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Effect of temperature on *Diorhabda elongata* growth and mortality

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Diorhabda elongata after their release in various locations has been slowly spreading in the southwestern U.S. However, their dispersion and adaptability to different environmental conditions are not clearly known and still being investigated. We sought to investigate *D. elongata*'s growth and mortalities under various constant and variable temperature conditions by conducting laboratory experiments. In constant temperature experiment, *D. elongata* were grown at an average room temperature of 24°C, and constant 31°C in growth chambers. In variable temperature experiment, they were grown in 24 hour cycle fluctuating temperature ranging from 25°C to 40°C with a mean of 31°C. The photoperiod setting for all the experiments was 16: 8 (L: D) to prevent *D. elongata* from going into diapause. Growth was estimated by counting number of days between their life stages (egg incubation, 1st, 2nd and 3rd instars, pupation and reproductive stage) and by measuring their body weight at the beginning of each stage. Mortality was recorded daily. The results suggested that temperature affects the development time as well as size of *D. elongata* at each stage. *D. elongata* kept at 31°C constant temperature took the shortest time to reach adult eclosion from egg while those at room temperature took the longest. However *D. elongata* grown at room temperature had the highest average individual weight. Our results also showed that the *D. elongata* kept at higher constant temperature grew faster with more body weight than those kept at higher variable temperature. Furthermore, *D. elongata* grown at higher variable temperature had higher mortality compared to other temperature treatments suggesting that temperature plays a significant role in *D. elongata*'s growth and mortality.