Invasive Ambrosia Beetle Conference
The Situation in California
August 12 – 14, 2012

Meeting sponsored by:

The Hofshi Foundation

University of California, Riverside

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The Huntington Botanical Gardens

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Session 3

Biology of the Beetles

Volcani Center, Agricultural Research Organization, Israel

What did we learn so far in Israel about the biology of *Euwallcea fornicatus*, host range, natural and artificial rearing, beetle behavior and its seasonal history?

Zvi Mendel , Alex Protasov , Michal Sharon, Netta Okon-Levy, Miriam Eliyhu, Yonathan Maoz, Omer Golan, Michael Noy, Stanley Freeman

Host trees in Israel

Hosts suitable for reproduction

Acer negundo, Sapindaceae

Quercus pedunculifolia, Fagaceae

Persea americana, Lauraceae

Ricinus communis, Euphorbiaceae

Attacked trees, unsuitable for reproduction

Acer obtusifolium, Sapindaceae

Bauhinia variegata, Fabaceae

Brachychiton acerifolius, Sterculiaceae

Brachychiton populneum, Sterculiaceae

Ceiba speciosa, Bombacaceae

Diospyros kaki, Ebenaceae

Platanus orientalis, Platanaceae

Roystonea regia, Arecaceae

Tamarindus indica, Fabaceae


Acer negundo


The cortex is clean
Typical gum exudation on elder box

Acer negundo

Infested

נגוע

Healthy

בריא


Acer negundo
95


Infested *Ricinus communis*


Infested *Ricinus communis*

Castor bean stem

Infested

Healthy

Fungus spread in the stem of castor bean plant

E. fornicatus gallery in the stem of castor bean plant


E. fornicatus gallery in the stem of castor bean plant


Quercus pedunculifolia
English oak


Quercus pedunculifolia

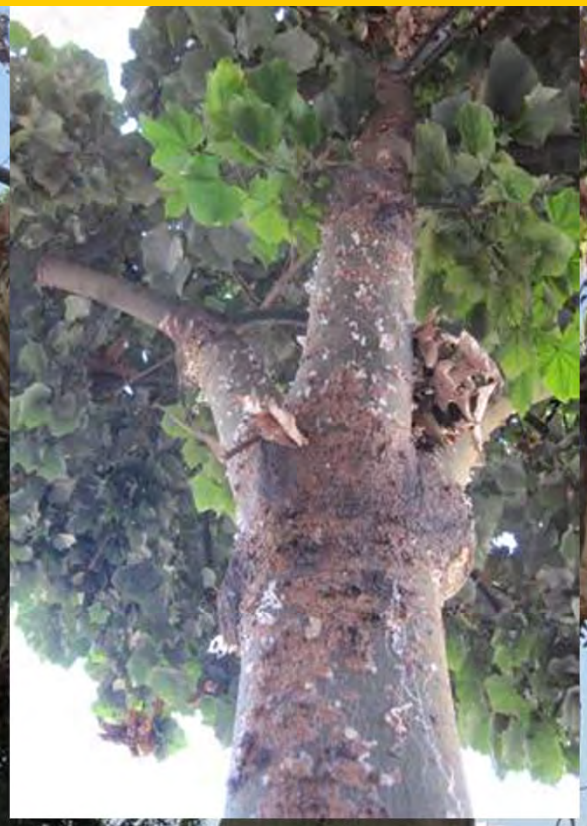

Quercus pedunculifolia

Quercus pedunculifolia

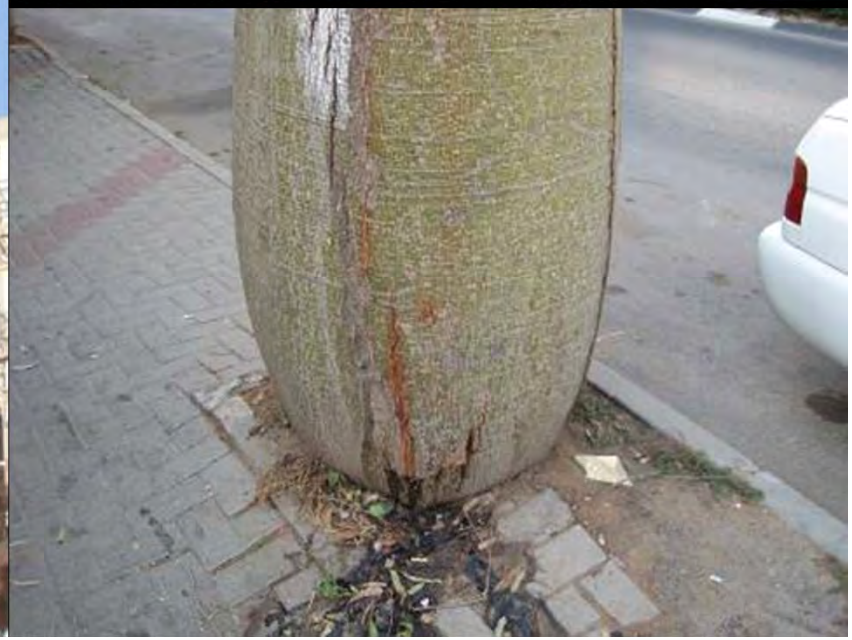

Quercus pedunculifolia


Quercus pedunculifolia

Brachychiton acerifolius



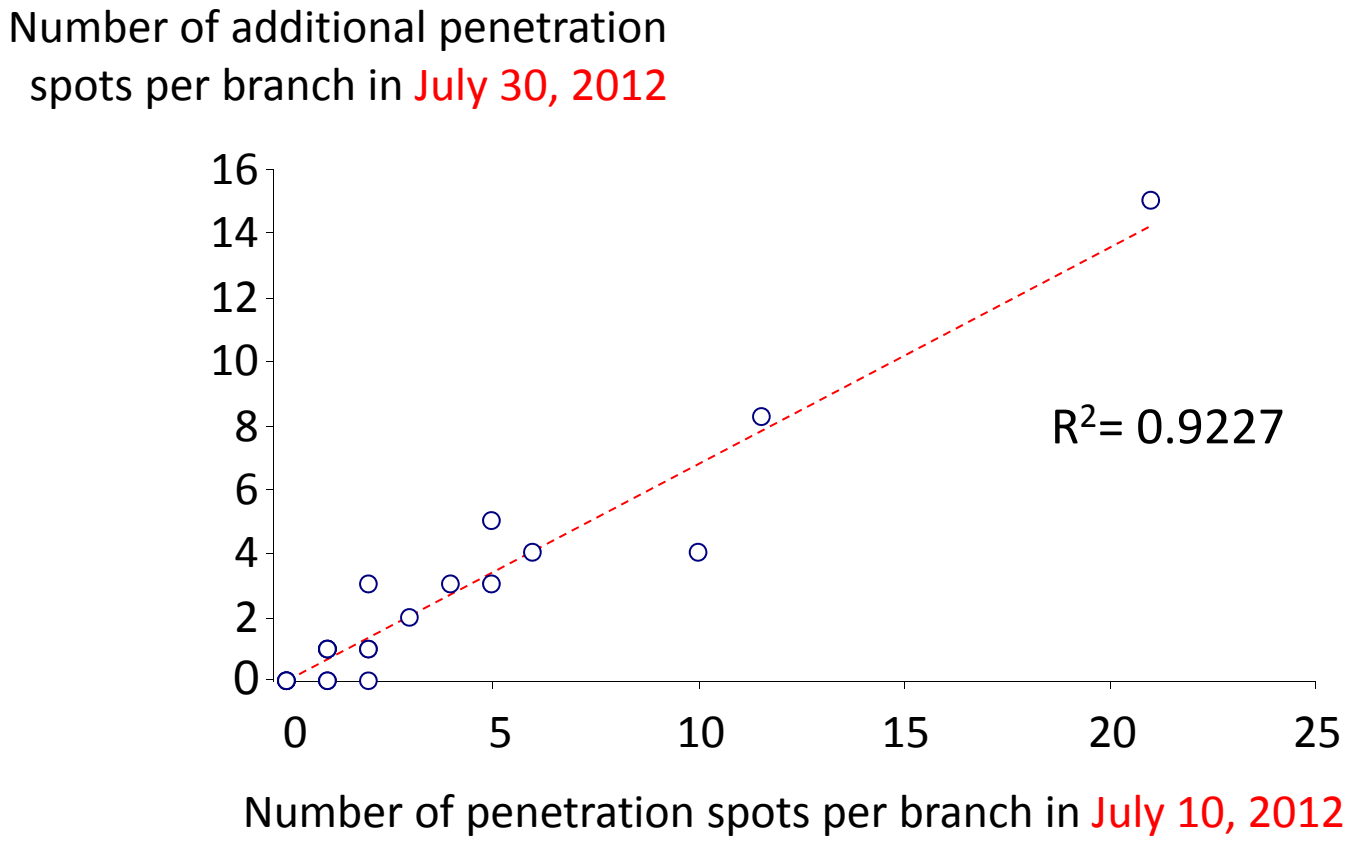
Brachychiton populneum



Hass: persitol exudation

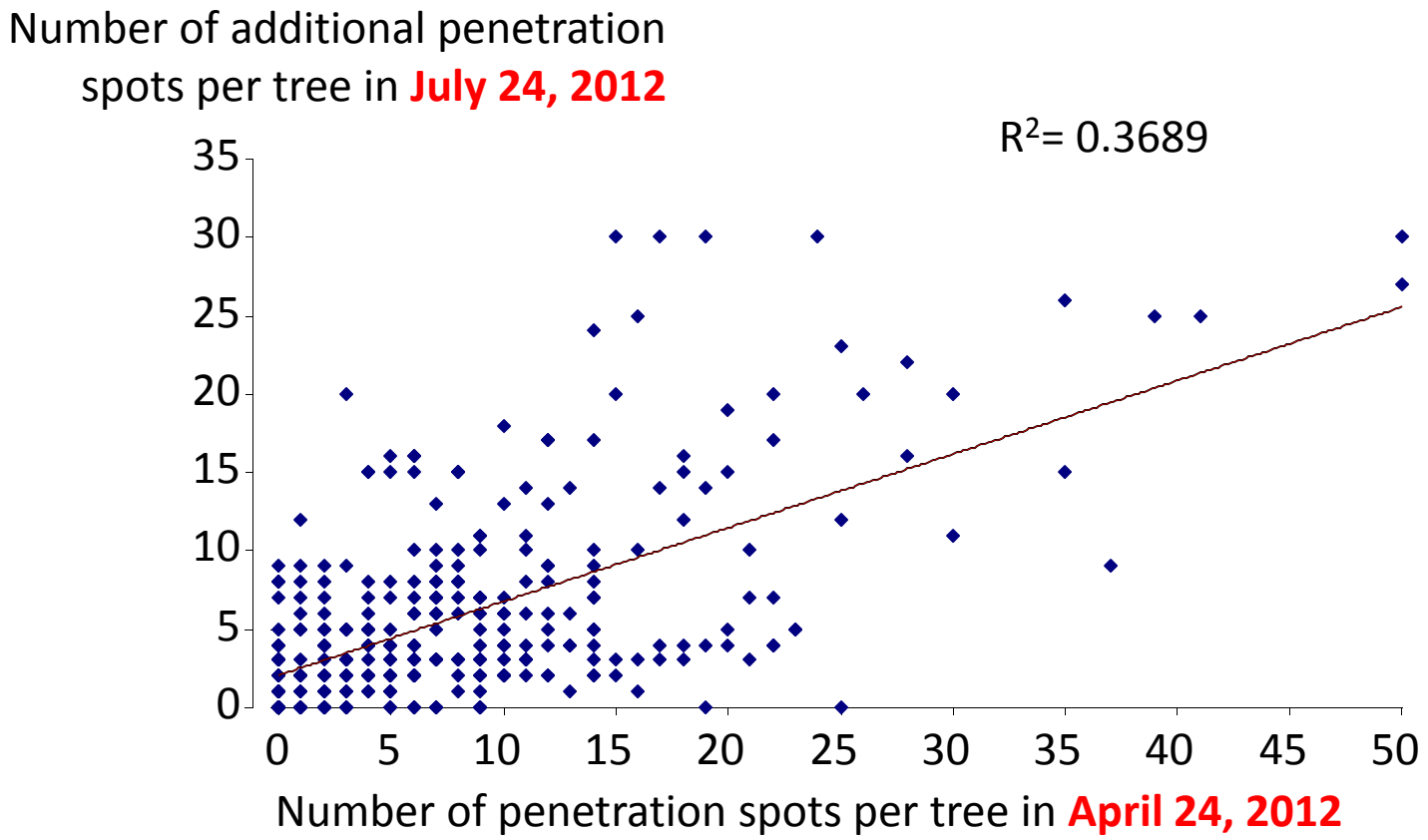
Relation between penetration spots to further attach by *E. fornicatus*

Rishpon, Reed ~ 17 yr old plantation



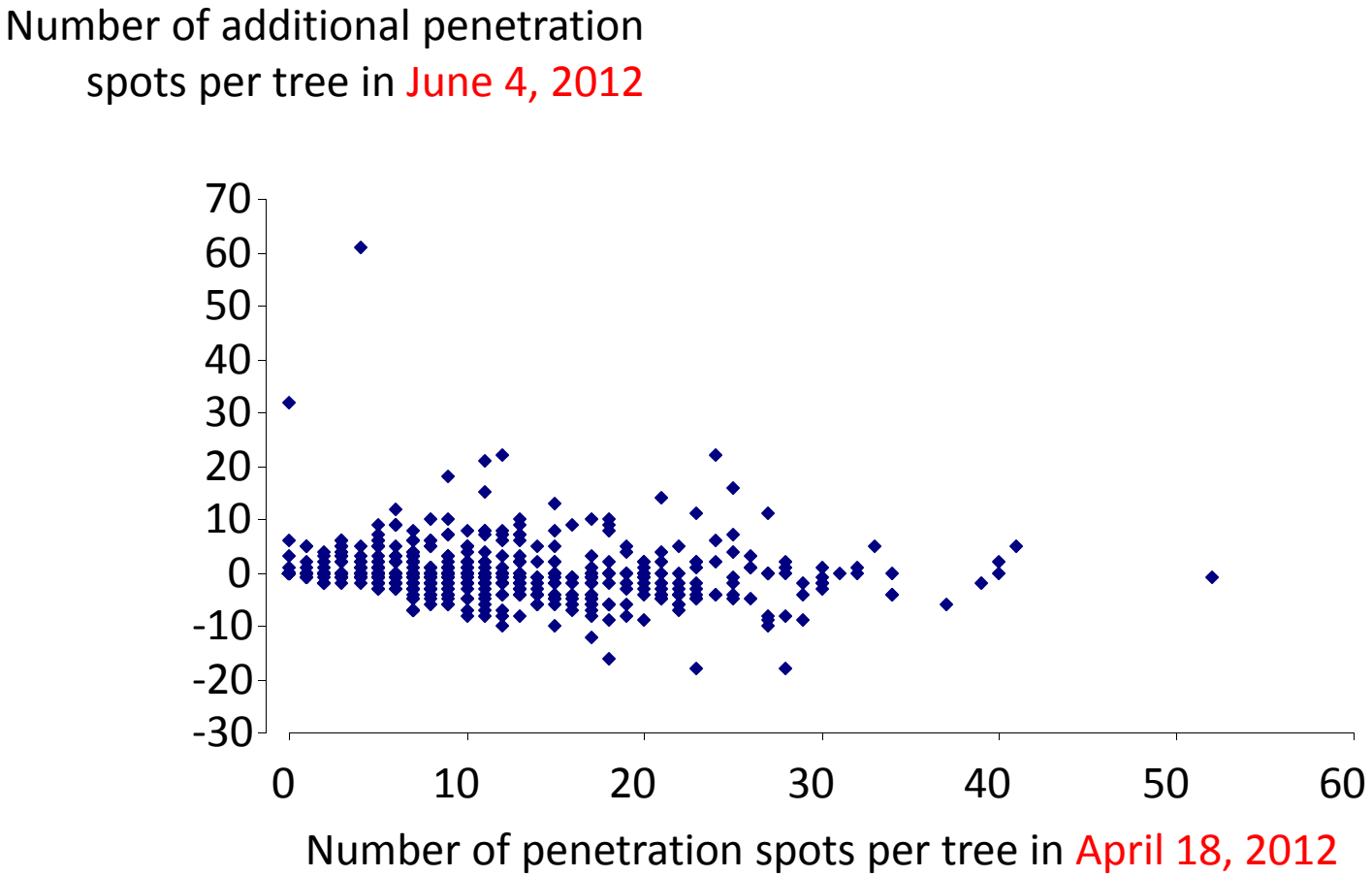
Relation between penetration spots to further attach by *E. fornicatus*

Ga'ash, Hass, 6 yr old plantation



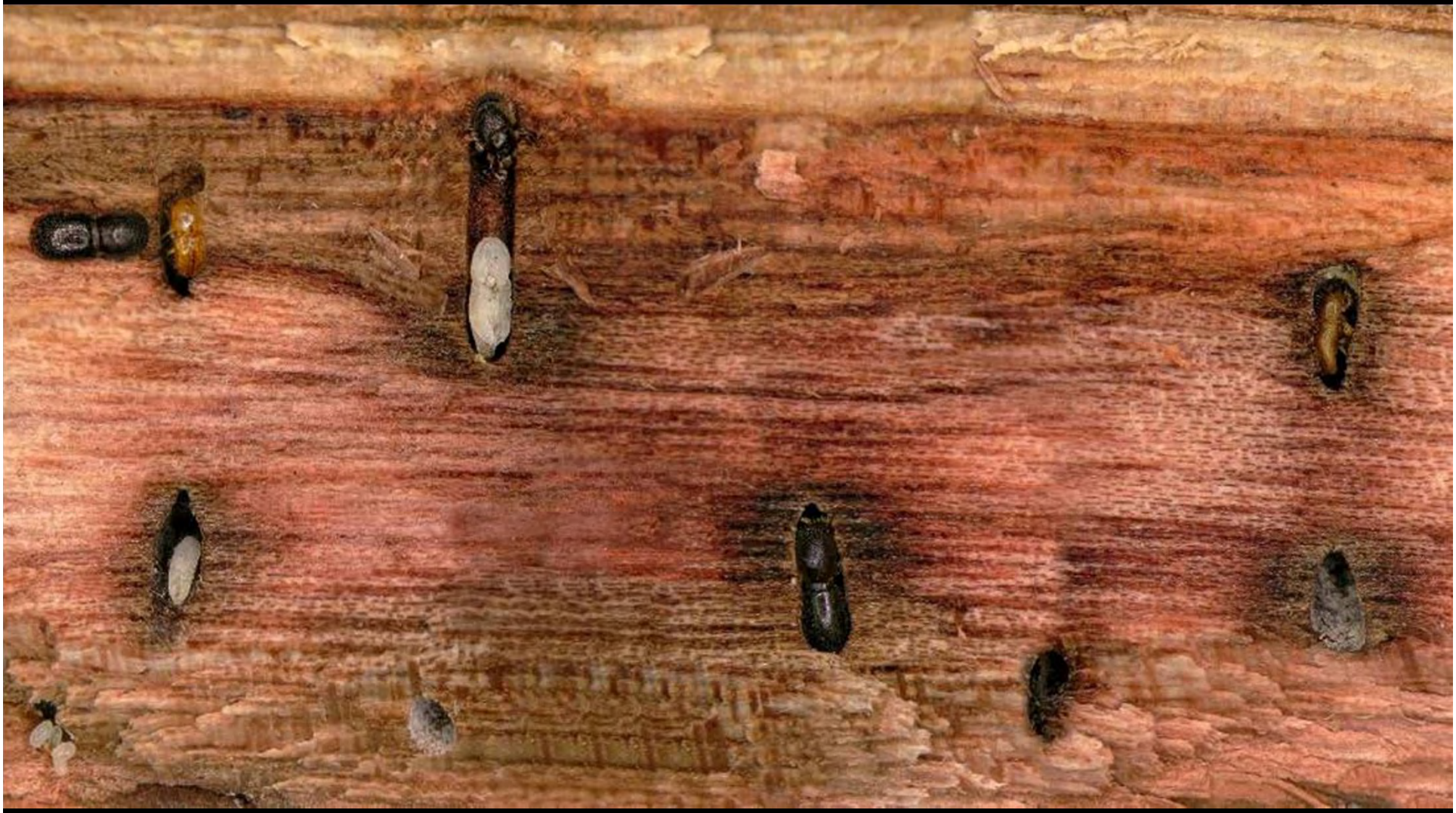
Relation between penetration spots to further attach by *E. fornicatus*

Eyal, Hass, 9 yr old plantation

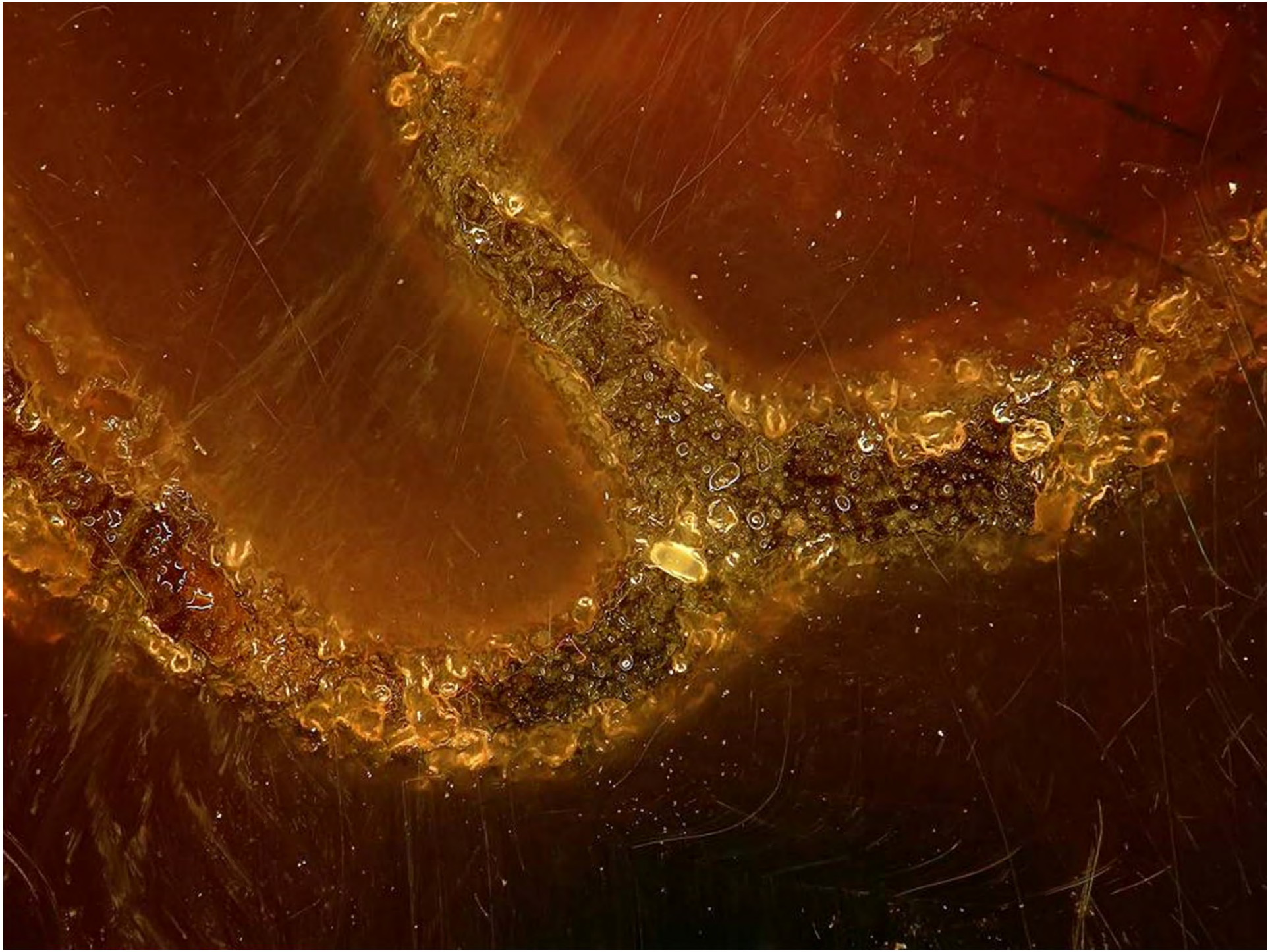



ECHO

Several development stages in a single stem section

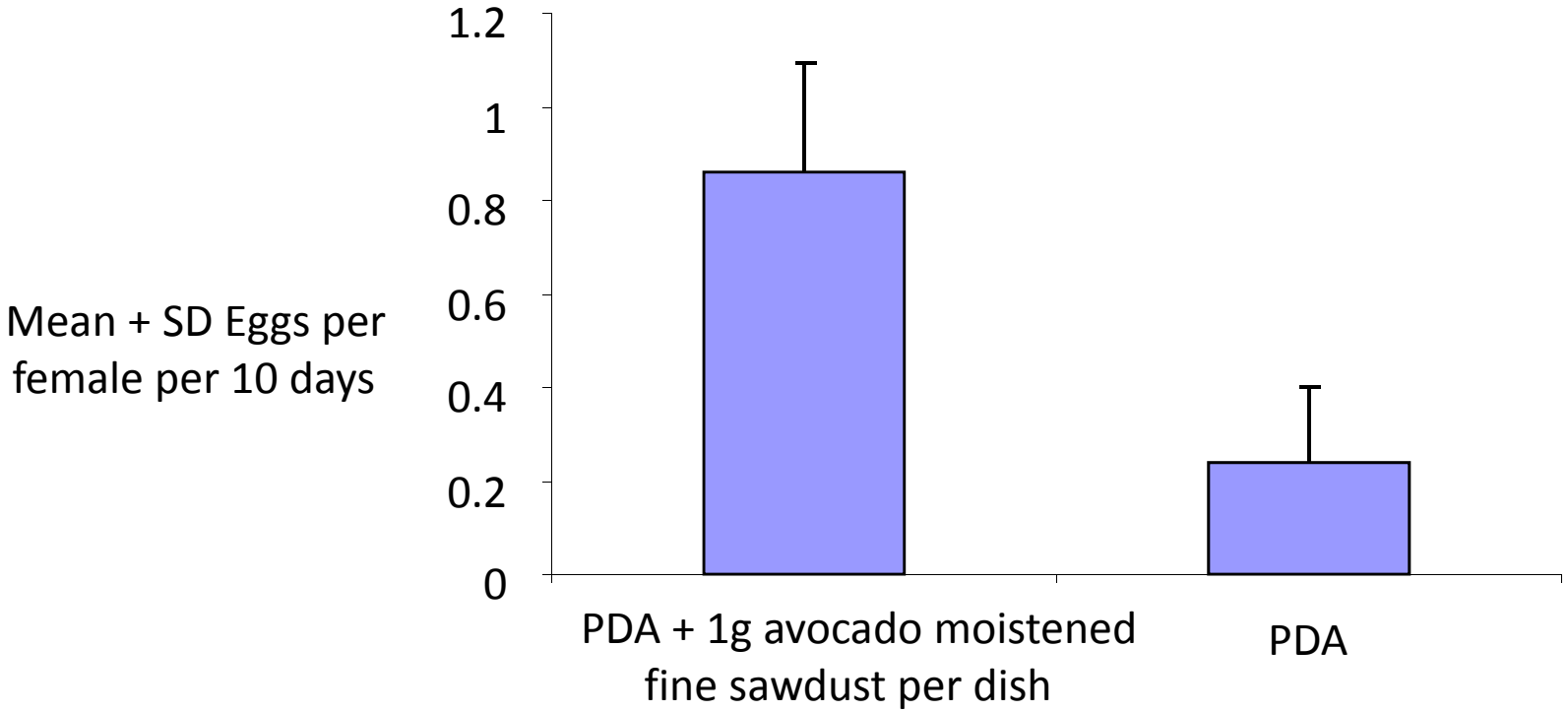



Emergence



Effect of avocado sawdust on oviposition

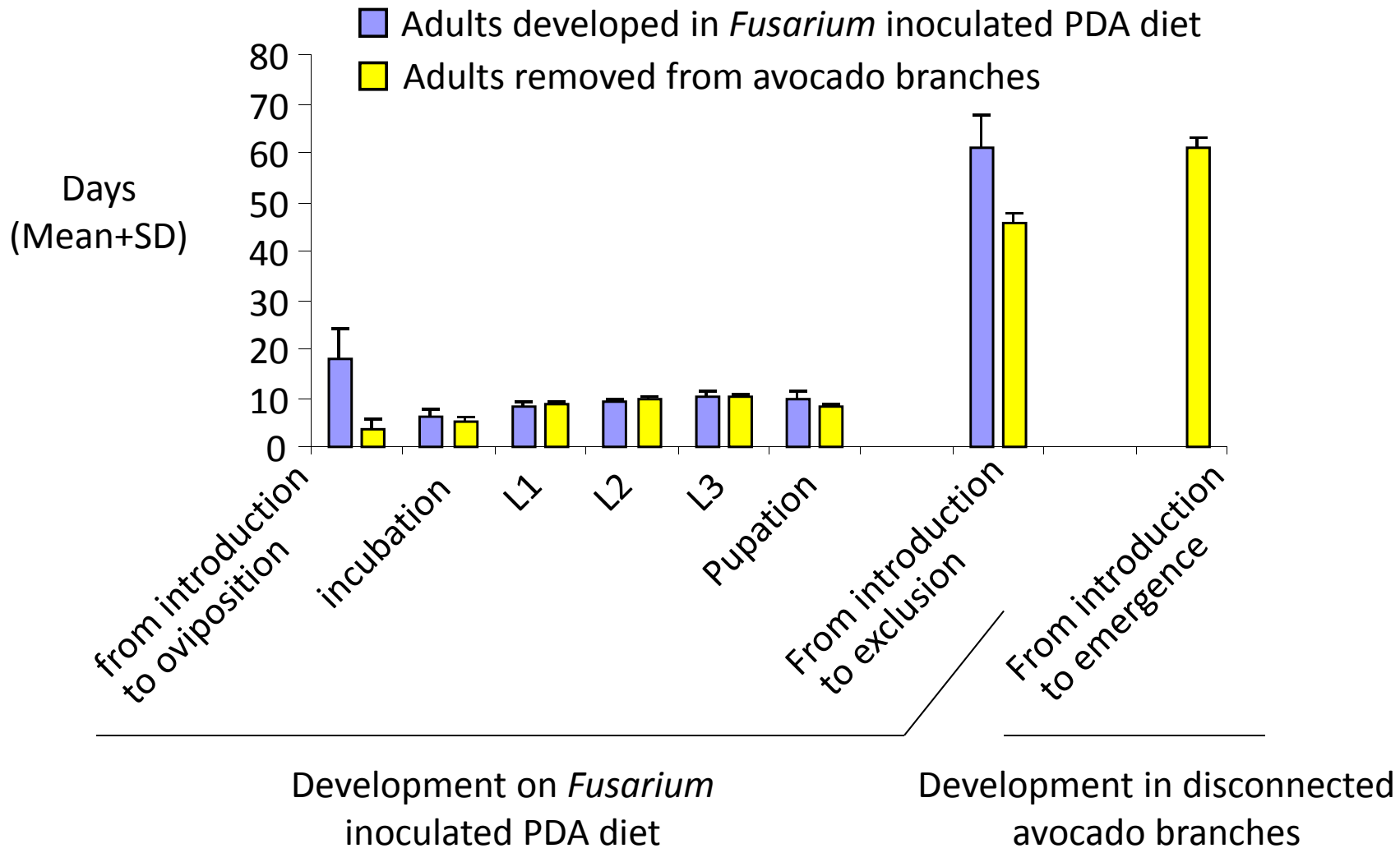
Ten replicates, each consisted of 5 ♀♀ and 1 ♂, 12 days after beetle introduction

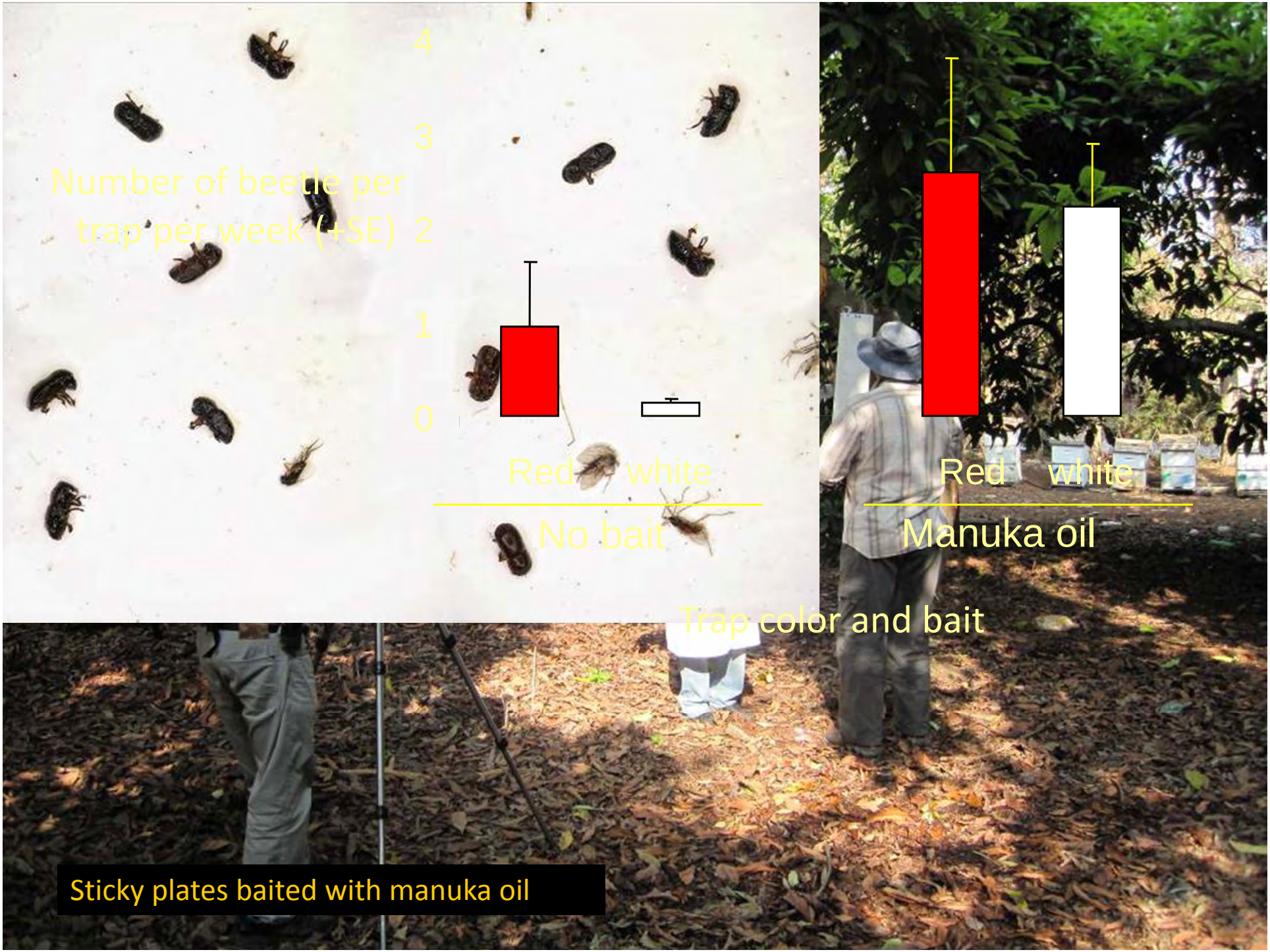


Rearing matrix

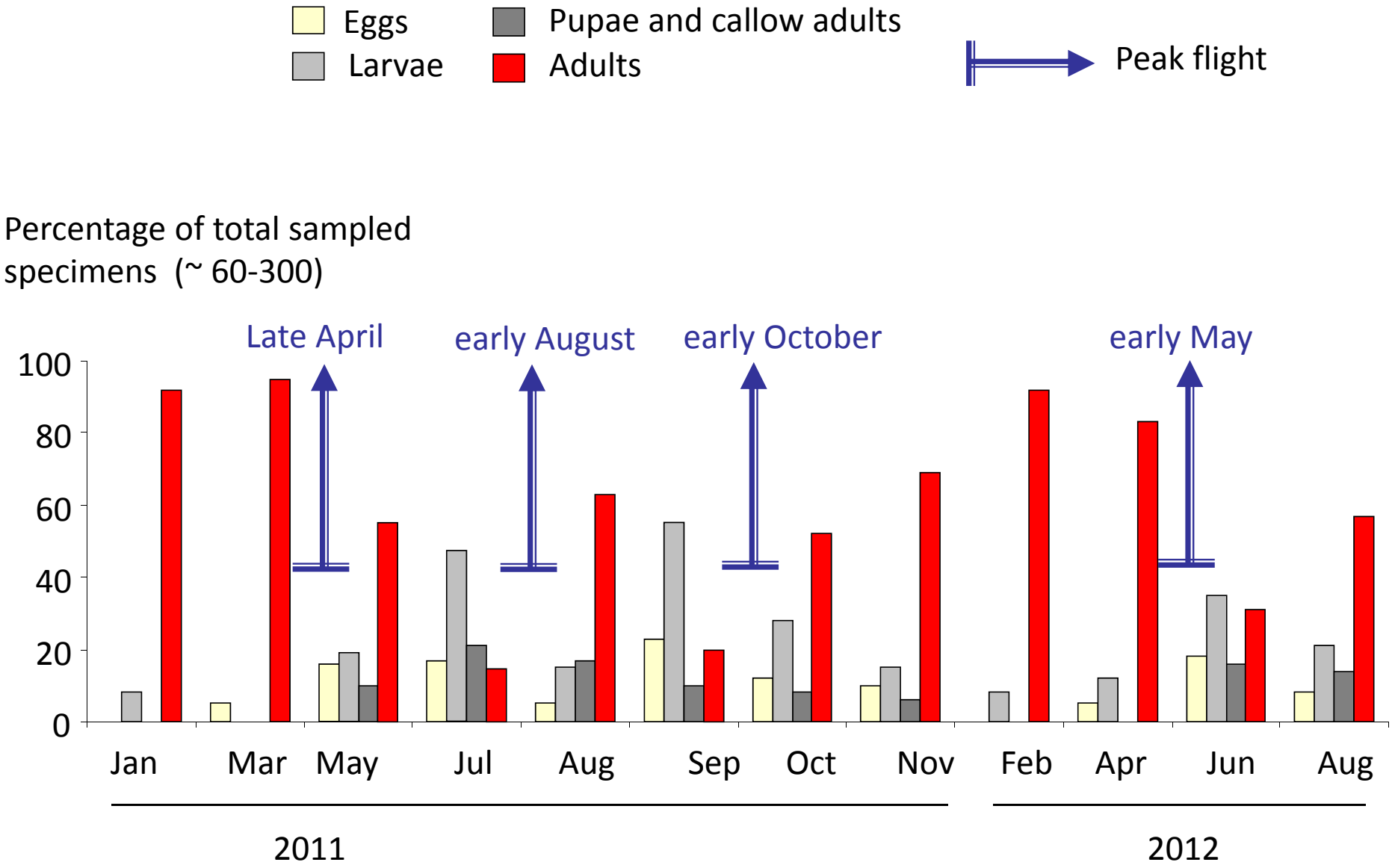
Effect of beetle parent source and offspring diet on their rate of development

The first individual of each stage (25^{0}C)




Number of beetle per trap per week (+SE)
4
3
2
1
0
Red
white
No bait
Red
white
Manuka oil
Trap color and bait
Sticky plates baited with manuka oil

Stage distribution of *Euwallcea fornicatus* in avocado and castor bean stems sampled in the central coast area of Israel



Thank you for your attention

Directions for future research ??