



Daily Feeding Habits of an Aphid Parasitoid: Influence of the Distance between Host and Food

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Louise L  rault, Marine Weishaar, Johanna Branger, Viel Pierre-Antoine, Blas Lavandero, et al.. Daily Feeding Habits of an Aphid Parasitoid: Influence of the Distance between Host and Food. Conference: Entomo2021 : 42  mes journ  es des Entomophagistes (Rennes 2021, France), Nov 2021, Rennes, France. 2021. hal-03577528

HAL Id: hal-03577528

<https://hal.science/hal-03577528>

Submitted on 16 Feb 2022

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Daily feeding habits of an aphid parasitoid: influence of the distance between host and food

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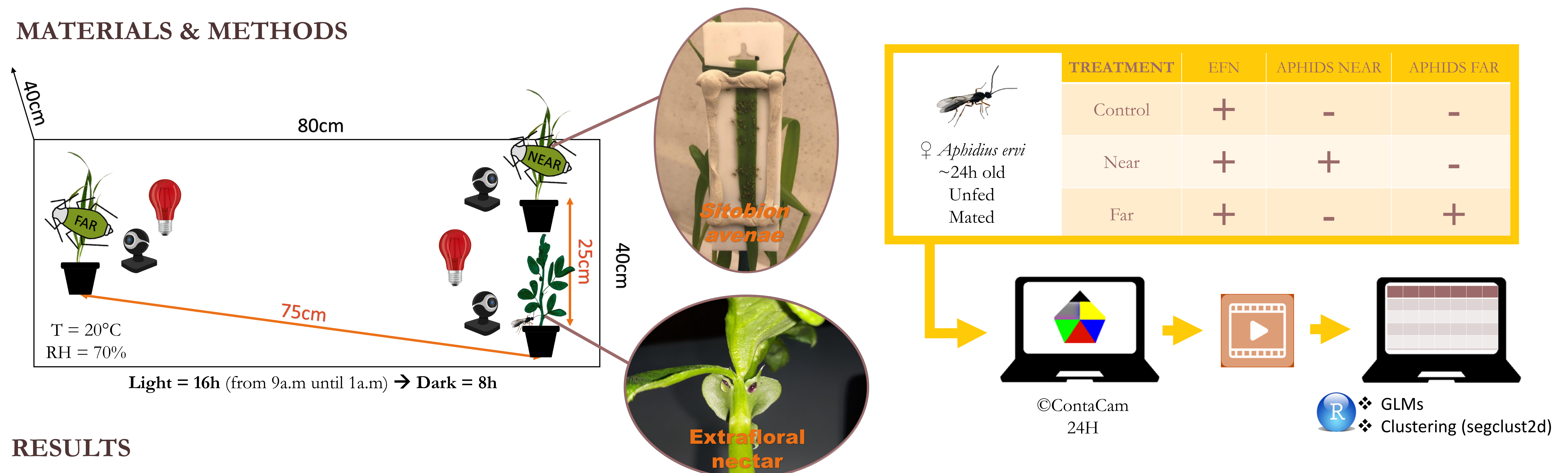
feeding frequency, commuting, *Aphidius ervi*, extrafloral nectar

Parasitoid females must search for hosts for their reproduction and for food (nectar, honeydew) for their metabolic maintenance. Carbohydrates found in their food sources have multiple benefits (lifespan increase, egg maturation, flight fuelling) [1]. To make their decision, they take internal parameters into account, such as their satiation state, but they must also adapt their choice to external information about the available resources in their environment [2].

The presence of both resources in the vicinity, the respective density of host and food, and the distance between the two resources could affect the time spent searching for each resource, the resource uptake, the fitness gain, and the host regulation.

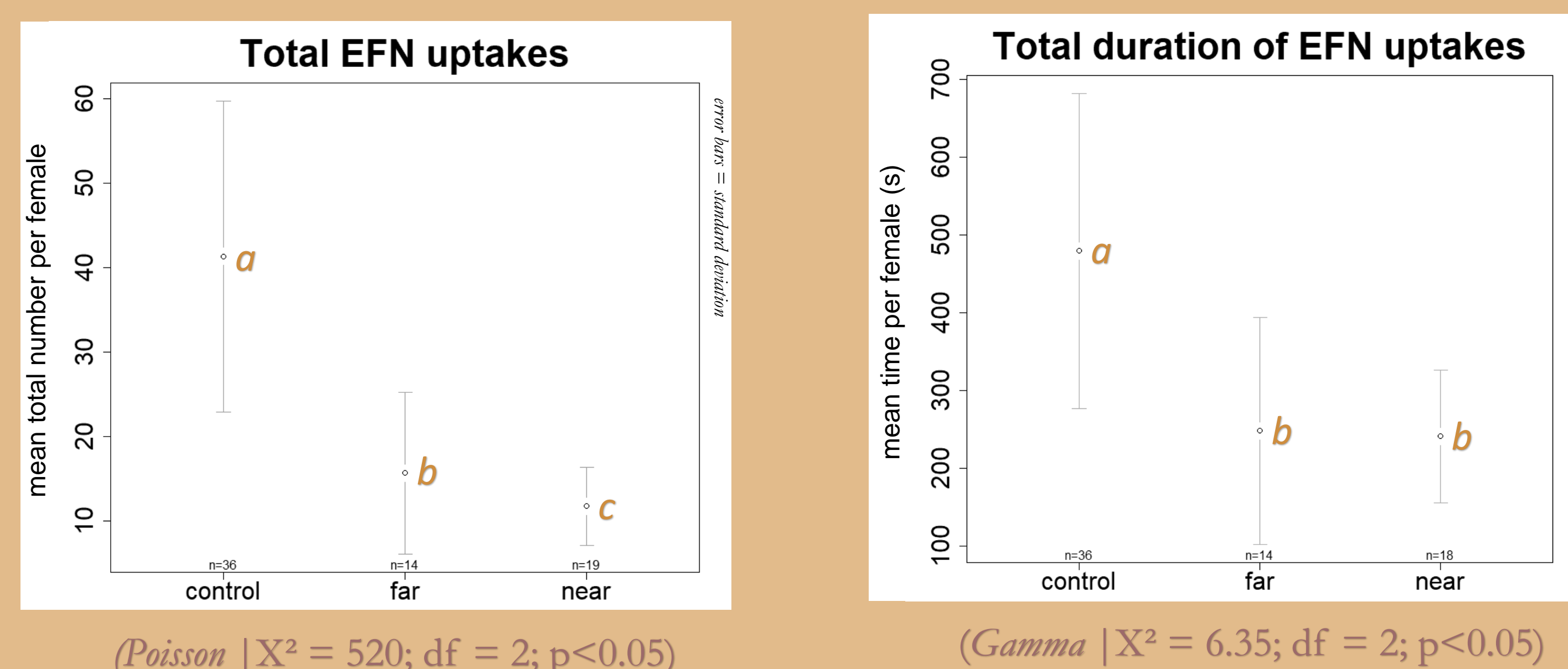
In this study, we investigated the effect of host availability and host-nectar distance on the feeding frequency of *Aphidius ervi* [Hymenoptera: Braconidae] females, by video recording.

MATERIALS & METHODS



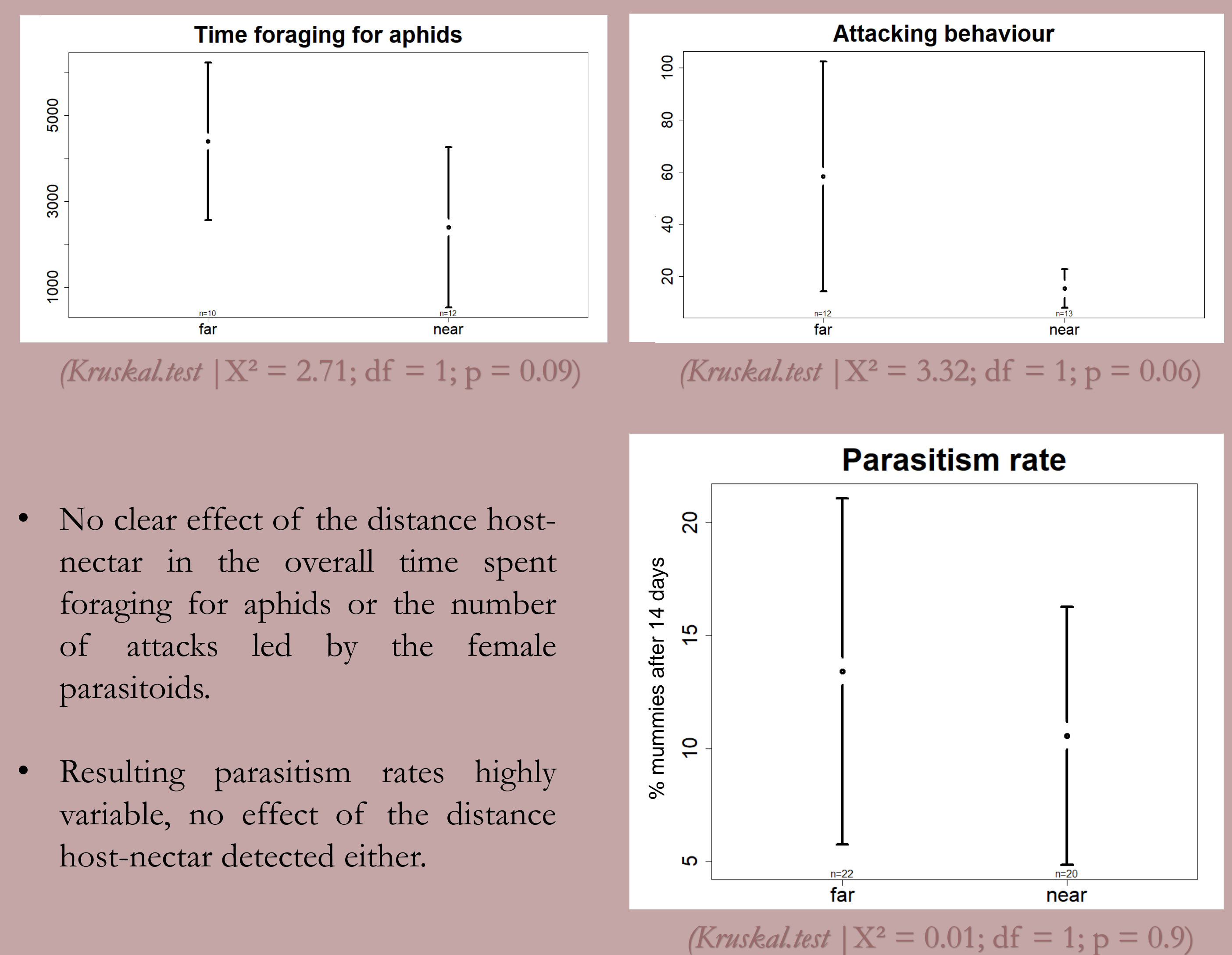
RESULTS

❖ Feeding activity



- In the absence of their hosts, *A. ervi* females tended to feed on EFN more often than when *S. avenae* aphids were present. It also resulted in a longer total duration of the uptakes.
- When aphids were close, females fed less often than when aphids were further away.

❖ Parasitism activity



- No clear effect of the distance host-nectar in the overall time spent foraging for aphids or the number of attacks led by the female parasitoids.
- Resulting parasitism rates highly variable, no effect of the distance host-nectar detected either.

- In the absence of hosts, EFN uptakes as well as the number of feeding females tended to occur at two periods of time in daylight: a large period in the morning, and a shorter period late in the evening.
- Parasitoids never fed in the darkness.
- When hosts were present, either near or far from the EFN source, female parasitoids showed only one feeding uptake period, in the morning.

CONCLUSION

- Parasitoid females tended to feed at only one period of the day, rather early, when in the presence of both extrafloral nectar and aphid hosts. Results suggest that the presence of their hosts reduced the overall time that they spent feeding.
- No effect of the distance host-nectar on the daily feeding times nor on the parasitism activity of *Aphidius ervi* females was demonstrated in this experiment.

References

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- [2] Sirot, E.; Bernstein, C. Time Sharing between Host Searching and Food Searching in Parasitoids: State-Dependent Optimal Strategies. *Behavioral Ecology* **1996**, *7*, 189–194, doi:[10.1093/beheco/7.2.189](https://doi.org/10.1093/beheco/7.2.189).