

Table S1. Summary of General Linear Model statistics for all measured and calculated parameters in Figs 2 to 4.

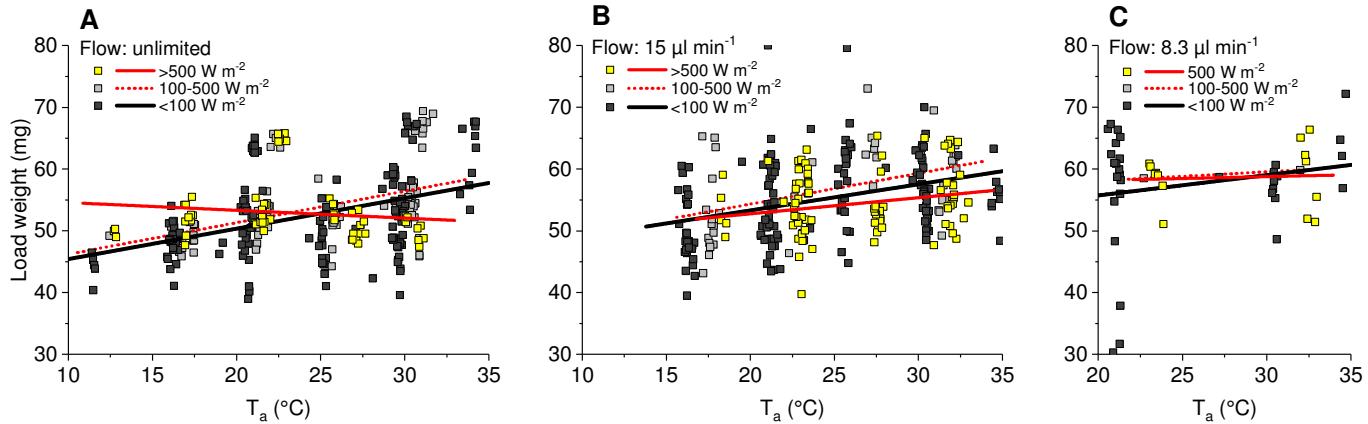
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Table S2. Constants and statistics for regression functions in Figs 2 to 5.

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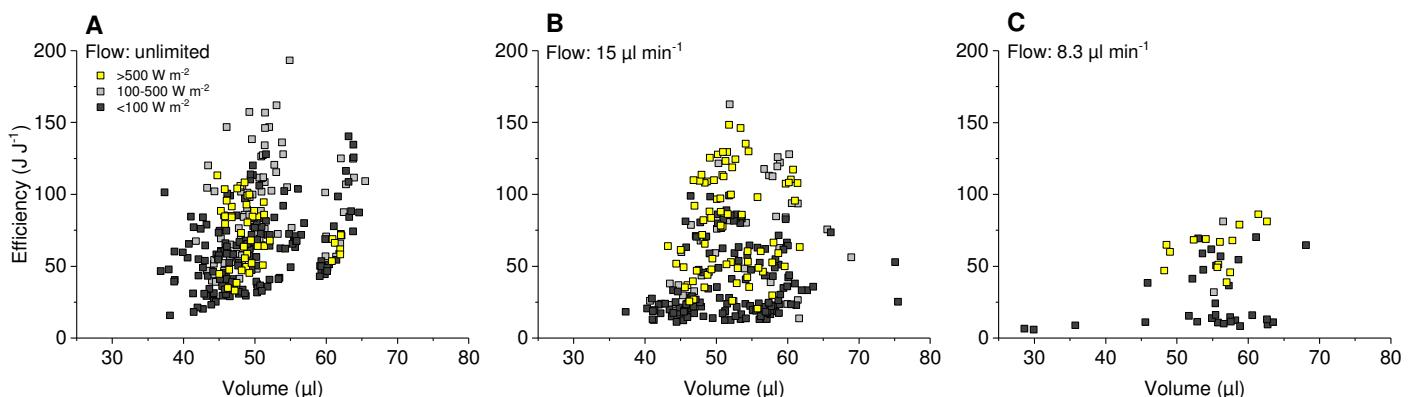
Table S3. Summary of ANOVA statistics for comparison between radiation categories (bright sunshine and shade) of all measured and calculated parameters in Figs 2 to 5 (y-axes) in dependence on ambient temperature (Ta, x-axes), at different reward conditions.

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**Supplementary Figure S1.** Load weight of wasps foraging sucrose solution (0.5 M) in shade (black/filled symbols) and in sunshine (yellow and grey symbols) at different reward rates (A-C) in relation to ambient temperature ( $T_a$ ).

$T_a$  = ambient air temperature near the wasps in the measurement chamber. N=295 unlimited flow rate, N=255 limited flow of  $15 \mu\text{l min}^{-1}$ , N=48 limited flow of  $8.3 \mu\text{l min}^{-1}$ . For constants of fit curves and statistics see Table S1.



**Supplementary Figure S2.** Energy efficiency (gain-costs/costs [ $\text{J J}^{-1}$ ]) of wasps foraging sucrose solution (0.5 M) in shade (black/filled symbols) and in sunshine (yellow and grey symbols) at different reward rates (A-C) in relation to ingested sucrose solution volume. N=295 unlimited flow rate, N=255 limited flow of  $15 \mu\text{l min}^{-1}$ , N=48 limited flow of  $8.3 \mu\text{l min}^{-1}$ .