

Interactive effects of temperature and food availability on the Marsh Frog (*Pelophylax ridibundus*) tadpoles in Western Iran

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ABSTRACT

Knowledge of how interactions between food availability and temperature influence larval growth, development and survivorship may also be of value to amphibian conservation. In the present study, to examine the effect of temperature and food availability on larval survival, growth and development, a 2 × 2 factorial design was used. The experiment involved two rearing temperatures (20 and 27°C) and two feeding regimens (constant and stochastic food availabilities). The effects of food availability and water temperature on tadpole size were determined by measuring individual body length and photographed by Stereo microscope equipped with a digital camera. Based on our results, larval growth rate was highest at the constant food and warmer temperature (27°C) treatment, whilst larval survivorship rate was highest at the constant food and cooler temperature (20°C). Furthermore, the longest metamorphosis time was observed on constant food and temperature (20°C) whilst the shortest metamorphosis time occurred on stochastic food and temperature (27°C). These results study strongly suggest that, environmental differences in food availability and water temperature and their interactions, cause differences in growth, development and survivorship of tadpoles in marsh frog.

Key words: Constant food; Development; Growth; Metamorphosis; Stochastic food; Survivorship.