

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

PUBLIC MEETING

Meeting sponsored by:

The Hofshi Foundation

University of California, Riverside

UC Center for Invasive Pest Research

The Huntington Botanical Gardens

The Los Angeles Arboretum



Agricultural Research Organization (ARO)
Institute of Plant Protection

Extension
Service



The situation in Israel: pace of spread, the potential and actual damage and the susceptibility of avocado varieties

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



Historical points

1908 - First few seedlings arrived in Israel to a French monastery near Jerusalem.

1924 - Planting the first grafted trees (Fuerte).

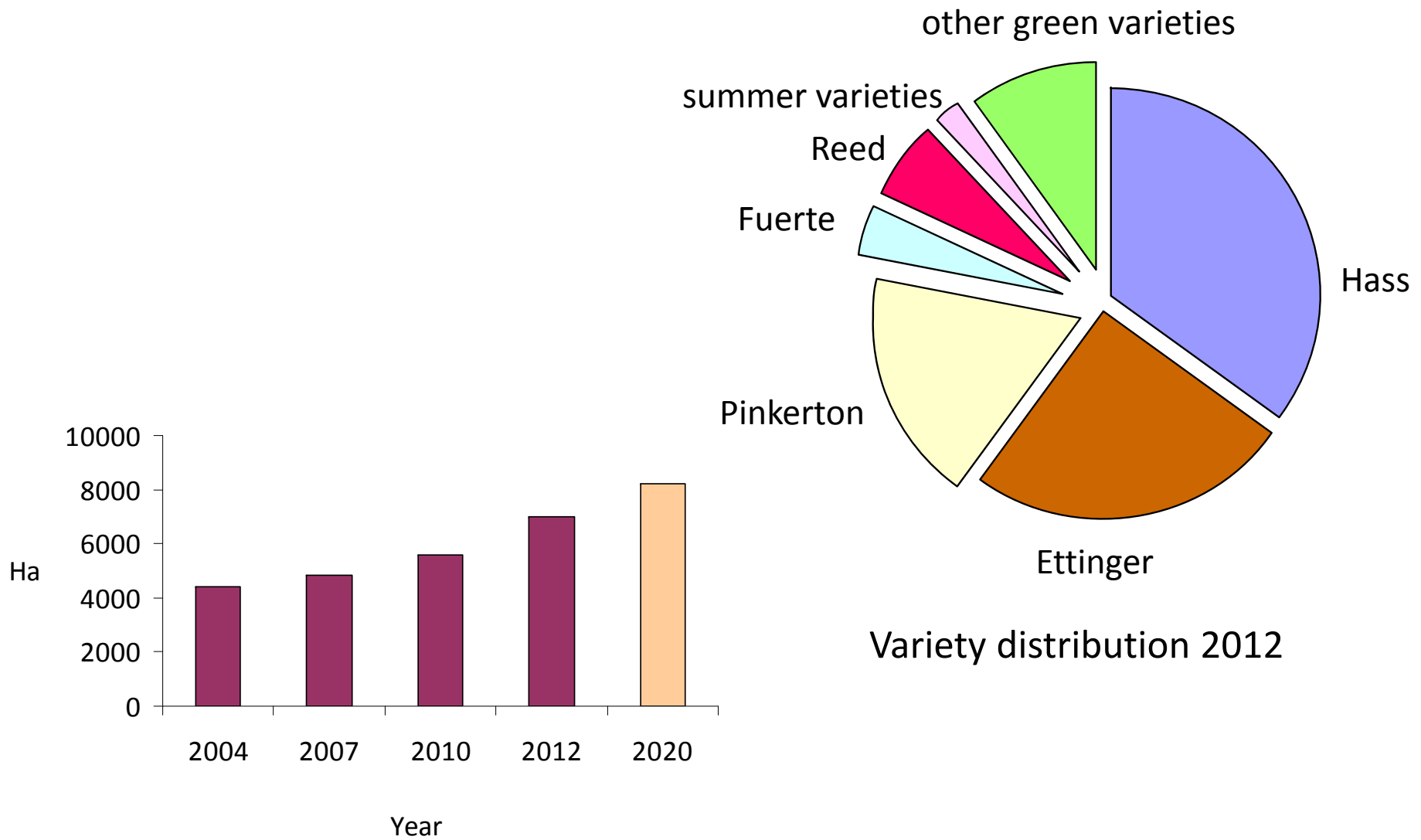
1930s- Establishing the first experimental plots mainly in coastal area.

1937 - Identifying resistant for high concentration of lime and water salinity.

1950s- Planting of the first commercial orchards.

1960 - First year of export to Europe.

Avocado plantations in Israel



Arthropod pests on Avocado in Israel



Beetles

Euwallacea fornicatus

Mites

Olygonychus perseae

Scale insects

Protopulvinaria pyriformis

Moths

Boarmia selenaria

Cryptophlebia leucotreta

Cryptoblabes gnidiella

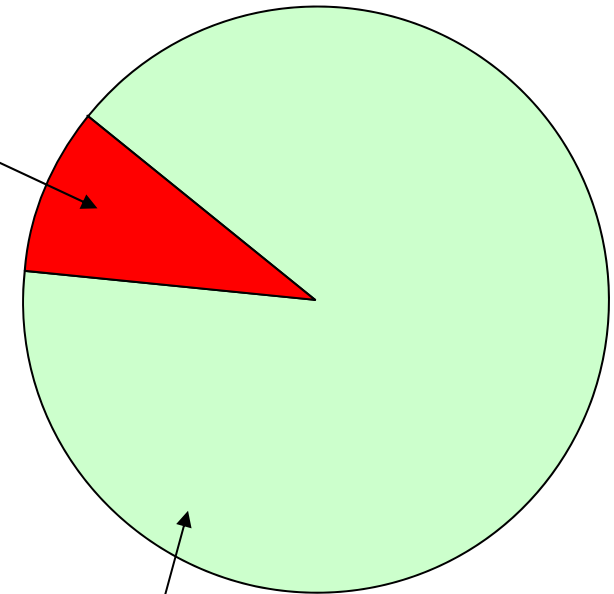
Cacoecimorpha pronubana

Thrips

Chaetanaphothrips orchidii

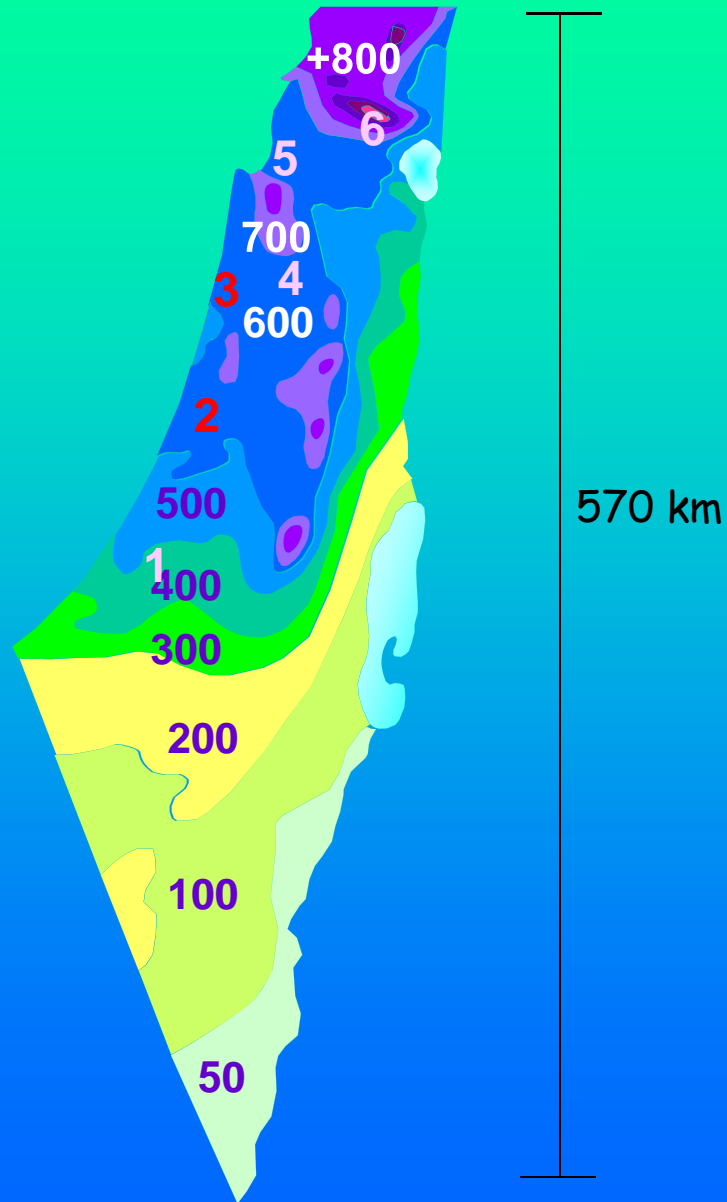
Heliethrips haemorrhoidalis

9 species of economic importance



78 species of minor or non economic importance

Annual rainfall (mm, multi-year average)











Typical wilting of branches











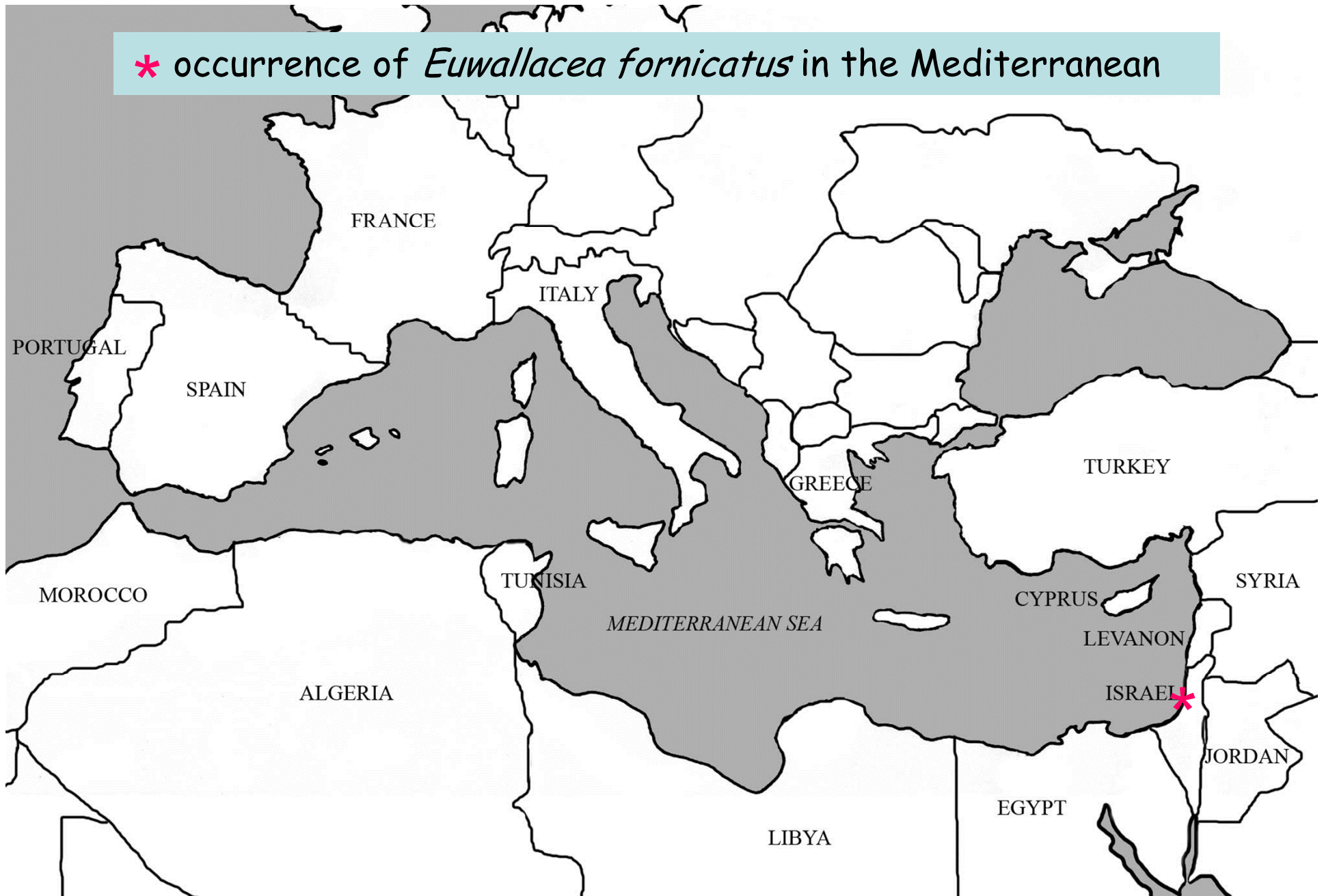
Persitol exudation

Mechanical injury →

Beetle penetration spots

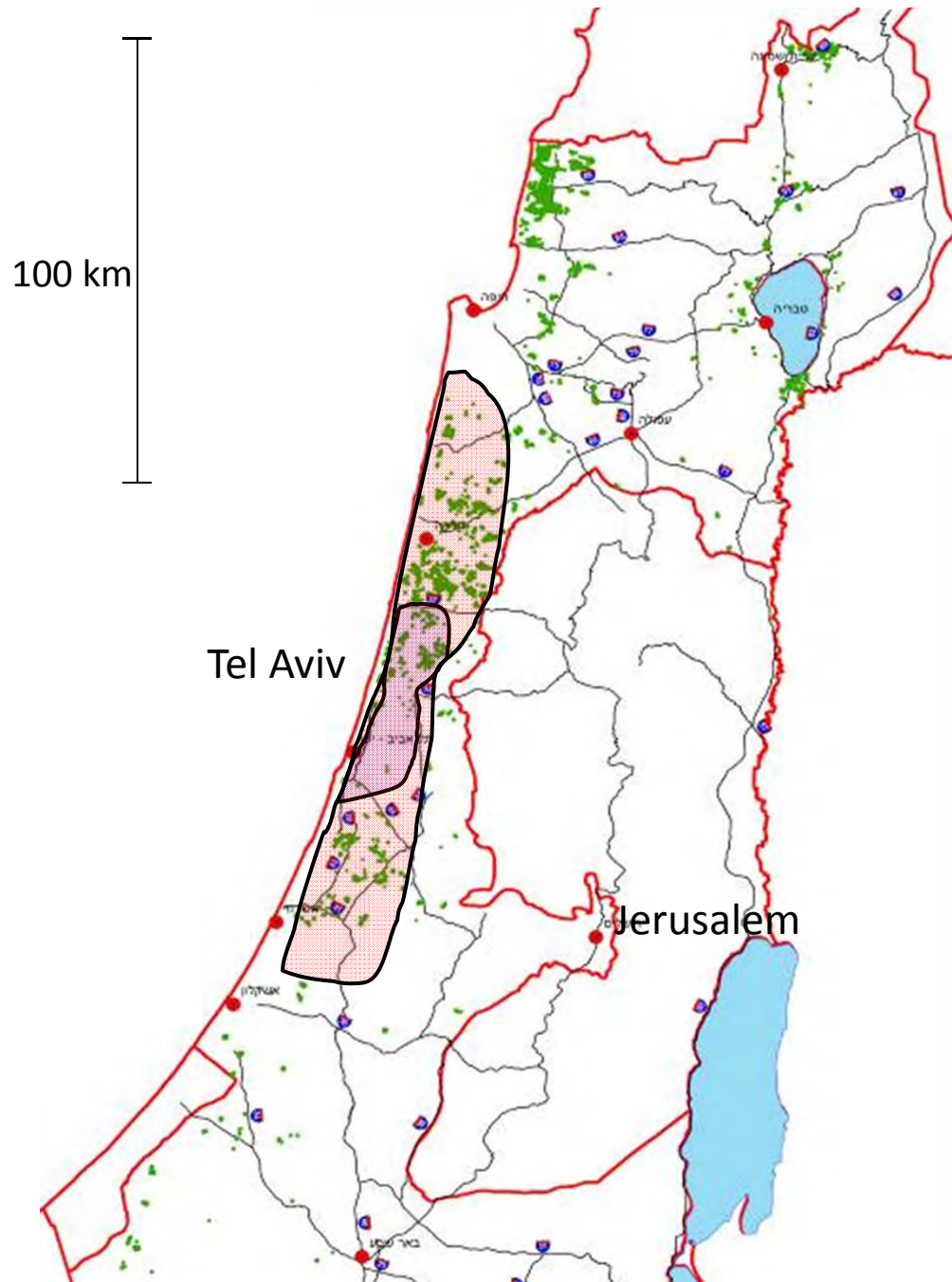





* occurrence of *Euwallacea fornicatus* in the Mediterranean



The beetle first recorded in Israel in 2009

Distribution of the Ambrosia problem in Israel



-  Avocado plantations
-  Area of distribution in 2010
-  Area of distribution in 2012





The syndrome behavior

Symptoms of injury vs actual damage

Management – irrigation and damage progress

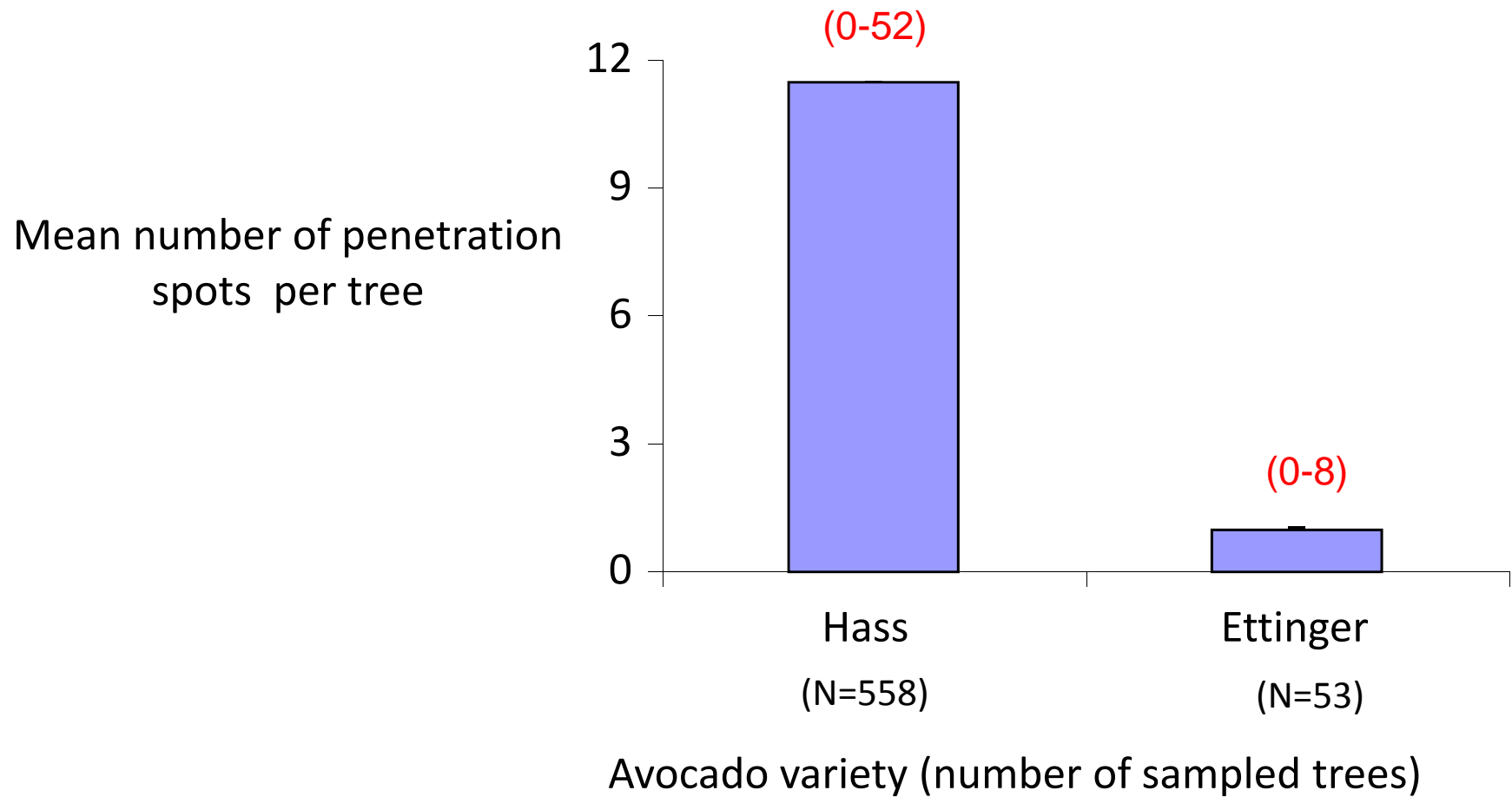


The growers' attitude

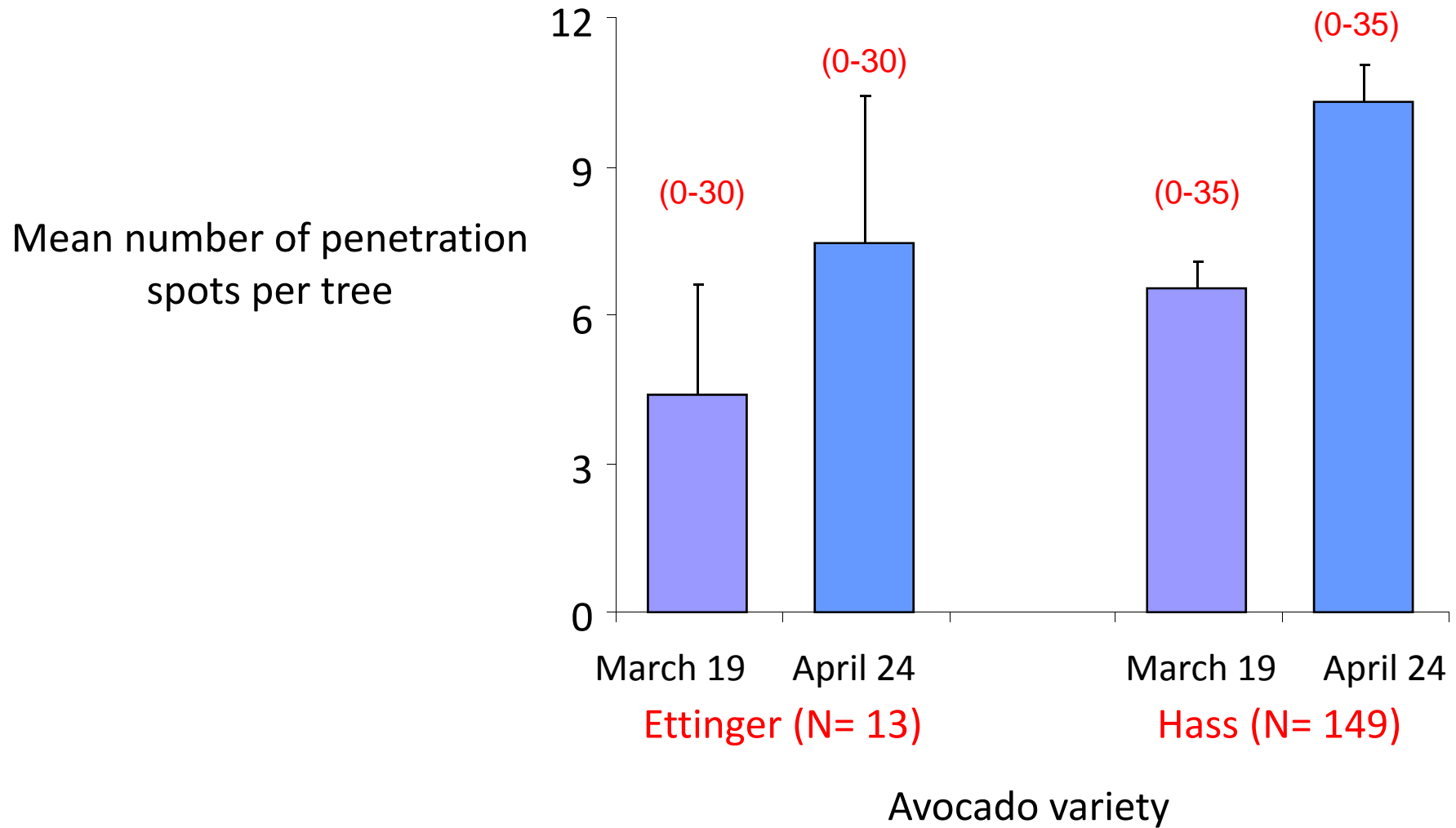
The inclination to minimize or even to ignore the potential damage

Looking for easy solutions = chemical application formula

Ayal, 9 yr old trees, May 31, 2012

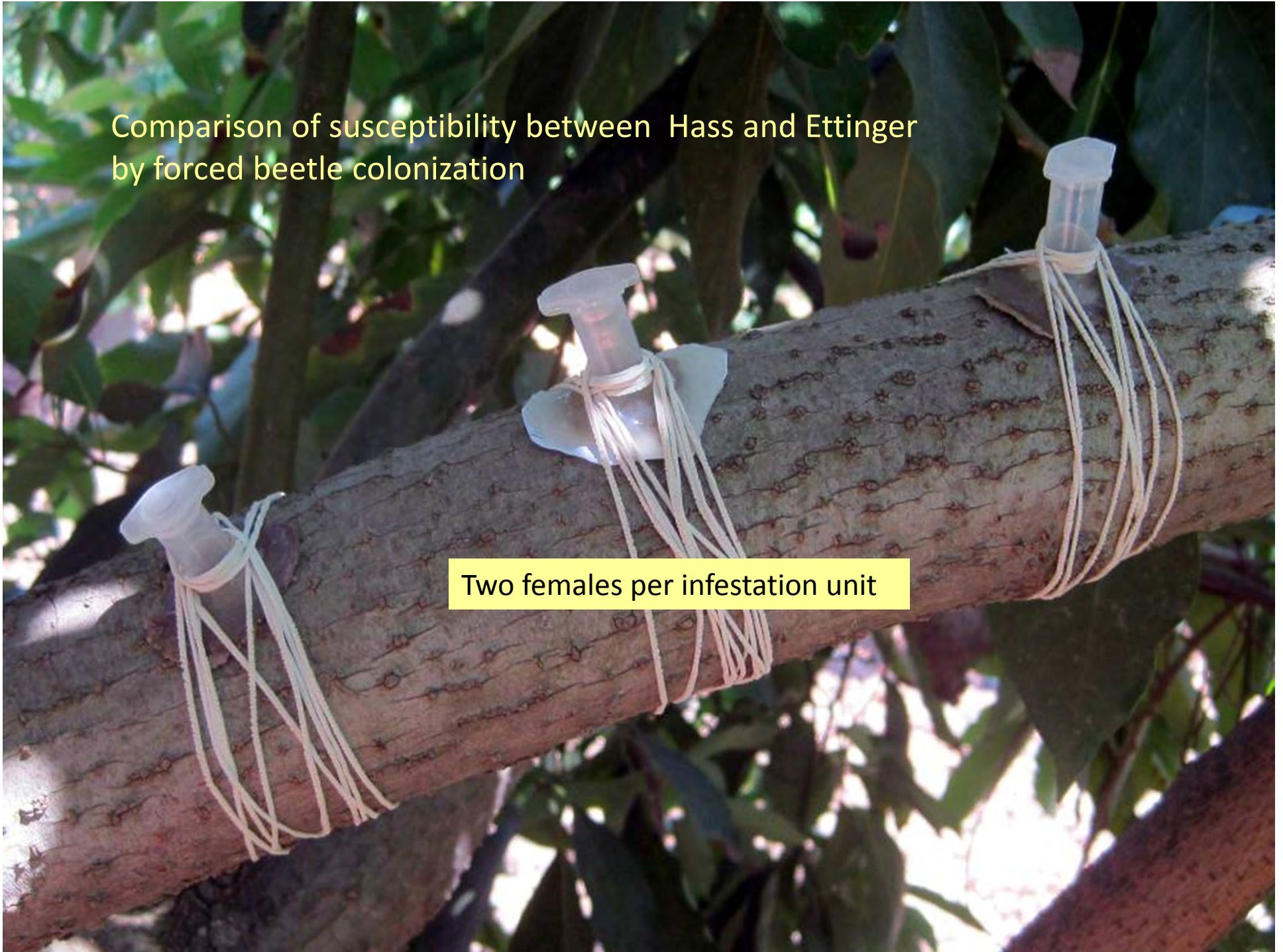


Ga'ash, 8 yr old plantation, 2012



Comparison of susceptibility between Hass and Ettinger
by forced beetle colonization

Two females per infestation unit







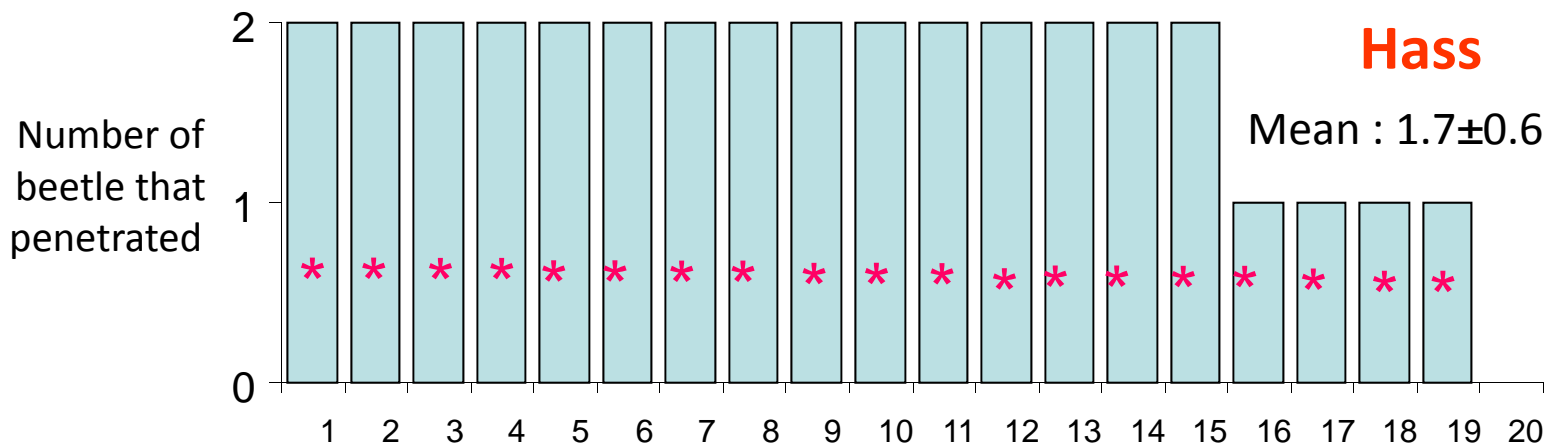
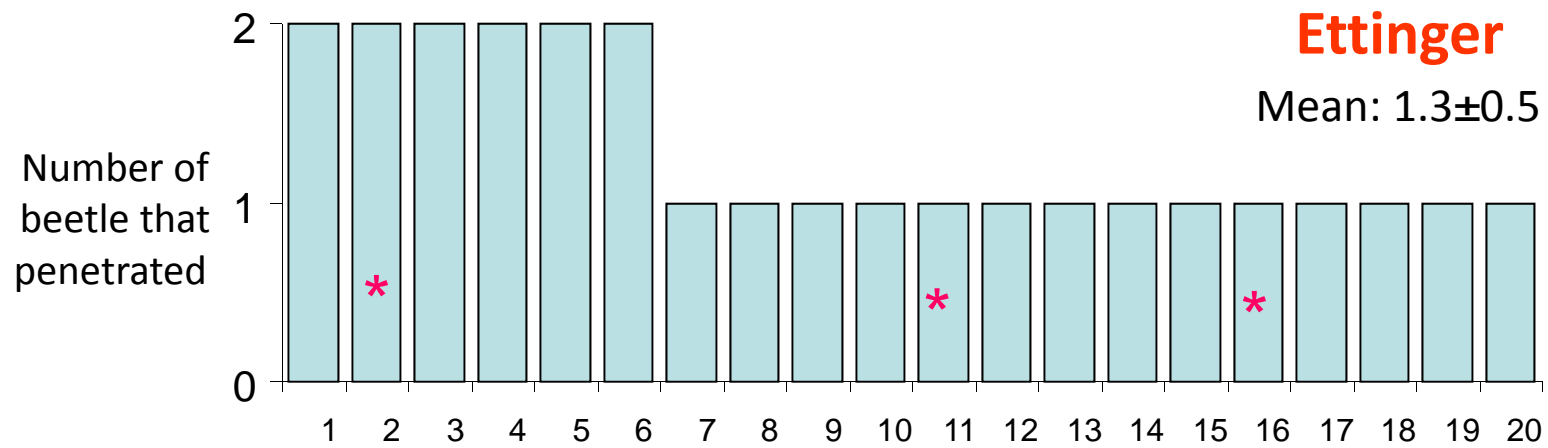
Five days after beetle colonization

Controlled colonization, Palmachim

Colonization: July 16, 2012

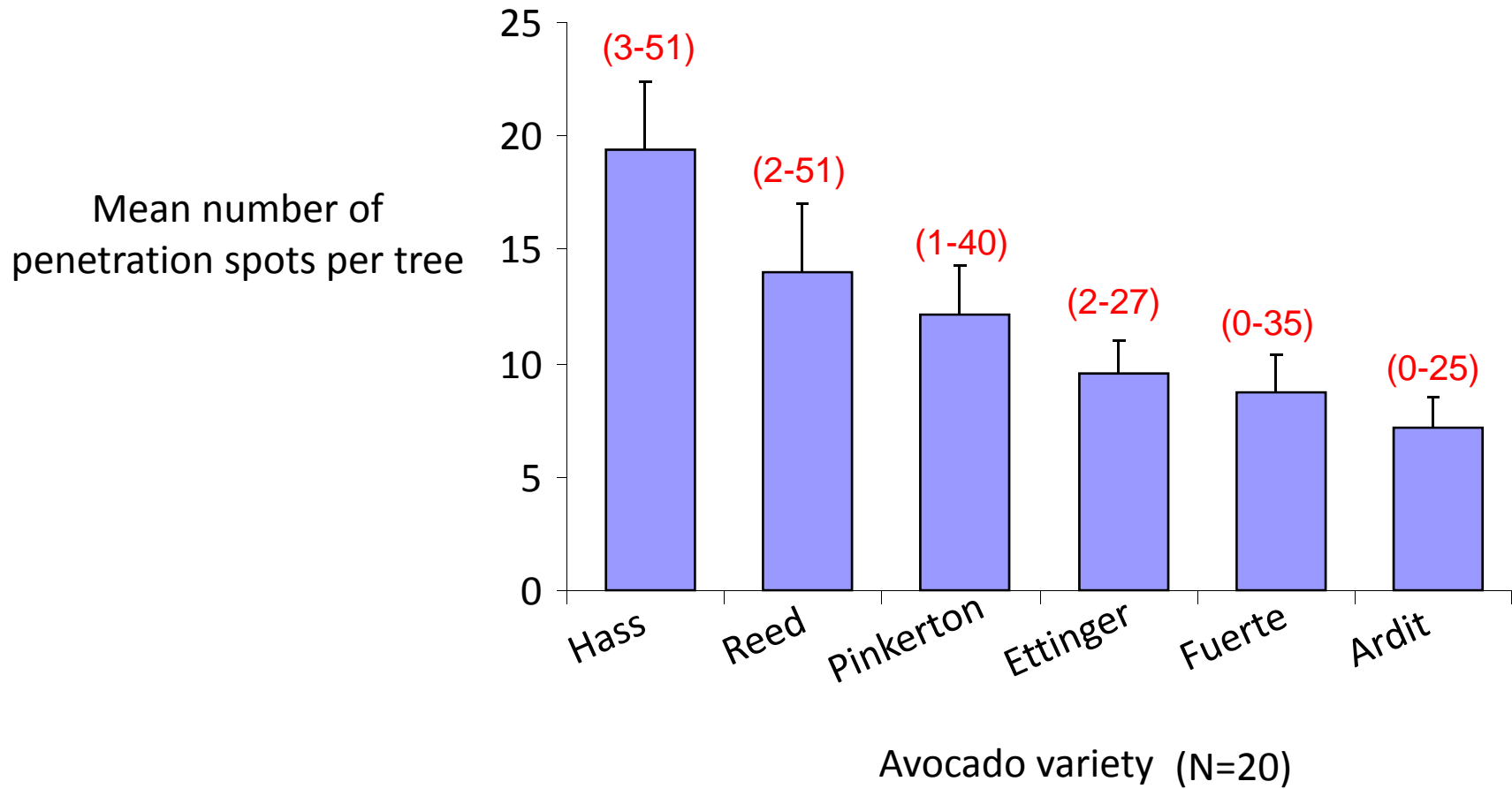
Checking: July 23, 2012

* Spread of the fungus deep in the xylem

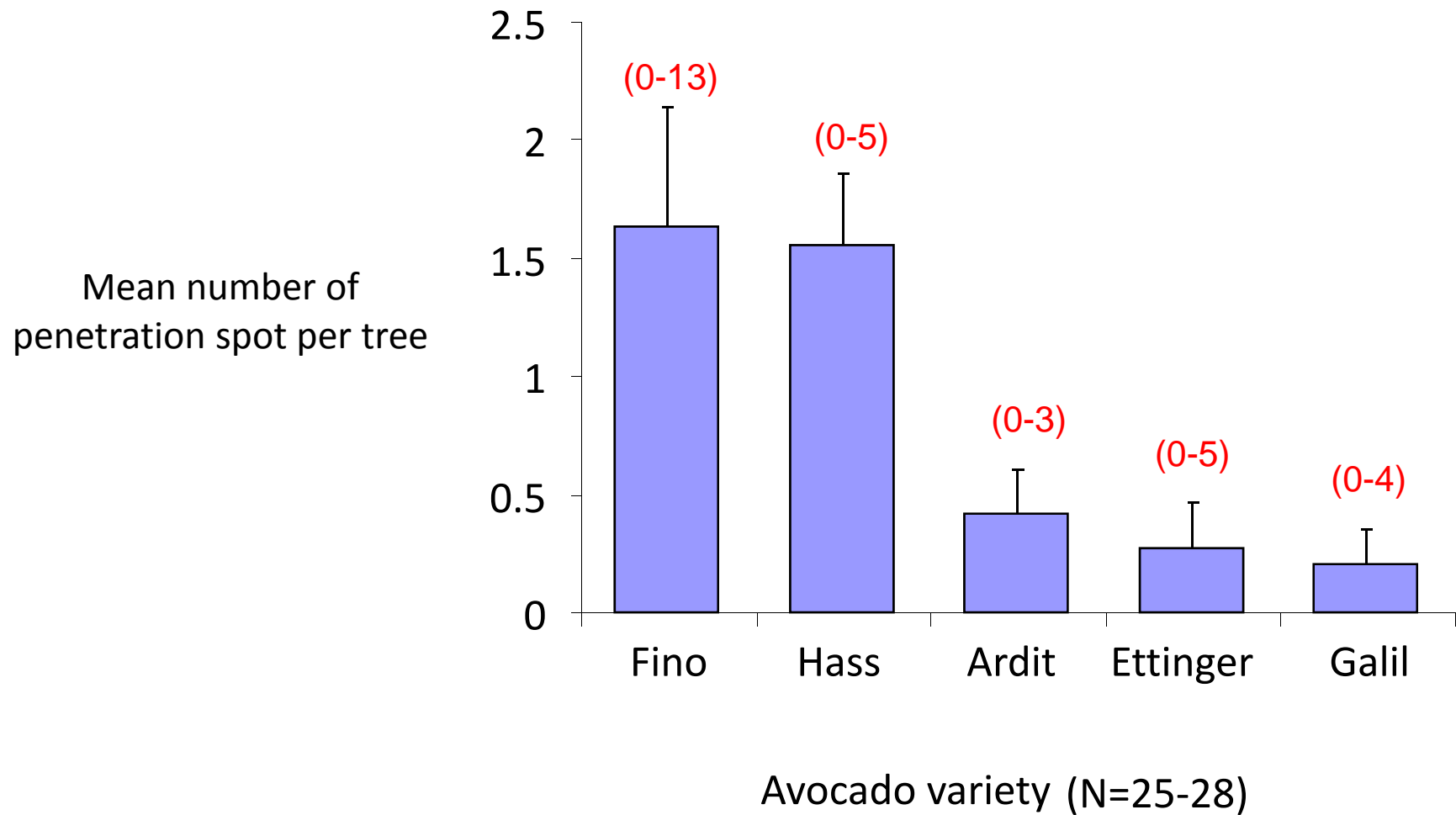


Colonization unit

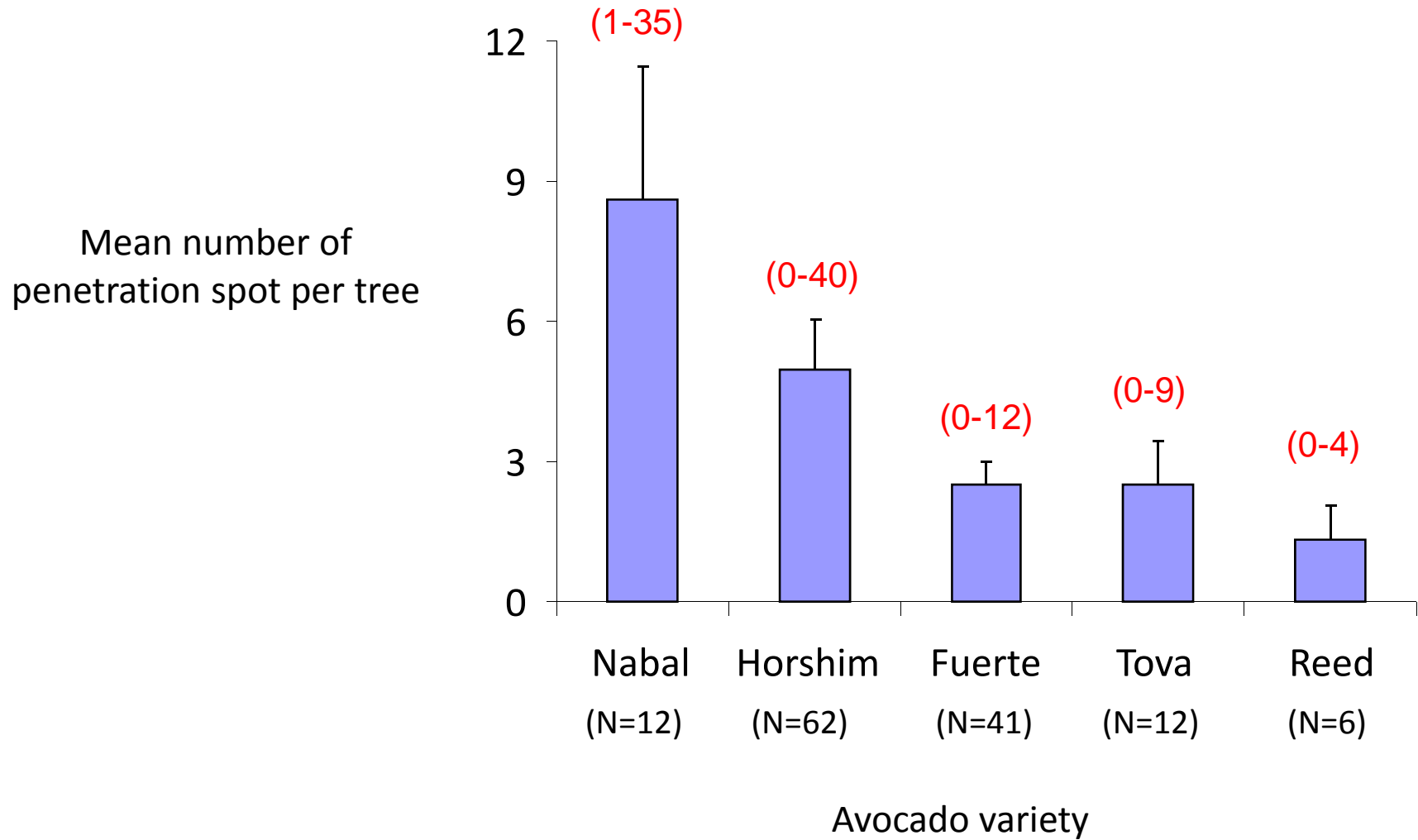
Nordia, Adult trees, June, 27, 2012



Ma'agan Michael, Adult trees, May, 9, 2012



Magshimim, mature trees >35yr, May 31, 2012



Castor bean plants
as a refuge



13/12/2011



Failed attempts to attack persimmon trees



Tree cortex and xylem
are not affected







- 1) So far there is no good solution for the problem.
- 2) The conspicuous penetration points make the monitoring and then 'surgical' treatments makes it feasible.
- 3) For the moment, preventive management, including sanitation, is the best option. And...

Thank you for your attention