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DOI

[10.1007/s00442-017-4000-7](https://doi.org/10.1007/s00442-017-4000-7)

Publication date

2018

Document Version

Other version

Published in

Oecologia

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[Link to publication](#)

Citation for published version (APA):

Zhang, N. X., Messelink, G. J., Alba, J. M., Schuurink, R. C., Kant, M. R., & Janssen, A. (2018). Phytophagy of omnivorous predator *Macrolophus pygmaeus* affects performance of herbivores through induced plant defences. *Oecologia*, *186*(1), 101-113. Advance online publication. <https://doi.org/10.1007/s00442-017-4000-7>

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Supplementary Materials for

Phytophagy of omnivorous predator *Macrolophus pygmaeus* affects performance of herbivores
through induced plant defences

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Supplementary Data Description

Supplementary Results Spread of Rhodamine-B through sweet pepper plants

Supplementary Table S1 Parameters used for detection of phytohormones and related compounds
with LC-MS/MS

Supplementary Figure S1 Presence of Rhodamine-B in sweet pepper leaves 3, 5 and 6 after 4h, 24h,
and 48h.

Supplementary References

Supplementary Results

Spread of Rhodamine-B through sweet pepper plants

After 4h, Rhodamine-B was observed in half of leaf 5 and 6, but not in leaf 3 (Figure S1), suggesting that half of the leaves 5 and 6 were connected with leaf 4 through vascular bundles, but leaf 3 was not directly connected. Subsequently, the Rhodamine-B also accumulated in the other halves of leaf 5 and 6 after 24 h (Figure S1). After 48h, it was visible in leaf 3 and both sides of leaves 5 and 6.

Table S1 Parameters used for detection of phytohormones and related compounds with LC-MS/MS

Compound	Capillary	Molecular	Fragment	CE ² (V)	Reference
	CID ¹ (V)	ion [M-H] (<i>m/z</i>)	ion (<i>m/z</i>)		
OPDA	-35	291	165	18	(Koo et al. 2009)
JA	-35	209	59	12	(Wu et al. 2007)
D₅-JA (IS)	-35	213	61	12	(Alba et al. 2015)
JA-Ile	-35	322	130	19	(Wu et al. 2007)
SA	-35	137	93	15	(Wu et al. 2007)
D₆-SA (IS)	-35	141	97	15	(Alba et al. 2015)
ABA	-35	263	153	9.0	(Bonaventure et al. 2011)
D₆-ABA (IS)	-35	269	159	9.0	(Bonaventure et al. 2011)

¹collision-induced dissociation; ²collision energy; IS = internal standard.

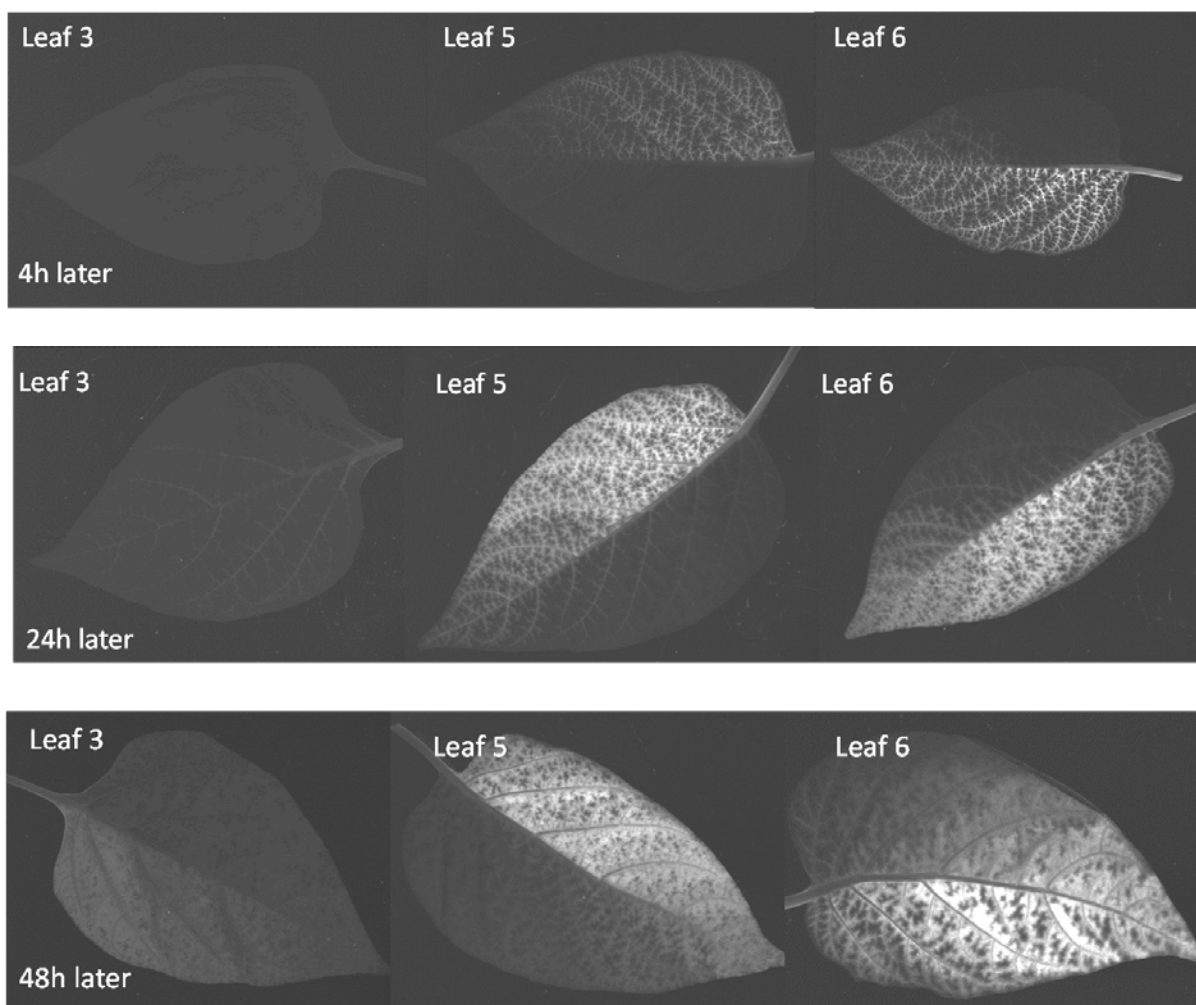


Fig. S1 Presence of Rhodamine-B in sweet pepper leaves 3, 5 and 6 after 4h, 24h, and 48h. Rhodamine-B was applied to the main vein and petiole of leaf 4

Supplementary References

Alba JM, Schimmel BCJ, Glas JJ, et al (2015) Spider mites suppress tomato defenses downstream of jasmonate and salicylate independently of hormonal crosstalk. *New Phytol* 205:828–840

Bonaventure G, VanDoorn A, Baldwin IT (2011) Herbivore-associated elicitors: FAC signaling and metabolism. *Trends Plant Sci* 16:294–299

Koo AJK, Gao X, Daniel Jones A, Howe GA (2009) A rapid wound signal activates the systemic synthesis of bioactive jasmonates in *Arabidopsis*. *Plant J* 59:974–986

Wu J, Hettenhausen C, Meldau S, Baldwin IT (2007) Herbivory rapidly activates MAPK signaling in attacked and unattacked leaf regions but not between leaves of *Nicotiana attenuata*. *Plant Cell* 19:1096–1