

**PESTICIDE REDUCTION USING
PHEROMONES – BEST
TECHNIQUES AND TIMING OF
IMPLEMENTATION, SUITABILITY
FOR IPM SYSTEMS**

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USE OF PHEROMONES

- Monitoring
- Control
 - mass trapping
 - lure-and-kill
 - mating disruption



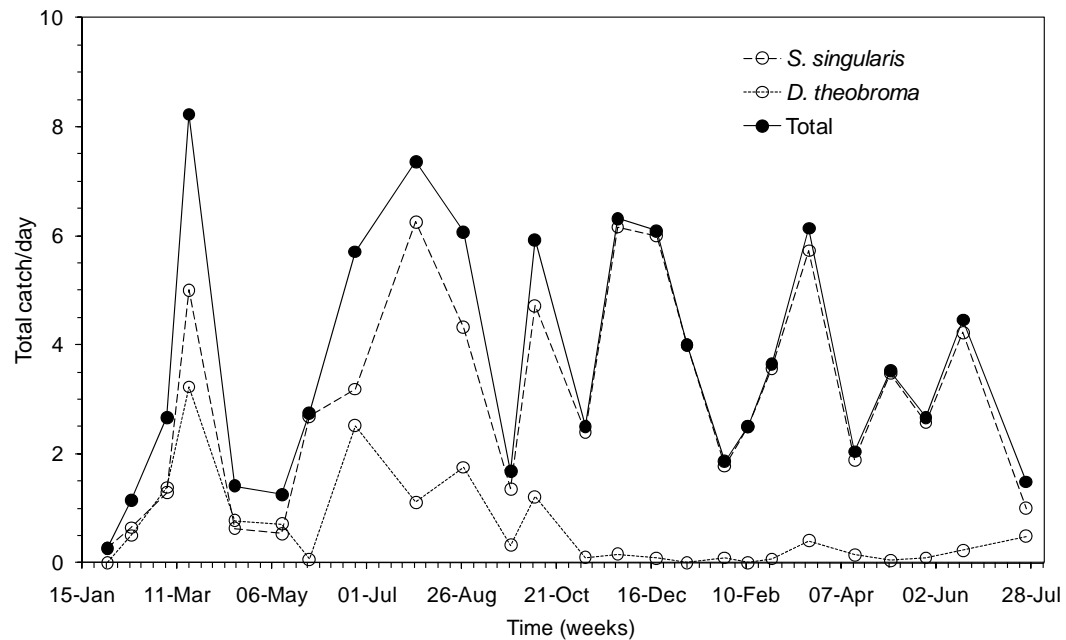
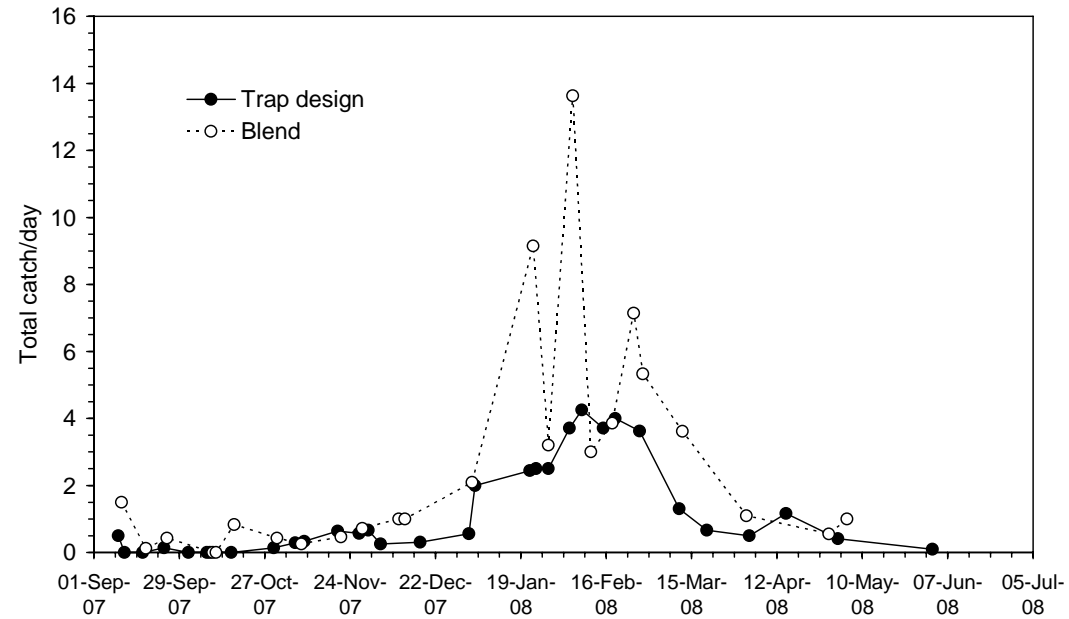
Monitoring cocoa mirids in Ghana

COCOA MIRIDS IN GHANA

Distantiella theobroma
Sahlbergella singularis



Monitoring cocoa mirids in Ghana

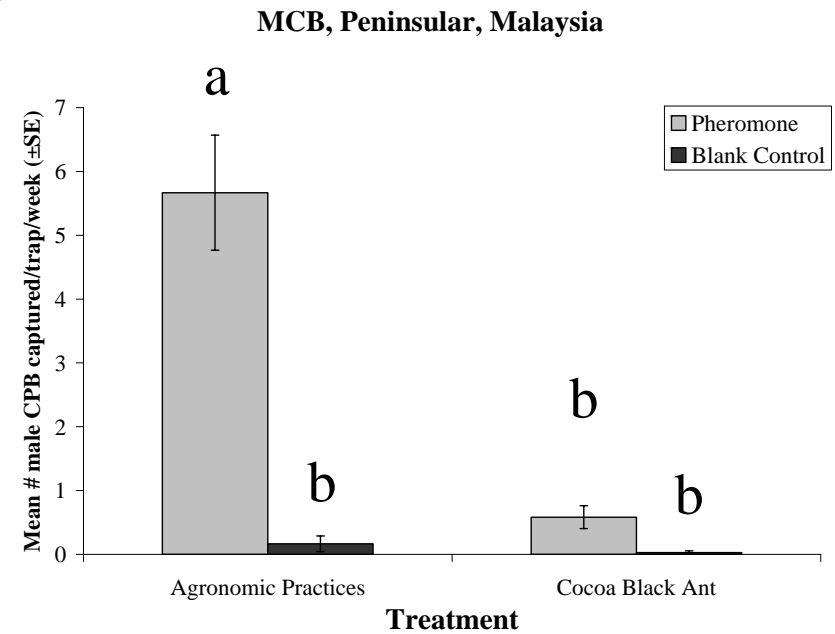
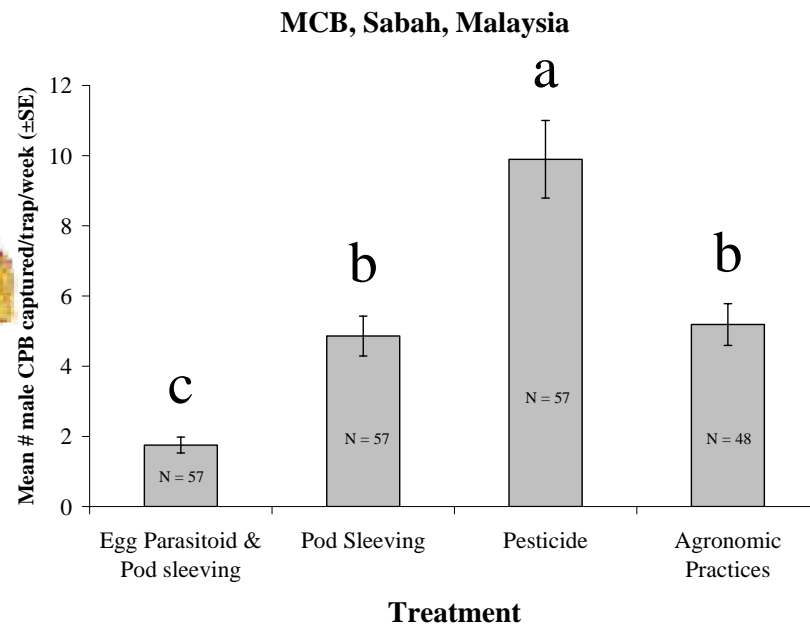


Monitoring cocoa pod borer

COCOA PODBORER, *Conopomorpha cramerella*



Monitoring cocoa pod borer

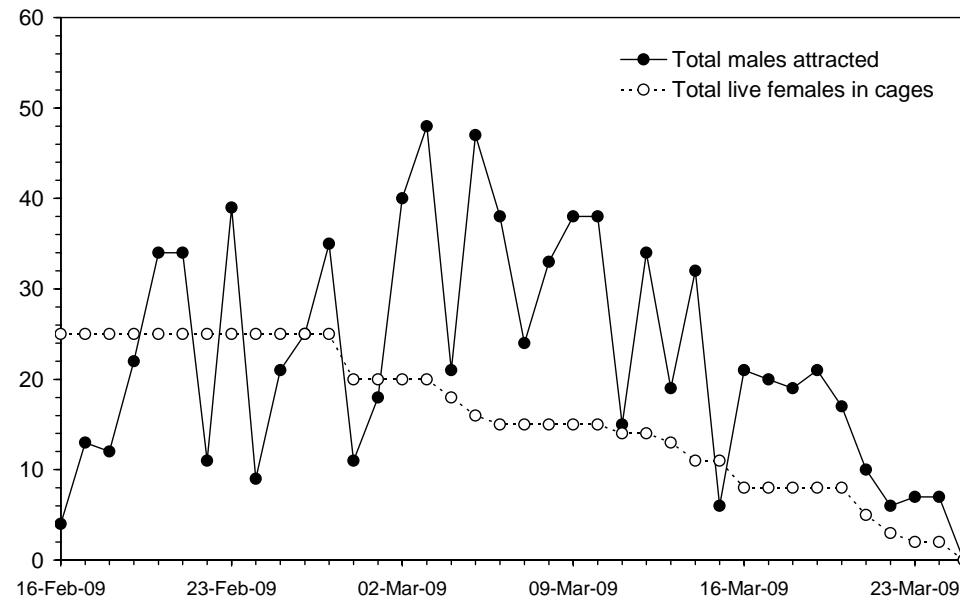
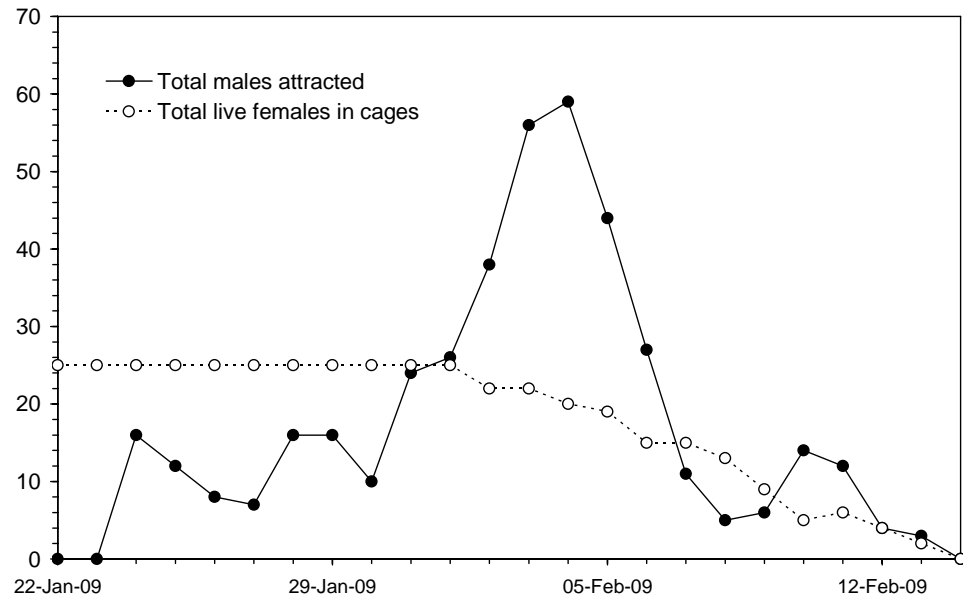


Monitoring *Helopeltis*

COCOA MIRID IN INDONESIA *Helopeltis theobromae*



Monitoring *Helopeltis*



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Mass trapping cocoa mirids

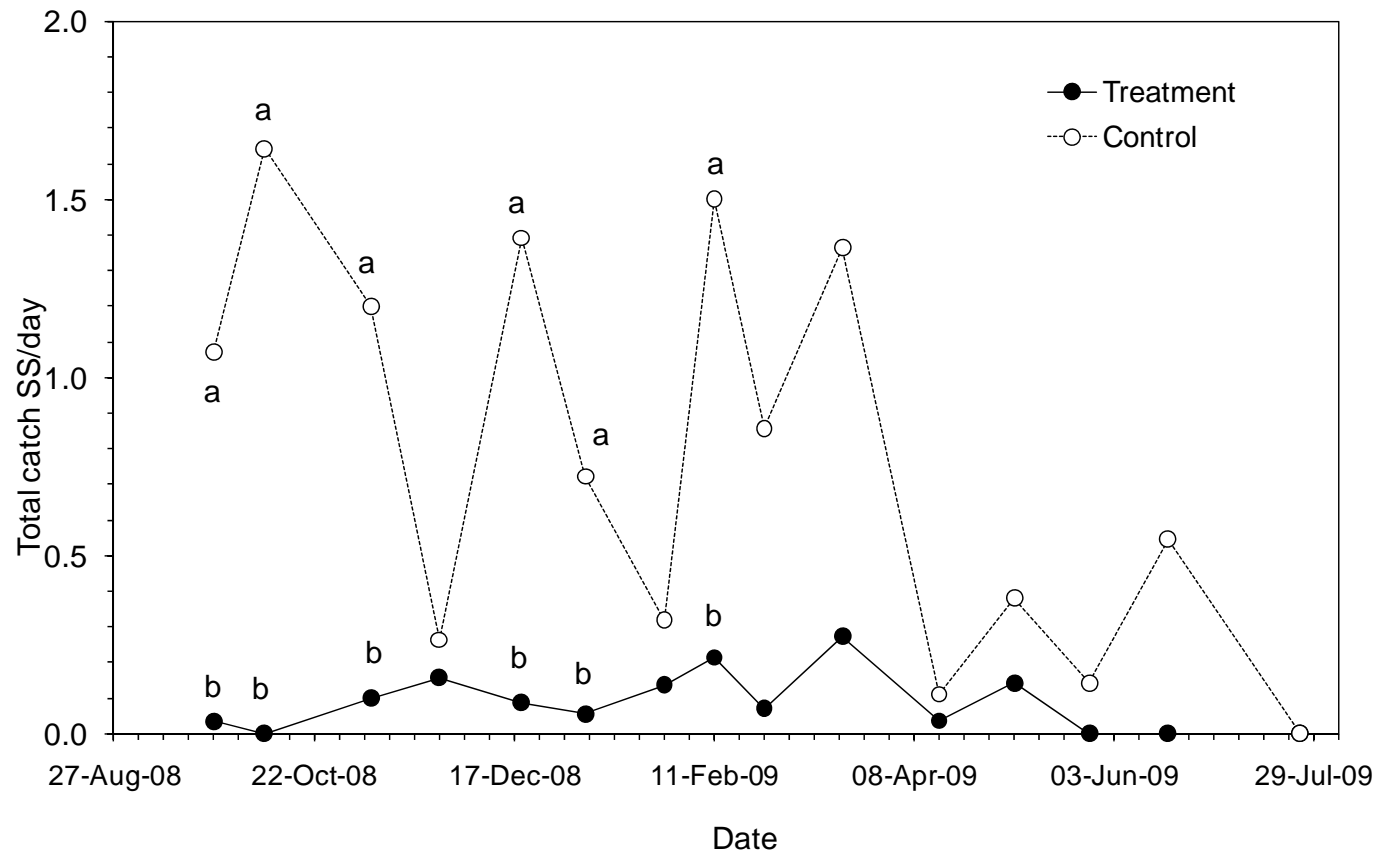
MASS TRAPPING - ACHERENSUA

- Compare 150 traps/ha with untreated control (Jan 2008)
- 8 replicates x 0.5-0.6 ha with 40-50 m between plots
- 600 Large bottle traps for mass trapping
- Each plot divided into 5 subplots
- Monitoring traps initially at 0, 2, 4, 8 and 15 per subplot (May – August 2008)
- Single monitoring traps in each subplot (August 2008 – present)

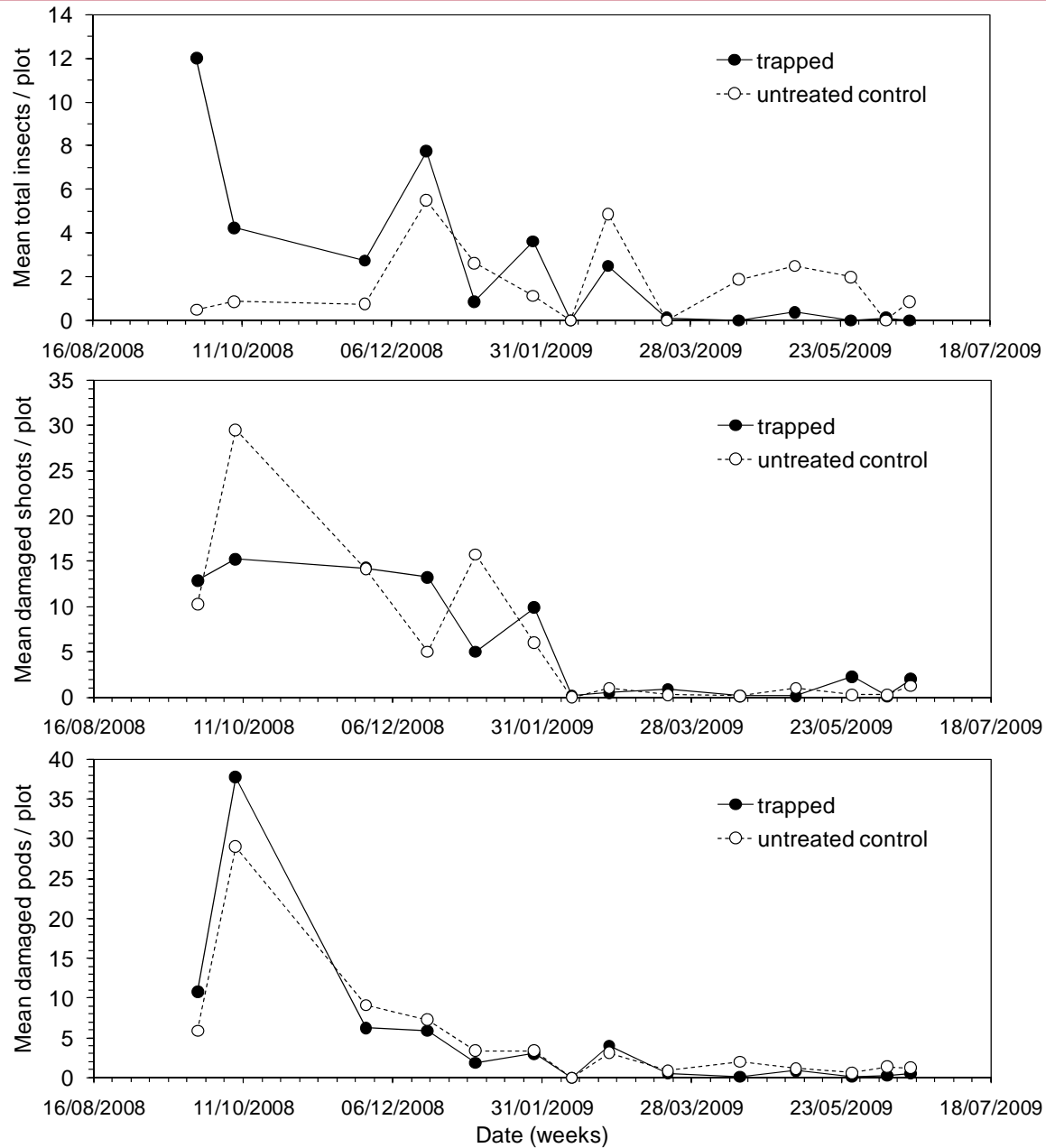


Mass trapping cocoa mirids

Pheromone trap catches



Mass trapping cocoa mirids



USE OF PHEROMONES

- Monitoring – improving CODAPEC mass spraying in Ghana
- Control
 - mass trapping – CPB, mirids in Ghana
 - lure-and-kill
 - mating disruption – mirids in Ghana

