



Control of *Carpophilus* Spp. (Coleoptera: Nitidulidae) from Basic Science to the Development of a Green Method of Crop Protection

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AGRICULTURE VICTORIA

WHY SHOULD WE CARE ABOUT THIS BEETLE?

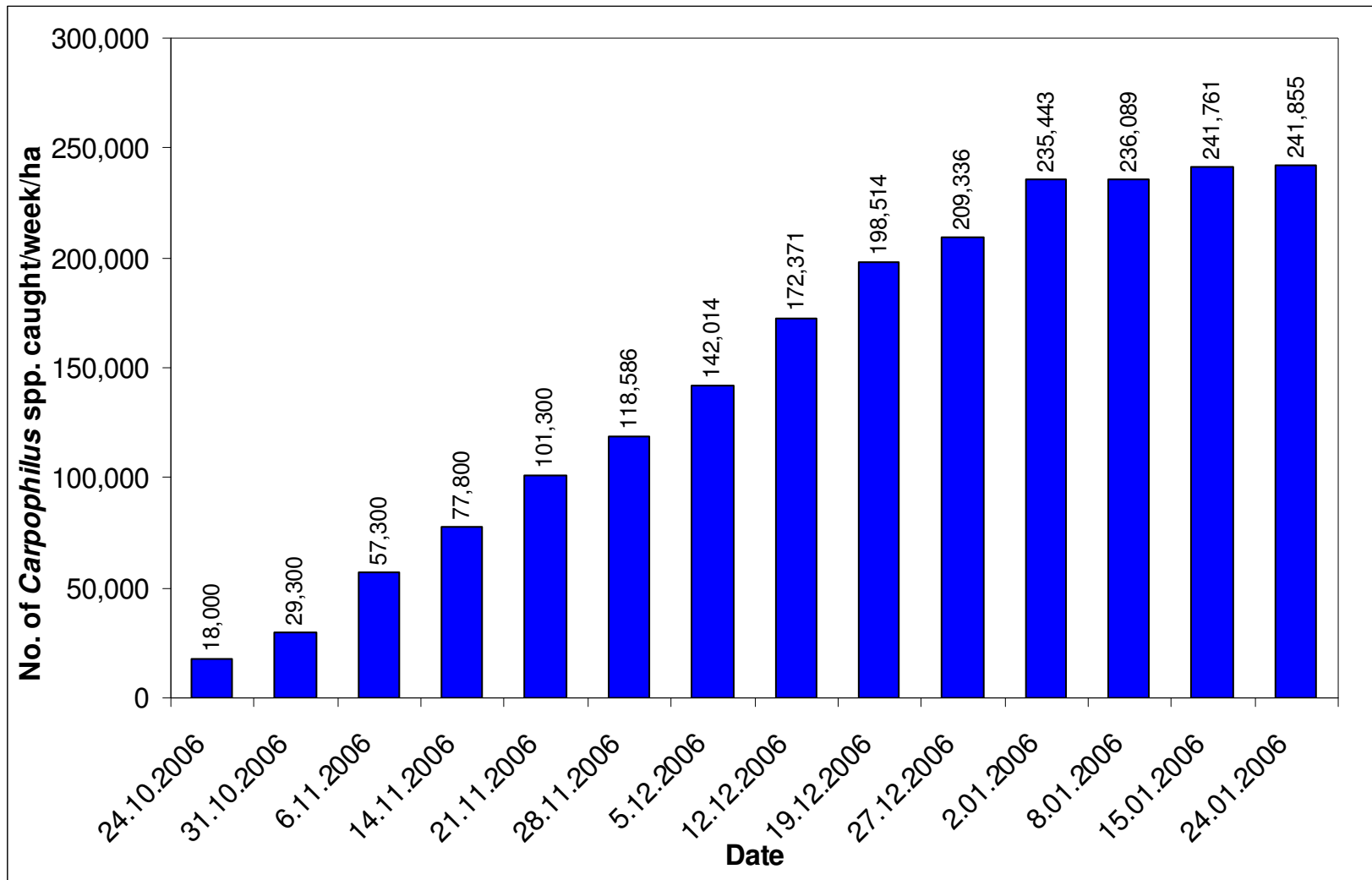
- **Carpophilus is one of the major pests in Stone Fruit, Cherries, Strawberries and Almonds in Australia**
- **Carpophilus can damage fruit and can also carry Brown Rot**
- **Due to its size and nature, Carpophilus is not easily visible and is difficult to predict**
- **Chemical control immediately before harvest is difficult due to MRL constraints. In addition, it's not environmentally friendly**
- **Attract and Kill System we developed now been commercialised and readily available to use**

ATTRACT & KILL TRAP WITH SYNTHETIC CO-ATTRACTANT



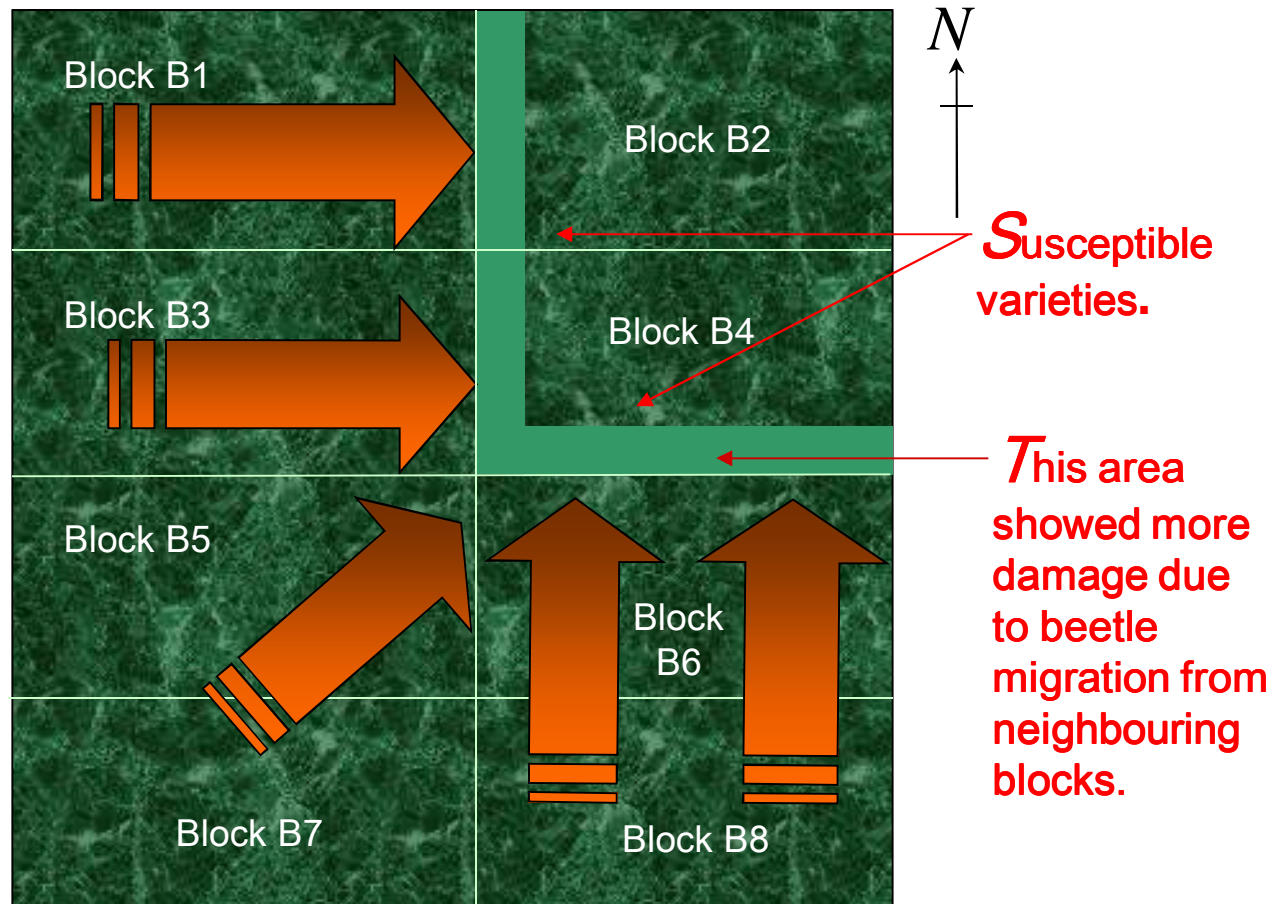
SOME IMPORTANT FACTS ABOUT THE TRAPS AND SOME TIPS

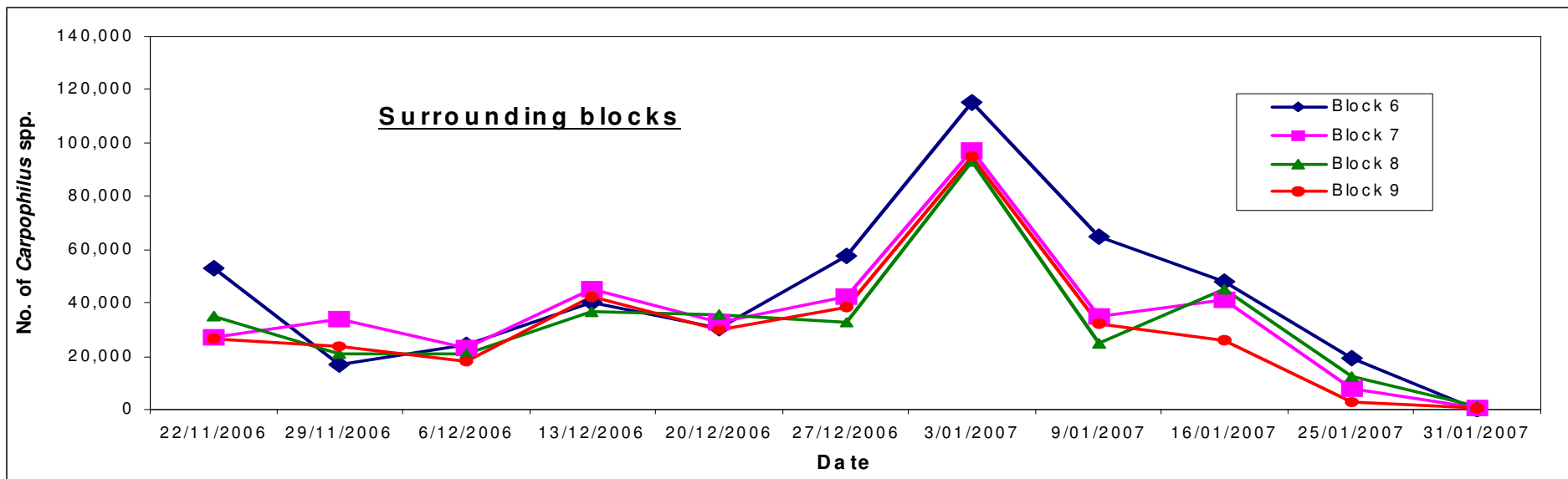
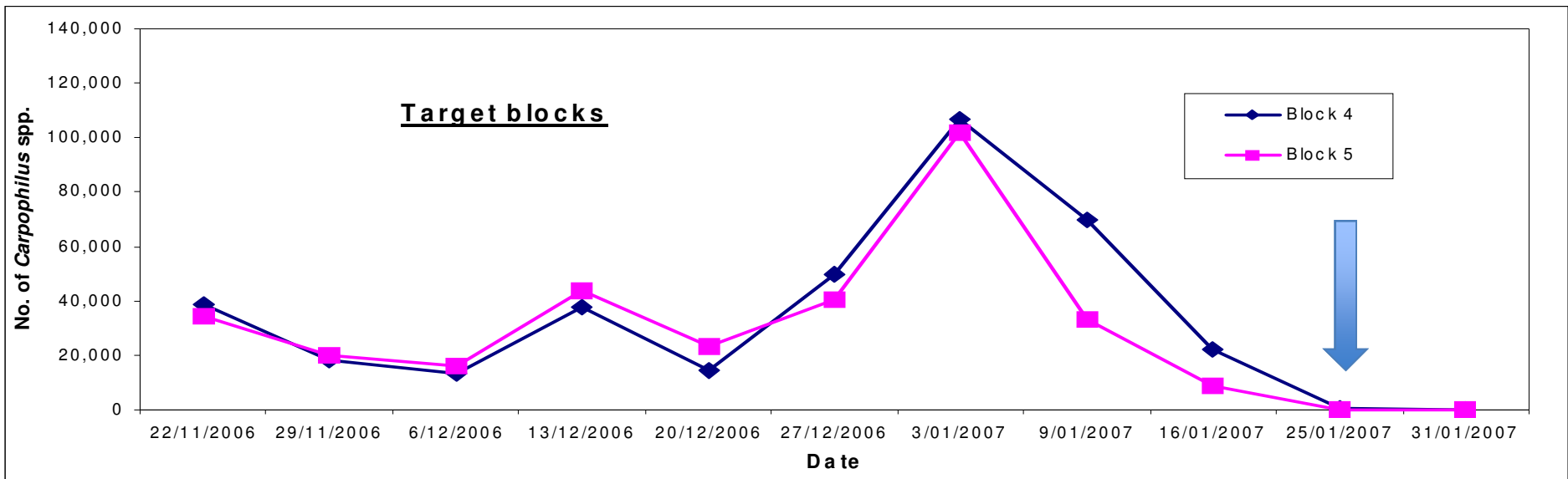
- **Pheromone and food attractants having synergistic effects**
- **Pheromone septa should be stored in freezer and food attractant in fridge for maximum benefit**
- **Traps need to be placed way before fruit ripening (compete with food attractant)**
- **Servicing traps:**
 - **Completely replace food attractant each week**
 - **Adding pheromone septa every two weeks**
 - **Take special care to keep the traps as clean as possible (including dead beetles)**
 - **Remember to service traps same day of each week**



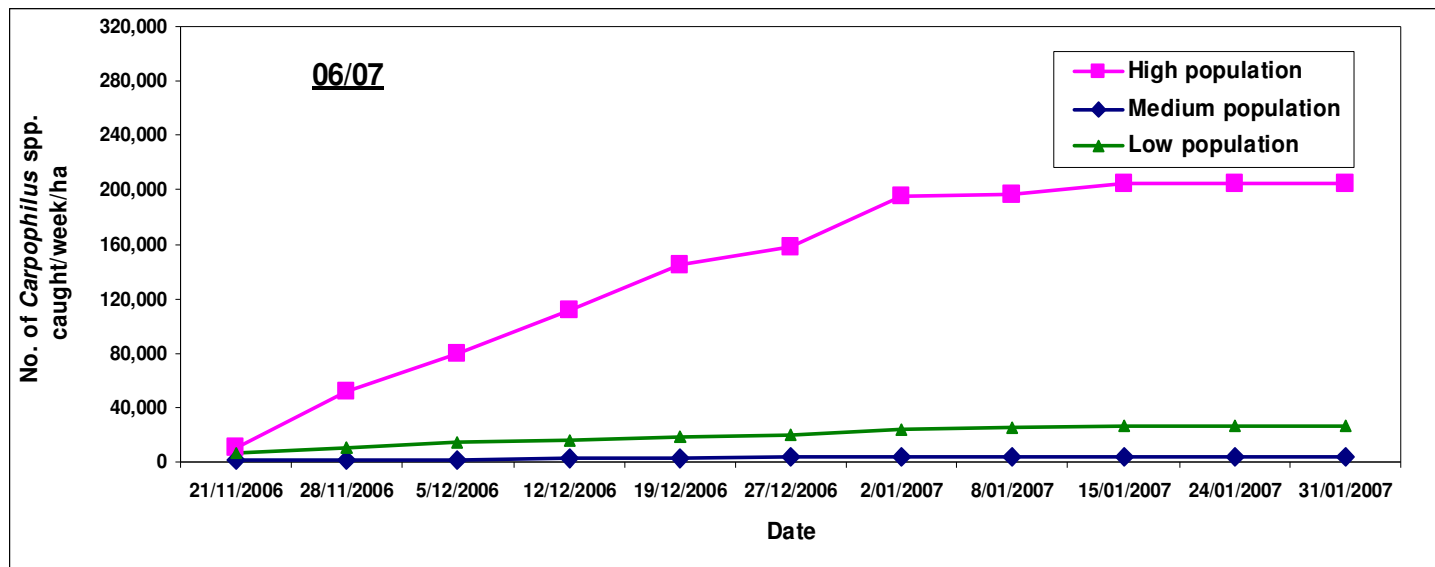
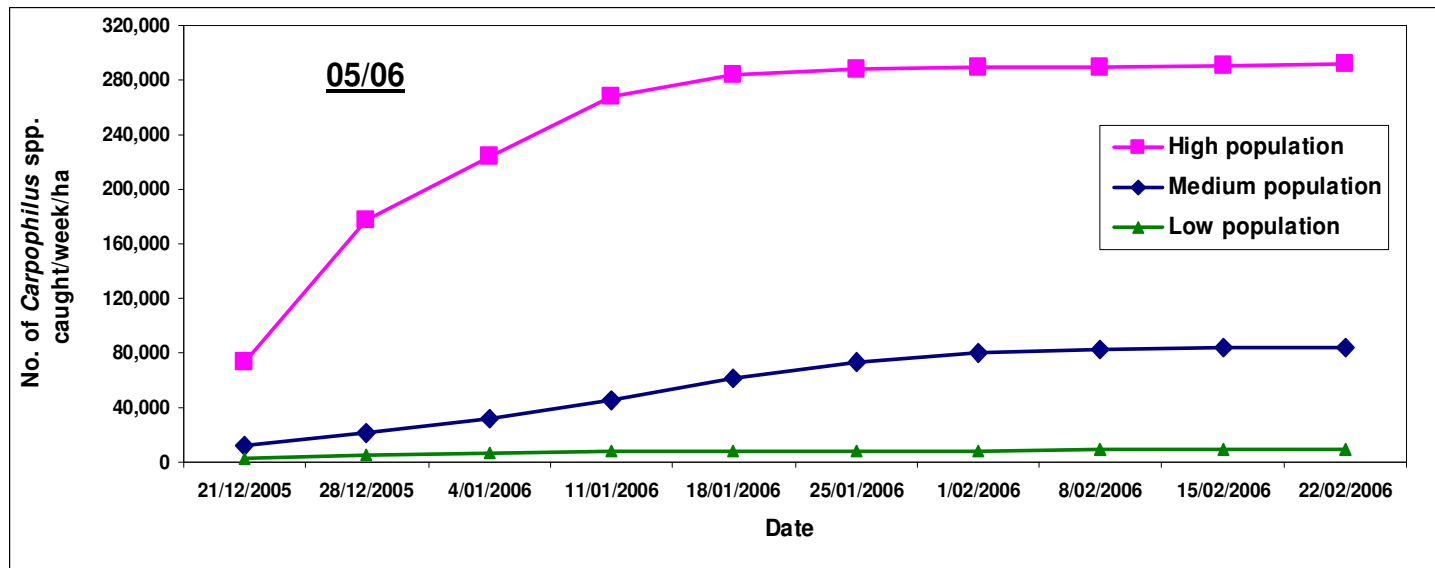
Cumulative number of *Carpophilus* spp. caught in attract and kill stations from October 2006 to January 2007 in a property with high population.

TREATED BLOCKS INVASION



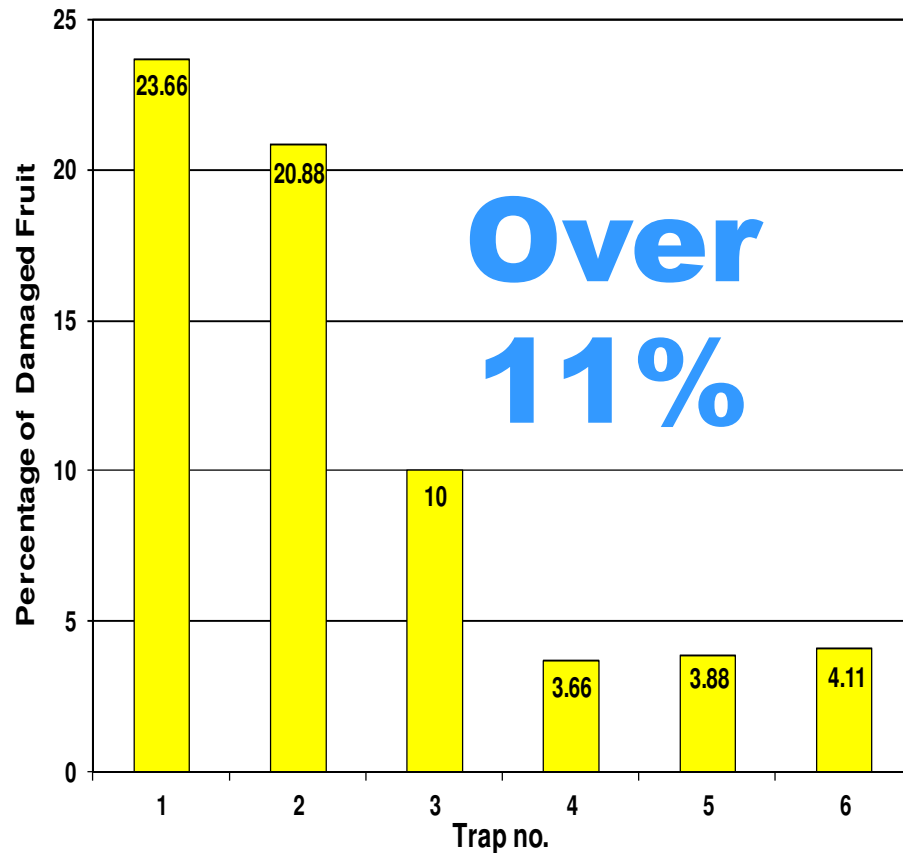


Total number of *Carpophilus* spp. killed per week in the attract and kill stations in target and surrounding blocks .

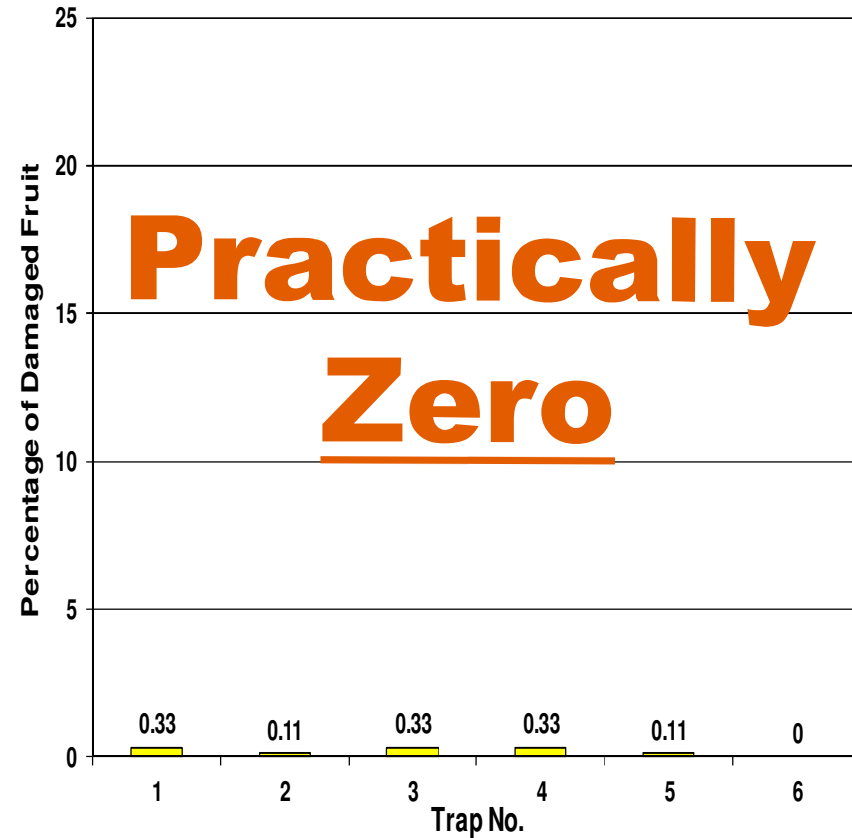


Cumulative number of *Carpophilus* spp. caught in attract and kill stations in properties with **high, medium and low populations**

FRUIT DAMAGE COMPARISON



Percentage of Damaged Fruit in a Control block



Percentage of Damaged Fruit in a Treated block

SUMMARY

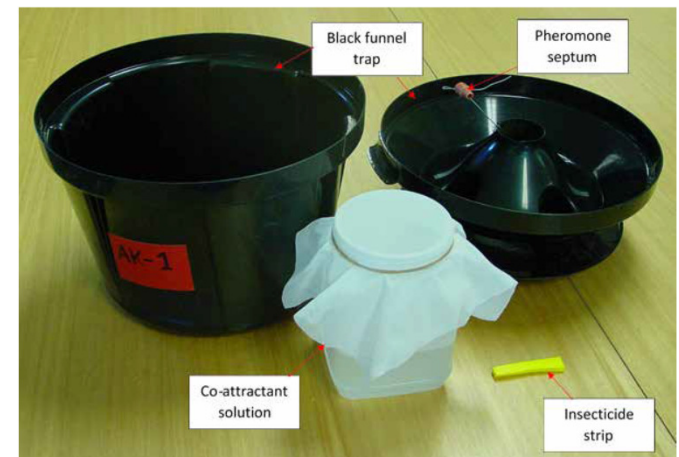
- **Now we have an easy to use attract and kill system which attract and kill both sexes of beetles, this is an advantage**
- **This user-friendly tools now commercially available**
- **Treatment with A&K in a wide area is more sustainable and cost effective program to control Carpophilus**
- **Wide area treatment helped to reduce Carpophilus populations significantly even within a year**
- **Once the number reach to a certain level (Medium/Low levels) reduced number of A& K could be used**
- **Lift productivity of fruit orchards by reducing fruit damage below economic thresholds**
- **Good beetle management might also help improve brown rot managements**

MISSING LINK

- **How we can make current A&K traps better and more cost effective?**
- **What are the issues growers/consultants are facing while using this product**

POSSIBLE FUTURE PLANS

- **MAKE CURRENT A&K TRAPS MORE USER FRIENDLY**
- **BETTER FORMULATIONS**
- **CROSS INDUSTRY APPLICATIONS**



APPLIED CHEMICAL ECOLOGY GROUP AND OUR CURRENT STRENGTH

“Understanding how pest insects interact with odours in their **environment**”

Developing insect attractants

- Detection / Monitoring
- Mass trapping/ attract and killing
- Formulation

Codling moth & Oriental fruit moth

Horticulture
Innovation
Australia



Carpophilus beetle

Horticulture
Innovation
Australia

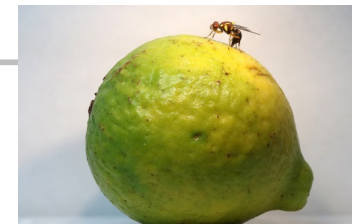
australian
almonds
ALMOND BOARD OF AUSTRALIA



Queensland fruit fly

Horticulture
Innovation
Australia

GRS PLANTbiosecurity



Carob moth ?





**THANK YOU ALL
FOR YOUR ATTENTION**