

RATIONALE

BIOPESTICIDE STRATEGISTS

Biopesticides – in crop protection

- Amenable to use in **IPM** programmes
- Work best in **population management**
- Can have several effects on pest/disease:
 - kill – by direct action or secreted products
 - pest or disease suppression and competition
 - plant defence mechanism stimulation
- Useful for **resistance management**
- Useful for **residue management**



Microbial and botanical biopesticide application



Natural forces control populations

Without natural control, one cabbage aphid could produce 250 million tonnes of offspring in a year!



- Factors that naturally limit population development:
 - Density independent factors (e.g. climate).
 - Density dependent factors:
 - ✓ Competition for limited resources between individuals of the same species.
 - ✓ Competition / antagonism with other species.
 - ✓ Being eaten/parasitised/infected by other species.

Exercise

Do biopesticides work?

What is efficacy?

What are the advantages?

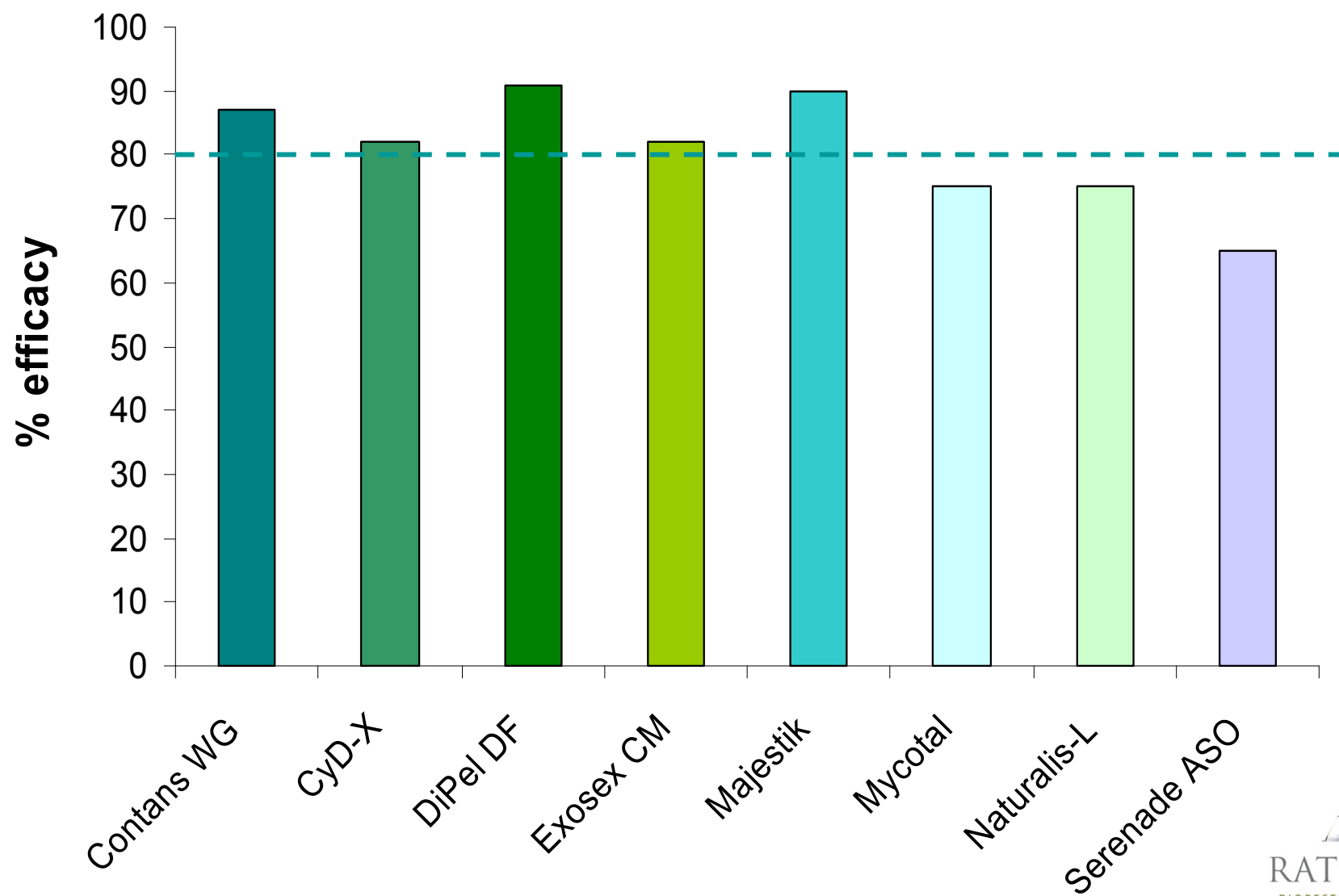
What are the disadvantages ?

Impact of interactions with chemical pesticides?

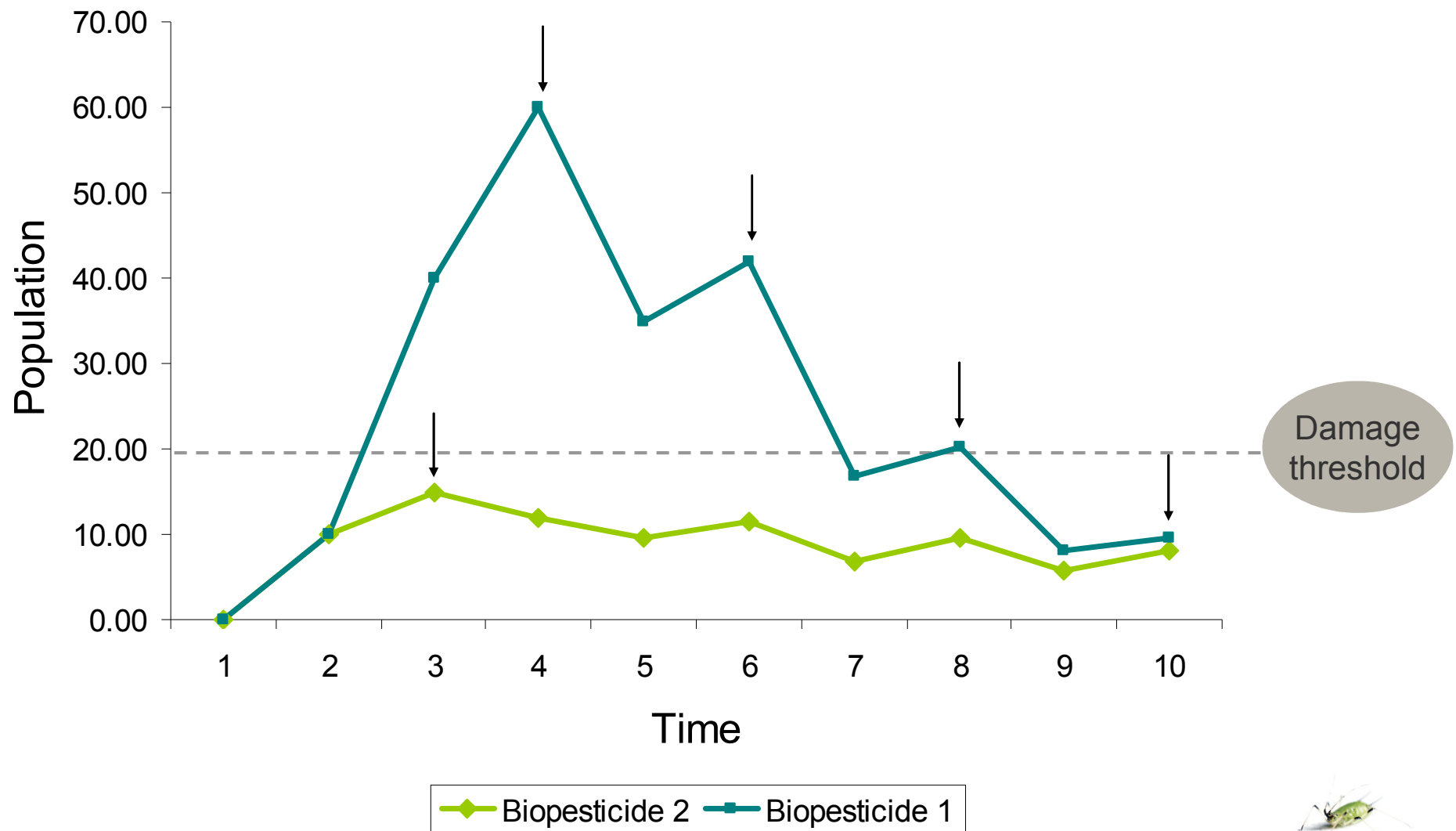
What effects expected?

How to get the best results ?

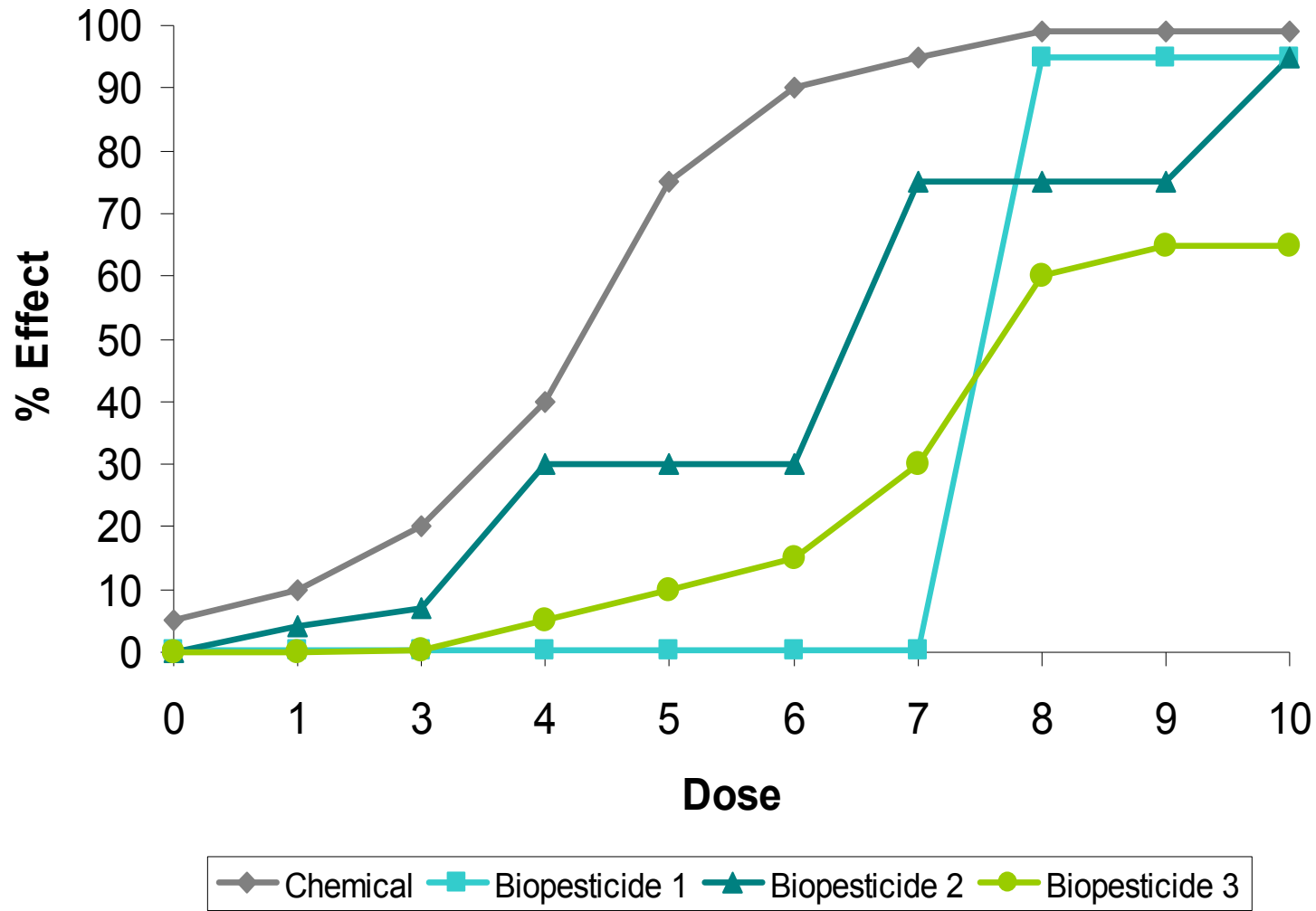
Biopesticides – efficacy



Biopesticides – programme use



Biopesticides – dose response curves



Biopesticides – efficacy

Good practice to get good efficacy

- Alter evaluation to consider – when product 'not' working
- Timing of application relative to the pest or disease
- Frequency of application
- What effect is needed
- IPM programme
- Consider application water volumes
- Consider techniques and equipment



Thank you for your attention



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