



# Evaluation of biocontrol products against *Myzus persicae* to prevent sugar beet yellows

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# Evaluation of biocontrol products against *Myzus persicae*

- Project of PNRI (French national research and innovation plan against SB Yellows) 2021-2023
- Screening in greenhouse, then in field trials
- More than 20 active compounds tested in greenhouse
- Only one compound ( ITB 52202 ) drives aphid population down
- Some other compounds reduce the growth rate of an aphid population

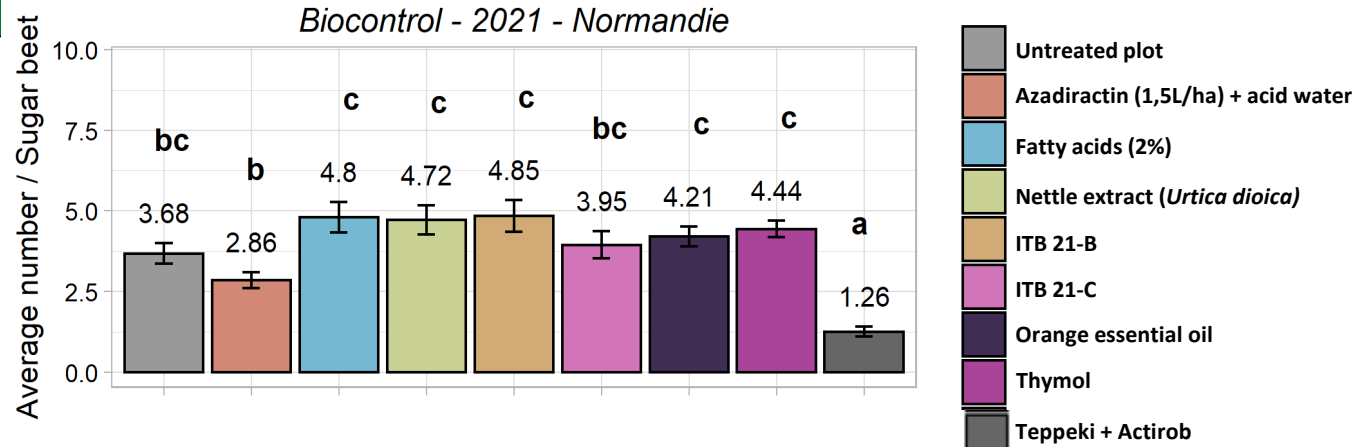


Screening of biocontrol products

# 2021 Field trial

## Green aphids - number of apterous / Sugar beet

2021937AE



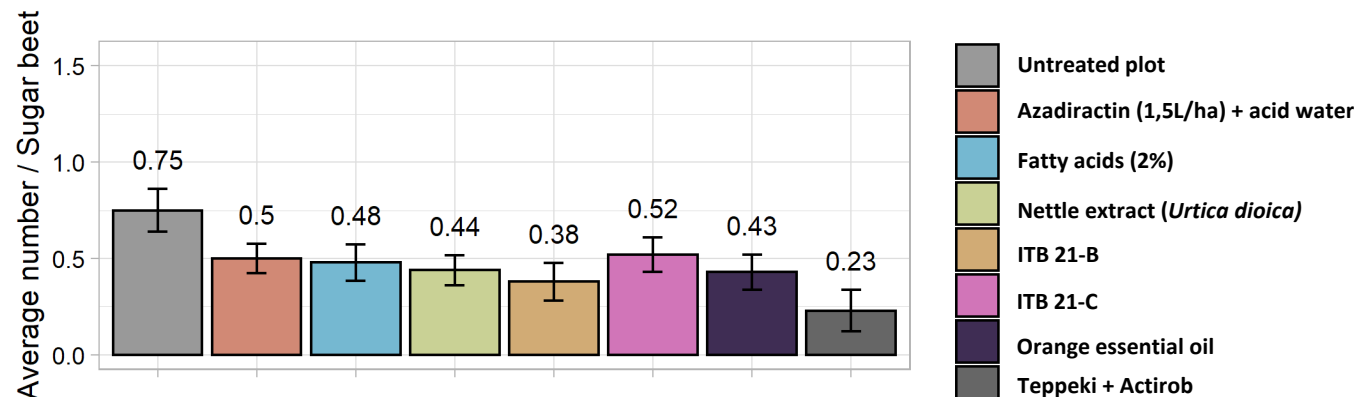
**Average number of green apterous aphids per plant depending on biocontrol product used, Normandie 2021.**

Aggregation of 3 dates.

Generalized linear model (negative binomial). P-value threshold : 0,05.

## Green aphids - number of apterous / Sugar beet

Biocontrol - 2021 - Nord-Pas-de-Calais



**Average number of green apterous aphids per plant depending on biocontrol product used, Nord 2021.**

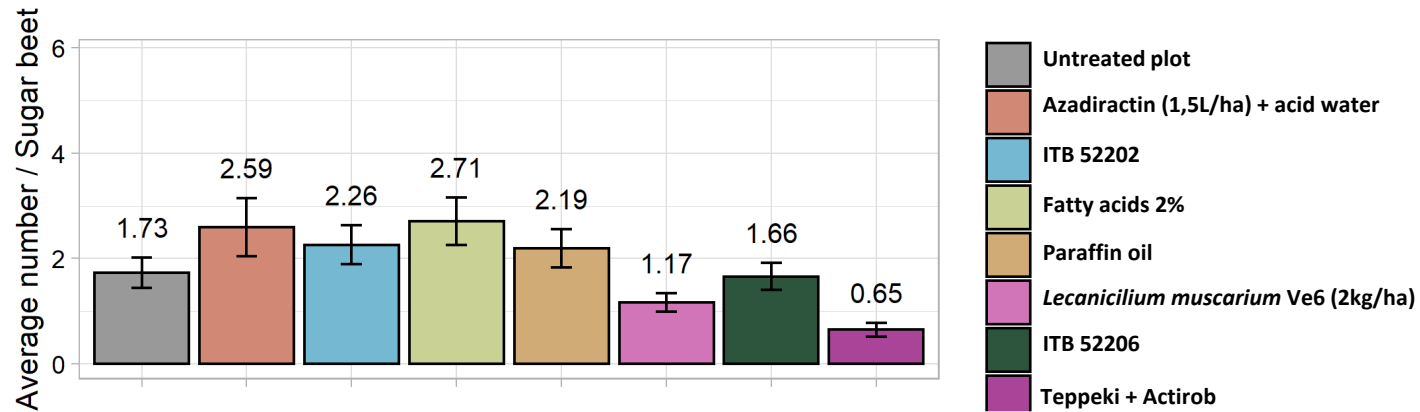
Aggregation of 3 dates.

Models doesn't fit to data

# 2022 Field trial

## Green aphids - number of apterous / Sugar beet

Biocontrol - Normandie - 2022



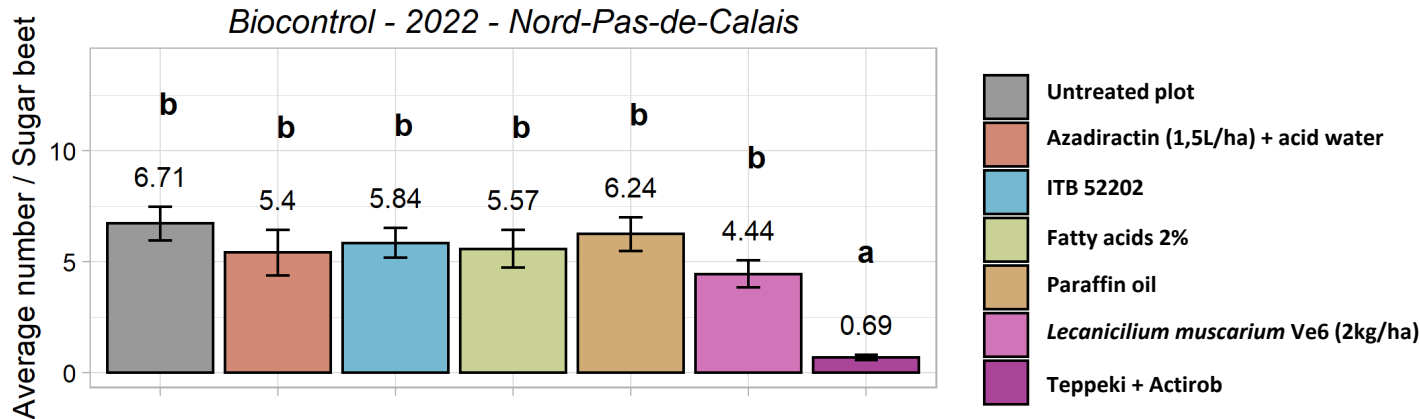
**Average number of green apterous aphids per plant depending on biocontrol product used, Normandie 2021.**

*Aggregation of 3 dates.*

*Models doesn't fit to data*

## Green aphids - number of apterous / Sugar beet

22979AN



**Average number of green apterous aphids per plant depending on biocontrol product used, Nord- Pas-de-Calais 2022.**

*Aggregation of 3 dates.*

*Generalized linear model (negative binomial). P-value threshold : 0,05.*

# 4 years of field trials - Conclusions

Activ compound	Efficiency			
	2019	2020	2021	2022
Azadiractin	-/(+)	-	-/(+)	-
<i>Beauveria bassiana</i>		-/(+)		
Biopolymer		-		
Fatty acids			-	-
ITB 21-B			-	
ITB 21-C			-	
ITB 52202				-
ITB 52206				-
Kaolin	-			
<i>Lecanicillium muscarium</i> Ve6	(+) / ++	(+)/+		- / +
Maltodextrin	- / (+)	(+)		
Nettle extract ( <i>Urtica dioica</i> )			-	
Orange essential oil			-/(+)	
Paraffin oil	- / (+)	-		-
Sulfur	-			
Thymol			-	

Biocontrol products efficiency against *M. persicae* or against SB yellows in field experiments.

- : no efficiency ;

(+) : trend, but no statistical differences with untreated plot or very weak effect

+ : moderate efficiency (less than 50%) ;

++ : good efficiency (more than 50%)

- Greenhouse to field trials : loss of efficiency
- 1 active compound (*Lecanicilium muscarium*) has a good efficiency in several trials
- Most biocontrol products have to touch aphids -> Need to investigate on sprays conditions (Sprayer, weather, ...)

Thank you for your attention  
& your questions

for more details :

