Giornate Fitopatologiche
PROTEZIONE DELLE PIANTE, QUALITÀ, AMBIENTE

UNIVERSITÀ CATTOLICA del Sacro Cuore

Stato della resistenza ai fitofagi in Italia

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Premessa

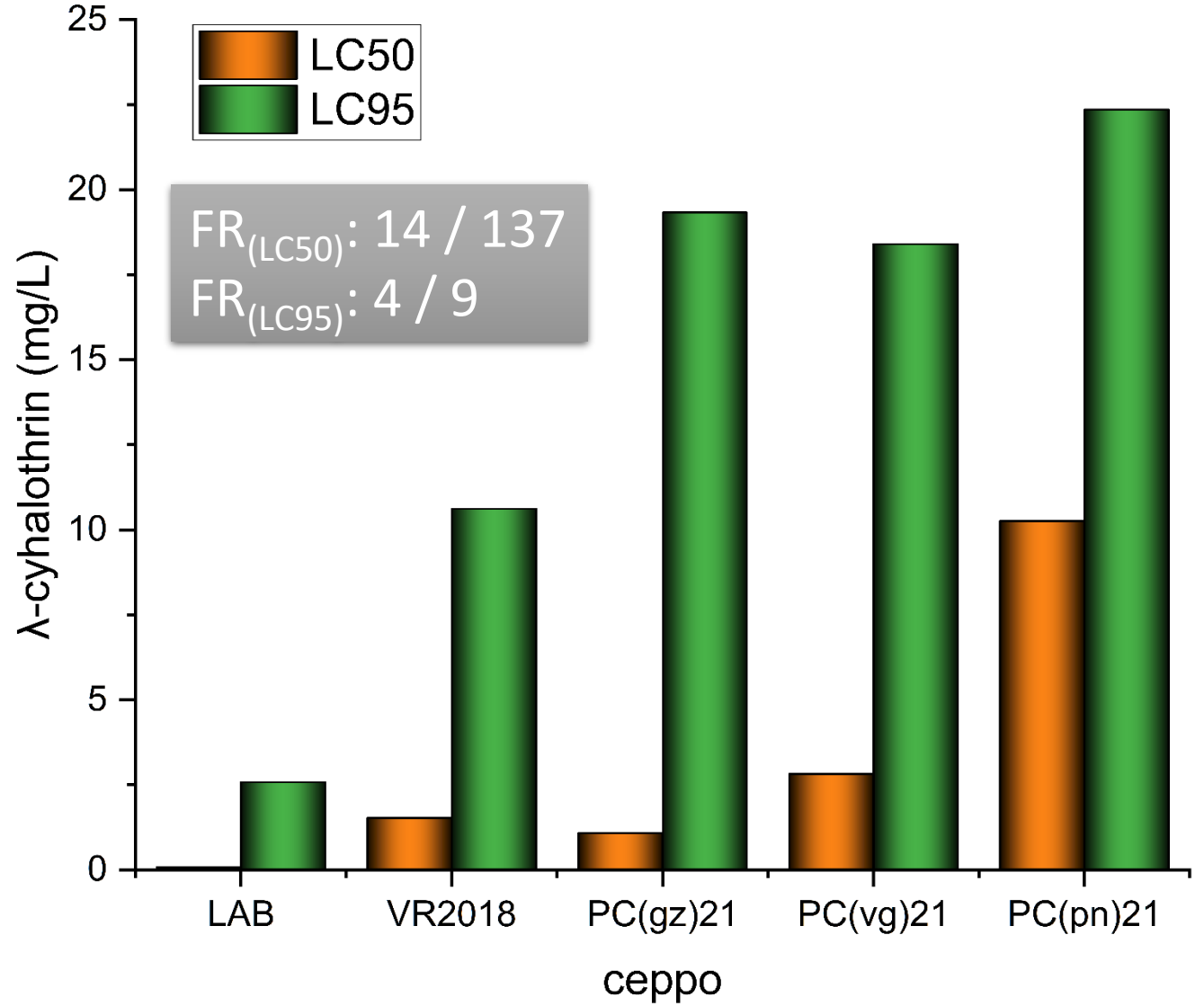
IRAC:
“ la resistenza agli insetticidi è un processo dinamico e quindi le informazioni fornite non riflettono la situazione corrente della resistenza agli insetticidi in tutti i paesi e località”.

Quali aggiornamenti in Italia rispetto al 2022 (dati pubblicati o in corso di pubblicazione)

Tetranychus urticae

Acyrthosiphon pisum
Aphis gossypii
Myzus persicae

Acyrthosiphon pisum



By Shipher Wu (photograph) and Gee-way Lin (aphid provision), National Taiwan University - PLoS Biology, February 2010 direct link to the image description, CC BY 2.5, https://commons.wikimedia.org/w/index.php?curid=9590073

con il supporto di Syngenta Crop Protection AG (Resistance monitoring of *Acyrthosiphon pisum* from Italy to λ-cyhalothrin 2021)

Acyrthosiphon pisum

Entomologia Generalis, Volume 43 (2023), Issue 3, 627–637
Published online 22 March 2023

Molecular characterization of pyrethroid resistance in field-collected populations of the pea aphid, *Acyrthosiphon pisum*

Viola Müller[1,2], Benjamin Buer[1], Bettina Lueke[1], Emanuele Mazzoni[3], Adam Pym[4], Chris Bass[4], and Ralf Nauen[1,*]

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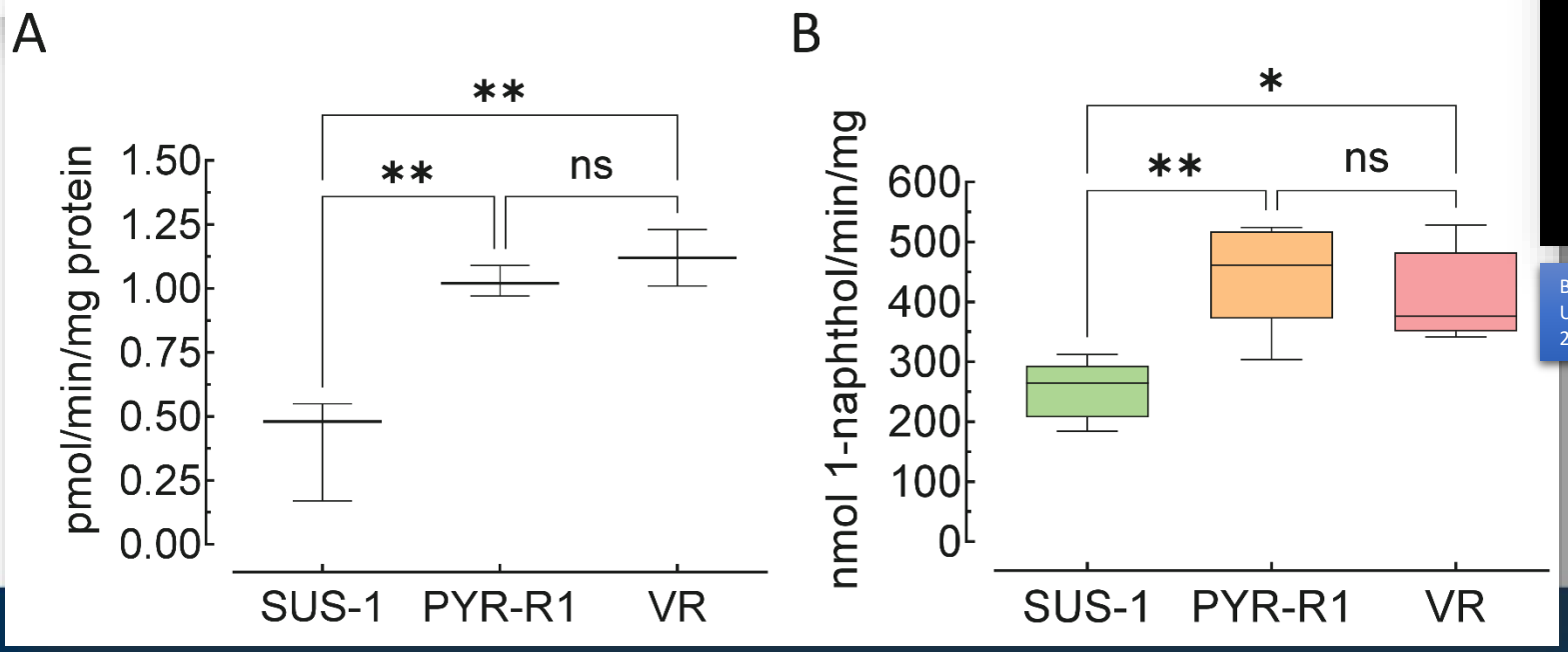
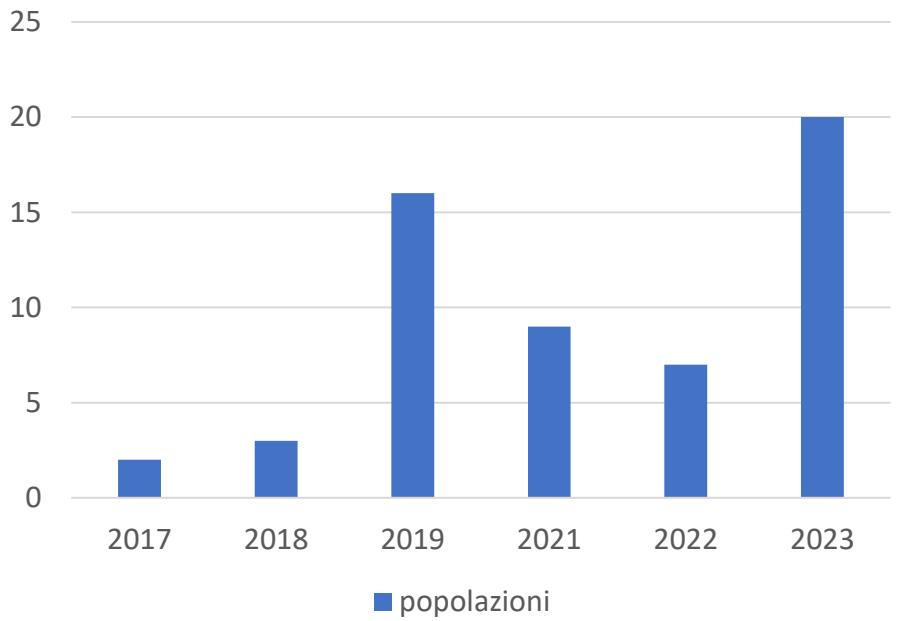
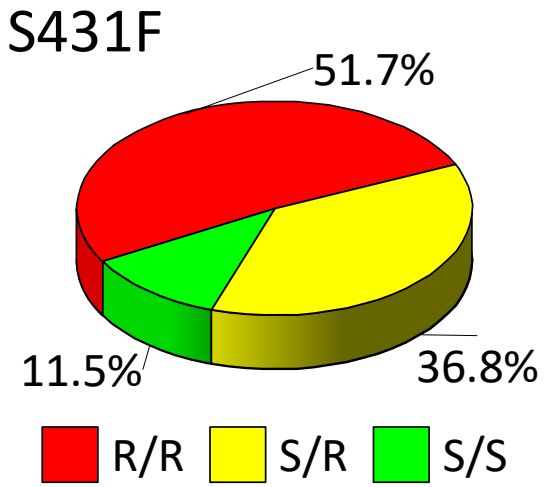
By Shipher Wu (photograph) and Gee-way Lin (aphid provision), National Taiwan University - PLoS Biology, February 2010 direct link to the image description, CC BY 2.5, https://commons.wikimedia.org/w/index.php?curid=9590073

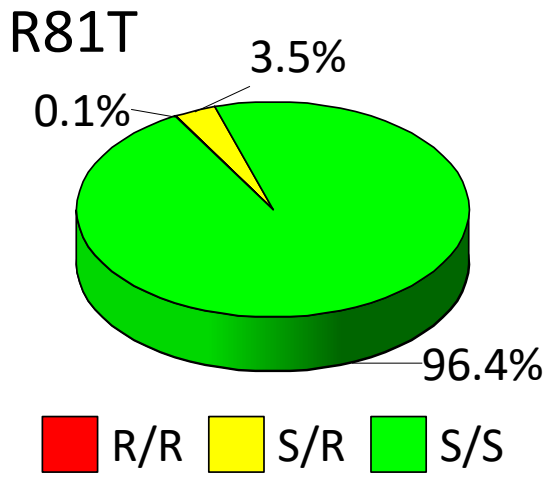


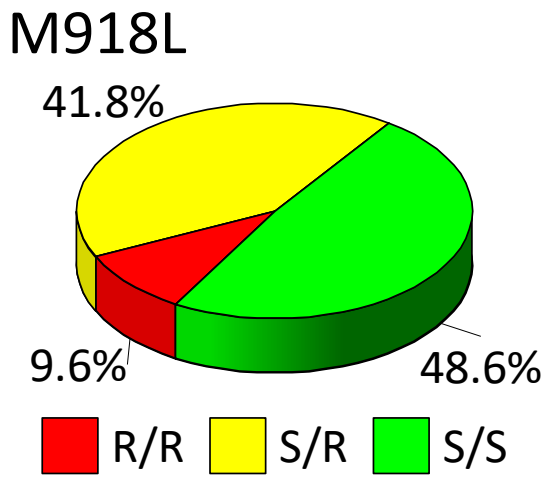
Aphis gossypii – 2016-2023 (IRAC MOA 1A, 3A, 4A)

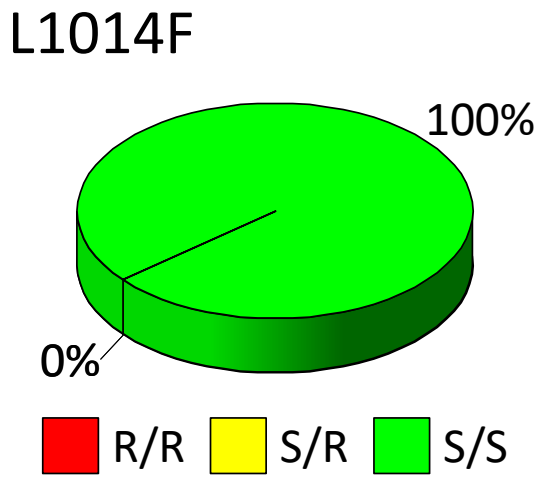
Popolazioni: 60
afidi: 1351



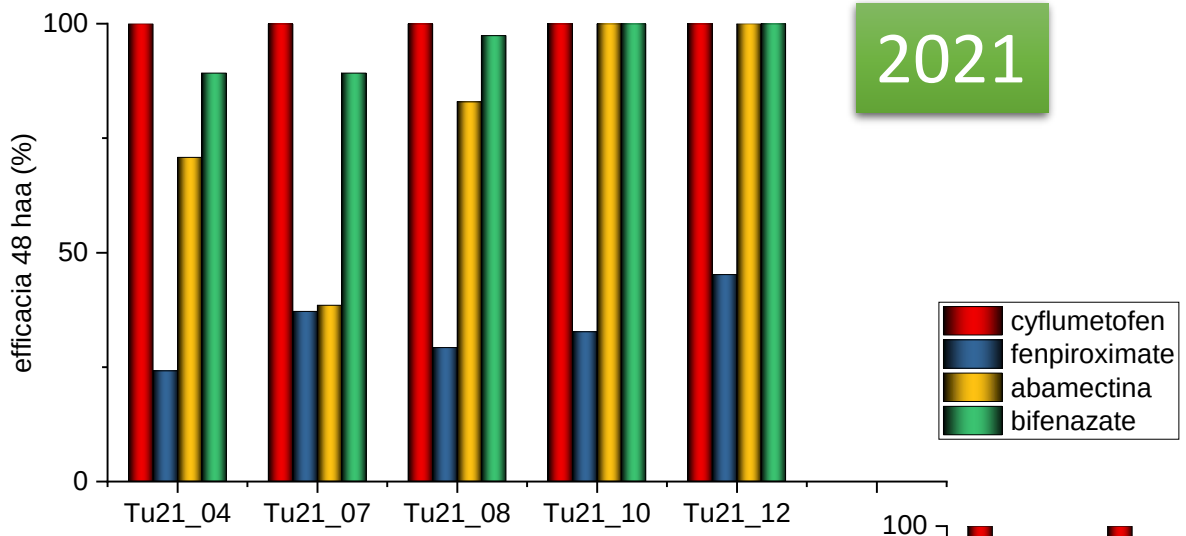


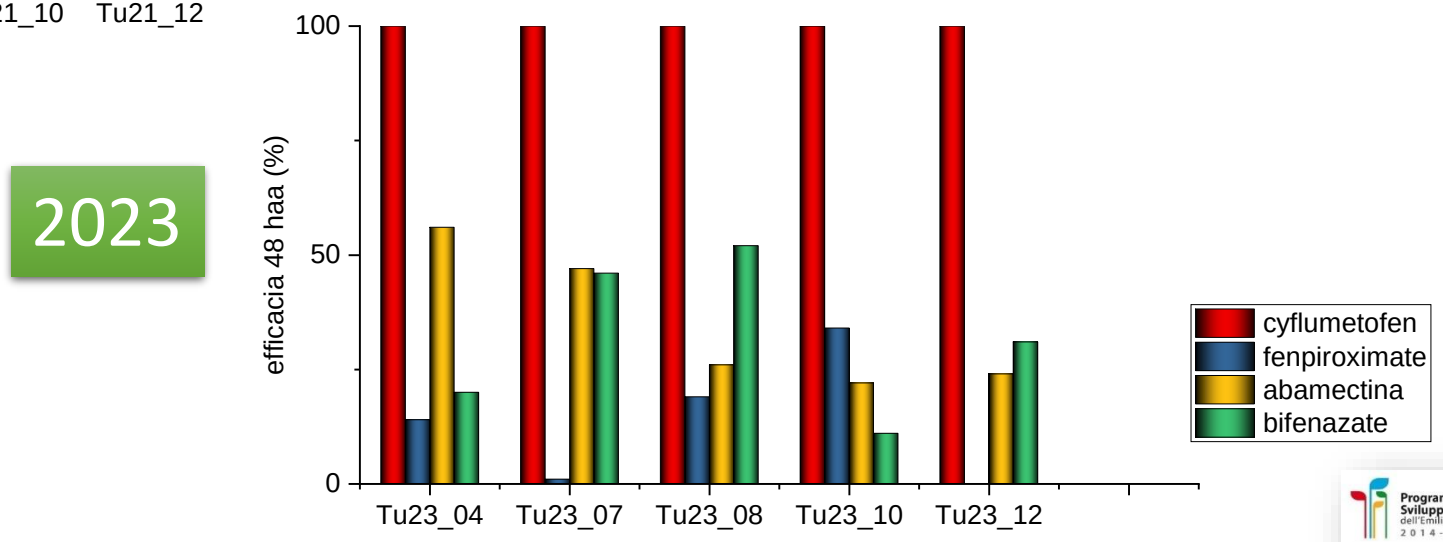






Tetranychus urticae adulticidi (IRAC MOA 6, 20D, 21A e 25A)





Attività parzialmente finanziata dalla Regione Emilia Romagna nell'ambito del PSR 2014-2020 Op. 16.1.01 - GO PEI-Agri - FA 3A, Pr. "5116538 - Innovazione della Difesa fitosanitaria contro il RAgnetto rosso per la filiera del pomodoro da industria" con il coordinamento del Consorzio Agrario Terrepadane

Dermanyssus gallinae (IRAC MOA

Veterinary Parasitology 319 (2023) 109957

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Veterinary Parasitology

journal homepage: www.elsevier.com/locate/vetpar

Profiling of *Dermanyssus gallinae* genes involved in acaricide resistance

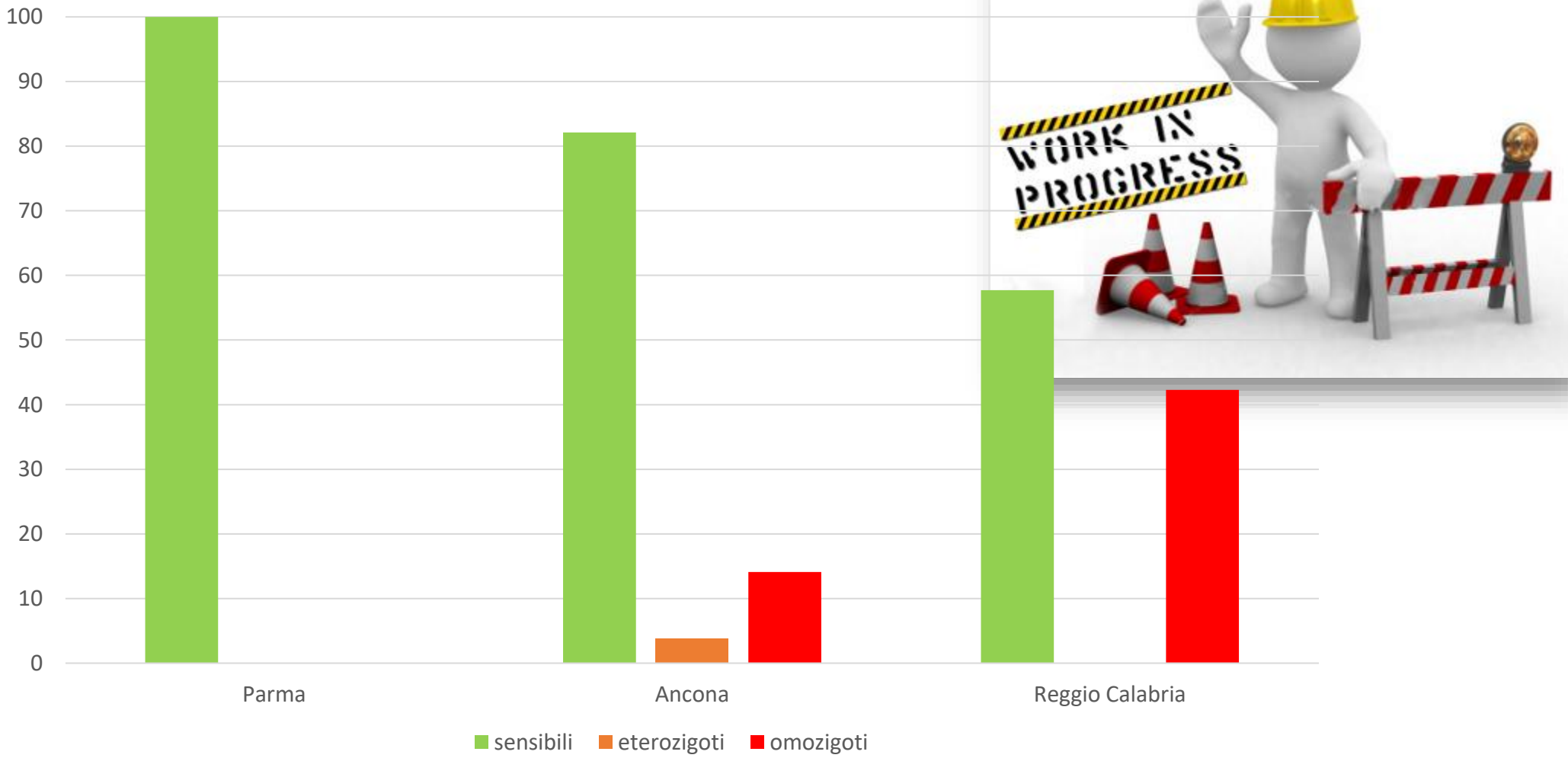
Antonella Schiavone [a,*,1], Daniel R.G. Price [b,1], Nicola Pugliese [a], Stewart T.G. Burgess [b], Ifra Siddique [a], Elena Circella [a], Alasdair J. Nisbet [b], Antonio Camarda [a]

[a] Department of Veterinary Medicine, University of Bari, Valenzano 70010, Italy
[b] Moredun Research Institute, Pentlands Science Park, Edinburgh EH26 0PZ, United Kingdom

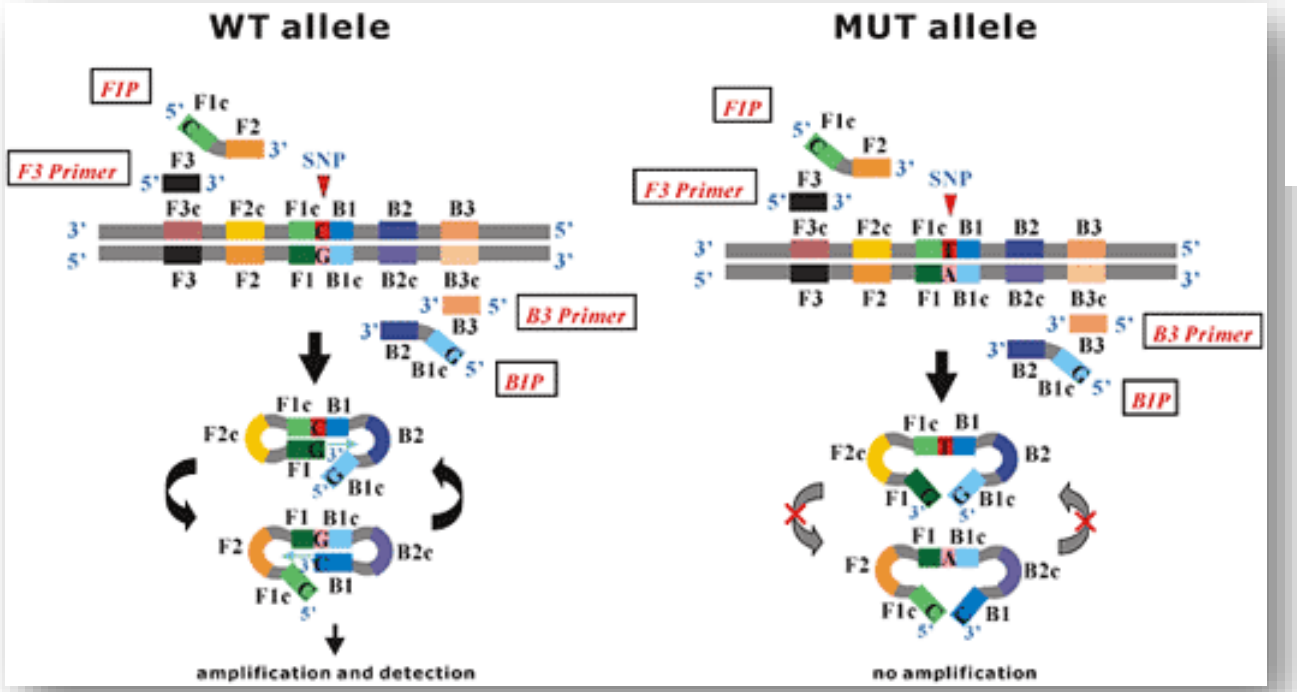
Di AW - Opera propria, CC BY-SA 2.5, https://commons.wikimedia.org/w/index.php?curid=6967126

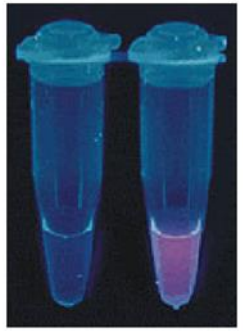
Mutations in the voltage-gated sodium channel (*vgsc*) and in acetylcholinesterase (*AChE*) were investigated, detecting mutations known to be associated with acaricide/insecticide resistance in arthropods, including M827I and M918L/T in the *vgsc* and G119S in the *AChE*. RNA-seq analysis was performed to characterize metabolic resistance in fully susceptible PRM and in cypermethrin-resistant PRM exposed and unexposed to cypermethrin as well as phoxim resistant PRM exposed and unexposed to phoxim. Detoxification enzymes (including P450 monooxygenases and glutathione-S-transferases), ABC transporters and cuticular proteins were constitutively overexpressed in phoxim and cypermethrin resistant mites.

Varroa destructor 2023 (IRAC MOA 3A, 19)



LAMP
(Loop-mediated isothermal amplification)





Myzus persicae a *Aphis gossypii*: L1014F (kdr)

Nessun risultato su altri target:
- s-kdr (M918T/L)
- Acetilcolinesterasi insensibile (S431F)
- Recettore nicotinico (R81T)

Attività finanziata dalla Regione Emilia Romagna nell'ambito del PSR 2014-2020 Op. 16.1.01 - GO PEI-Agri - FA 4B, Pr. "5149124 – RESISTI: Nuovi sistemi di diagnosi veloce e tecniche a basso impatto eco-tossicologico per contenere fenomeni di resistenza dei patogeni, fitofagi e delle malerbe" con il coordinamento di CRPV/RINOVA

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MOLECULAR ECOLOGY WILEY

ORIGINAL ARTICLE

Population genomic insights into invasion success in a polyphagous agricultural pest, *Halyomorpha halys*

Elahe Parvizi[1] | Manpreet K. Dhami[2] | Juncong Yan[3] | Angela McGaughran[1]

tinues to expand its range. Despite no record of BMSB insecticide resistance to date, our results show high capacity for potential evolution of such traits, highlighting the need for future sustainable and targeted management strategies.

Conclusioni

Le informazioni sono sempre molto frammentarie

- Manca un piano di monitoraggio
  - Migliorare le tecniche di diagnosi
  - Aumentare visibilità del problema
- La situazione di alcuni p.a. è a rischio molto elevato
- Occorre
  - ripensare alcune strategie
  - migliorare le formulazioni
  - Valutare possibili effetti sinergizzanti

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Grazie per l'attenzione

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