



Aphid regulation in covered organic apricot production by open rearing and releasing of beneficial insects

Sara Amsler, Clémence Boutry, Michael Friedli

Ecofruit, Filderstadt, 20th of February 2024

Produce apricots without any pesticides?



But production under cover promotes aphids...



How to naturally control aphids?



FiBL



**Open rearing
of beneficials**



Beneficials



Hoverflies
(*Episyrphus balteatus*)



Ladybugs
(*Adalia bipunctata*)



Lacewings
(*Chrysoperla carnea*)



Parasitic wasps
(*Praon volucre*,
Aphidius ervi, *A. colemani*,
A. matricariae,
Aphelinus abdominalis)

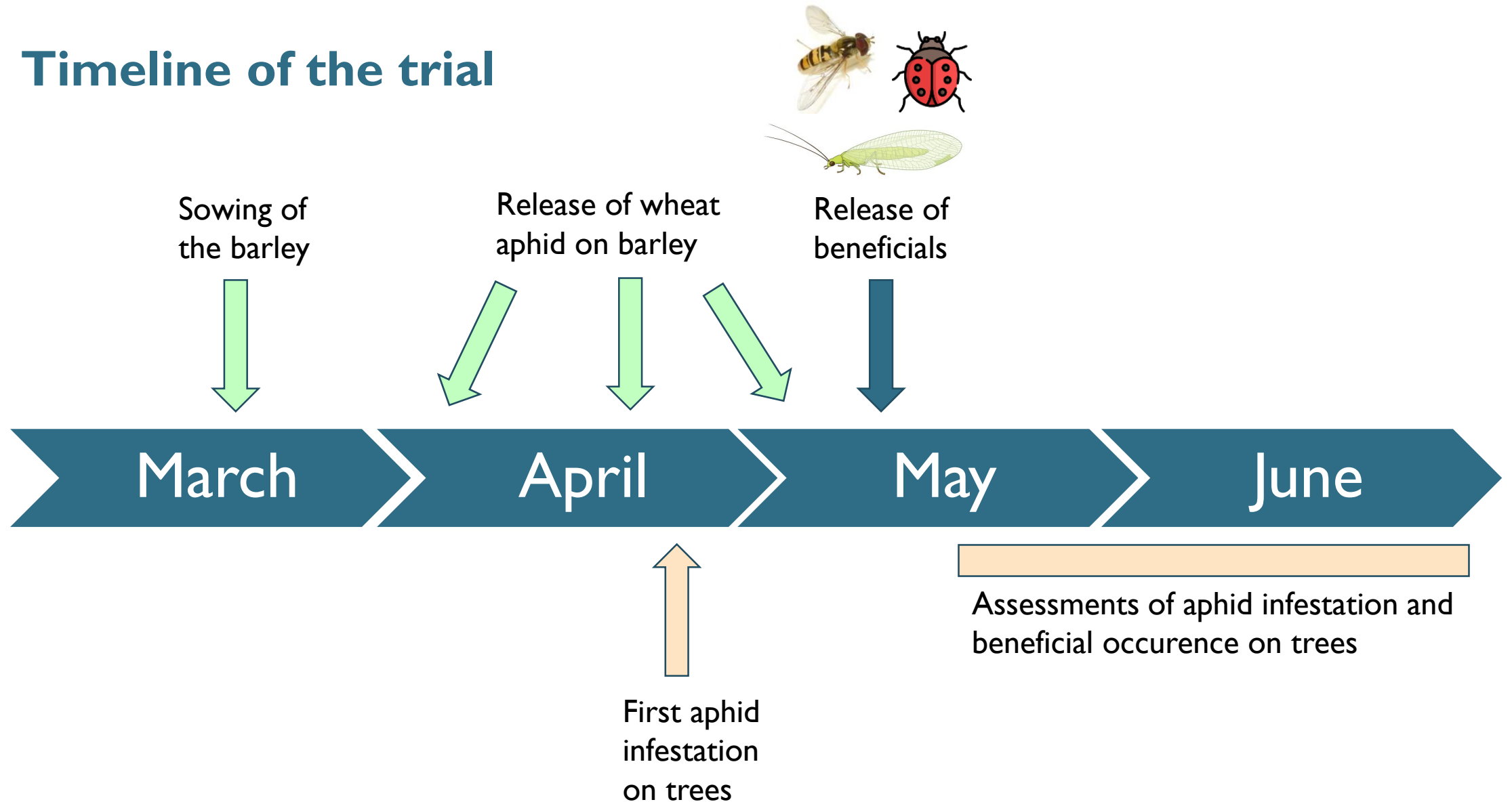
Trial location



Apricot tunnel



Timeline of the trial



Release of beneficials



Hoverfly pupae



Ladybug larvae



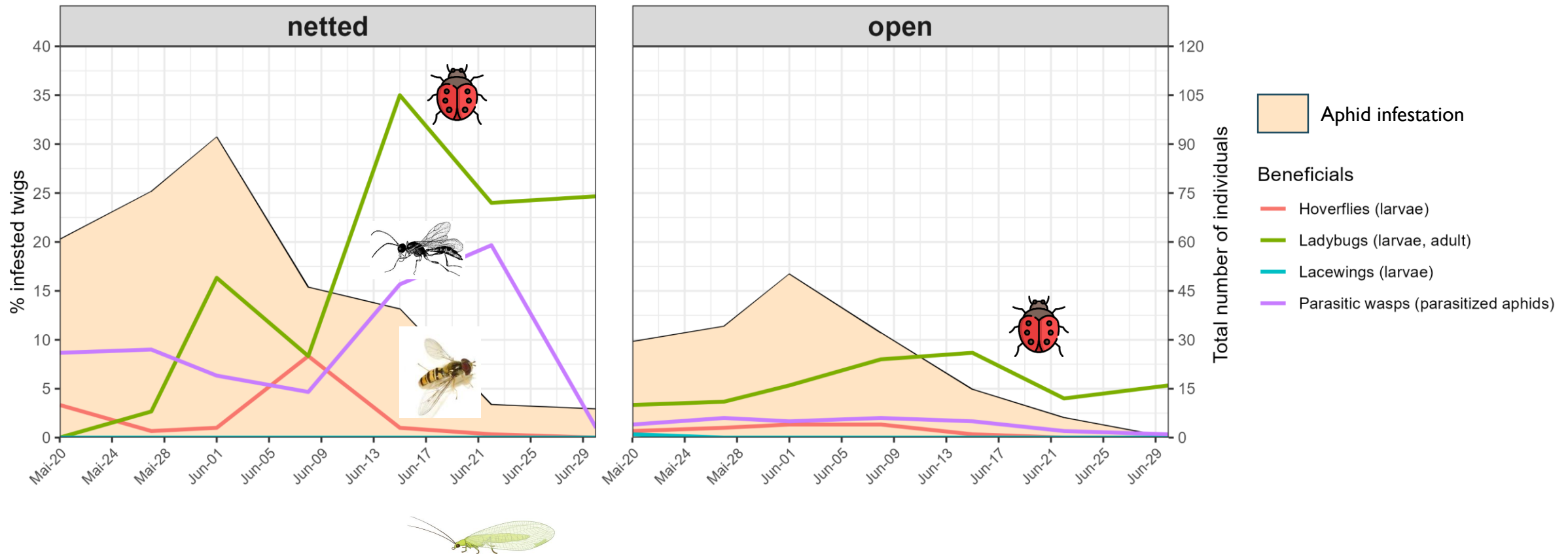
Lacewing larvae



Parasitic wasps

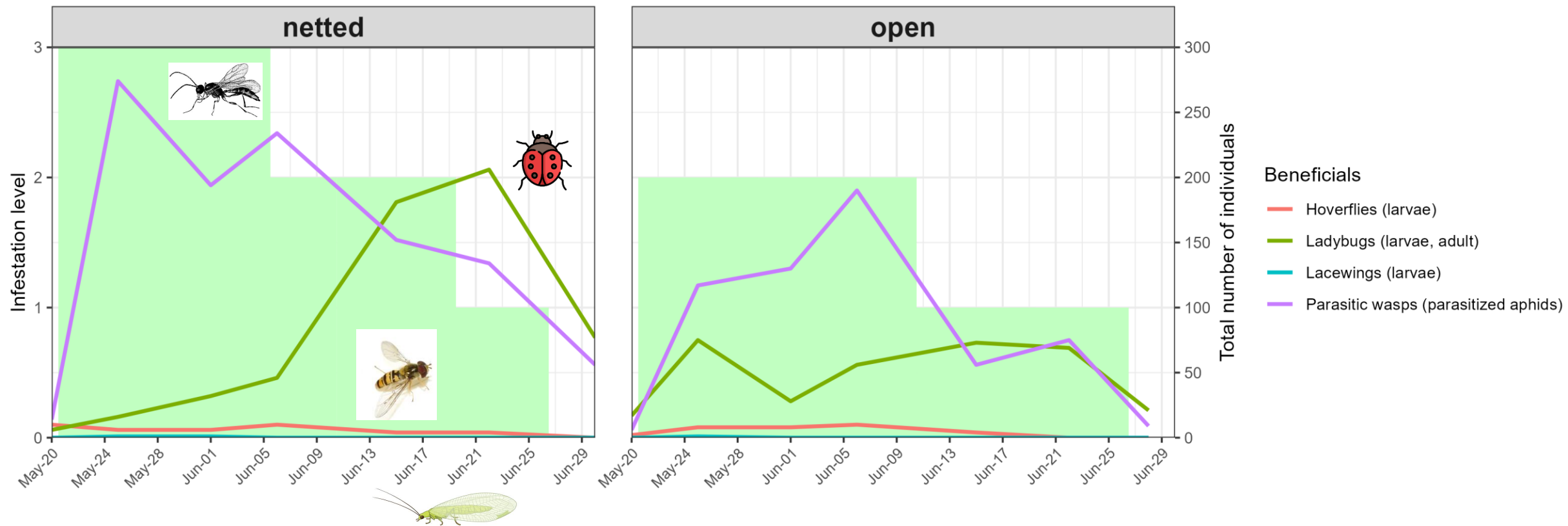
Trees: Aphid infestation and beneficial occurrence

- More beneficials but also more aphid infestation in the **netted** treatment



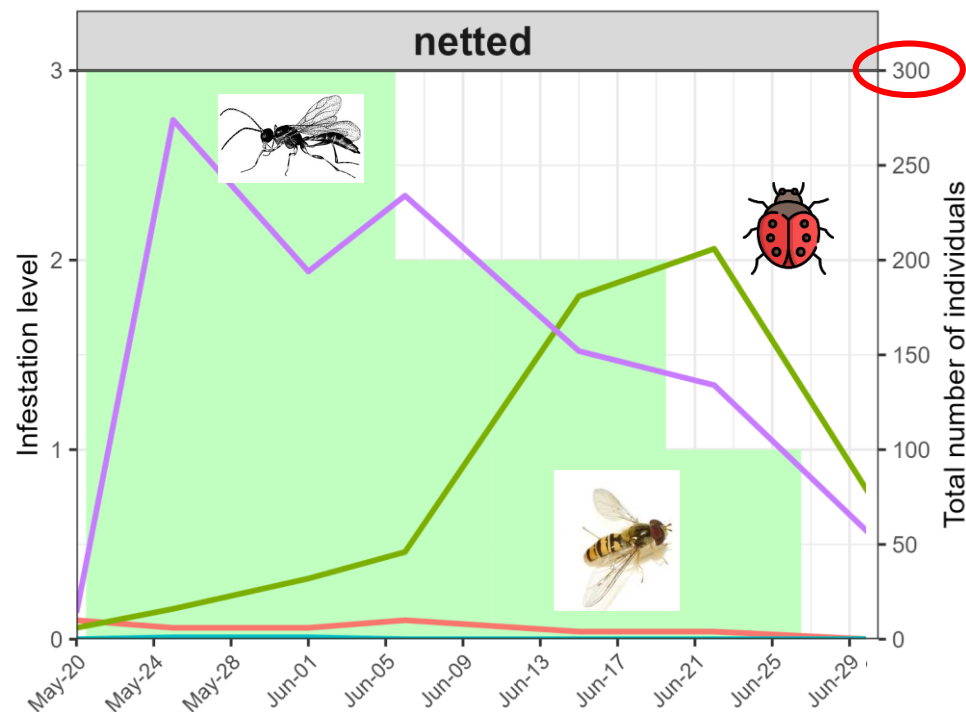
Barley: Aphid infestation and beneficial occurrence

- More aphids on the barley in the **netted** treatment

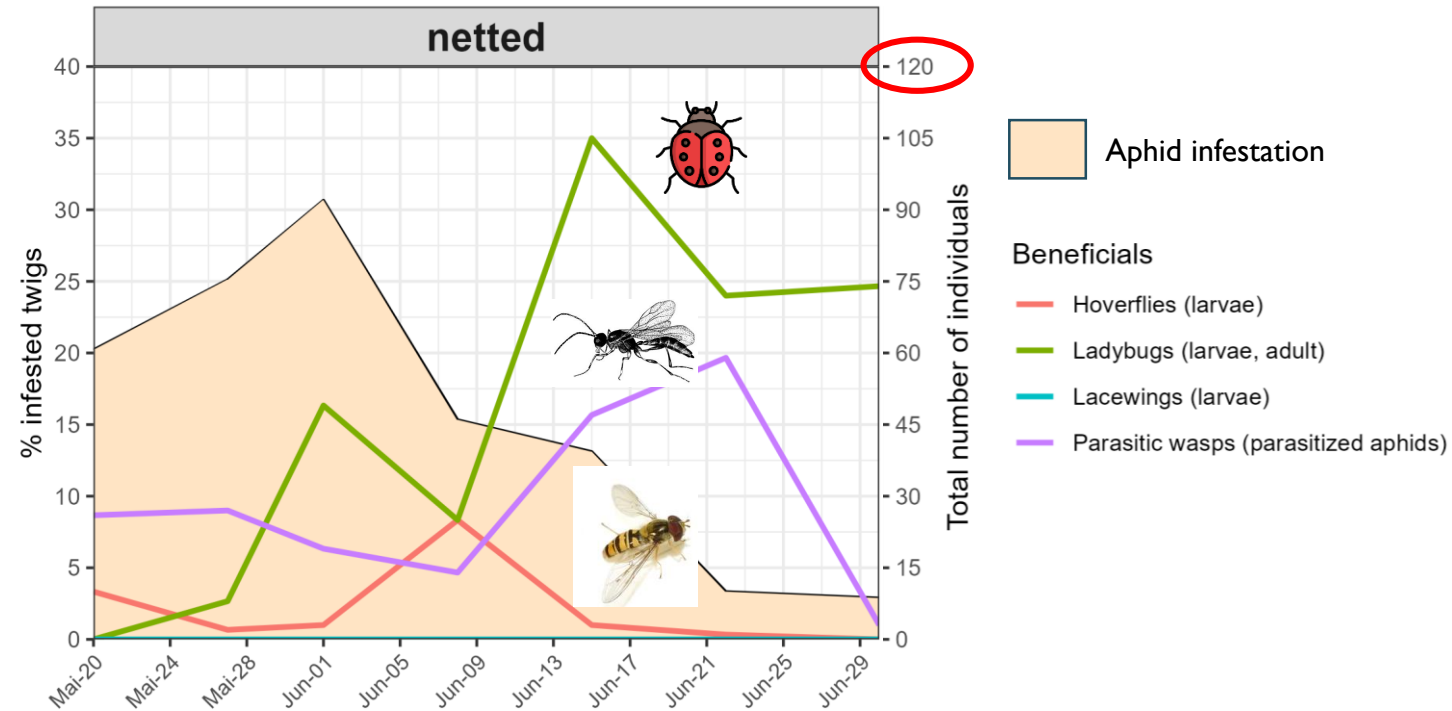


Barley vs. apricot trees: Aphid infestation and beneficials

- A lot more beneficials on the barley than on the trees (x2)



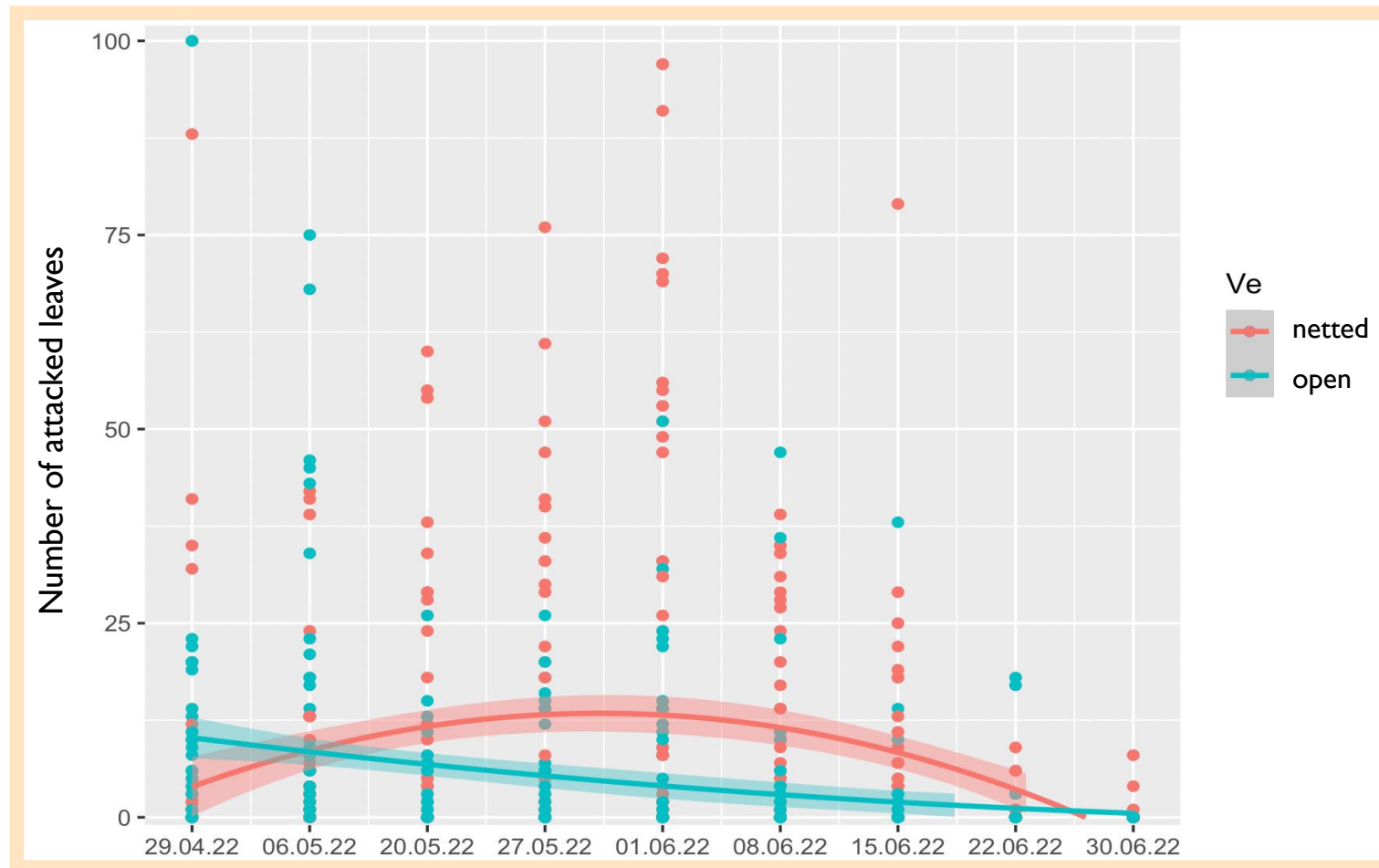
2x 12 barley plots



450 twigs assessed
(45 trees, 10 twigs per tree)

Trees: Aphid infestation (leaf damage)

- **Decrease** of aphid infestation in the **open** treatment vs. **increase** in the **netted** treatment



Trees: Parasitic wasps



Praon volucre

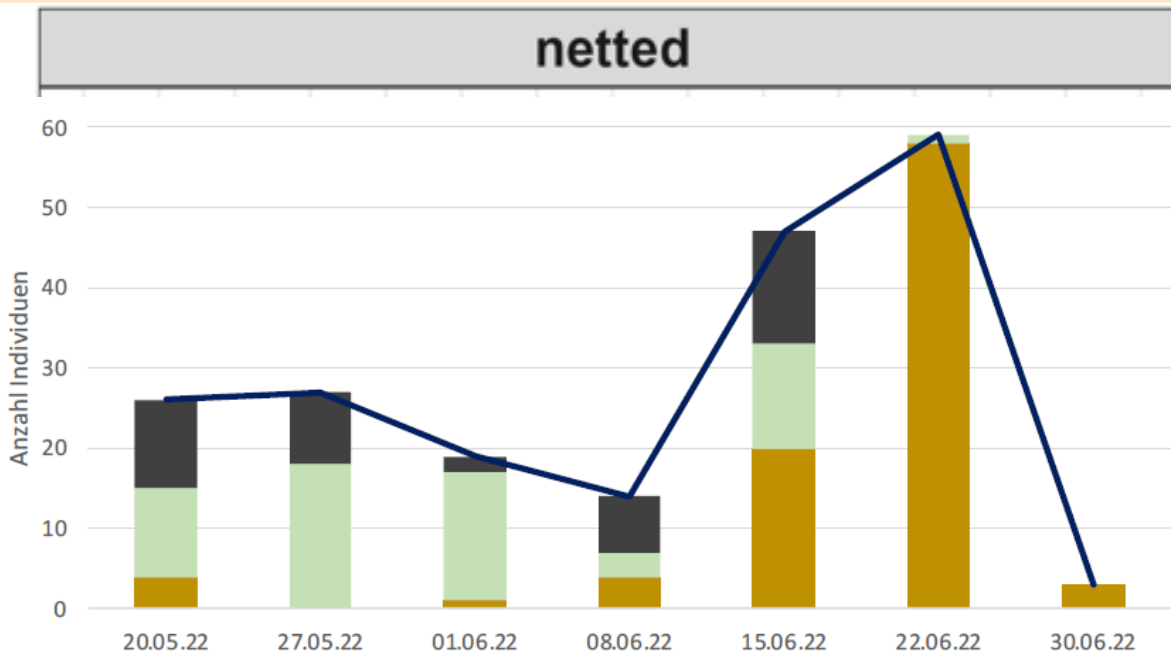


Ephedrus spp.

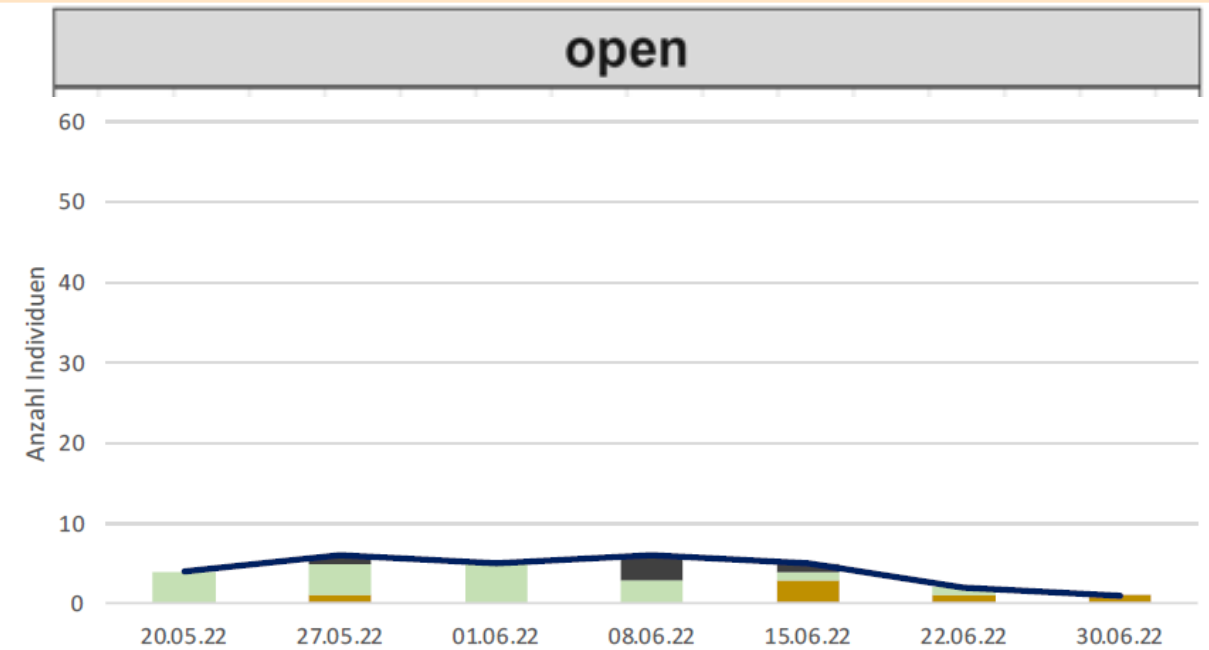


Aphidius spp.

netted



open



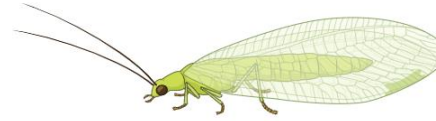
Conclusions



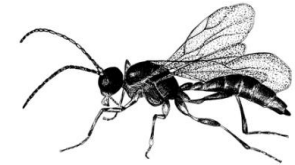
- + Very effective aphid predators
- + Occur early and throughout the season
- + Easy to release (as pupae)



- + Very effective aphid predators
- Occur a bit later
- Difficult to release (as larvae)



- Not found
- Difficult to release (as larvae)



- + Occur early and throughout the season
- + Easy to release (as adults)
- Don't parasitize all the aphids

Conclusions

- Promote naturally occurring beneficials



Contact

Research Institute of Organic Agriculture FiBL
Ackerstrasse 113, Box 219
5070 Frick
Switzerland

Phone +41 62 865 72 72
Fax +41 62 865 72 73

info.suisse@fibl.org
www.fibl.org

References

Hoverfly icon: shutterstock, HHelene, <https://www.shutterstock.com/de/image-photo/hoverfly-episyrphus-balteatus-isolated-on-white-2033364059>

Lacewing icon: Biorender, <https://www.biorender.com/icon/green-lacewing-chrysoperla-rufilabris>

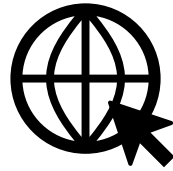
Ladybug icon: flaticon

Parasitic wasp icon: shutterstock, Rina_Ch, <https://www.shutterstock.com/de/image-vector/hand-drawn-sketch-wasp-aphidius-ink-1101727793>

FiBL online



www.fibl.org



www.bioaktuell.ch



[fiblfilm](#)



[@fiblorg](#)



[@FiBLaktuell](#)



linkedin.com/company/fibl