



Using predators for biological control of Fall armyworm

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Problem

FAW's arrival in 2016 led to widespread indiscriminate use of chemical pesticides

Risks to human health and environment (Lewis et al, 2016; Tang et al, 2021)

Overuse of toxic pesticides also threatens to undermine IPM because of impact on natural enemies

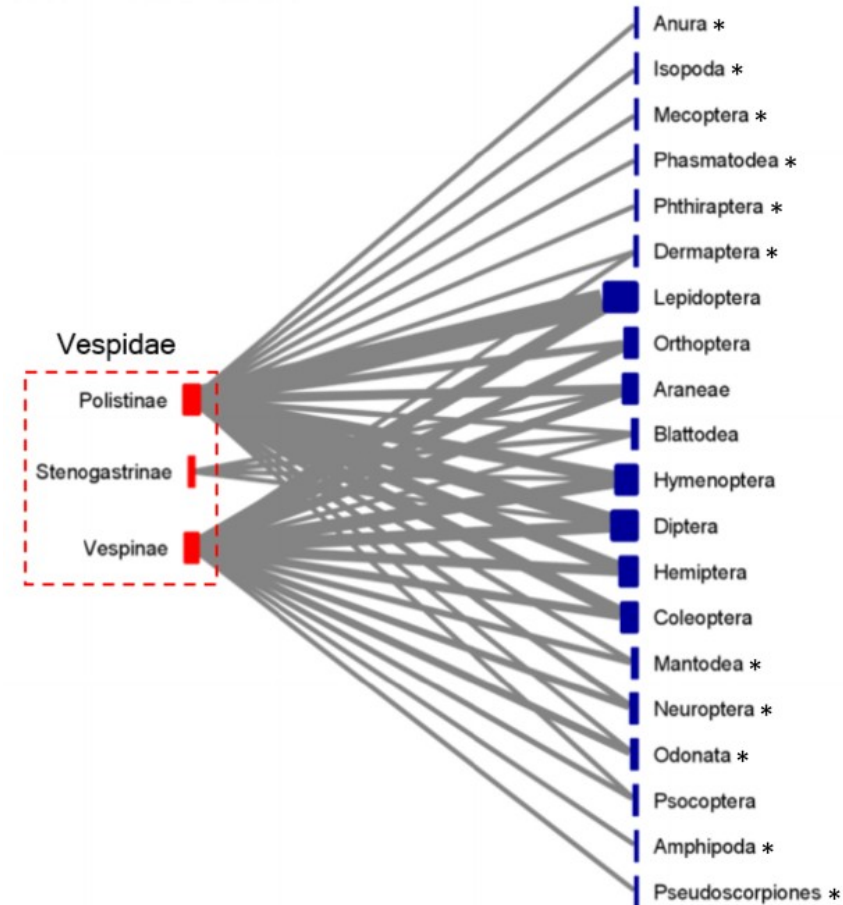
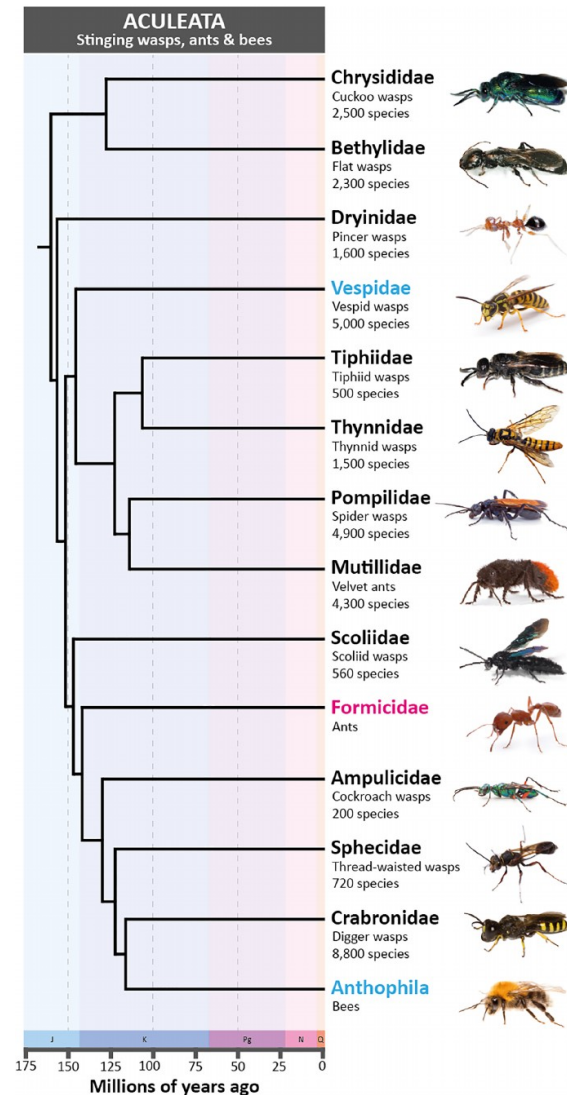


Predators of FAW

- Ants
- Social wasps
- Predatory beetles
- Assassin bugs
- Spiders
- Lady birds
- Birds
- Bats

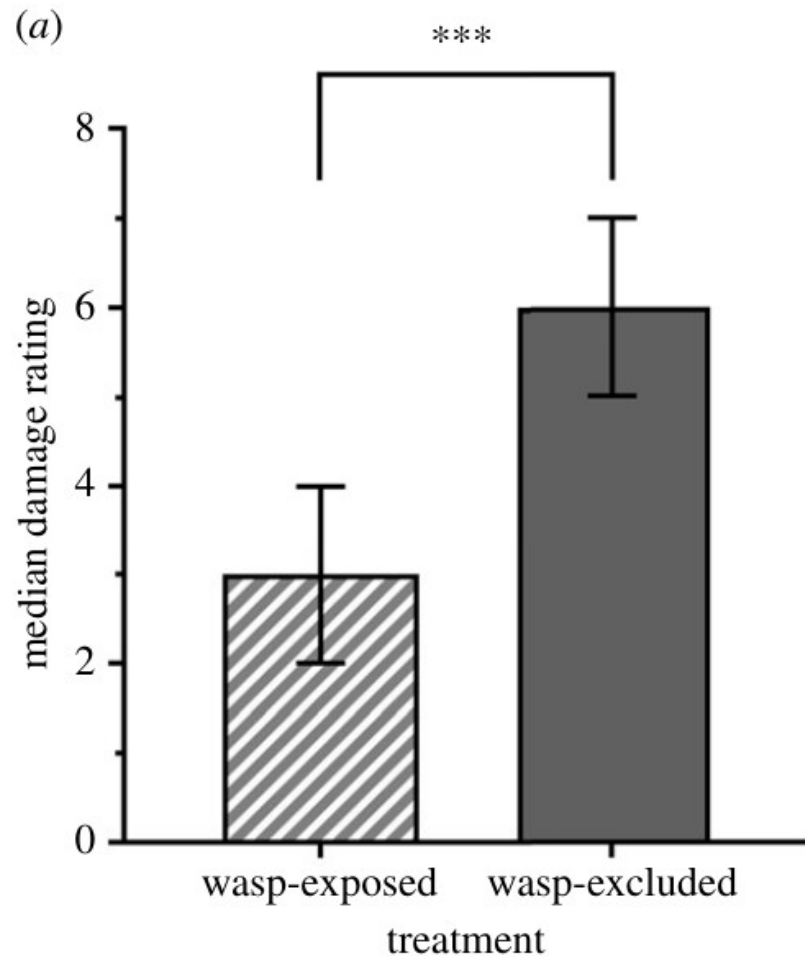


Social wasps as control agents



Brook et al 2021 Biol Rev 96:1645-1675

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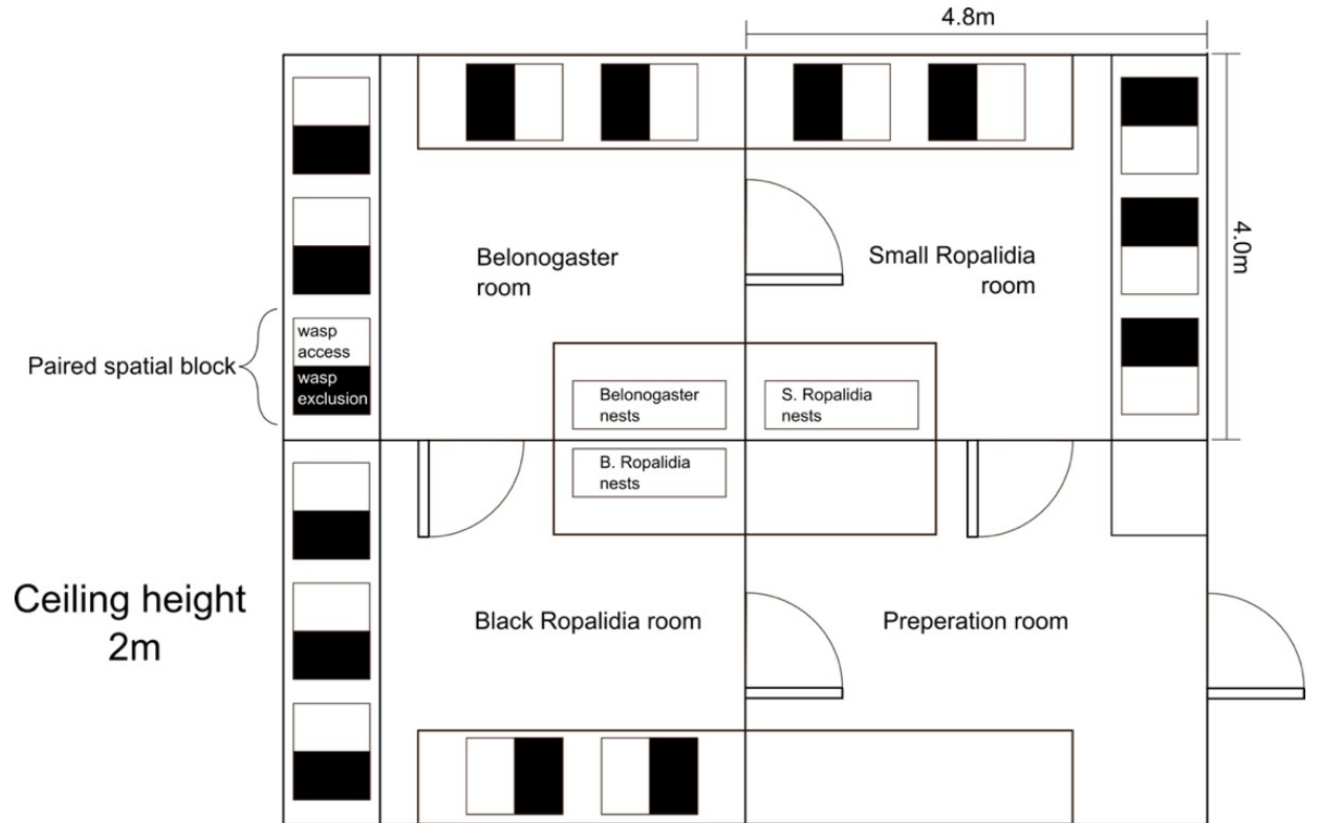


Social wasps are among the most common larval predators encountered in maize fields in Zambia

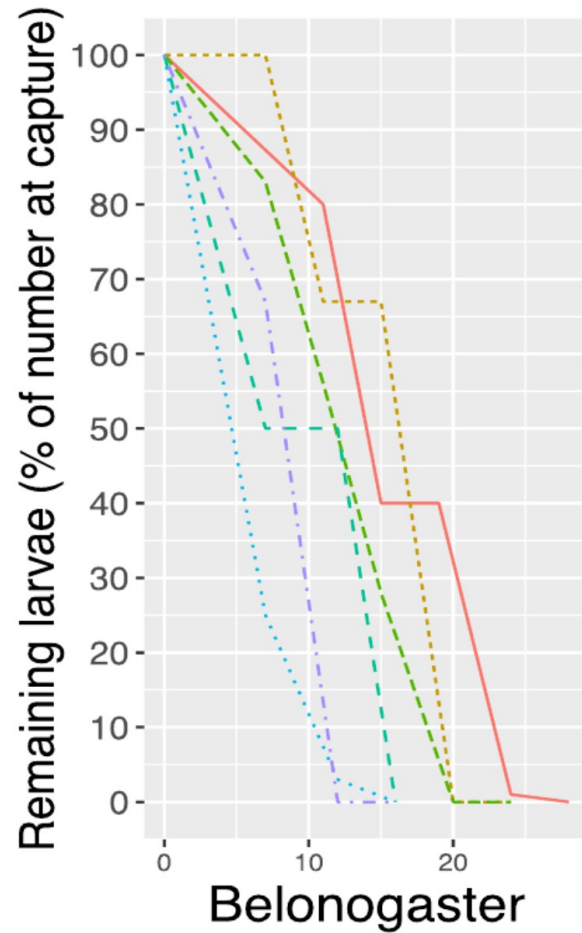
We* investigated the potential for FAW control through a screen-house experiment

*Seirian Summer and Ruben Douglas from Imperial College, London (plus ZARI and CIFOR-ICRAF)

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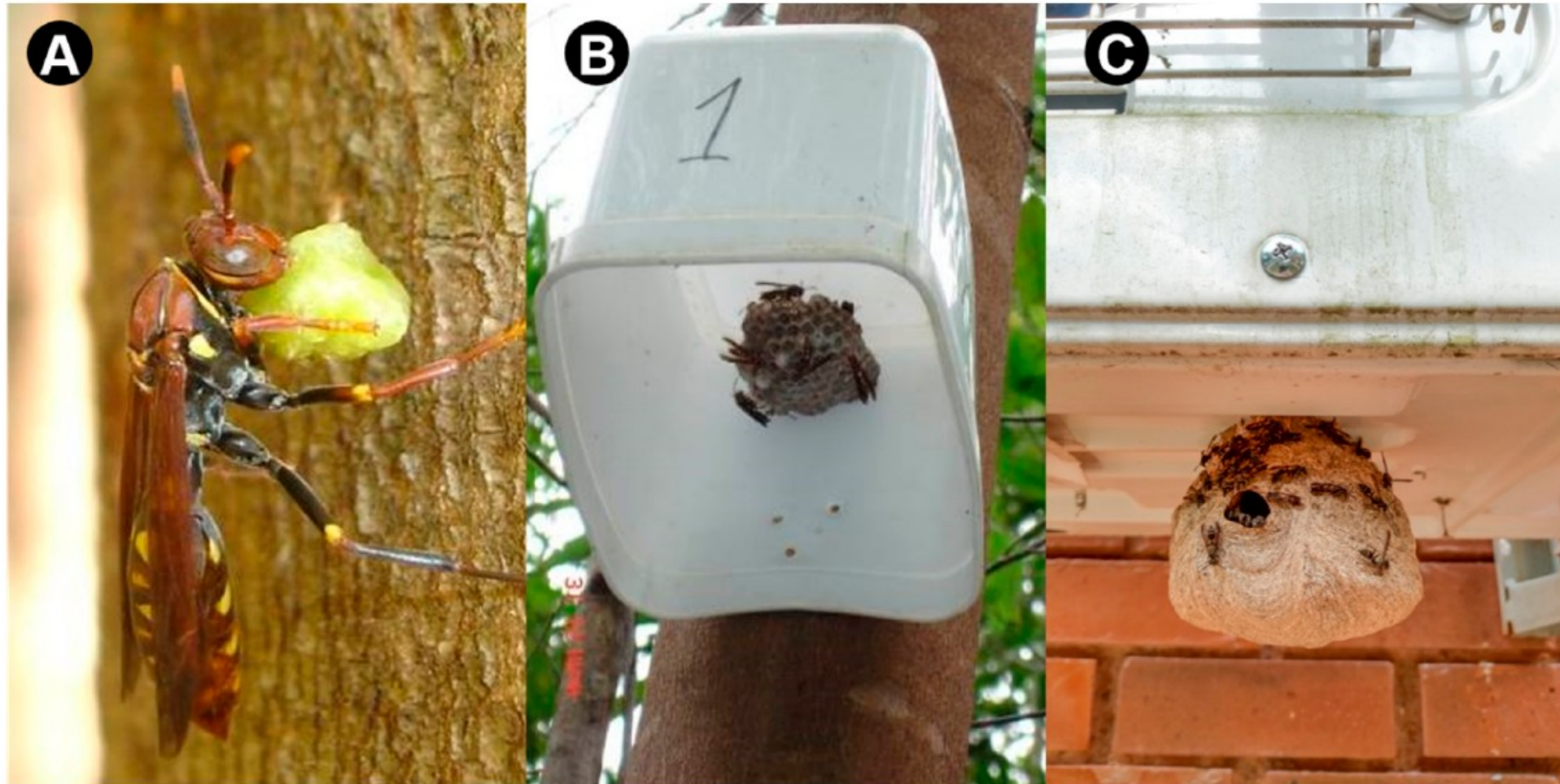
Social wasps fed on FAW larvae and were effective control agents under these controlled conditions

Wasp species selected larvae based on size, thus different wasp species feed on different sized larvae

Only the female wasps forage and only when they have larvae to feed, hence their effectiveness will depend on phenology which varies locally

Douglas (2020) MSc thesis Imperial College, London

Social wasps – augmentative biocontrol



Assassin bugs – augmentative biocontrol



Assassin bugs are common predators of FAW in fields

Through this research we are investigating the %predation and different levels of pest density and different levels of predator density

Mutibo, PhD candidate, University of Zambia

Thank you for your attention



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