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Influence of Season, Temperature, and Photoperiod on Growth of the Land Snail Helix aperta

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Abstract : Growth strategies are often plastic and influenced by environmental conditions. Terrestrial gastropods are particularly affected by seasonal and climatic variables, and growth rate and size at maturity are key traits in their life history. Therefore, we investigated juvenile growth of Helix aperta snails under four combinations of temperature and photoperiod using two sets of young snails, born in the laboratory from adults collected in either the autumn (aestivating snails) or spring (active snails). Parental snails were collected from Bakaro (Northeastern Algeria). Higher temperature increased adult size and reduced time to reproduction. Long day photoperiod also increased the final body weight, but had no effect on the length of the growth period. The season of birth had significant effects on length of the growth period and weight of hatchings, whereas this weight difference disappeared by adulthood. The spring snails took less time to develop and reached similar adult body weight as the autumn snails. These differences may be due to differences in egg size or quality between the snails from different seasons. More rapid growth in spring snails results in larger snails entering aestivation, a period with size-related mortality in this species.

Keywords : growth, Hélix aperta, photoperiod, temperature
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