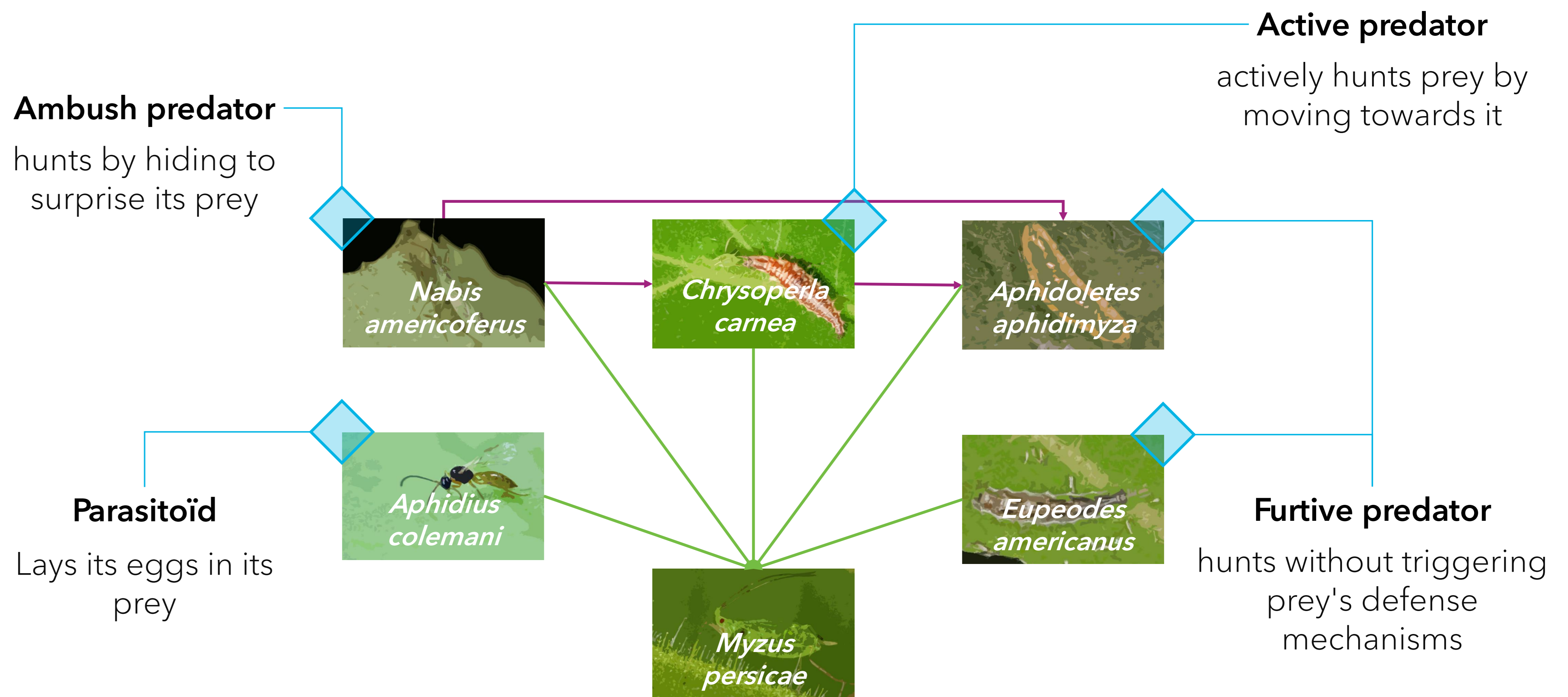


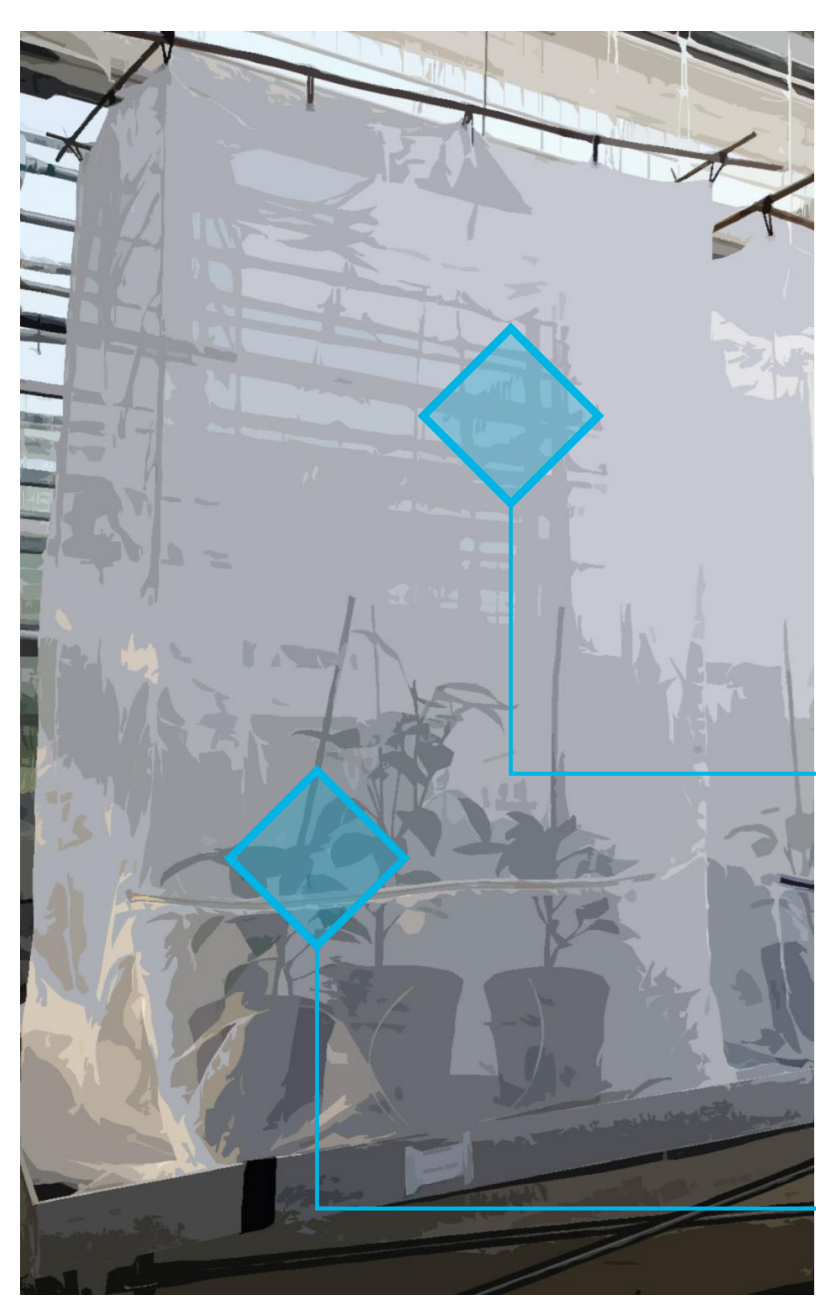
Compatibility of new predators and the parasitoid *Aphidius colemani* for green aphid control in greenhouse peppers

Abstract

The parasitoid wasp *Aphidius colemani* is a very efficient biological control agent against the aphid *Myzus persicae* in greenhouse sweet pepper crops. The control is improved when the parasitoid is combined with predators such as the midge, *Aphidoletes aphidimyza*, and the convergent ladybug, *Hippodamia convergens*. However, the effectiveness of the latter is variable. Other candidates may be more effective than the ladybug, including the green lacewing, *Chrysoperla carnea*, and the new biological control agents, the American hoverfly, *Eupeodes americanus*, and the damsel bug, *Nabis americanoferus*. However, little is known about the compatibility of the *A. colemani* parasitoids and these three candidate predators. **The aim of this study is therefore to measure the effectiveness of combinations of greenhouse predators (midge, hoverfly, lacewing and *Nabis*) and the parasitoid *A. colemani*.** We tested the compatibility of various predators (*Nabis*, lacewing, and midge) with the parasitoid wasp *Aphidius colemani* in an experimental greenhouse. The results suggest that *Nabis* is compatible with the parasitoid, while lacewings have a deleterious effect.



Methods



Summer
Autumn
70 tents (10 rep/ treatments)

3 sweet pepper plants (Early Sunstation)

Treatments

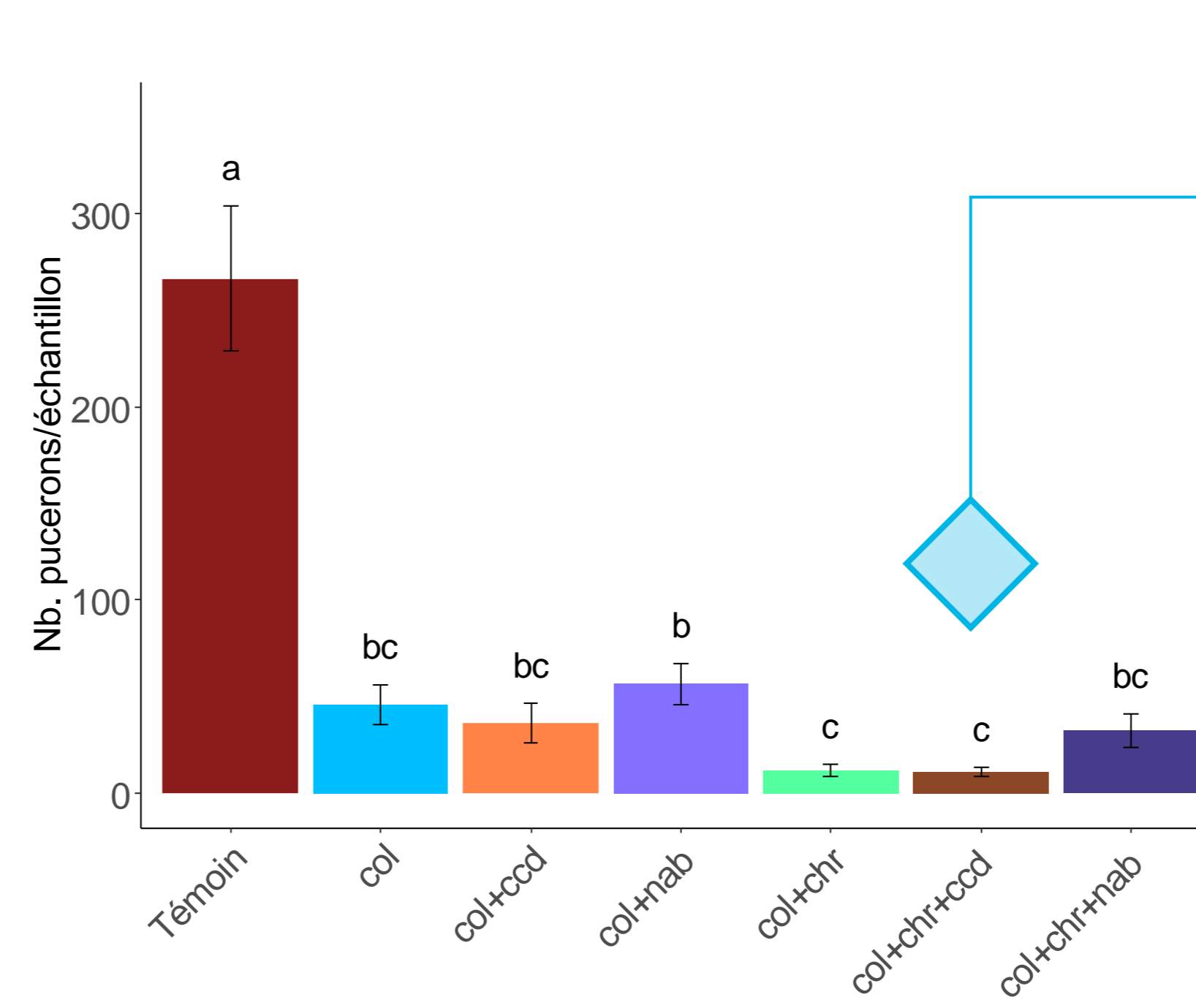
- Control: 15 aphids/ tent
- Col: 3 couples/ tent
- Col+Ccd: 3 couples/ tent
- Col+Nab: 3 couples/ tent
- Col+Chr: 6 larvae/ tent
- Col+Chr+Ccd: 3 species (3 types of predators)
- Col+Chr+Nab: 3 species (3 types of predators)

Monitoring

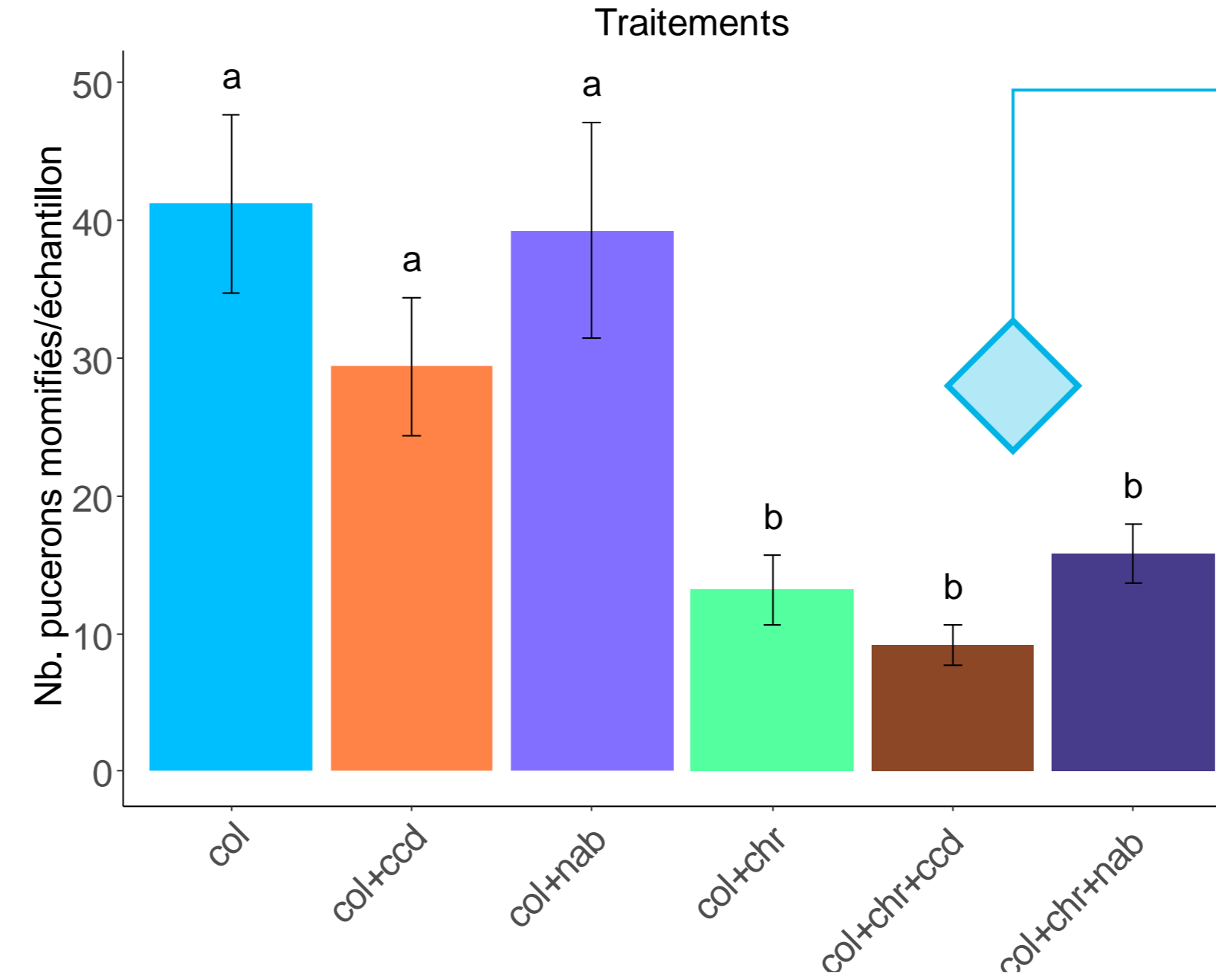
- 1 monitoring/ week X 9
- Count aphids/ delimited area (3 cm²) X 3 feuilles X 3 plants

Results & conclusions

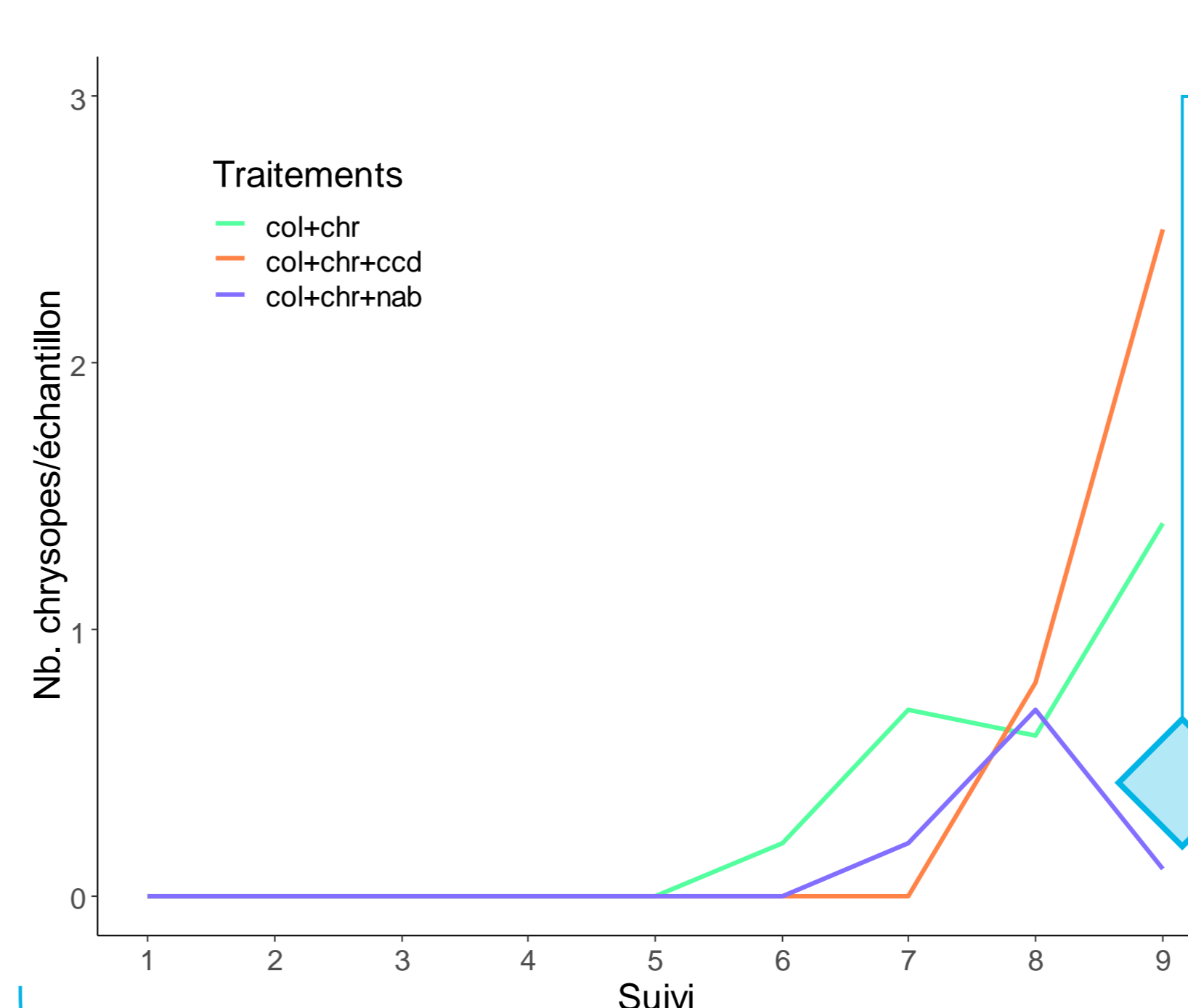
Autumn 2023



- All combinations are effective
- Lacewings are more efficient



- Lacewings have a significant impact on parasitoids
- *Nabis* does not reduce parasitoid populations



- *Nabis* negatively affects lacewings

