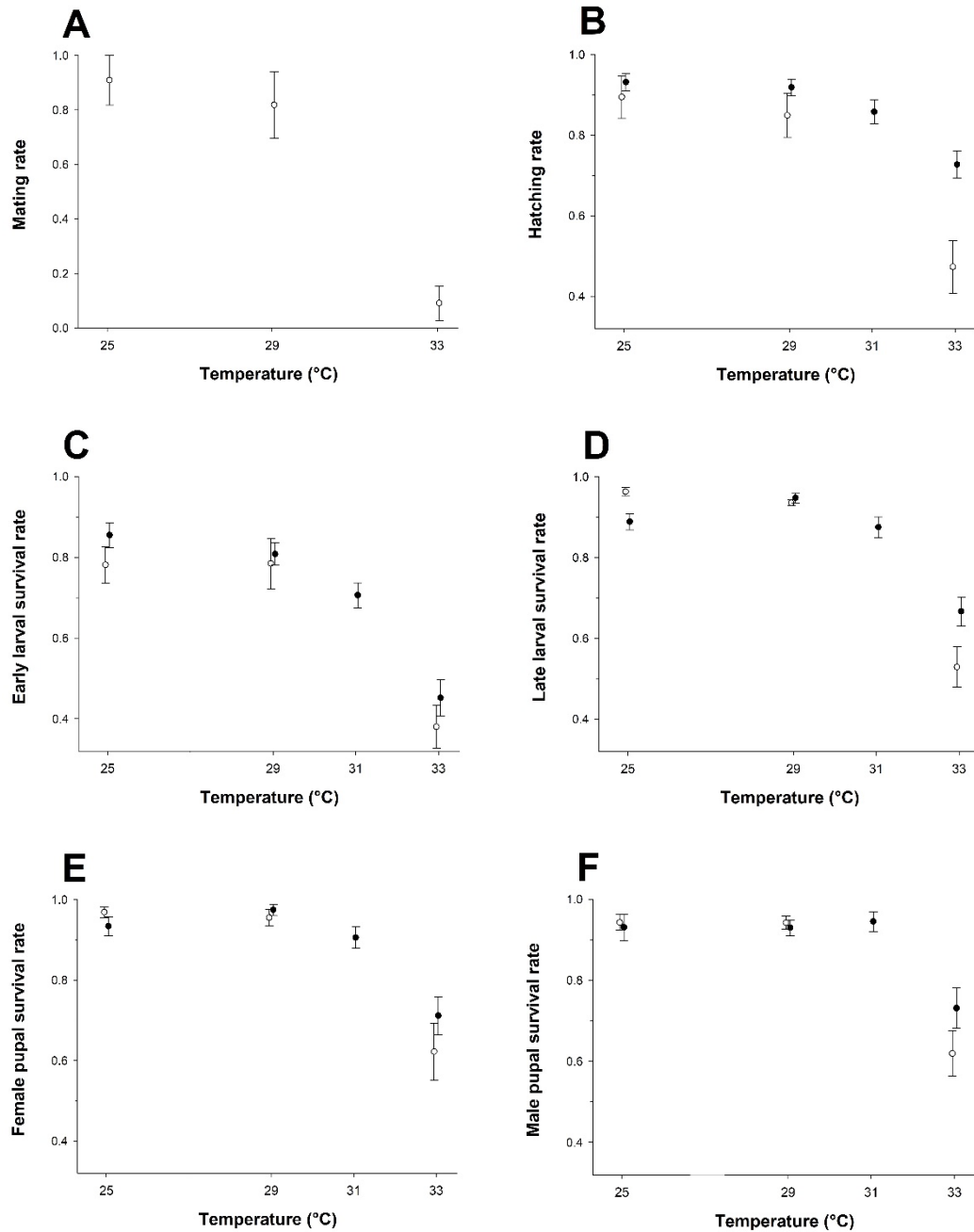


SUPPLEMENTARY INFORMATION for

The effect of developmental temperature on olfaction in a moth revealed by its interaction with body mass

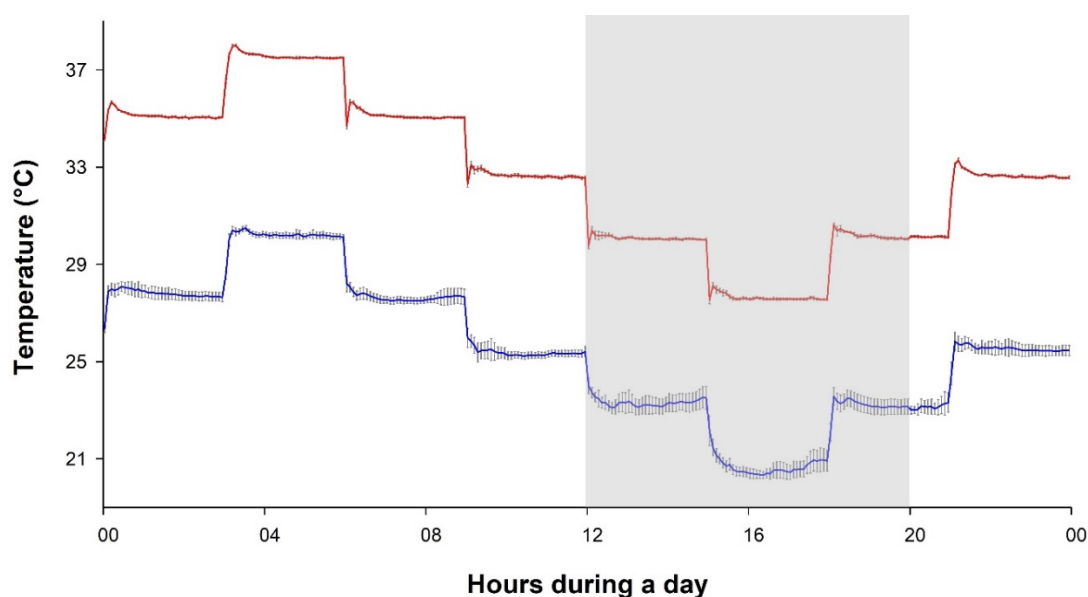


Supplementary Figure 1. Influence of mean developmental temperature (daily fluctuating temperature of $\pm 5^{\circ}\text{C}$) on reproduction and survival of *S. littoralis*. **A:** Mating rate, **B:** hatching rate of eggs, **C:** early larval survival rate between the 1st and 4th larval instars, **D:** late larval survival rate between the 4th larval instar and pupation, **E:** female pupal survival rate, **F:** male pupal survival rate. Vertical lines are s.e.m. between experimental clutches. Full circles are estimates from Bagni 2022, and open circles are estimates from Bagni et al. 2024.

References

Bagni, T. (2022). Influence combinée de la température et de pesticides sur le développement et la communication chimique chez le ravageur de culture *Spodoptera littoralis*. *PhD thesis* (Sorbonne Université, Paris).

Bagni, T. et al. (2024). Fitness under high temperatures is overestimated when daily thermal fluctuation is ignored. *Journal of Thermal Biology* **119**, 103806.



Supplementary Figure 2. The experimental temperatures measured in environmental test chambers. Temperatures were fixed at $25 \pm 5^\circ\text{C}$ (blue) and $33 \pm 5^\circ\text{C}$ (red). Mean values and 95% confidence intervals (vertical bars) were estimated over 24h of measurements performed each five minutes during three weeks using Vaisala HMP110 Temperature probes. For logistic reasons to study the nocturnal moth *S. littoralis*, the scotophase (grey area of the figure) of the 16/8 light/dark cycle was fixed from 12 to 20h.

Supplementary Table 1. List of odorants tested for EAG recordings.

Name	CAS number	Chemical class	Provider	Purity
(Z,E)-9,11-14:OAc	50767-79-8	Esters	Synthesized at the laboratory	94 %
Benzyl alcohol	100-51-6	Aromatics	Prolabo	98 %
(±)-linalool	78-70-6	Terpenes	Merck - Sigma-Aldrich	97 %
(Z)-3-hexenol	928-96-1	Alcohols	Merck - Sigma-Aldrich	98 %
Nonanal	124-19-6	Aldehydes	Merck - Sigma-Aldrich	95 %
(Z)-3-hexenyl acetate	3681-71-8	Esters	Merck - Sigma-Aldrich	≥98 %