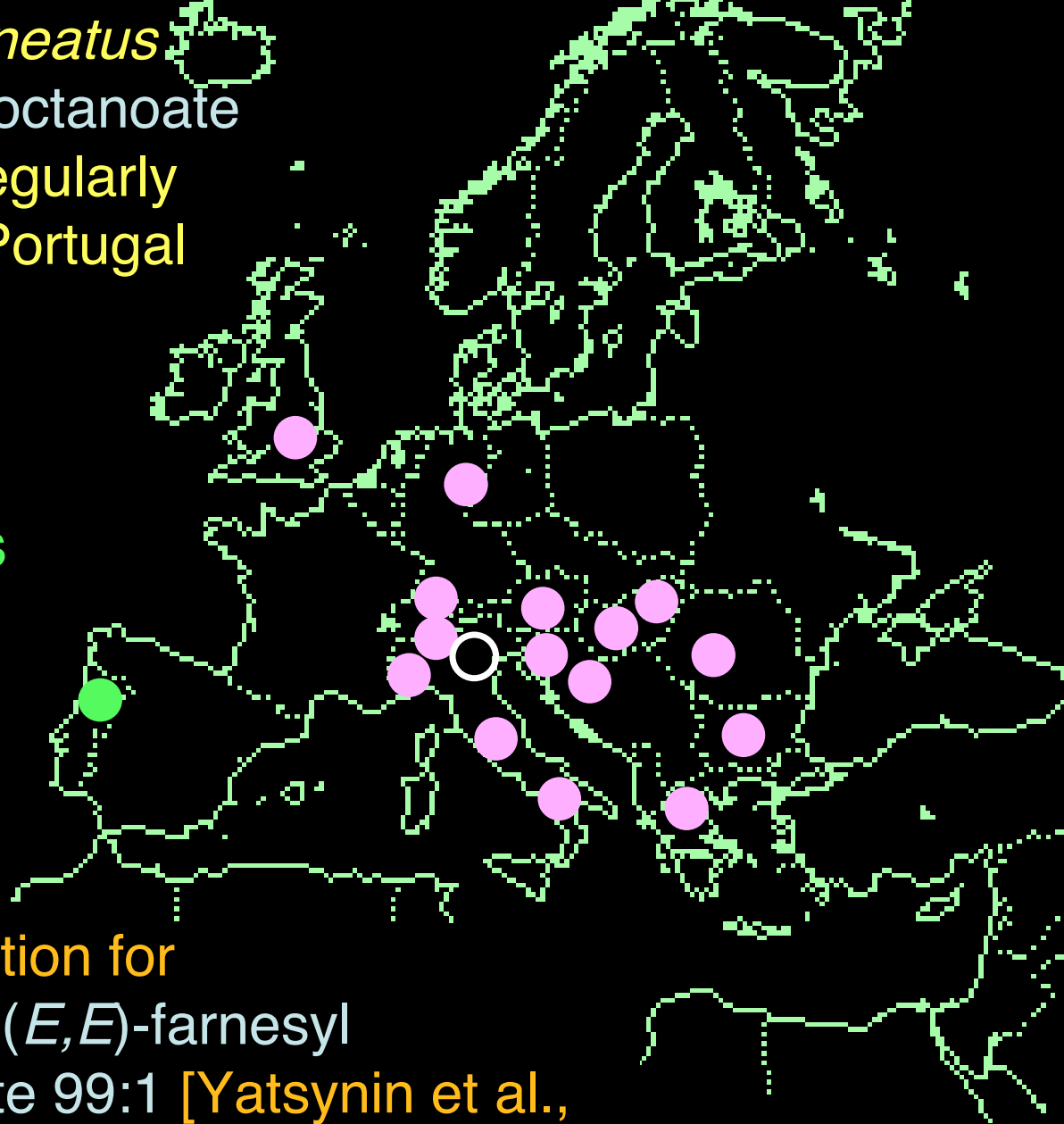
**New sex attractant for *Agriotes proximus*: similarities
in pheromonal communication with *A. lineatus*
(Coleoptera: Elateridae)**

Miklós Tóth¹, Lorenzo Furlan², Amália Xavier³, József Vuts¹, Theodora Toshova⁴, Mitko Subchev⁴, István Szarukán⁵, Venyamin Yatsynin⁶

¹*Plant Protection Institute, HAS, Budapest, Hungary;* ²*Department of Agronomy, Entomology, Padova University, Agripolis, Italy;* ³*DRAEDM, Porto, Portugal;* ⁴*Zoology Institute, BAS, Sofia, Bulgaria;* ⁵*Agricultural University, Debrecen, Hungary;* ⁶*Krasnodarskiy NIISKh im. P.P. Lukyanenko, Krasnodar 12, Russia*

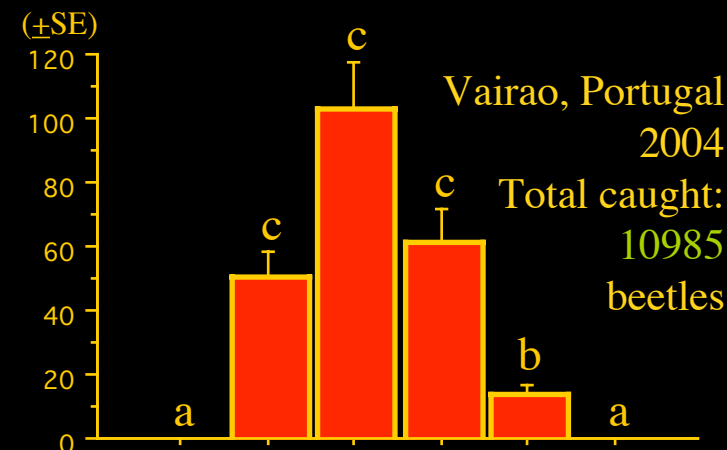
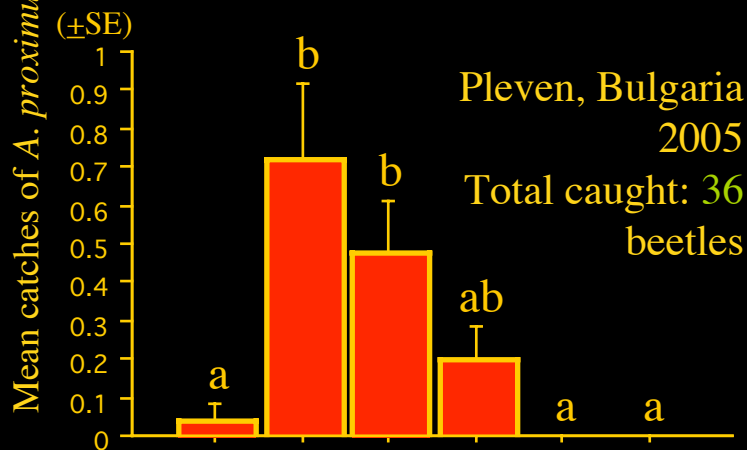
Traps baited with *A. lineatus* pheromone bait (geranyl octanoate + geranyl butanoate) regularly caught *A. proximus* in Portugal

- lineatus catches
- proximus catches
- no catch



Sex pheromone composition for *A. proximus* in literature: (*E,E*)-farnesyl acetate + neryl isovalerate 99:1 [Yatsynin et al., Khim.Sel'sk.Khoz. Moscow, Khimiya, 33-35 (1980)]

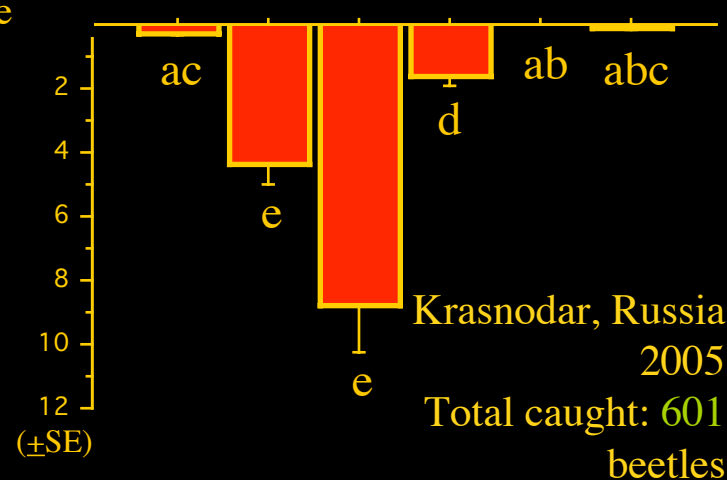
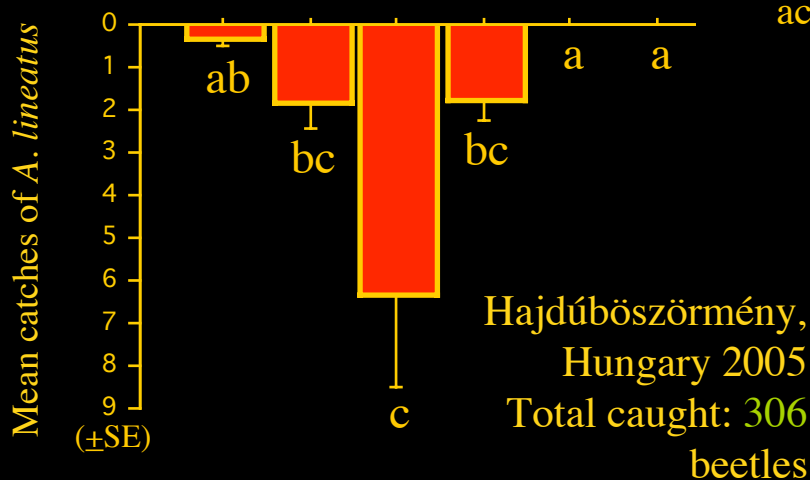
Agriotes proximus



	■	3	30	30	30	■	geranyl butanoate
Bait (mg)	30	30	30	3	■	■	geranyl octanoate
	■	■	■	■	■	30	neryl isovalerate
	■	■	■	■	■	0.3	(E,E)-farnesyl acetate

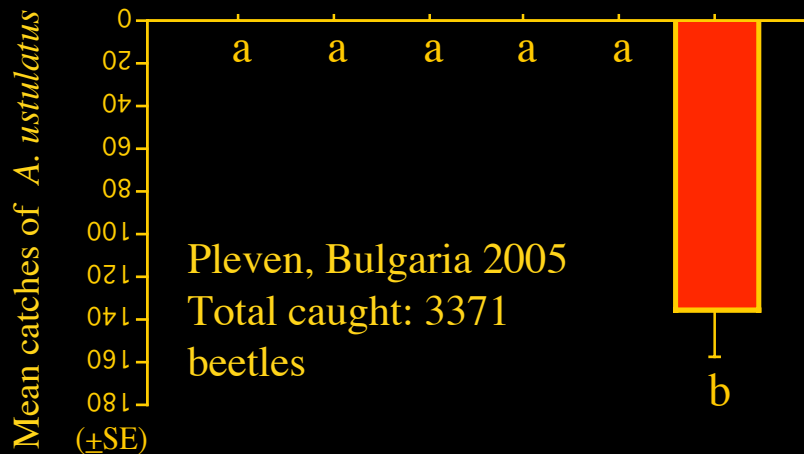
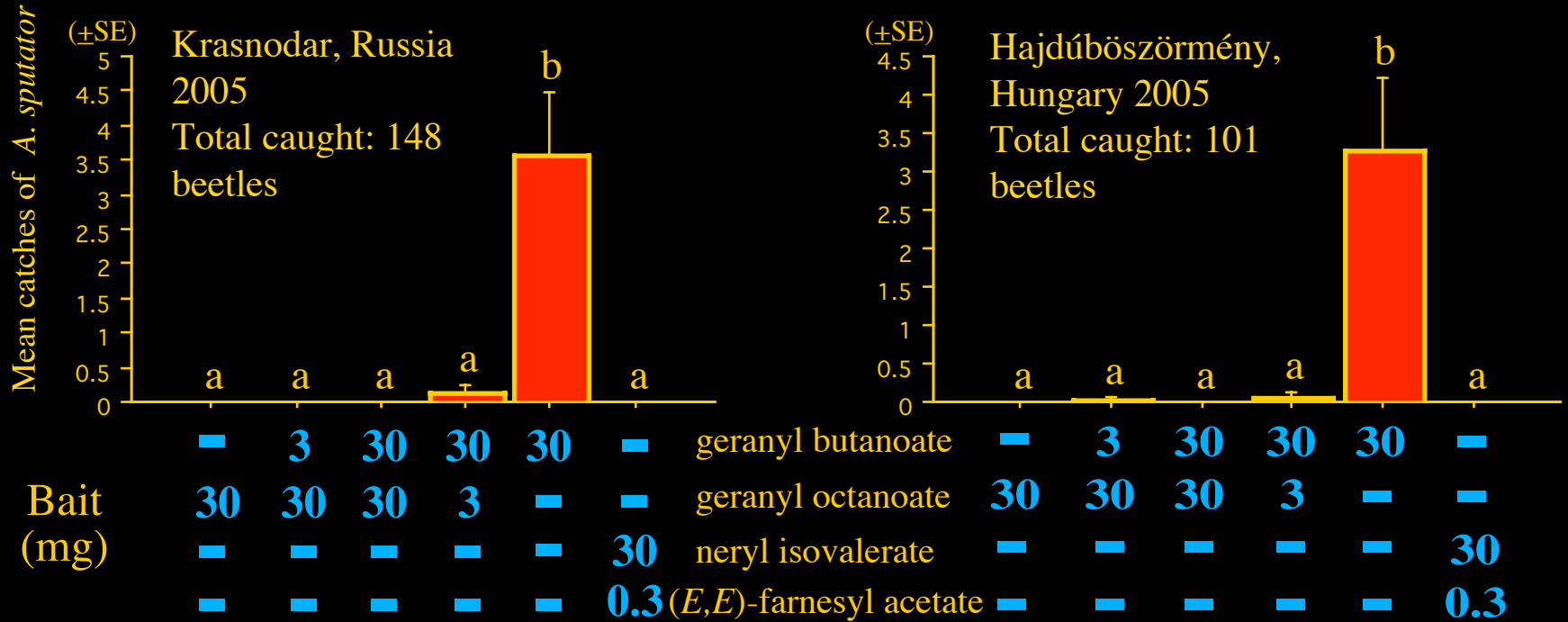
	■	3	30	30	30	■	geranyl butanoate
Bait (mg)	30	30	30	3	■	■	geranyl octanoate
	■	■	■	■	■	30	neryl isovalerate
	■	■	■	■	■	0.3	(E,E)-farnesyl acetate

Agriotes lineatus



For best attraction in both species both geranyl butanoate and octanoate was necessary, in about equal amounts – no difference between the two species. Blend previously described in literature for *proximus* was inactive.

Agriotes sputator



Agriotes ustulatus

Other spp. captured:
A. sputator: geranyl butanoate is main pheromone component
A. ustulatus: (E,E)-farnesyl acetate is main pheromone component

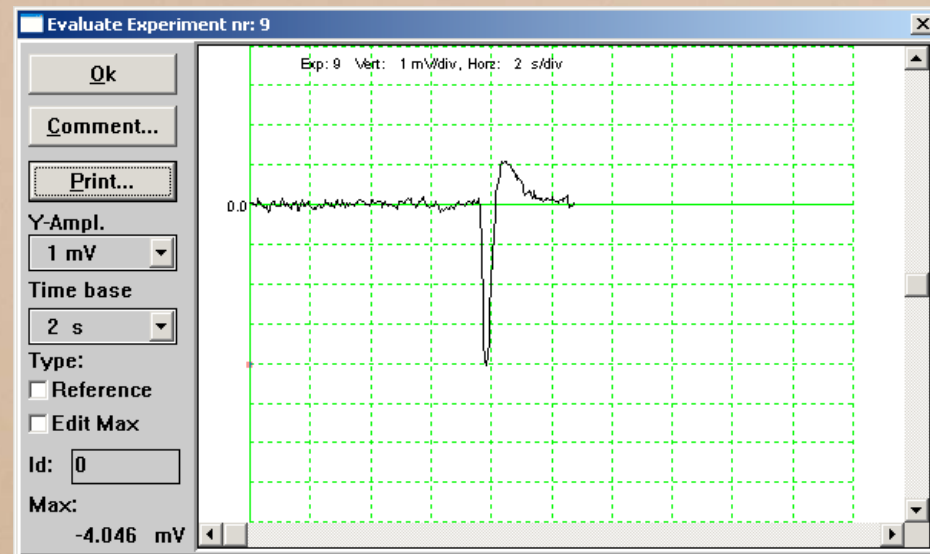
Antennal responses for both *A. proximus* and *A. lineatus* were recorded by an EAG apparatus

air flow with stimulus

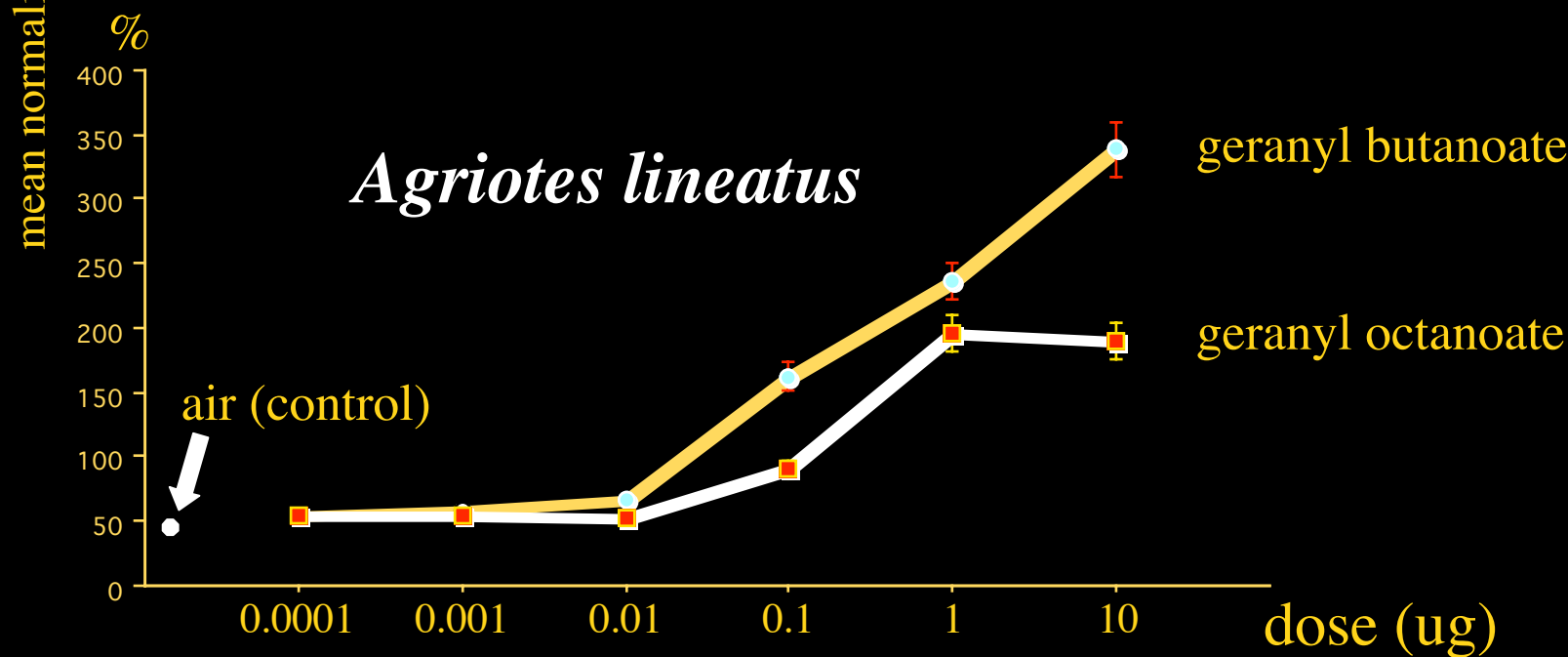
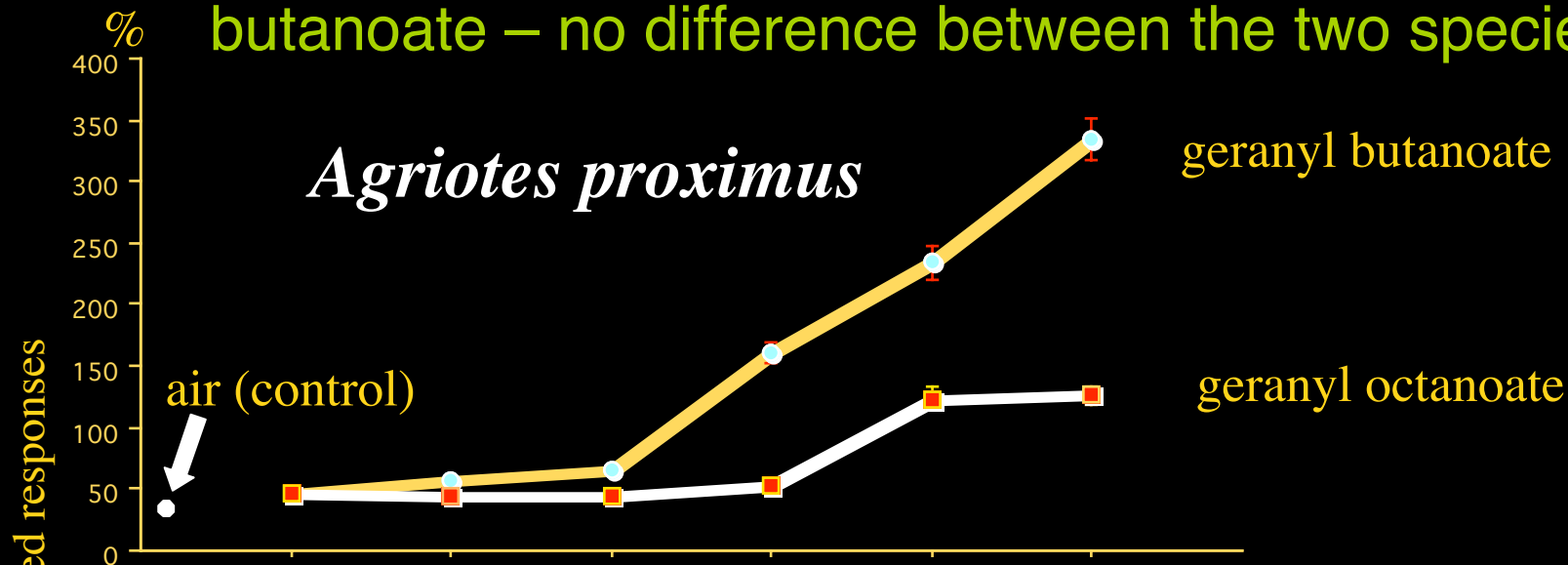
antenna of *A. proximus*

glass capillary electrodes

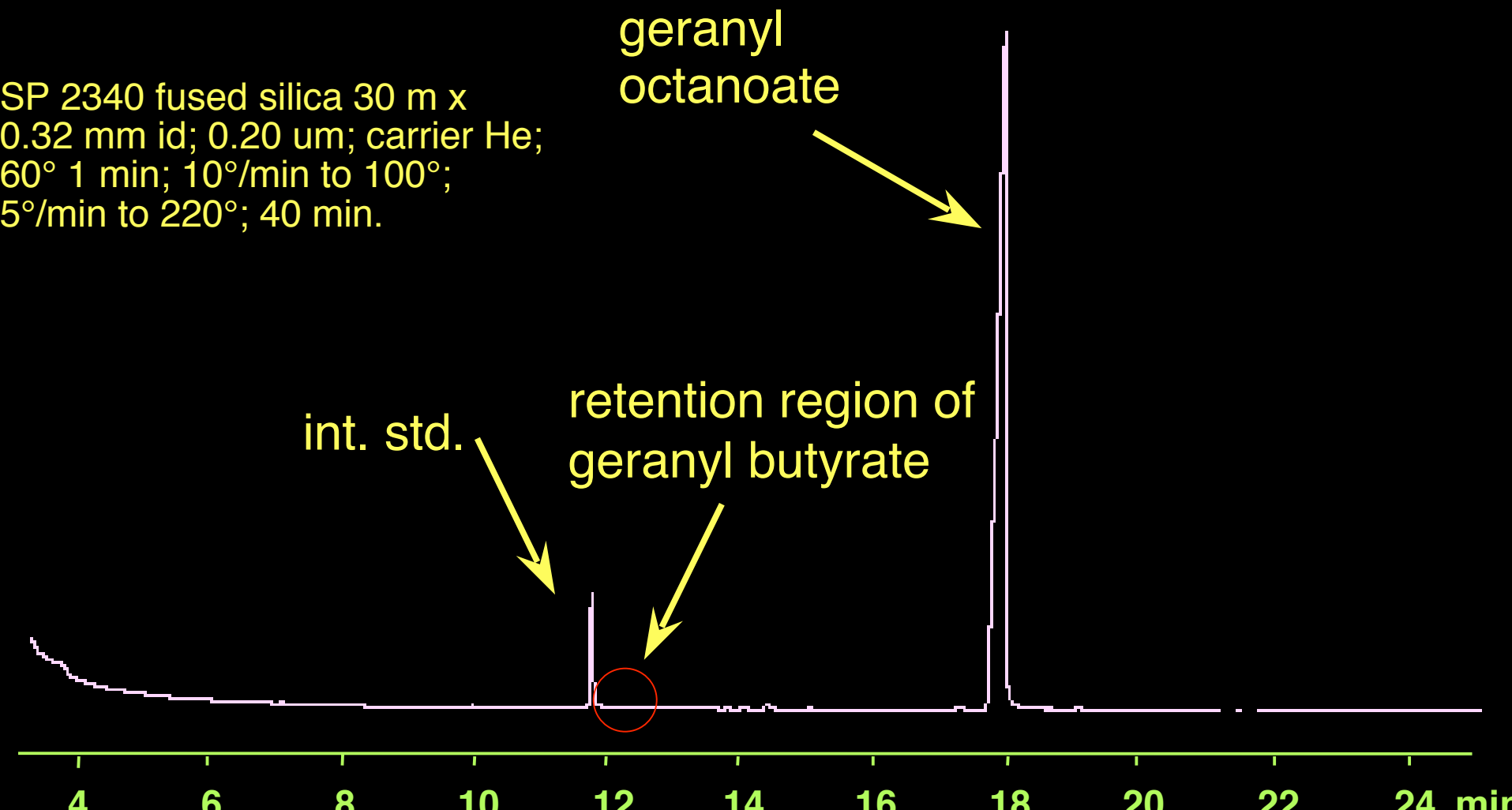
EAG-peak elicited by geranyl butanoate



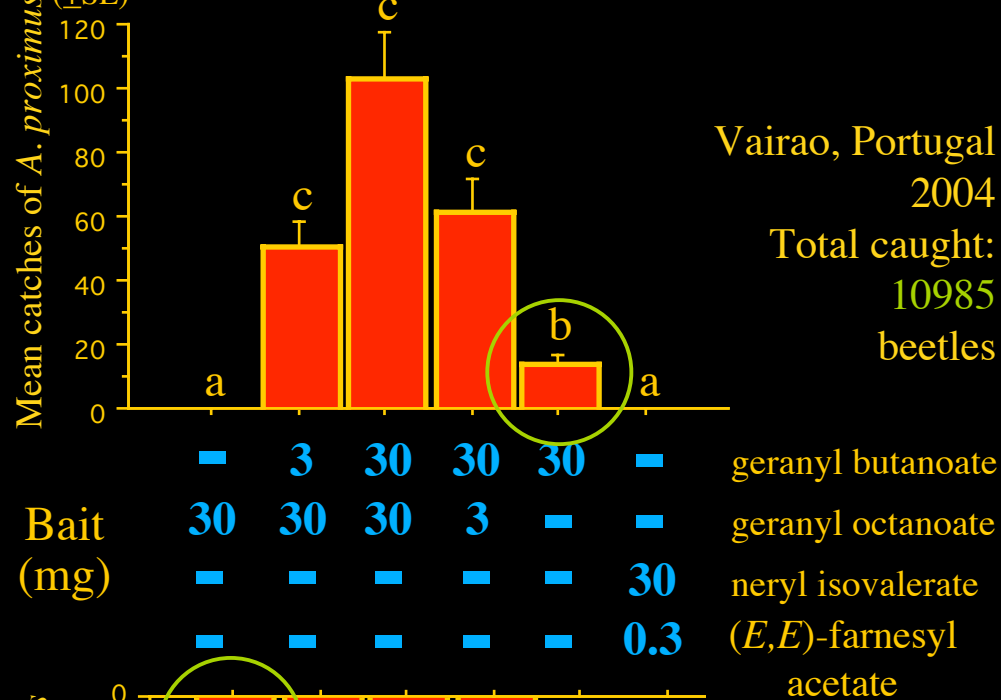
Antennae of both species responded better to geranyl butanoate – no difference between the two species



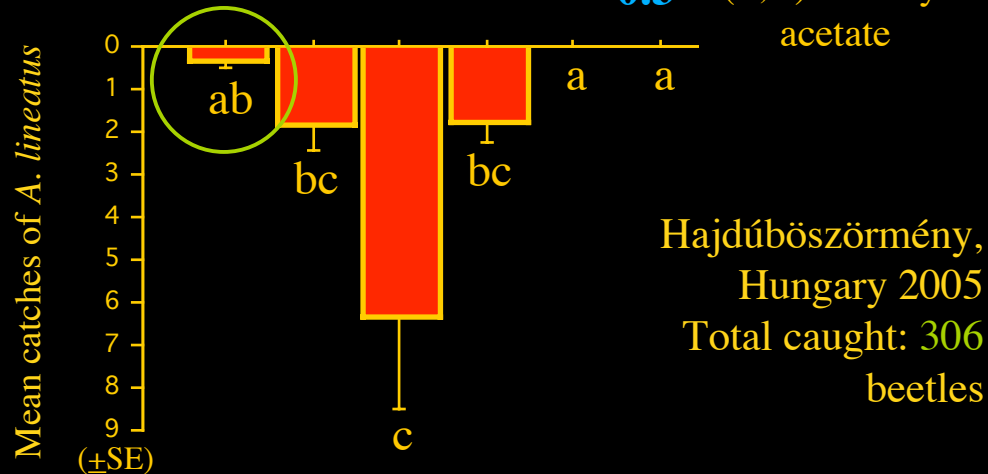
High optimal ratio of geranyl butanoate in baits for *A. lineatus* is surprising, as in previous analyses of pheromone gland extracts geranyl butyrate was found only in traces (with the predominant component as geranyl octanoate)!



Agriotes proximus



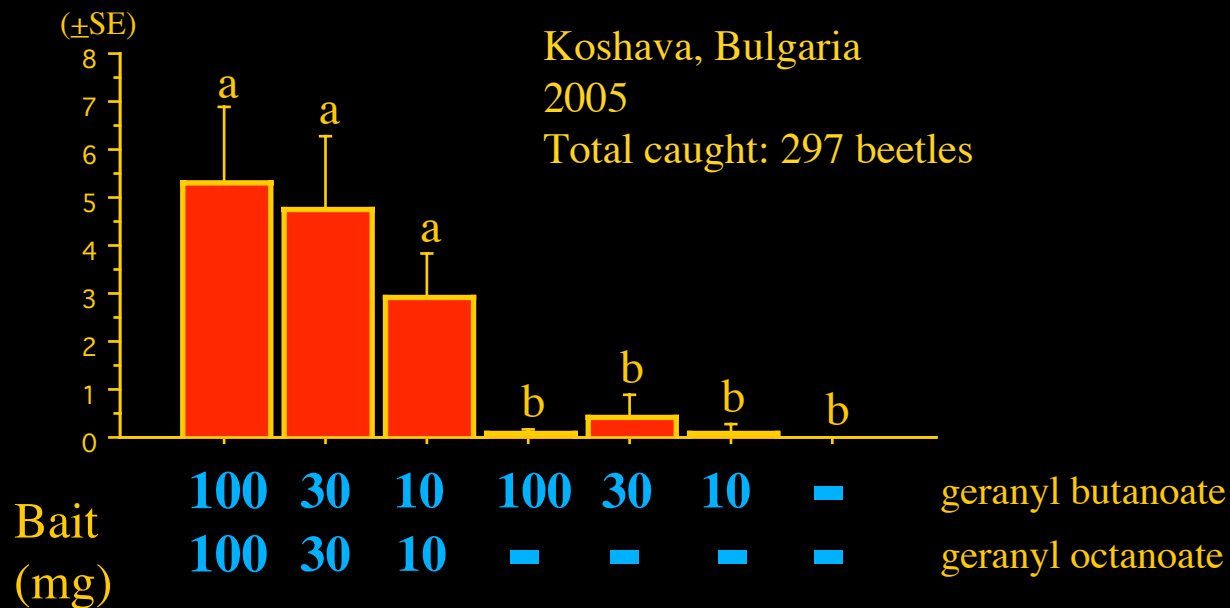
Agriotes lineatus



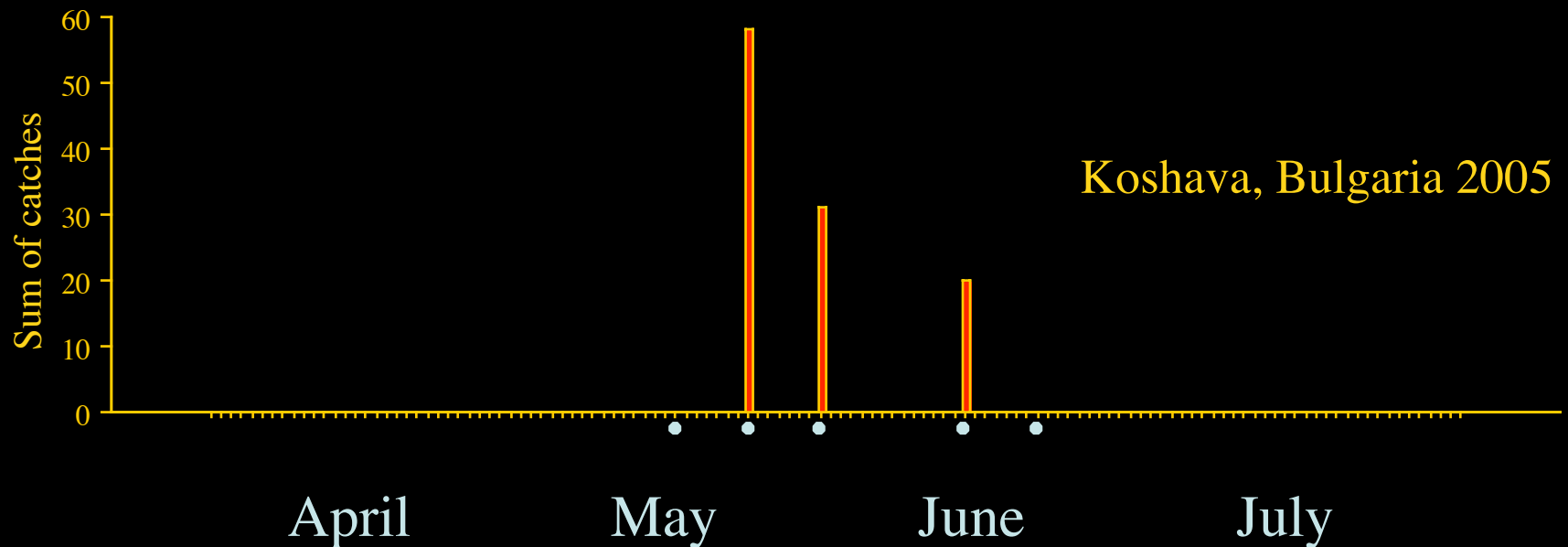
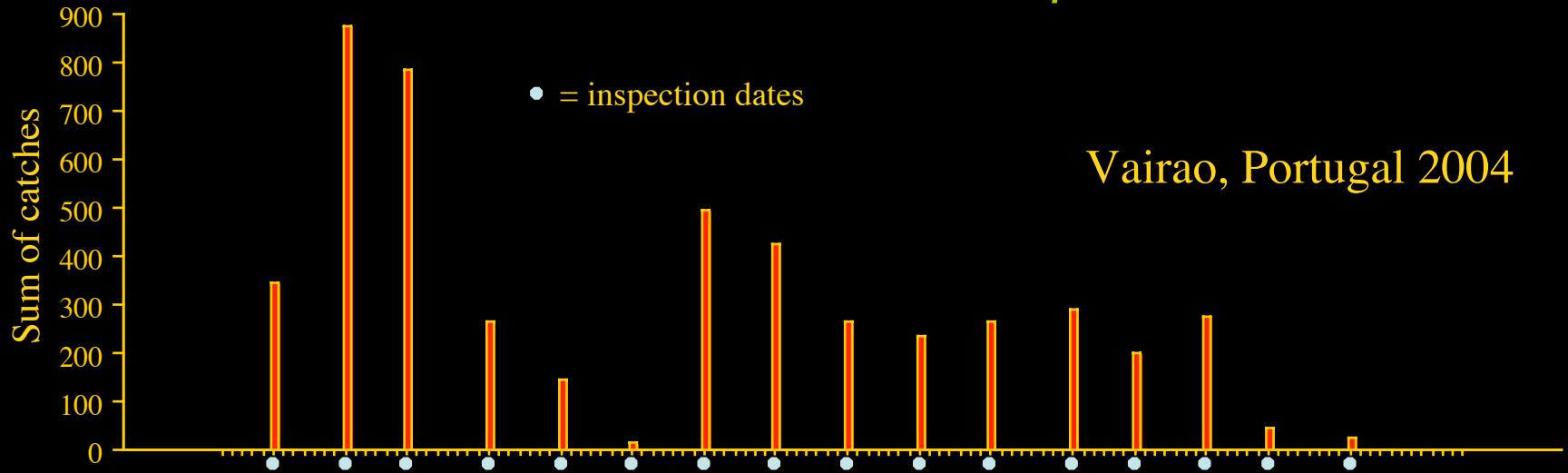
The only slight difference between the two species was that to baits with single compounds *A. proximus* appeared to respond to the butanoate, while *A. lineatus* to the octanoate.

Dose test: confirmed the necessity of both components for *A. proximus*

Agriotes proximus



Traps baited with the newly defined sex attractant can be used to detect and to monitor *A. proximus*



A. lineatus

A. proximus



Thanks for
your
attention!