

Nutrimite

**predatory mite and
biocontrol booster**

Biobest Knowledge and Training Center



Predatory mites:

- released for biocontrol of various prey types
- Many are also pollen feeders

when pollen is present these can be used for preventive introductions

Predatory mite	Main prey
<i>A. swirskii</i>	Thrips and whiteflies
<i>A. cucumeris</i>	Thrips
<i>A. californicus</i>	Spider mites



Lack of food supply:

insufficient prey and/or pollen availability

- often hampers establishment or population build-up of predatory mites
- this can be a serious bottleneck in biocontrol, mainly in ornamental crops, non-pollen bearing vegetable crops and young plant nurseries

Nutrimite!

What?

- highly nutritional food supplement based on specially selected pollen

Aim?

- a booster for pollen feeding predatory mites
 - to accelerate and enhance population development
 - to help existing populations survive periods of low prey density



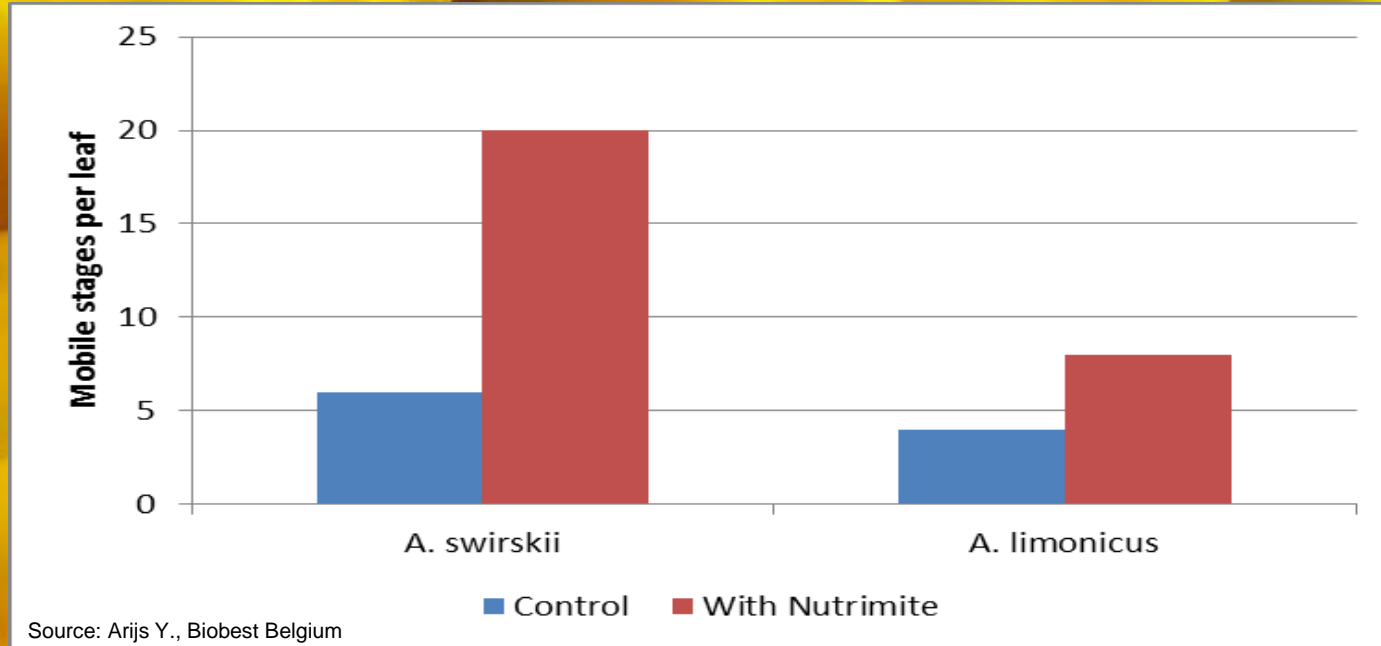
Advantages of Nutrimite:

- highly nutritional for predatory mites
- keeps its nutritional value for up to two weeks
- not attractive to honey and bumble bees
- relatively unattractive for pests, such as thrips
- relatively resistant to mould / high humidity
- hardly allergenic



Efficacy

Nutrimite and predatory mites



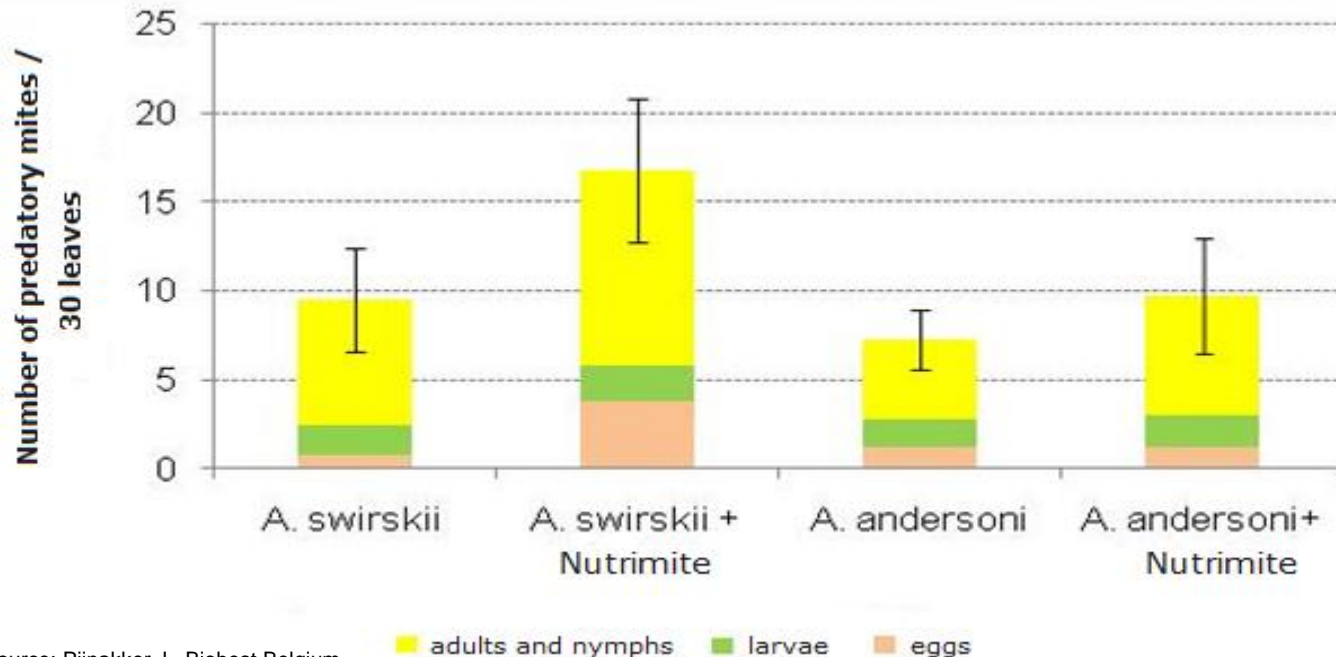
Crop:

- sweet peppers
- flowers removed

Observation:

- most predatory mites respond positive:
 - Increase in oviposition
 - Increase in mobile stages
- response varies between mite species

Efficacy Nutrimite and predatory mites



Source: Pijnakker J., Biobest Belgium

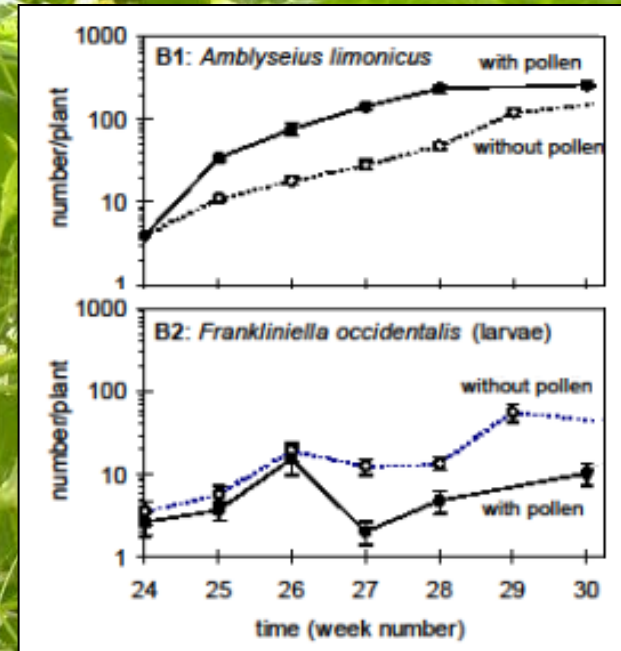
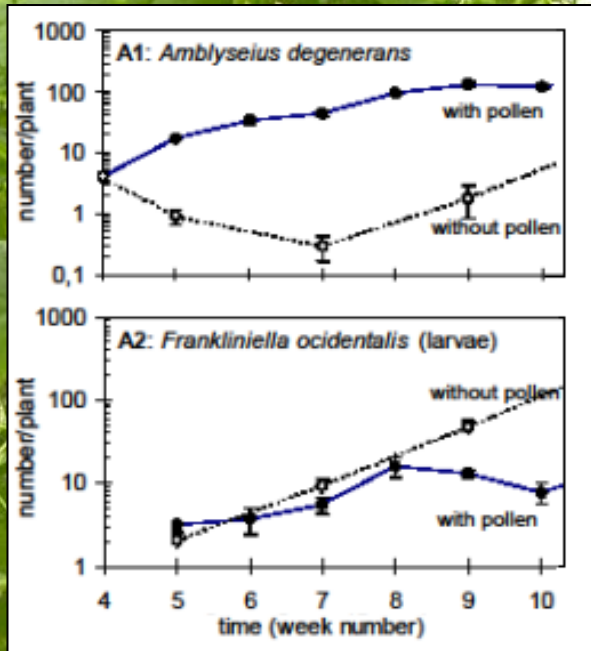
Crop:

- Cut gerbera

Observation:

- increase in predatory mite populations
- Response varies between mite species

Efficacy Nutrimite and pest suppression



Crop:

- Cucumber

Observation:

- increase in predatory mite populations
- better biocontrol of thrips.

Application

Young plant nurseries

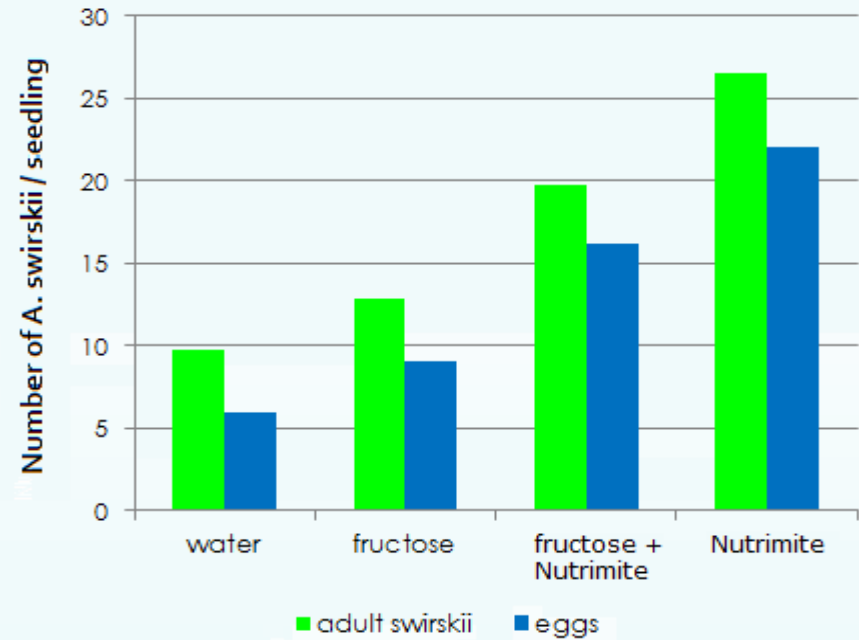


Crop:

- sweet pepper seedling.
- *A. swirskii*

Observation:

- *A. swirskii* responds positively:
 - Increase in oviposition
 - Increase in mobile stages



Source: Herdandez J., Biobest Spain



Application

Boosting predatory mite populations

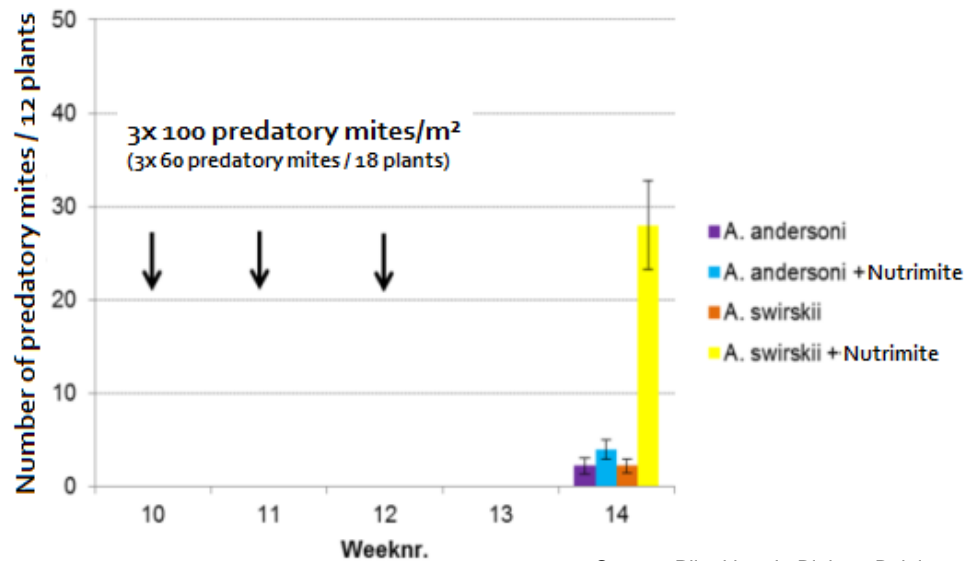
Enhance predatory mite populations when pollen sources are scarce

Crop:

- Calathea, non-flowering in nursery.
- *A. swirskii*

Observation:

- *A. swirskii* responds positively:
 - High increase in mobile stages



Source: Pijnakker J., Biobest Belgium



Application

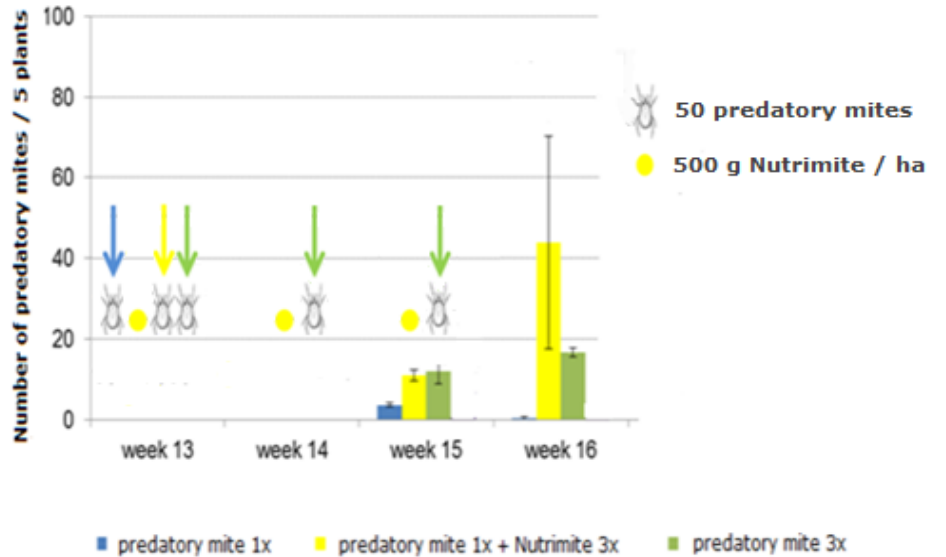
Reduction of predatory mite introductions

Crop:

- Cut roses

Observation:

- **2.5x higher** predator numbers with **1x release and 3 x Nutrimite** compared to 3 predatory mite releases!!



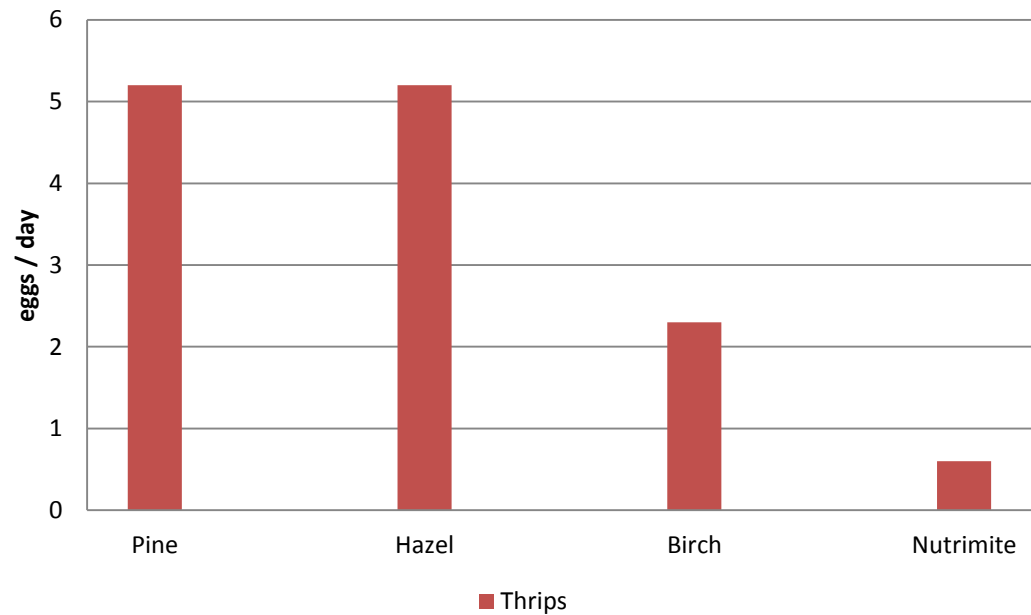
Source: Pijnakker J., Biobest Belgium

Selectivity Nutrimite and thrips



Nutrimite benefits the development of predatory mites, yet is relatively unsuitable for thrips

Responses of thrips to pollen



Some other possibilities:

Help existing populations survive periods of low prey/pollen:

- Recent transplanted crops
- Late blooming crops
- Low light conditions resulting in low blooming:
 - In chalked or shaded greenhouses
 - Dark or short daylight



Nutrimite package



Type of package	plastic container
Type of seal	sprinkler lid
Package size	1 L
Content	500 g
Storage	unlimited shelf life at -18°C (0,4°F)
	2 weeks shelf-life at 4-8°C (39-46°F)
	defrost in a refrigerated space
	do not freeze again after defrosting



Nutrimite Recommendations for use

Dosage	<ul style="list-style-type: none">- 500 g / ha / application- (0,45 lbs / acre / application)
N° of applications	<ul style="list-style-type: none">- Min. 2-3 times- depending on predatory mite population development
Application interval	<ul style="list-style-type: none">- 2 weeks
Application method	<ul style="list-style-type: none">- Nutrimite gun



Application method

Nutrimite gun



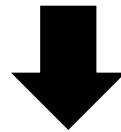
Full reservoir	50g
Max blow distance at full speed	+ 14,00m
Max width	+ 3,5m
Time to disperse full reservoir	6-10 min
Remark	when almost empty, slight tapping may be needed
Precaution	Use dust mask Eye protection



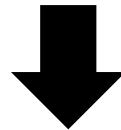


With Nutrimite: Less is more!

Lower levels of predatory mite releases
and fewer release



Yet larger and healthier predatory mite
populations



Better Biocontrol