Supplementary Online Material

Insights into differential activity patterns of Drosophilids under semi-natural conditions

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Running title: *Activity/rest rhythm in nature.*

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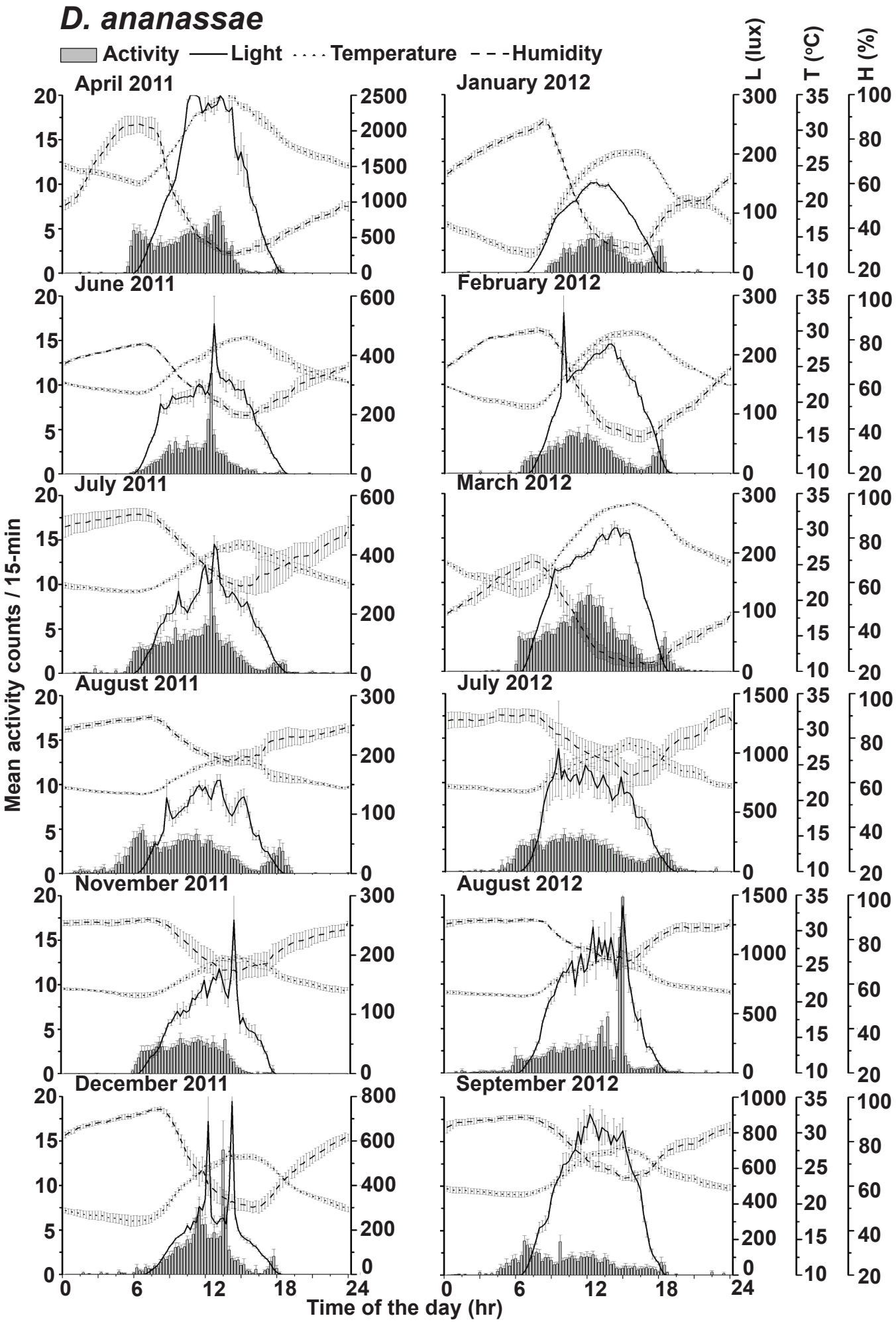

Figure S1. D. ananassae restricted most of its activity during light phase across different seasons. Average activity/rest profiles of virgin male flies *D. ananassae* (DA) across different assays in semi-natural condition. Mean activity counts, in 15-min bins (±SEM) averaged across flies over 6-days is plotted along with environmental factors L-light (solid curve), T-temperature (dotted curve) and H-humidity (dashed curve) whose values were averaged across 6-days.

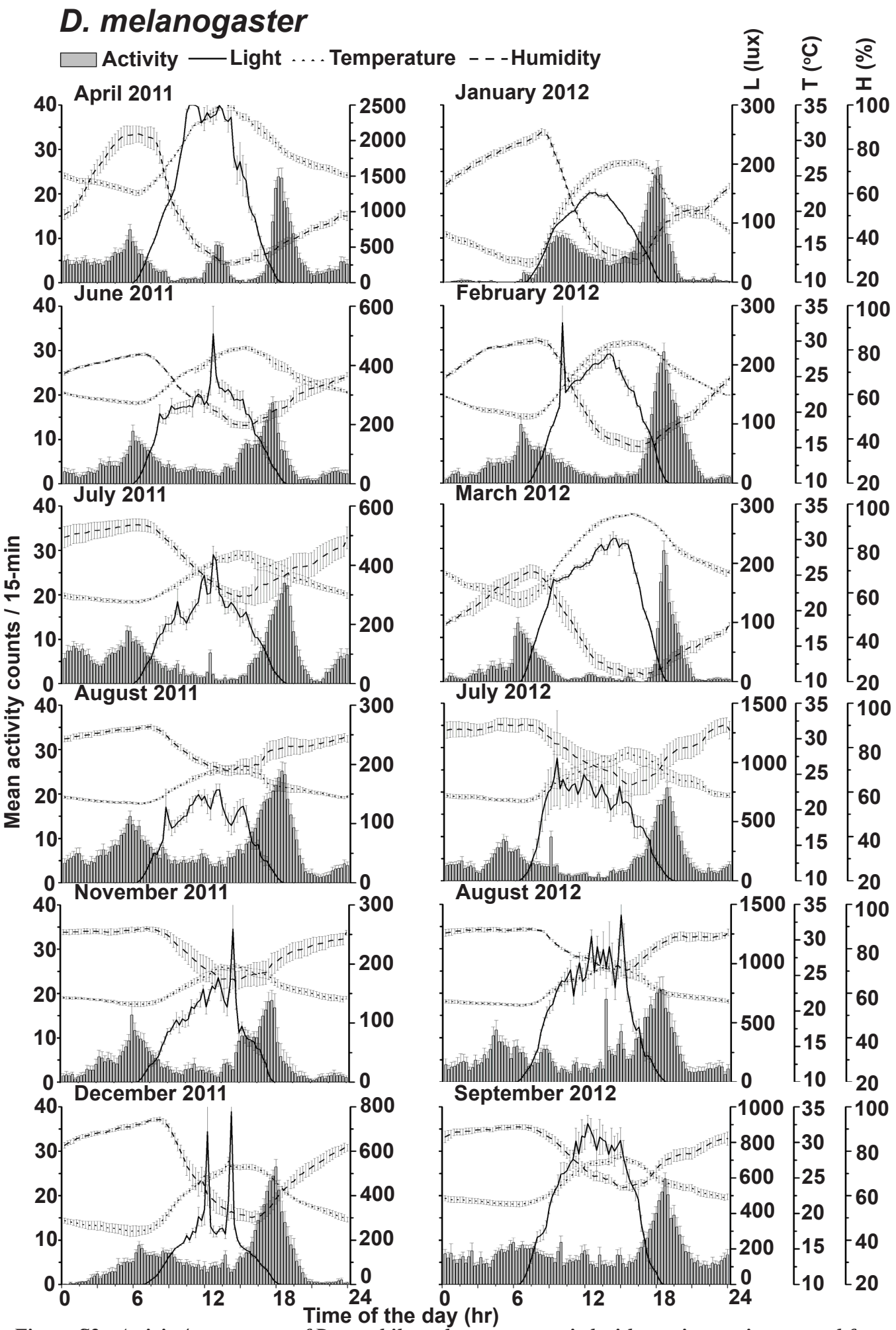

Figure S2. Activity/rest pattern of Drosophila melanogaster varied with varying environmental factors across different seasons. Average activity/rest profiles of virgin male flies *D.melanogaster* (DM) across different assays in semi-natural condition. All other details are the same as Fig. S1.

Prabhakaran and Sheeba, Figure S2

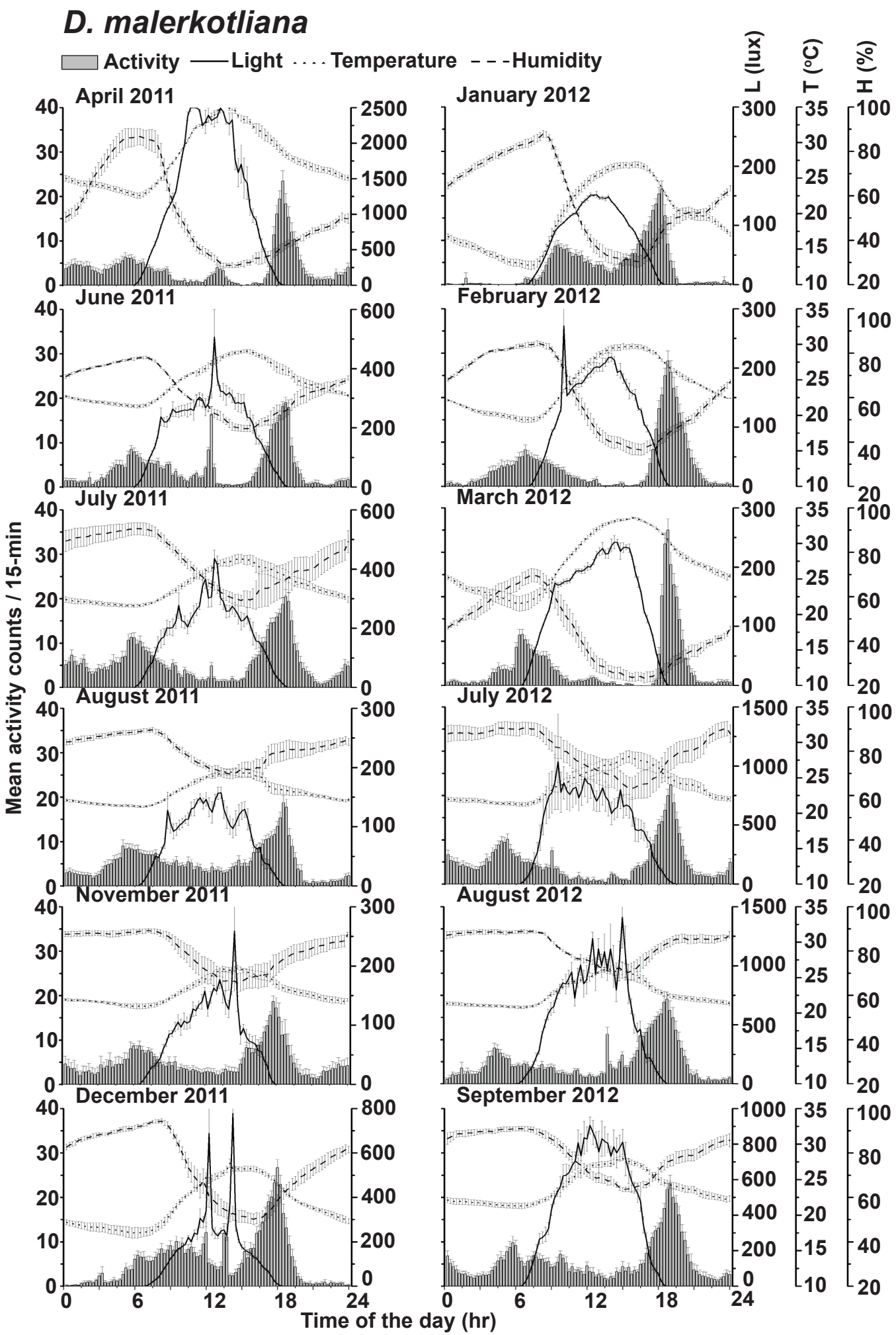

Figure S3. D. malerkotliana exhibited almost similar activity/rest pattern as that of DM across different seasons. Average activity/rest profiles of virgin male flies *D.malerkotliana* (DK) across different assays in semi-natural condition. All other details are the same as Fig. S1.

Z. indianus

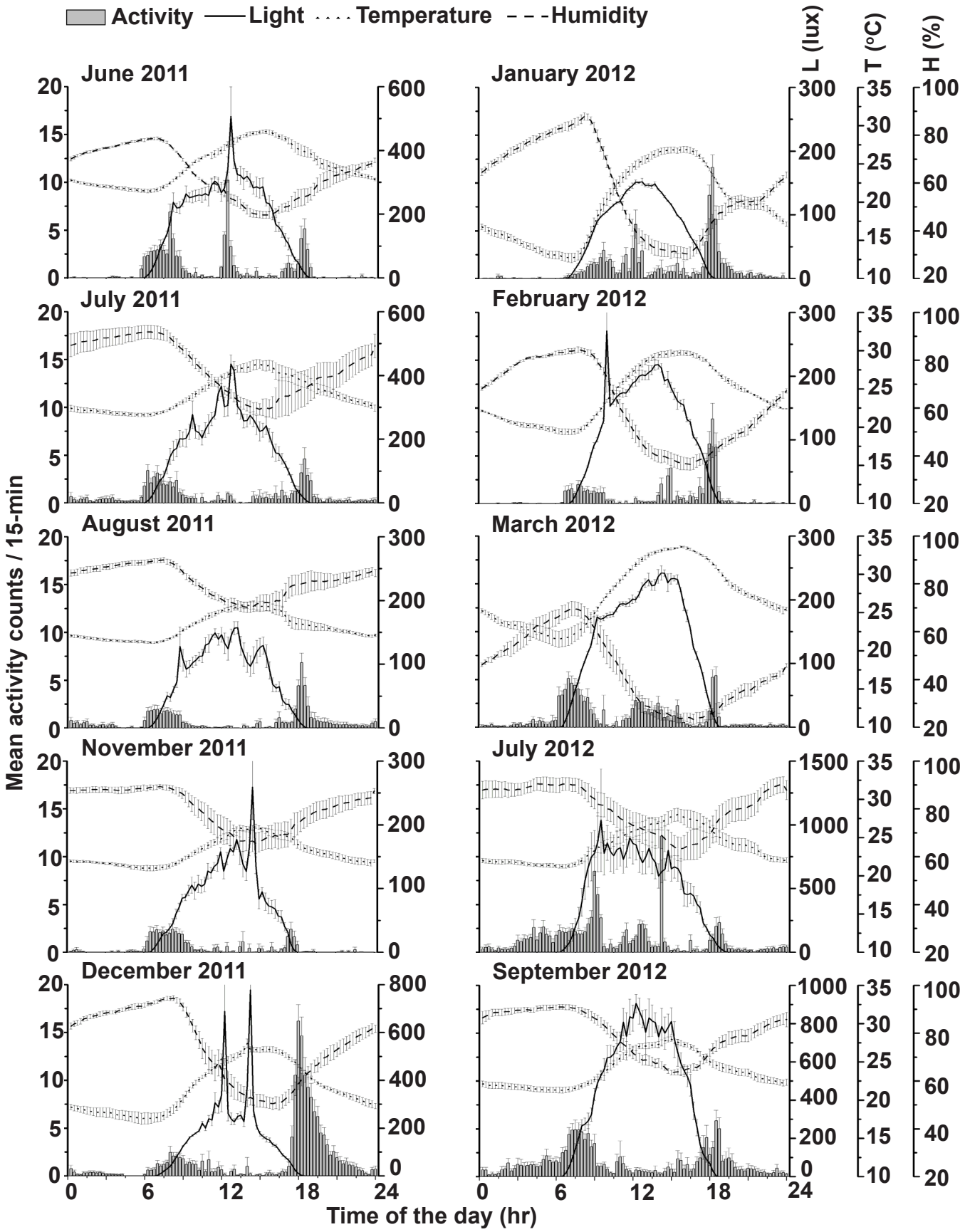

Figure S4. Z. indianus showed variation in its activity/ rest pattern across different seasons even though its activity levels were low compared to DM. Average activity/rest profiles of virgin male flies *Z. indianus* (ZI) across assays in semi-natural condition. All other details are the same as Fig. S1.

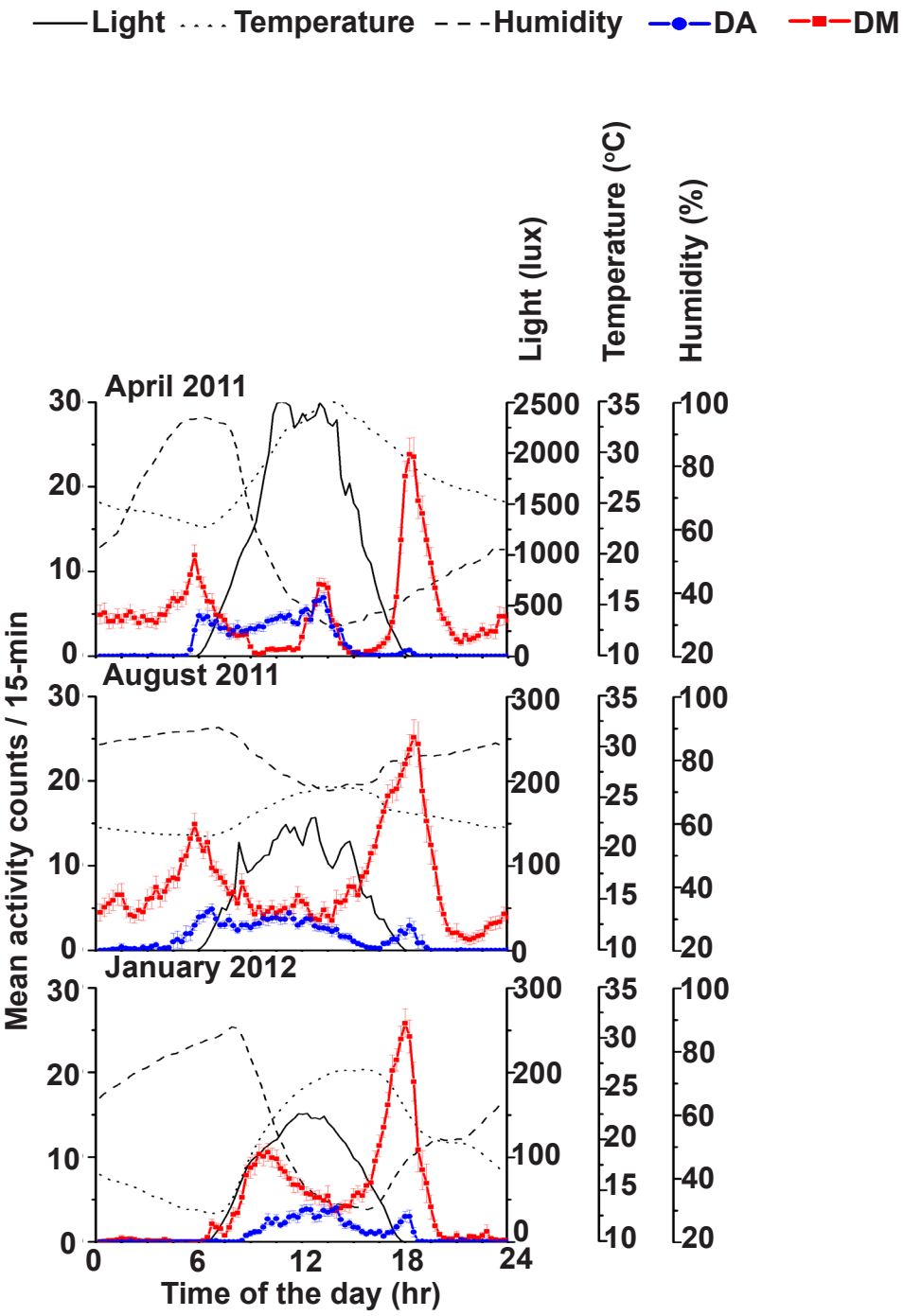

Figure S5. Divergence in activity/ rest pattern between DM and DA. Average activity/rest profiles of virgin male flies DA (blue) and DM (red) under warm dry days of April 2011 or cold dry days of January 2012 to the mild and least varying August 2011. Mean activity counts, in 15-min bins (±SEM) averaged across 6-days is plotted along with environmental factors light (solid curve), temperature (dotted curve) and humidity (dashed curve) whose values were averaged across 6-days.

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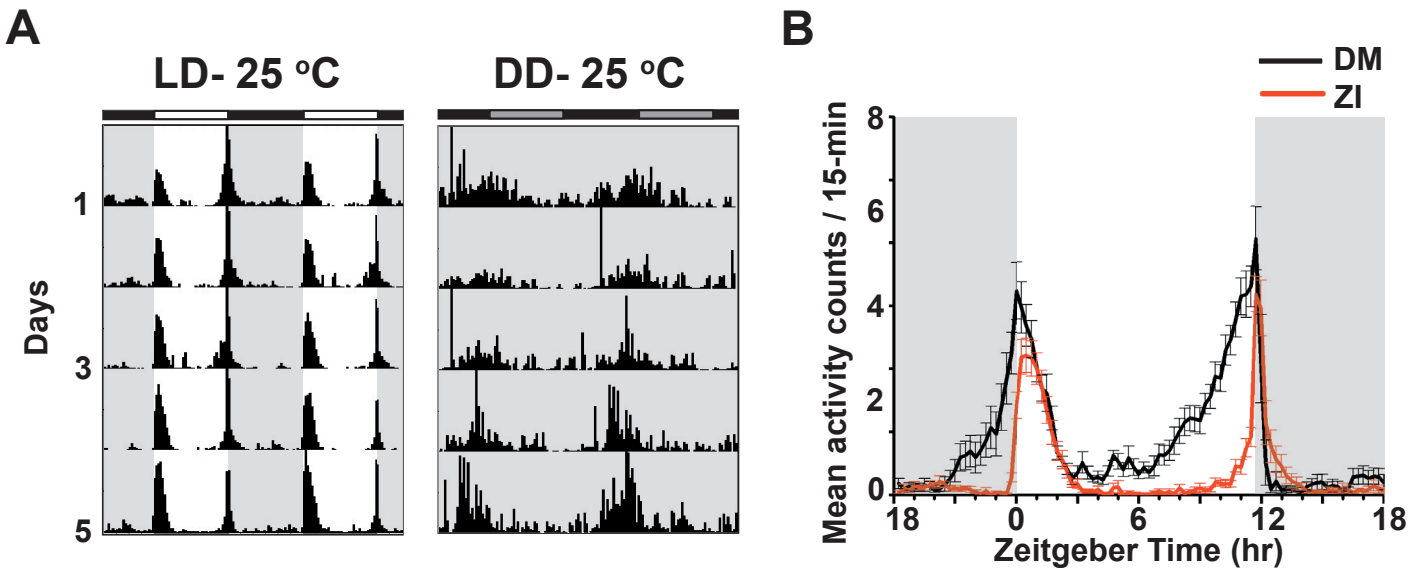

Figure S6. ZI showed bimodal activity pattern under LD12:12 and poor rhythmicity under constant darkness (DD). **(A)** Average double plotted actograms of male ZI under LD12:12 at 25 °C (left) and DD (right). The x-axis represents time of day from 0-48 hr, consecutive days are plotted along y-axis. **(B)** Raw Activity counts (15-min bin) averaged across 5 days for both DM and ZI virgin male flies (mean ± SEM). Grey shaded areas in actograms represent darkness.

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