

Effects of entomopathogenic nematodes on insect pests of oilseed rape

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Materials & Methods

- winter oilseed rape field trial with plots of 720 m²
- application of EPN with 2862 l water/ha at BBCH 53-55, 3 April 2017
- EPN: *Steinernema feltiae* (0.25 million nematodes/m²)
- check infectivity: soil samples (5 sample points/plot ~300 g soil) of treated and untreated plots were colonized with mealworms
- collection of OSR insect pest larvae with plastic bowls
- collection of new generation beetles with soil-photoecletors

Results

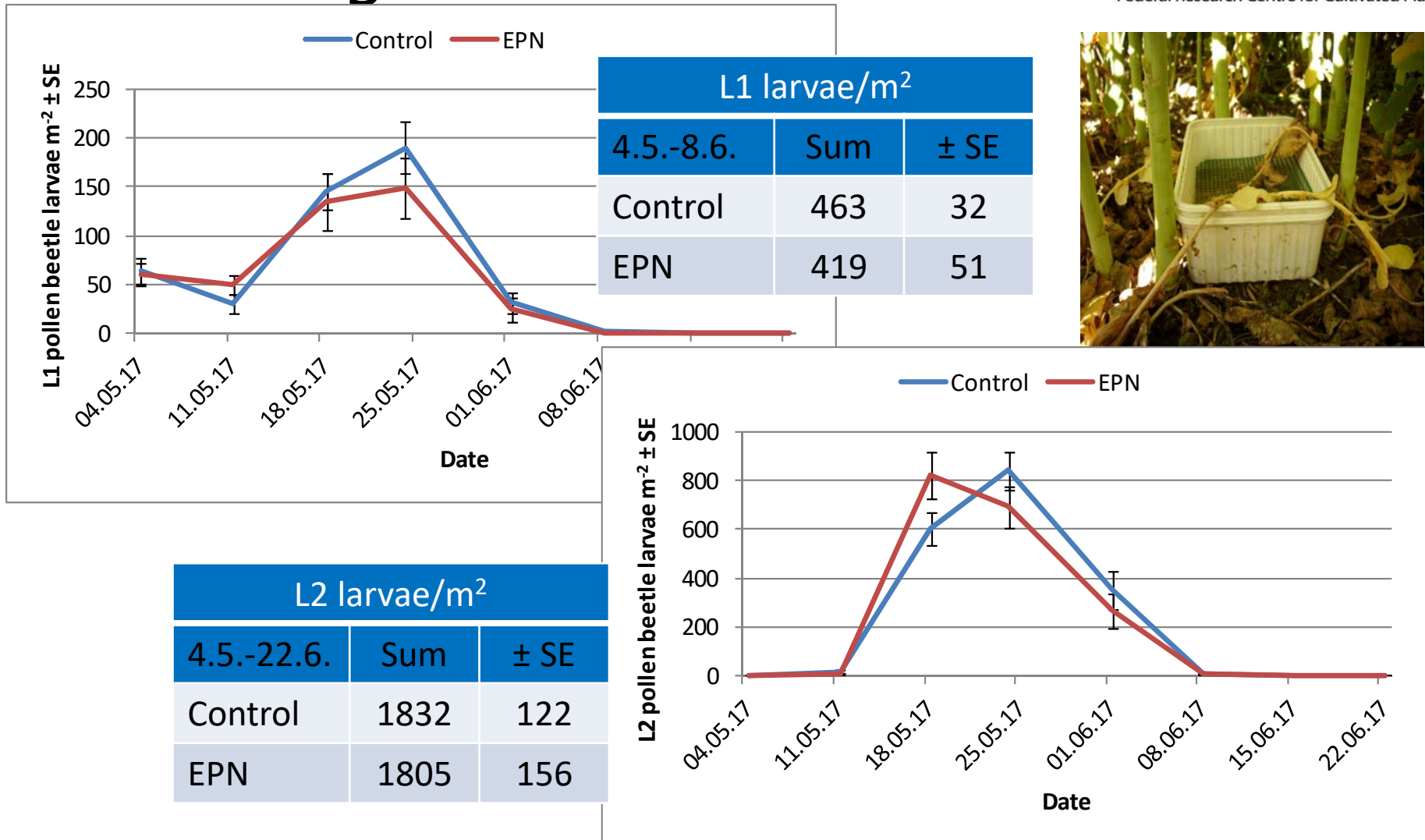
Control of infectivity with mealworms from April to end of June

- High infectivity from April to May
- Fading effects from beginning of June onwards
- EPN still detectable at the end of June



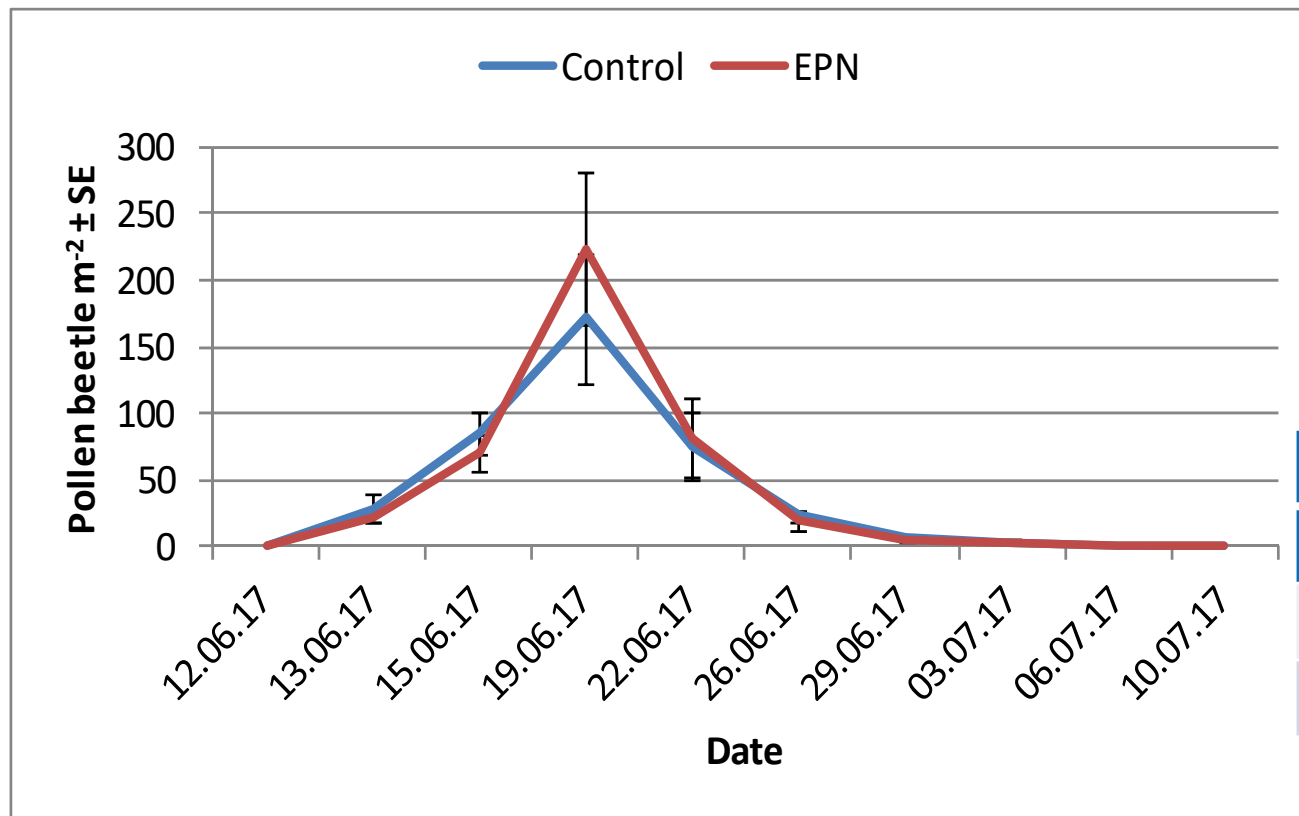
Results

Brassicogethes aeneus larvae



Results

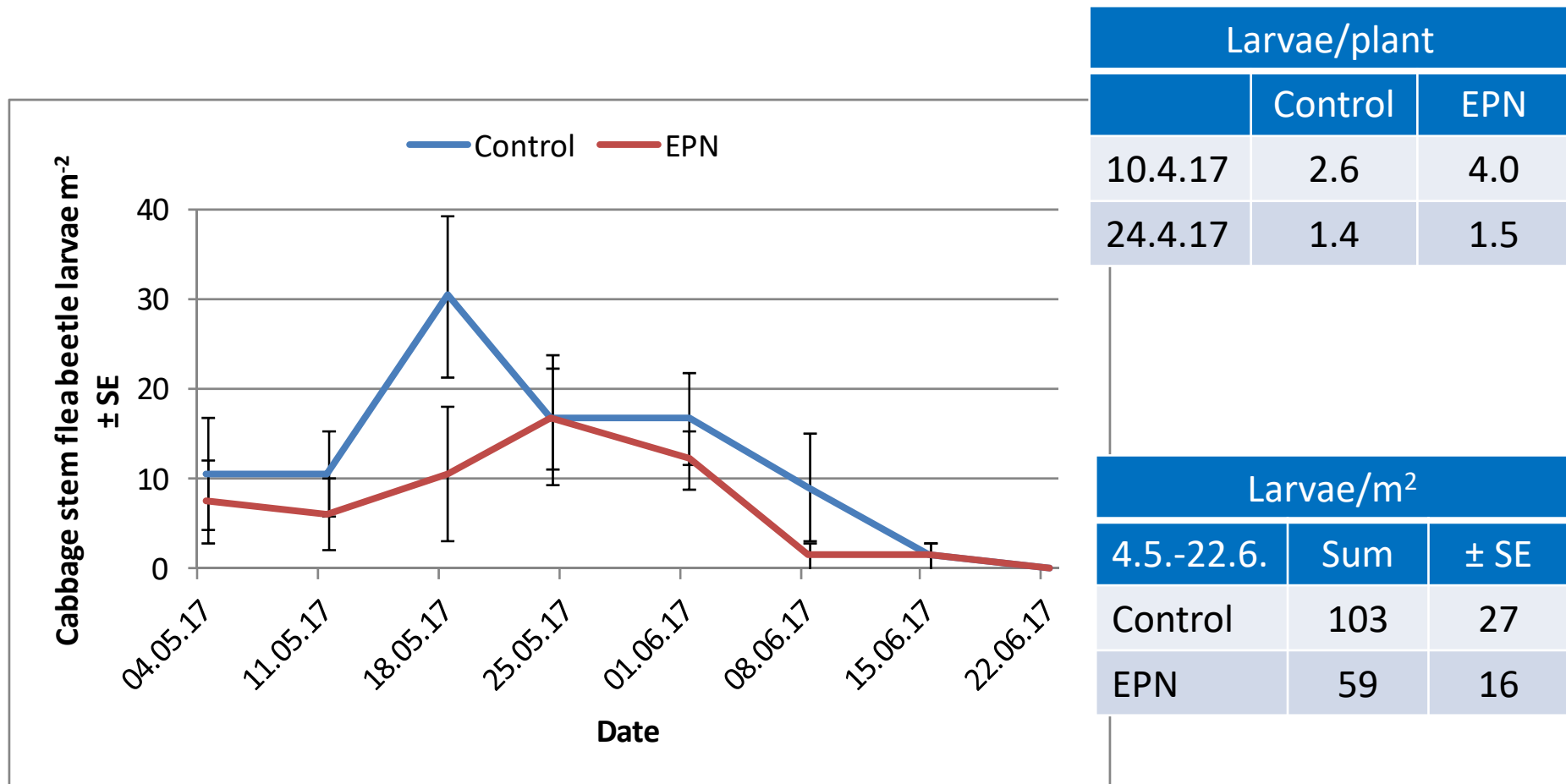
New generation *B. aeneus*



Pollen beetle/m ²		
12.6.-6.7.	Sum	± SE
Control	394	70
EPN	427	102

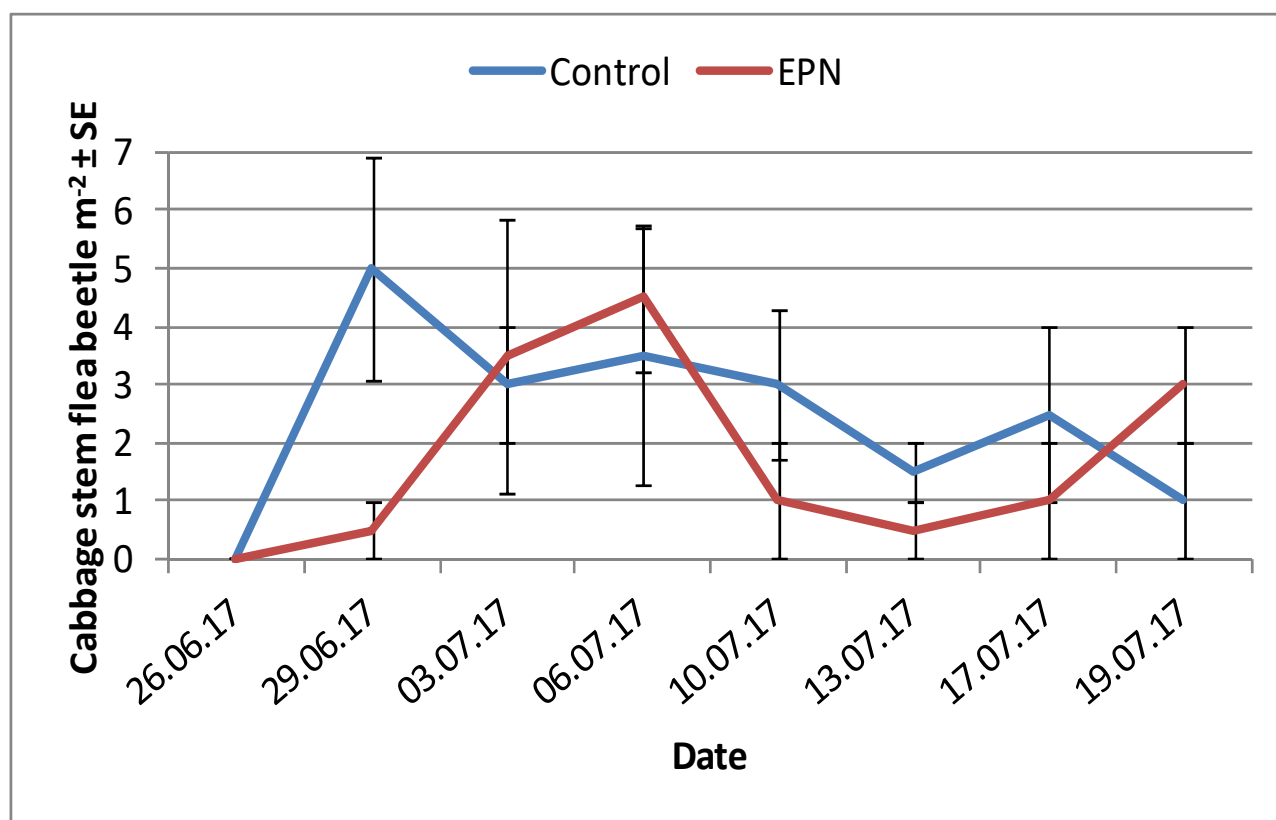
Results

Psylliodes chrysocephala larvae



Results

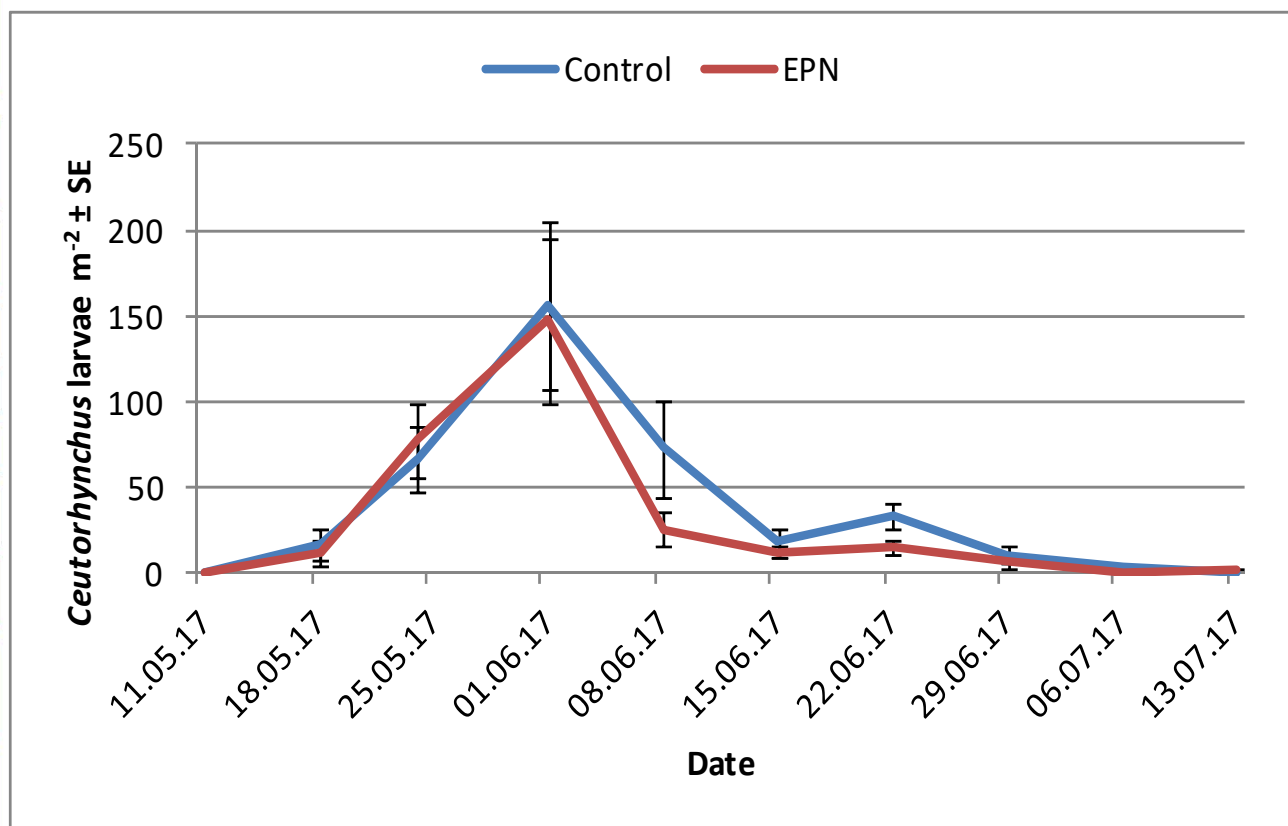
New generation *P. chrysocephala*



Flea beetle/m ²		
26.6.-19.7.	Sum	± SE
Control	21	6
EPN	15	5

Results

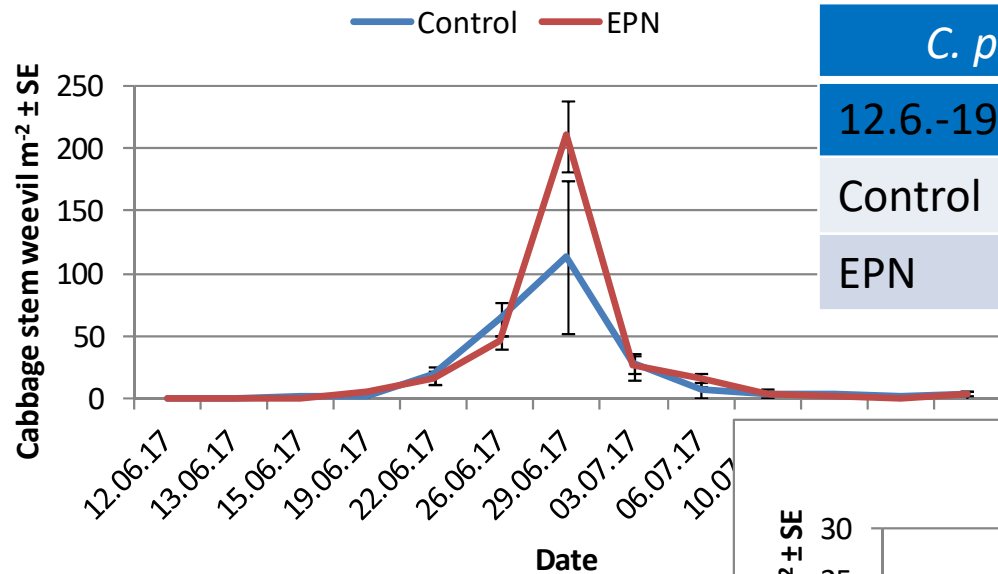
Ceutorhynchus larvae



Larvae/m ²		
11.5.-13.7.	Sum	± SE
Control	379	55
EPN	298	69

Results

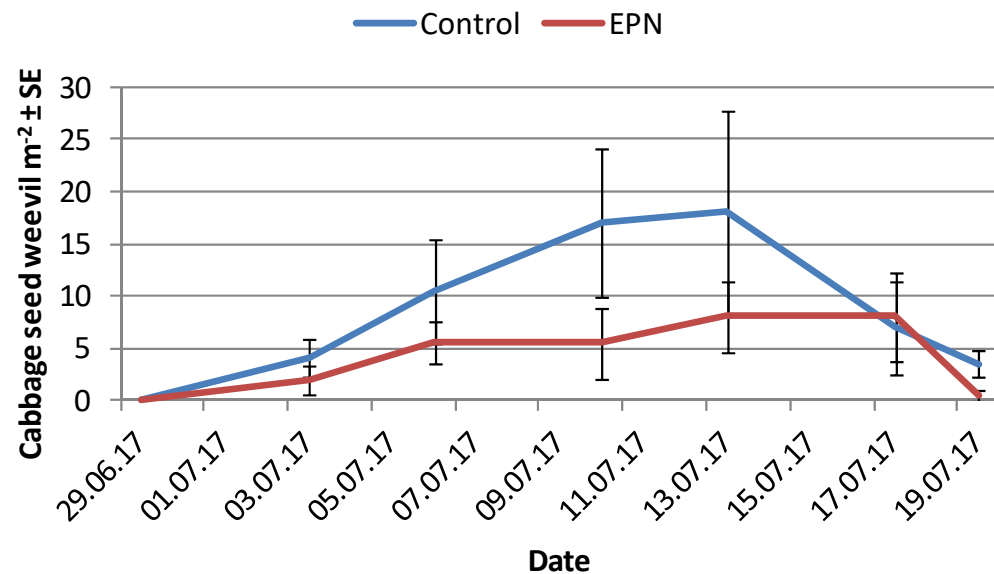
New generation *Ceutorhynchus*



<i>C. pallidactylus</i> /m ²		
12.6.-19.7.	Sum	± SE
Control	249	49
EPN	331	76

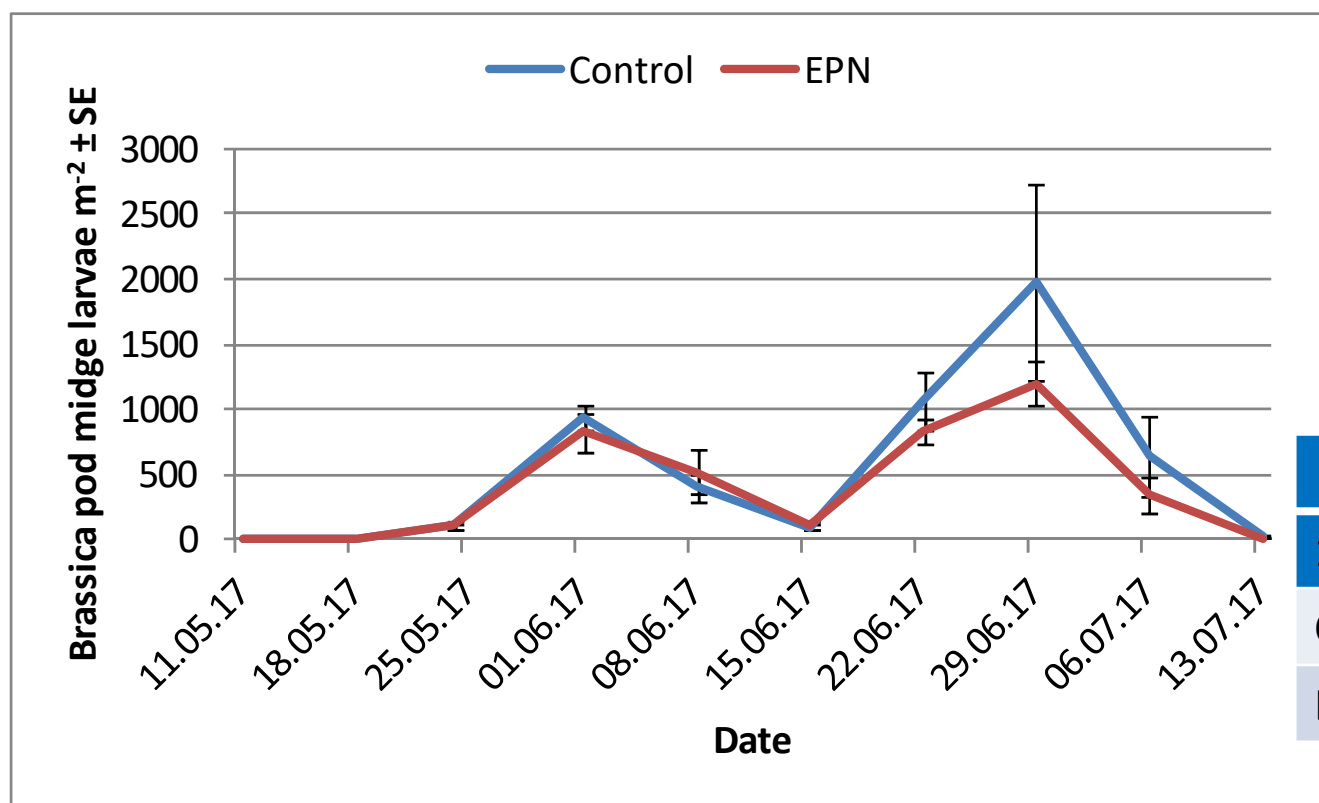


<i>C. obstrictus</i> /m ²		
29.6.-19.7.	Sum	± SE
Control	60	27
EPN	30	11



Results

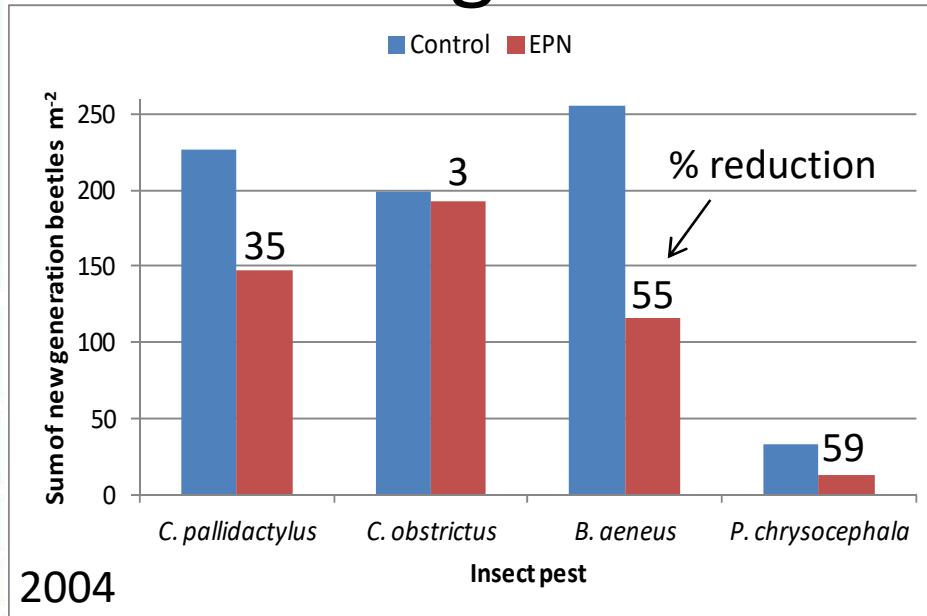
Dasineura brassicae larvae



Larvae/m ²		
11.5.-13.7.	Sum	± SE
Control	5253	1344
EPN	3953	517

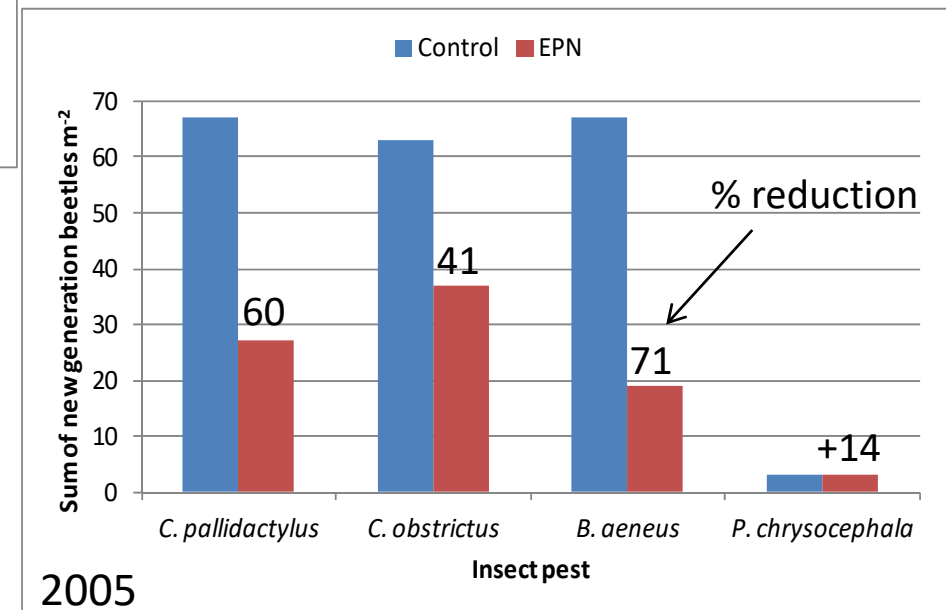
Field trials in Göttingen 2004 + 2005

New generation beetles



2004

Application rate:
1 million nematodes/m²
(*S. feltiae*) at **BBCH 67-69**



2005

Conclusion

- High application rates of EPN can affect insect pest of OSR
 - Potential as IPM element
 - Reduction of pest density and pest pressure in the following year/autumn (*P. chrysocephala*)
- Questions:
 - Were the low effects in 2017 caused by the reduced application rate or was the application of EPN too early?



Thank you for your attention

Thanks to e-nema for providing nematodes and lending photoelectors