



Optimisation of rearing *Transeius montdorensis* under laboratory conditions



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Why *Transeius montdorensis*?

A commercial beneficial agent for pest control in global agricultural settings

Wide range of prey

High adaptation in different environments

Sustain population at relatively high levels even at low prey or in the absence of prey

Why do we need to optimise the rearing method?

Previously



Phaseolus vulgaris



Frankliniella occidentalis



Rearing arena



T. montdorensis
eggs

> 2 weeks

Recently



Carpoglyphus lactis



Frozen *C. lactis*
eggs



T. montdorensis
eggs

< 1 week

Why frozen *C. lactis* eggs is a potential candidate?

Systematic and Applied Acarology

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Development and reproduction of four predatory mites (Parasitiformes: Phytoseiidae) feeding on the spider mites *Tetranychus evansi* and *T. urticae* (Trombidiformes: Tetranychidae) and the dried fruit mite *Carpoglyphus lactis* (Sarcoptiformes: Carpoglyphidae)

Original Articles

Emerging risk of infestation and contamination of dried fruits by mites in the Czech Republic

Jan Hubert ✉ Tomas Erban, Marta Nesvorna & Václav Stejskal
Pages 1129-1135 | Received 08 Feb 2011, Accepted 21 Apr 2011, Published online: 27 Jul 2011

The potential of highly nutritious frozen stages of *Tyrophagus putrescentiae* as a supplemental food source for the predatory mite *Amblyseius swirskii*

Fatemeh Pirayeshfar, Seyed Ali Safavi, Hamid Reza Sarraf Moayeri & Gerben J. Messelink ✉
Pages 403-417 | Received 11 Jul 2019, Accepted 23 Jan 2020, Published online: 06 Feb 2020

Pollen Provisioning Enhances the Performance of *Amblydromalus limonicus* on an Unsuitable Prey

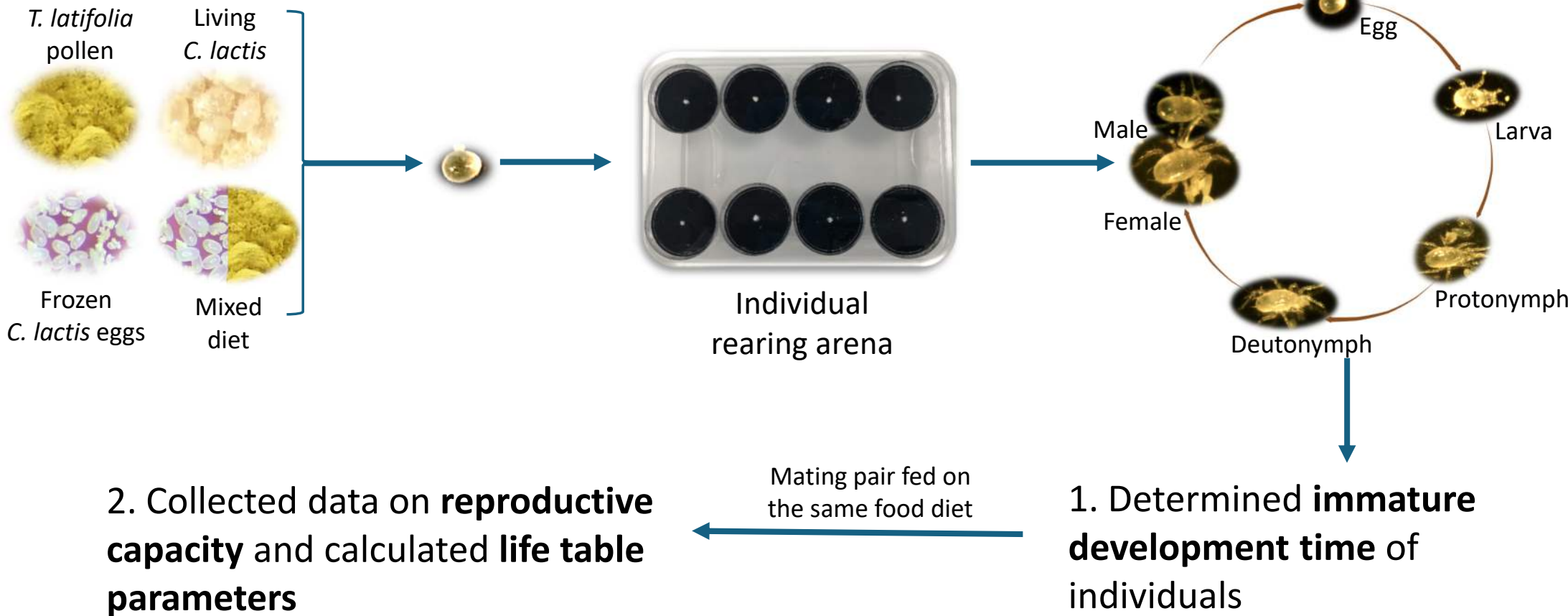
 Konstantinos Samaras  Maria L. Pappas  Evangelos Fytas  George D. Broufas*

Laboratory of Agricultural Entomology and Zoology, Department of Agricultural Development, Democritus University of Thrace, Orestiada, Greece

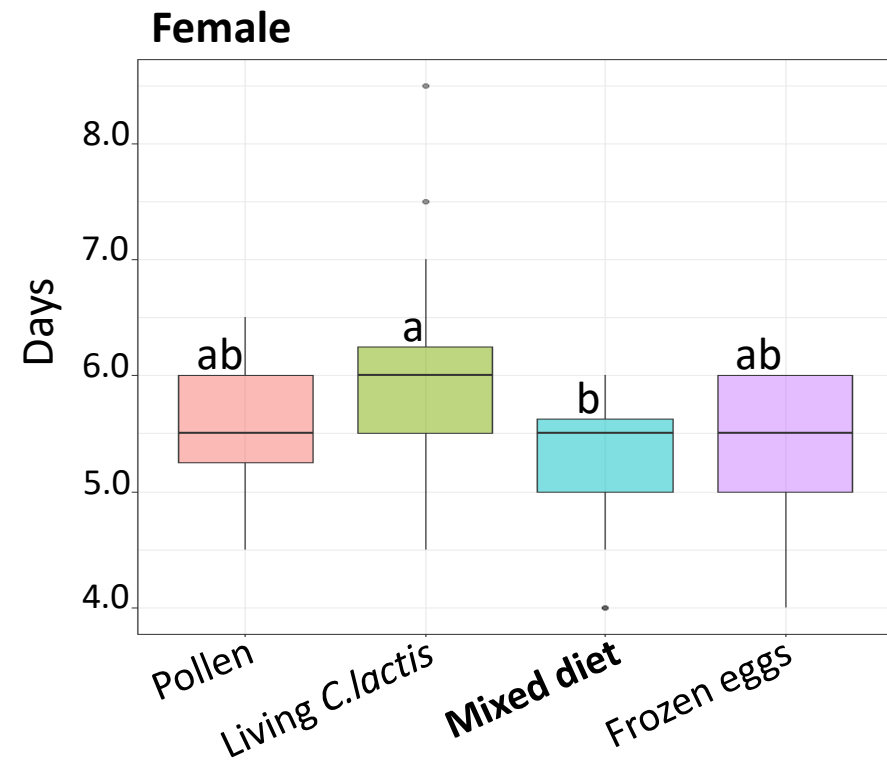
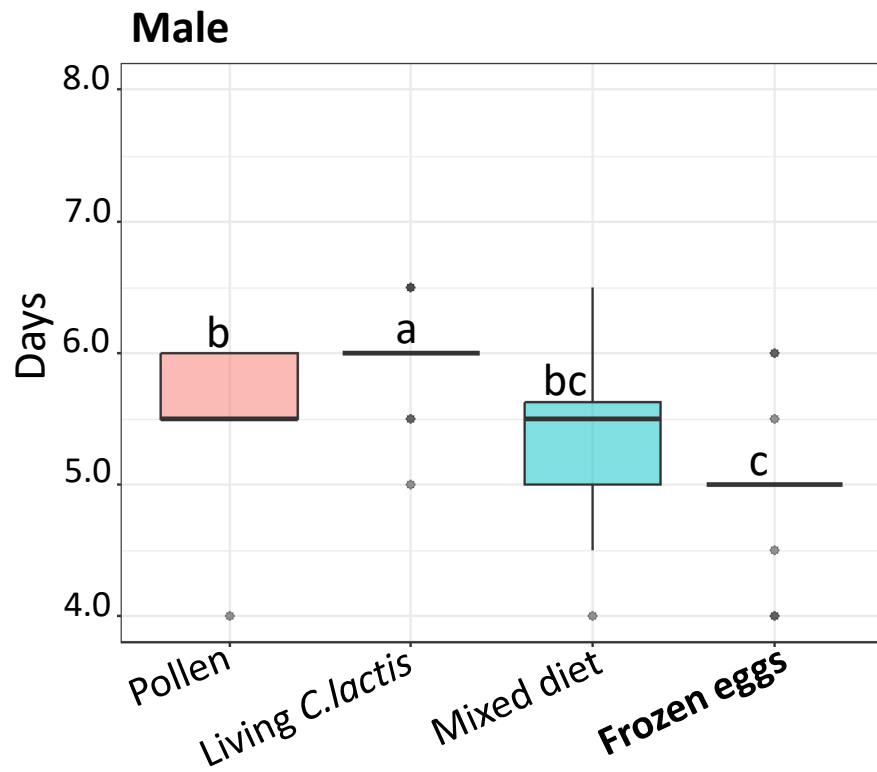
Research gap: No studies have examined the impact of frozen factitious food alone or mixed with pollen on *T. montdorensis*

Research's aim: To characterise the advantages of frozen *C. lactis* eggs alone or mix with *T. latifolia* pollen for rearing *T. montdorensis* under laboratory conditions.

Experimental design

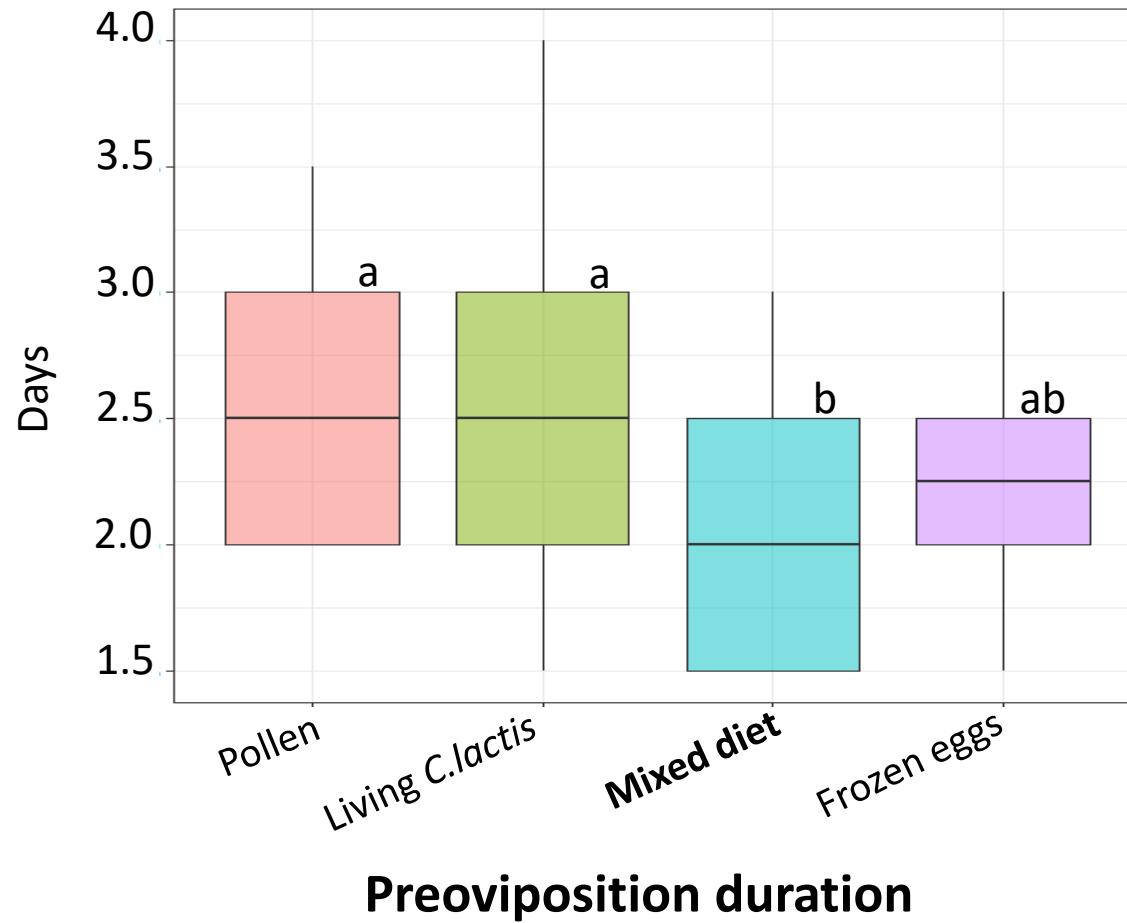


Results

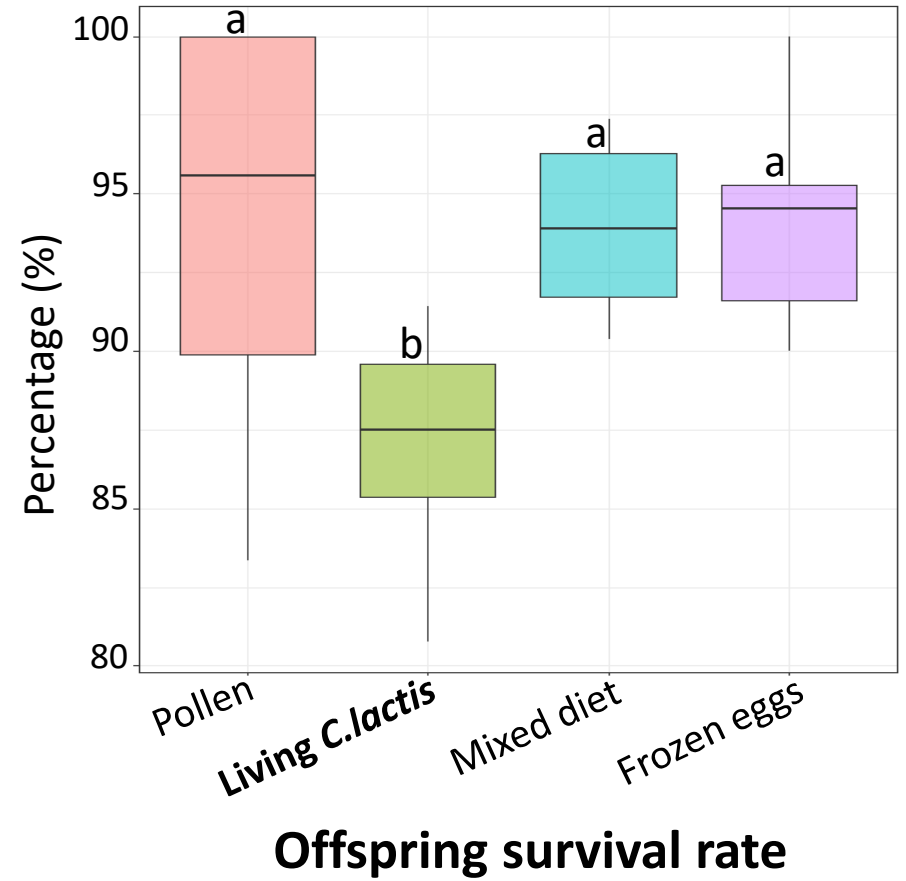
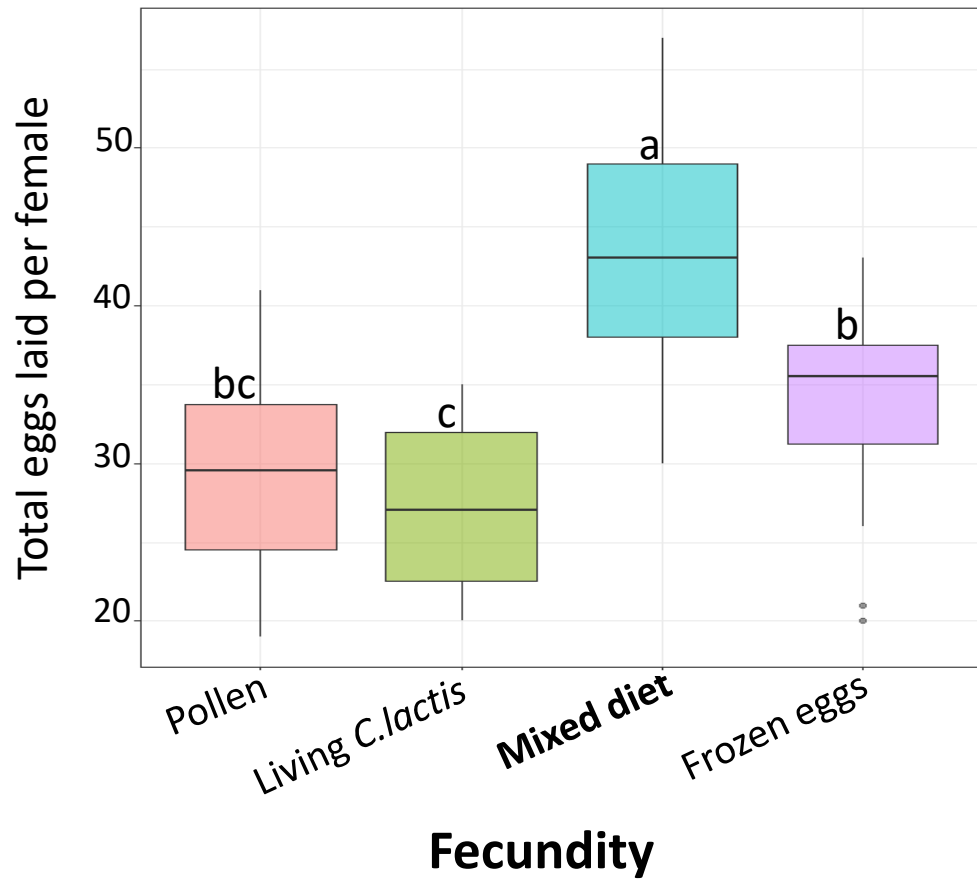


Immature development time of *T. montdorensis*

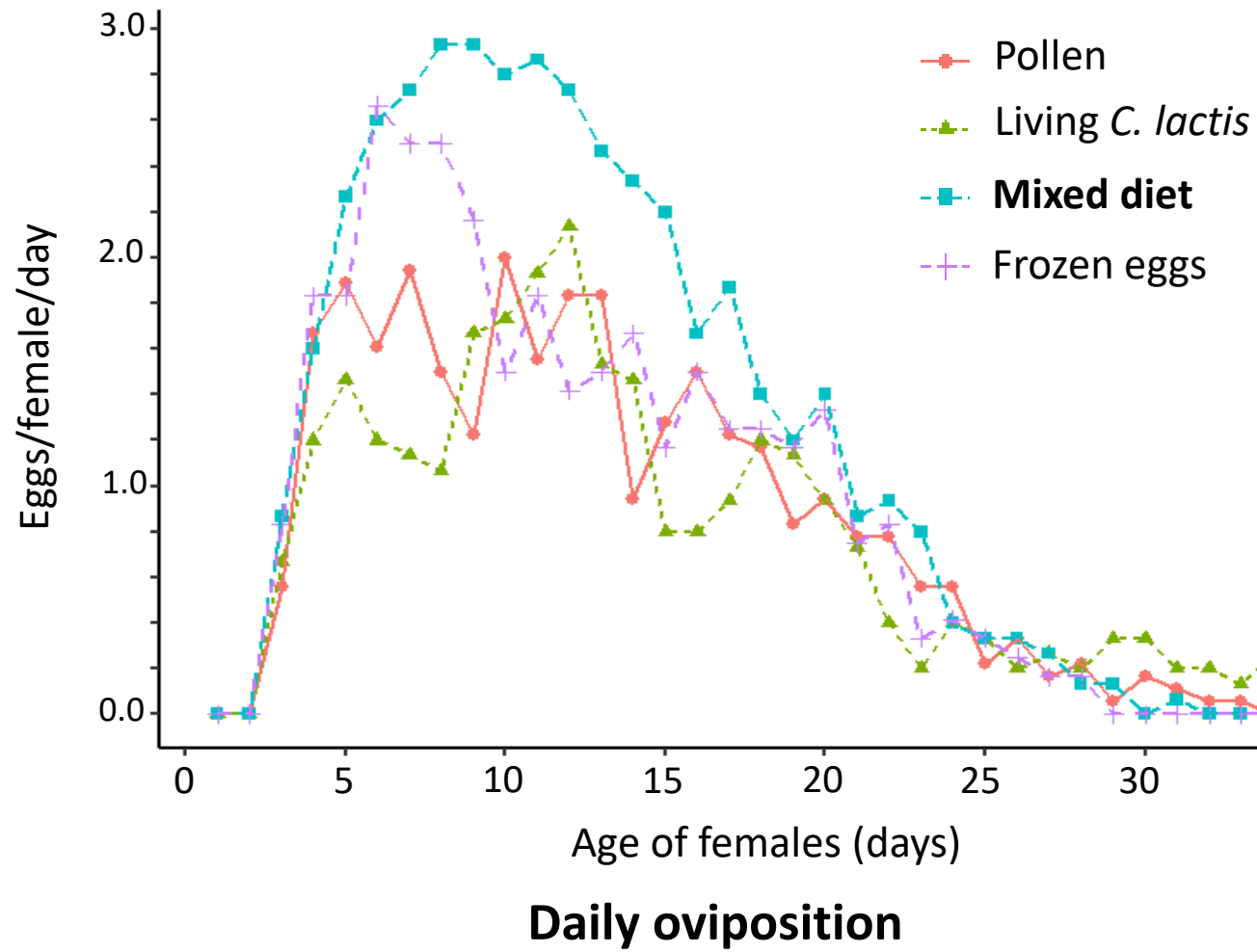
Results



Results



Results



Results

Life table parameters

Parameters	Pollen	Living <i>C. lactis</i>	<i>Mixed diet</i>	Frozen eggs
Net reproductive rate R_0 (females/female)	17.50 ± 0.07b	10.85 ± 0.10c	26.50 ± 0.13a	18.41 ± 0.17ab
Generation time T_c (days)	11.96 ± 0.02b	12.79 ± 0.05a	12.03 ± 0.02b	11.47 ± 0.04c
Intrinsic rate of increase r_m (females/female/day)	0.36 ± 0.01a	0.26 ± 0.01b	0.41 ± 0.02a	0.38 ± 0.02a

Conclusions and perspective

1. Our results highlight the superiority of a mixed diet of frozen *C.lactis* eggs and *T. latifolia* pollen in rearing *T. montdorensis* under laboratory conditions.

2. This method effectively supports mass-rearing of *T. montdorensis* while reducing contamination and infestation risks from live *C. lactis*.

3. Extending this study to other predatory mites could provide broader implications for biological control strategies across different agricultural contexts.

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