

Upcoming Research Findings on Wood Borer Detection Rates in Wood Packaging Materials From 2003-2020

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ISPM 15: Background Information

Objective: Reduce the risk of pests from being introduced to other countries in WPM through international trade

First approved in 2002

NZ - 1st implemented in 2003

USA - 2005-2006 (10-month phase in)



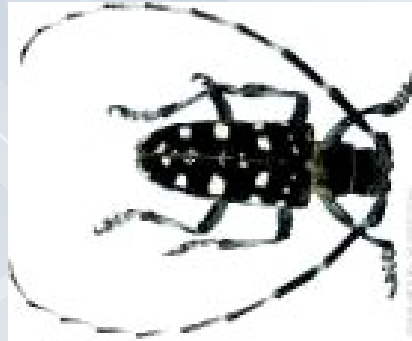
Note: 1000s of Insects Infest Woody Plants Worldwide



>15,000

Buprestids

(Metallic
Wood Borers)



>35,000

Cerambycids

(Longhorned
Beetles)



>6,000

Scolytines

(Bark and
Ambrosia
Beetles)



100

Siricids

(Woodwasps)

Of these 4 groups
> 2,500 North American species
Over 100 exotic

Background on the USDA APHIS “AQIM Program”

(Agriculture Quarantine Inspection Monitoring)

- Containerized shipments selected randomly for inspection at cooperating land and maritime US ports (record both + & - data)
 - Data are recorded on a consignment basis
- WPM 1st added to AQIM in 2003 (> 40 ports)
- 1st analysis by Haack et al. used 2003-2009 data ca. 35,000 records with WPM
- New analysis 2003-2020 (>100,000 records)

Major Findings of

Haack et al. 2014. *PLoS ONE* 9(5): e96611

- WPM infestation rates fell by 36-52% (depending on start date and countries included)

2003-05

PRE-ISPM 15

0.2%

2006-09

POST-ISPM 15

0.1%



New Findings

Haack et al. 2022. *Frontiers in Forests and Global Change*.
(In review)

2003-2020: **109,709** inspection records total

After dropping all records from Canada and records without the ISPM 15 mark from 2006-2020, there were **87,571** records in the final dataset.



New Findings

Haack et al. 2022. *Frontiers in Forests and Global Change*.

Overall borer detection rates in WPM for all AQIM Programs

2003-04

PRE

0.34%

2005-06

Interim

0.13%

2007-09

POST w/
no bark
regs

0.18%

2010-20

POSTw/
bark
regs

0.22%

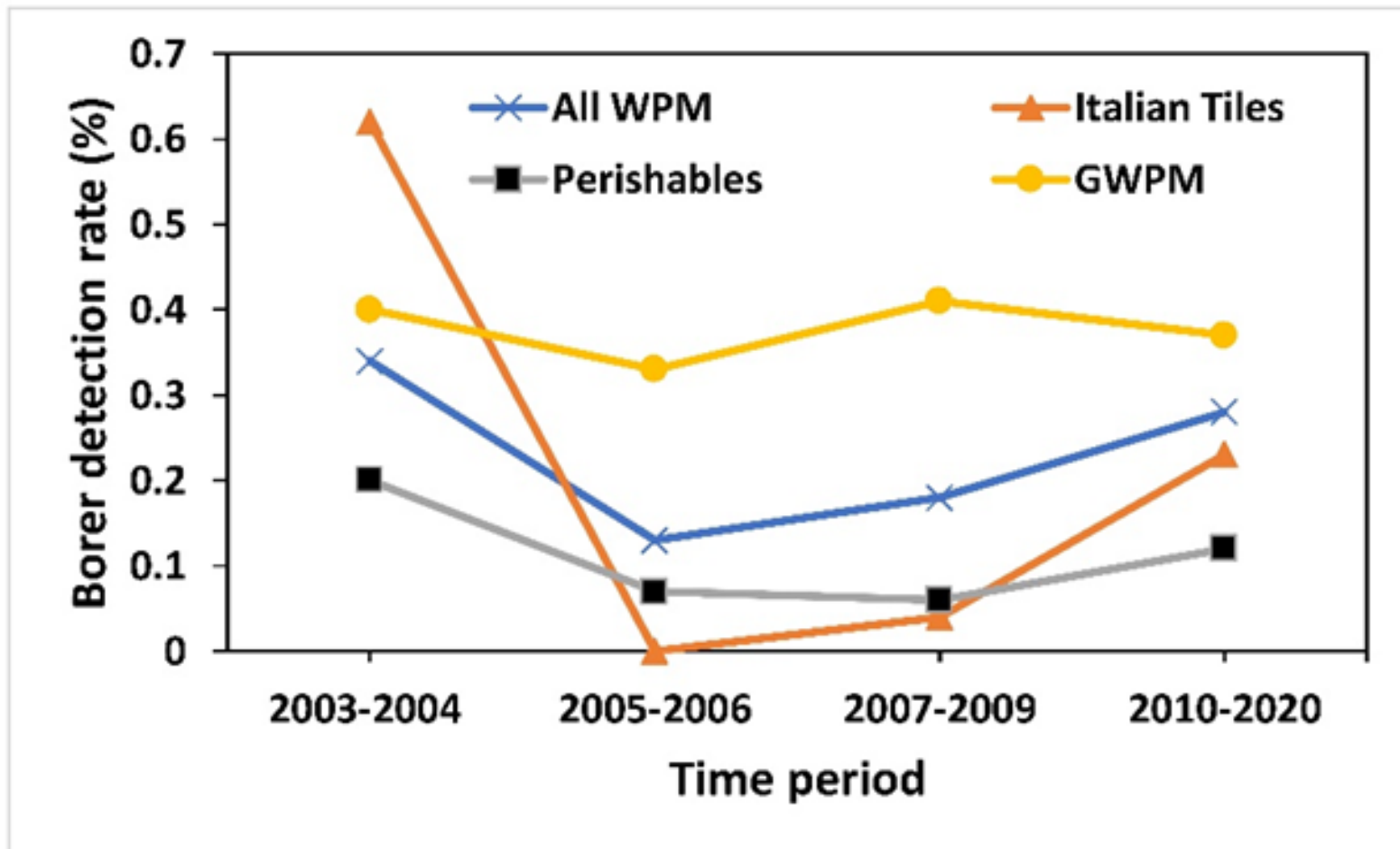


Detection rates for ALL WPM and 3 AQIM Special Programs

WPM associated with **Perishables** (i.e., food, cut flowers)

WPM associated with **Italian tiles**

General WPM (**GWPM**): any maritime containerized product



Detection rates varied among major trading partners.

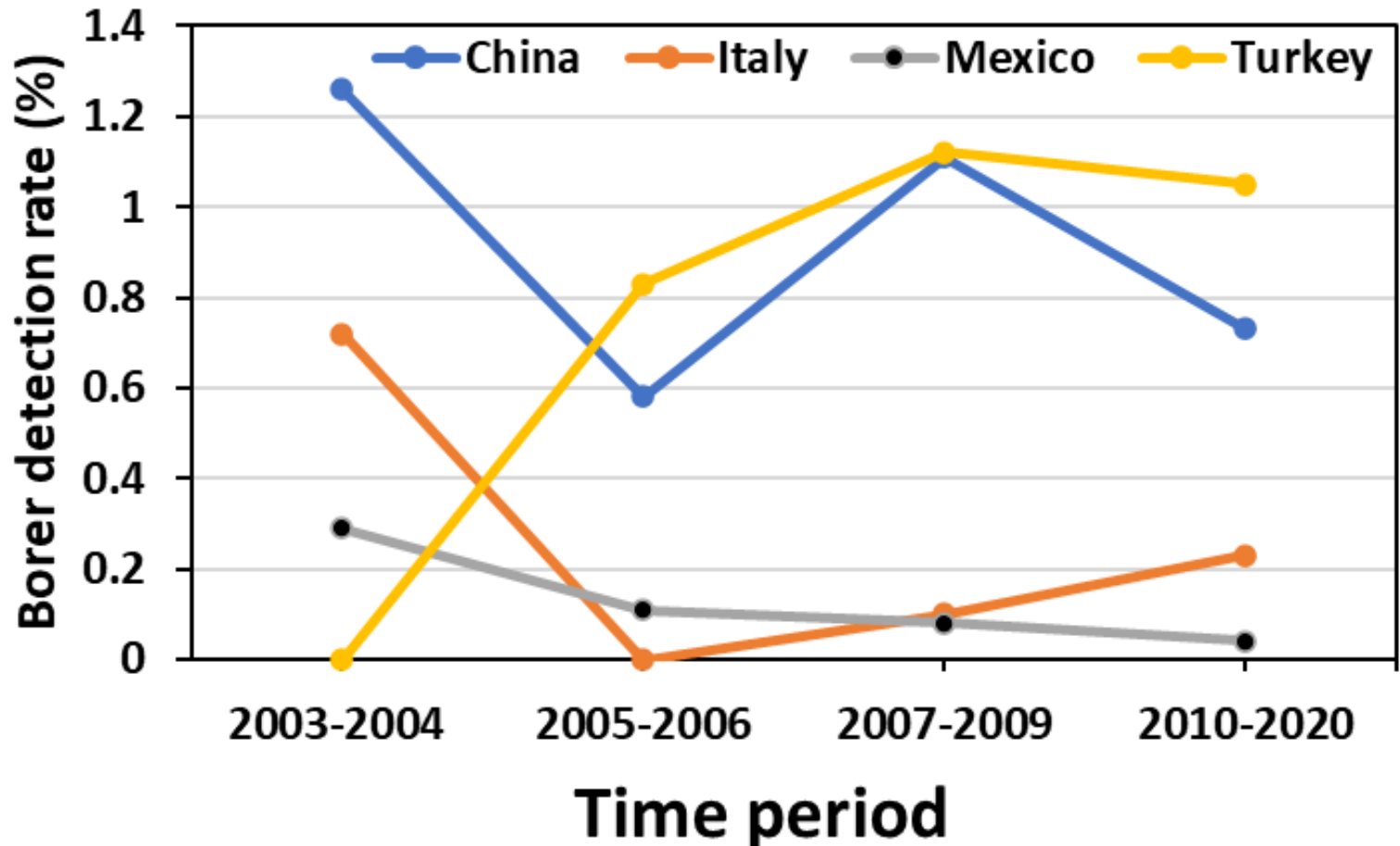
180 records with borers out of 87,571 total records (2003-2020)

China: 4.6% of all inspection records (40 with borers)

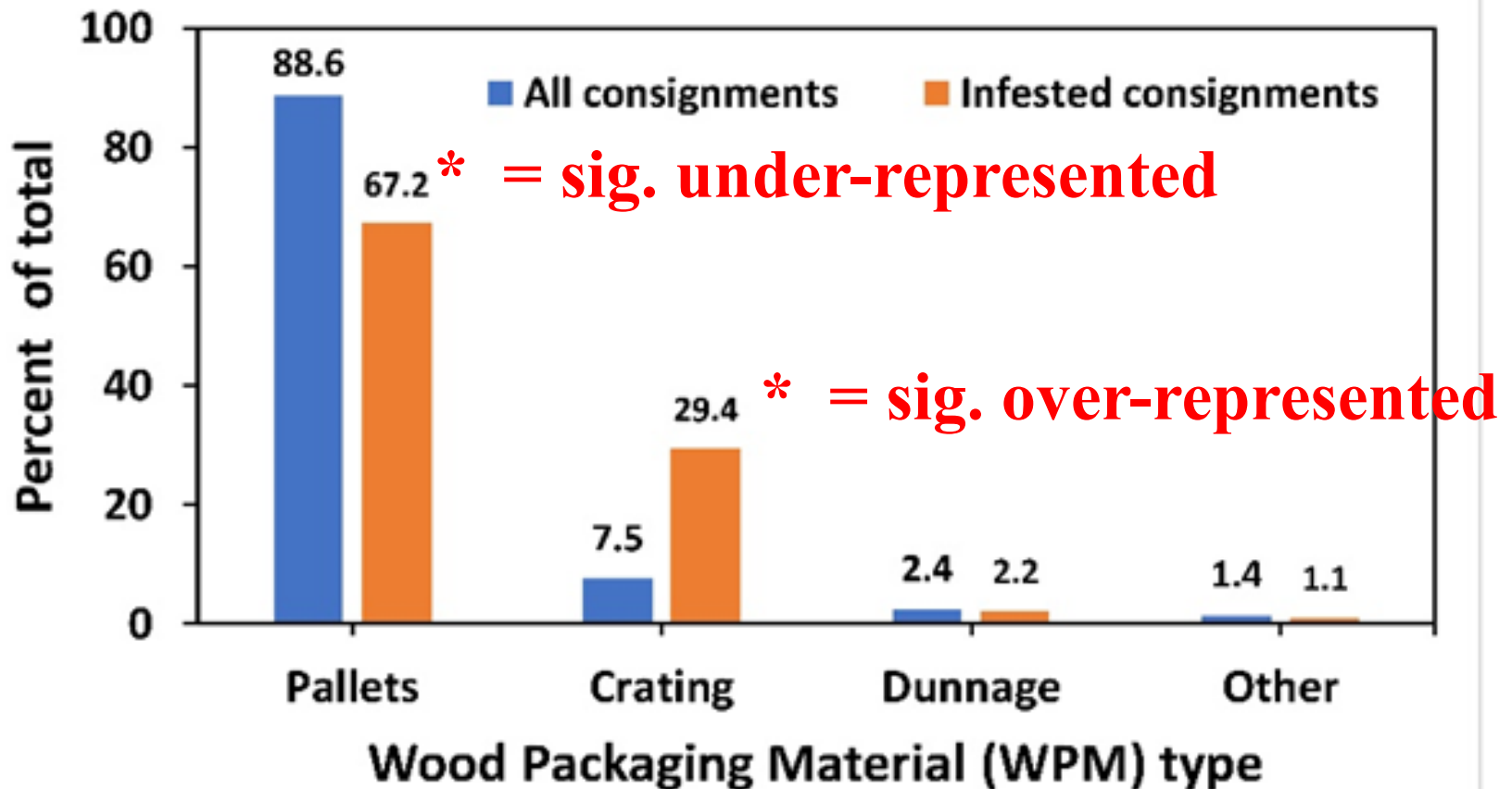
Italy: 12.7% all records (27 with borers)

Mexico: 30.4% of all records (22 with borers)

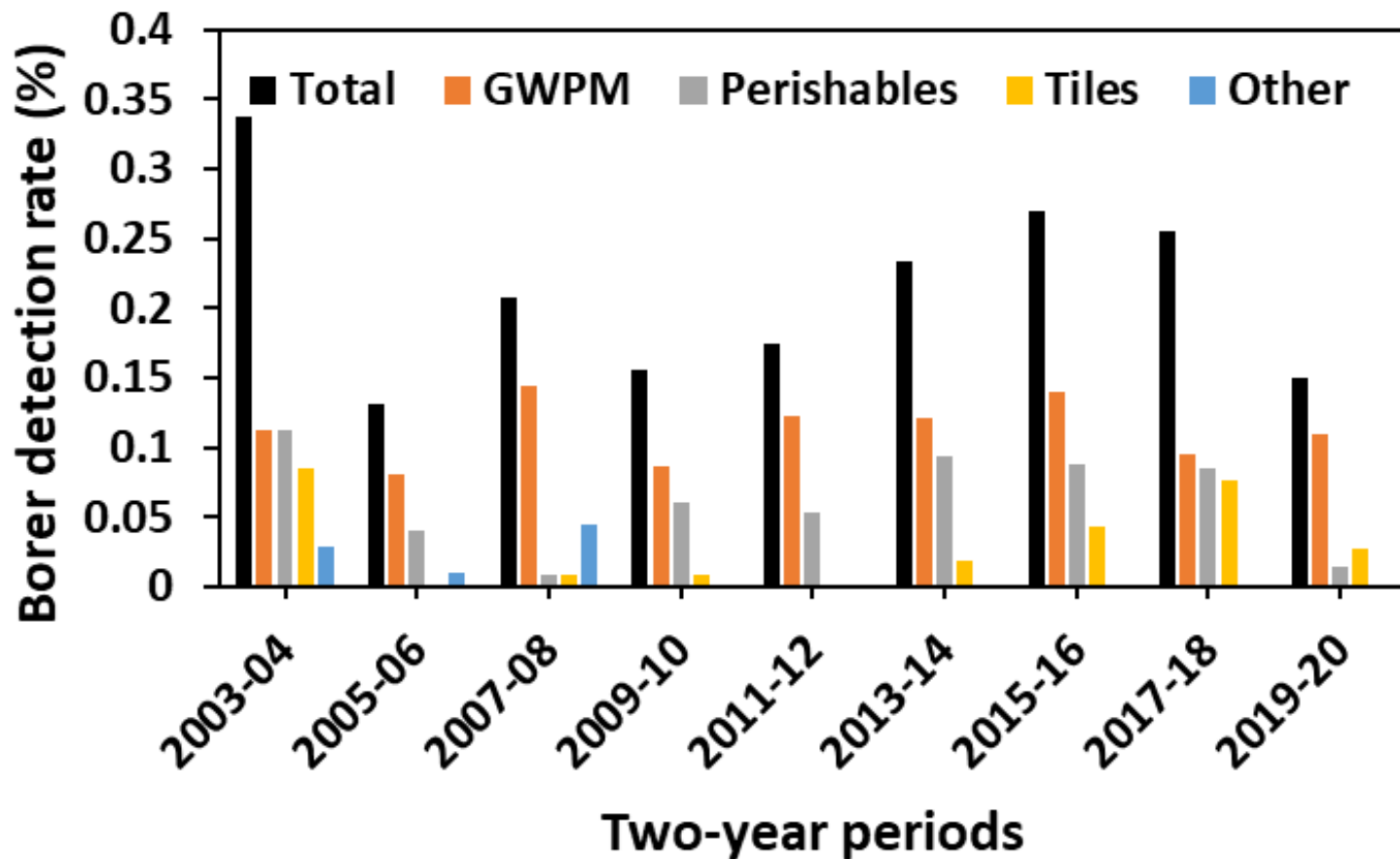
Turkey: 1.4% of all records (15 with borers)



Type of WPM inspected for all consignments (N = 87,571) and for those where wood borers were found (N = 180).
Other = WPM items such as wood blocks and spools.



Detection rates for all WPM and individual programs at 2-year intervals



There are many possible reasons why we might not see a larger drop in borer detections

- Pest tolerance of the treatment
- Unintentional noncompliance
- Fraud
- Data issues in AQIM (done on a consignment basis)
- Post-treatment colonization of WPM
- Policy anticipatory effect
- Improved inspector training
- Changing in trading partners over time

The background of the slide features a stylized, light blue and white pattern of overlapping leaves and stems, creating a textured, organic feel. The leaves are rendered in various shades of light blue, with white outlines and veins, set against a pale, gradient background that transitions from a slightly darker blue at the top to a lighter, almost white at the bottom.

Thank you!

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