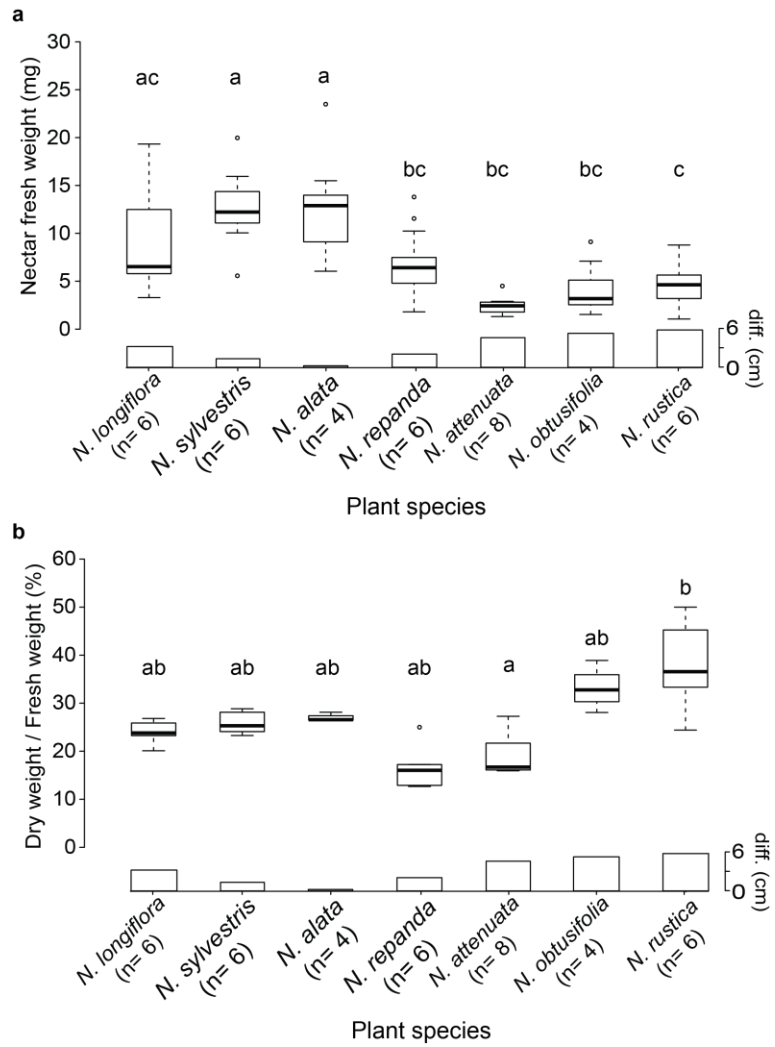


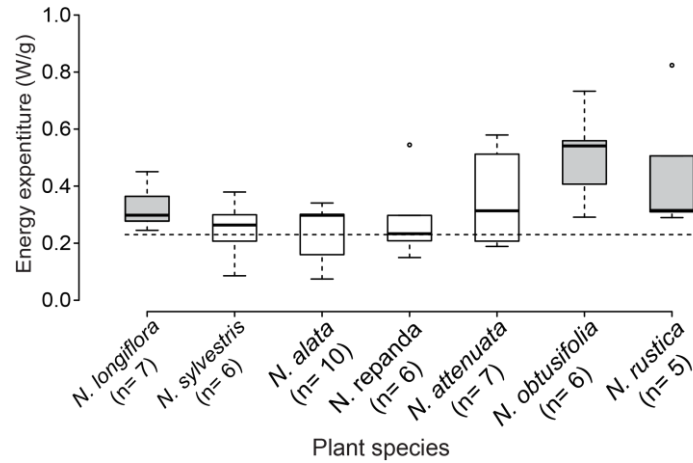
**Supplementary Figure 1 | Physiological response of *Manduca* towards volatiles from the tested *Nicotiana* species.**

Traces show representative FID traces (blue) and corresponding EAD responses (yellow) for every flower species. Numbers depict the following compounds: 1: 2 and 3- Methylbutyl aldoxime; 2: Eucalyptol; 3: Benzyl alcohol; 4: Benzeneacetaldehyde; 5: Linalool; 6: Phenylethyl alcohol; 7: Unknown; 8: Methylsalicylate; 9: Geraniol; 10: 4-Methylbenzaldehyde; 11: Eugenol; 12: Isoeugenol. Each compound was verified by coelution with a synthetic standard.



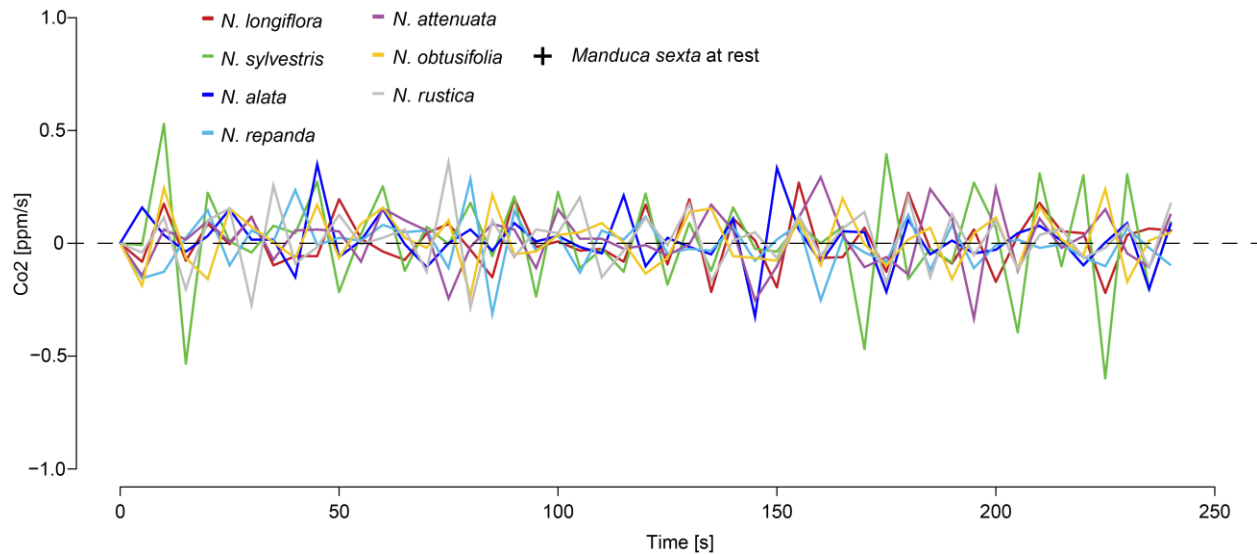
**Supplementary Figure 2 | Nectar amount and dry by fresh weight ratio of different *Nicotiana* species.**

(a) Boxplot shows total amount of nectar (mg) per flower provided by the different plant species. Letters indicate significant differences ( $P < 0.05$ ) according to Kruskal- Wallis test ( $P < 0.0001$ ) followed by Wilcoxon rank sum test with Holm correction for multiple comparisons. Black points indicate outliers. (b) Dry weight by fresh weight ratio shown as boxplot for the tested *Nicotiana* species. Letters indicate significant differences ( $P < 0.05$ ) according to Kruskal-Wallis test ( $P < 0.0001$ ) followed by Wilcoxon rank sum test with Holm correction for multiple comparisons. Circles indicate outliers.



### Supplementary Figure 3 | Energy expenditure during foraging

Boxplot indicates energy expenditure (W/g) for *Manduca sexta* foraging on different *Nicotiana* species. Dotted line indicates energy expenditure hovering *Manduca* without flower contact<sup>1</sup>. Grey colour indicates energy expenditures significantly greater ( $P < 0.05$ ) than those of hovering moth without flower contact according to Wilcoxon rank sum test. Circles indicate outliers.



**Supplementary Figure 4 | Single flowers and resting moth did not result in a detectable CO<sub>2</sub> emission rate.** Different lines represent CO<sub>2</sub> emission rates [ppm/s] of single flowers and a moth at rest simultaneously enclosed in the respiration chamber for 4 min.

### Supplementary References

1. Casey, T. M. Flight energetics of sphinx moths: power input during hovering flight. *J. Exp. Biol.* **64**, 529–543 (1976).