

THE ASSESSMENT OF THE METHODOLOGY FOR THE FEEDING OF THE EUROPEAN POND TURTLES (*EMYS ORBICULARIS*) JUVENILES UP TO ONE YEAR

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ABSTRACT

Lithuanian zoo participating in the Project of rearing of the European pond turtles in captivity had to prepare the methodology of the feeding European pond turtle juveniles. So it must be verify in practice. The juveniles were weighed every month and calculated the energy amounts of consumed foods and made comparison with the energy requirement.

Key words: European pond turtle, nutrition, rearing, metabolic energy

INTRODUCTION

Lithuanian zoo participates in the Project of rearing of the European pond turtles in captivity. One of the tasks of the project is to prepare methodology for the rearing this species, which includes the preparation of the methodology of the feeding juvenile. We decided to try out the mixed feeding option – to feed both the natural foods (beef, fish and other) with supplements, and the commercial food for the kitten. In prepared primary feeding methodology the requirement of foods of turtles juvenile was calculated by basic energy rate needed for growing animals by weight. The purpose of this work is to assess how a theoretical calculation of the feed requirements meets the juvenile growth rates and to set as a feeding correlate with primary methodology of feeding of the juvenile depending on their weight and their life cycles.

METHODS

The requirements of metabolic energy of juvenile turtles calculated using the formula: $BMR = 0.32W^{0.77} \cdot 2.5$ (Jansen & Nijboer, 2003).

I used to count the activity of animals coefficient 2.5 for the active juveniles (Dennert, 2008). This formula applies to the keeping of animals at 30°C. The requirement of metabolic energy calculated from 5 to 200 g increasing intervals between 5 and 50 g.

All juveniles were weighed every one month up to 1 year and counted amounts of consumed food. We tried fed them optimally and don't overfeed.

Some primary life stages of juveniles up to one year:

- ~01.08.2011 birth of juveniles;
- Dec 2011 – 09.01.2012 – preparation for hibernation;
- 09.01.2012 – 16.03.2012 – hibernation;
- 16.03.2012 – 31.03.2012 – transition to normal ambient temperature from hibernation;
- June 2012 – Aug 2012 - some of juveniles were kept in an outdoor adaptation enclosure in natural conditions where they found a natural diet.

The energy values (kcal) of the consumed food were calculated using created database in MS Access base for assessment of feed. Also

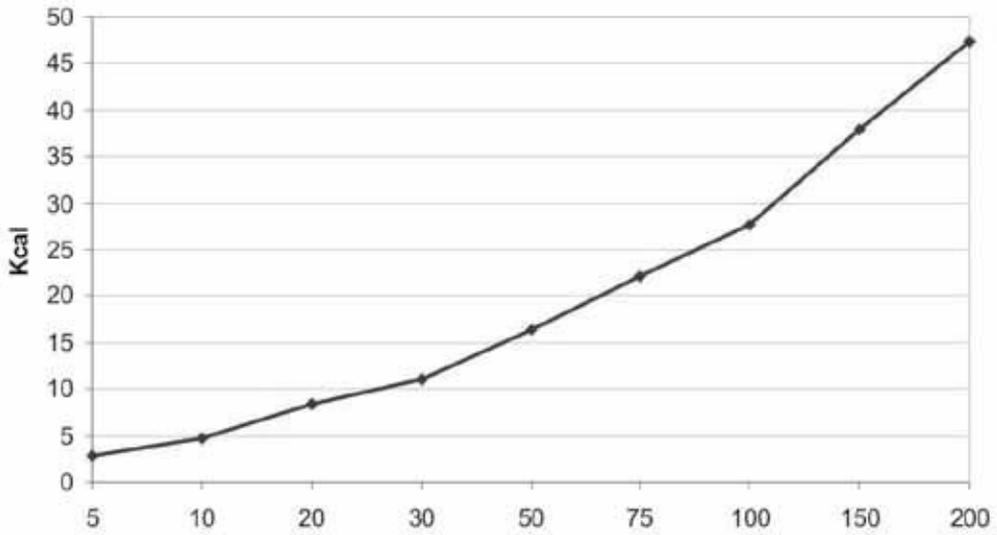


Figure 1. The requirement of metabolic energy for growing turtle juveniles.

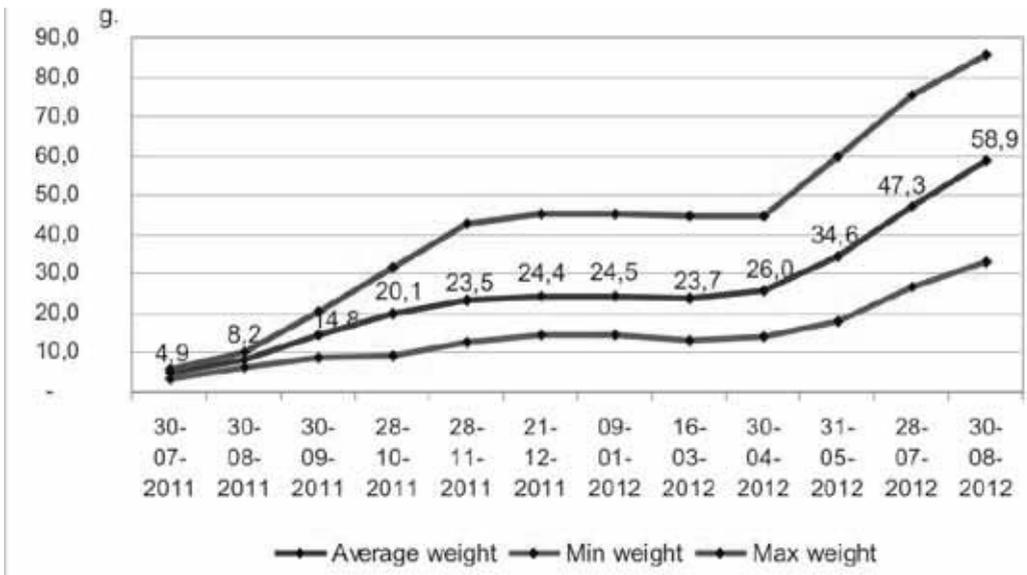


Figure 2. The average, maximum and minimum weights of the juveniles during weighing.

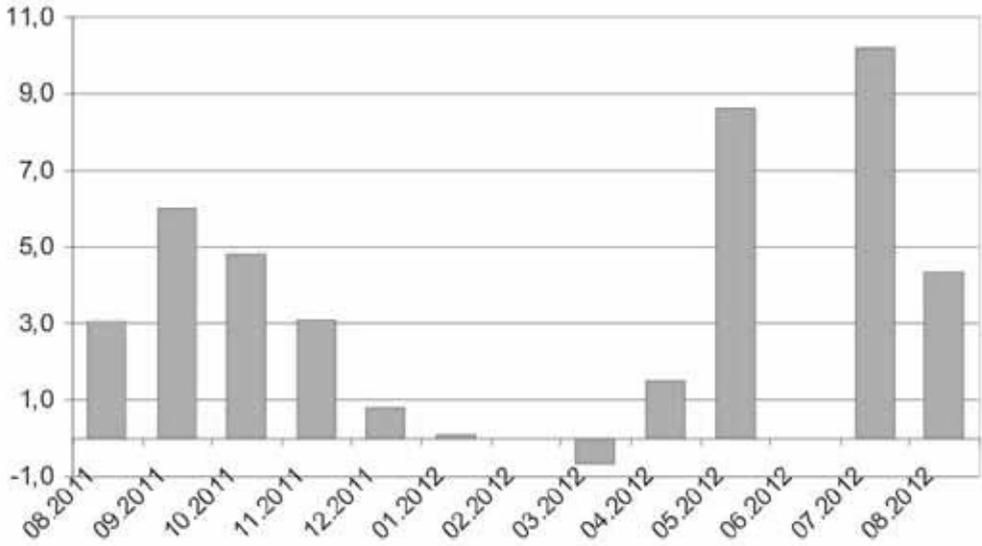


Figure 3. The average change of weight of 1 juvenile since last weighing.

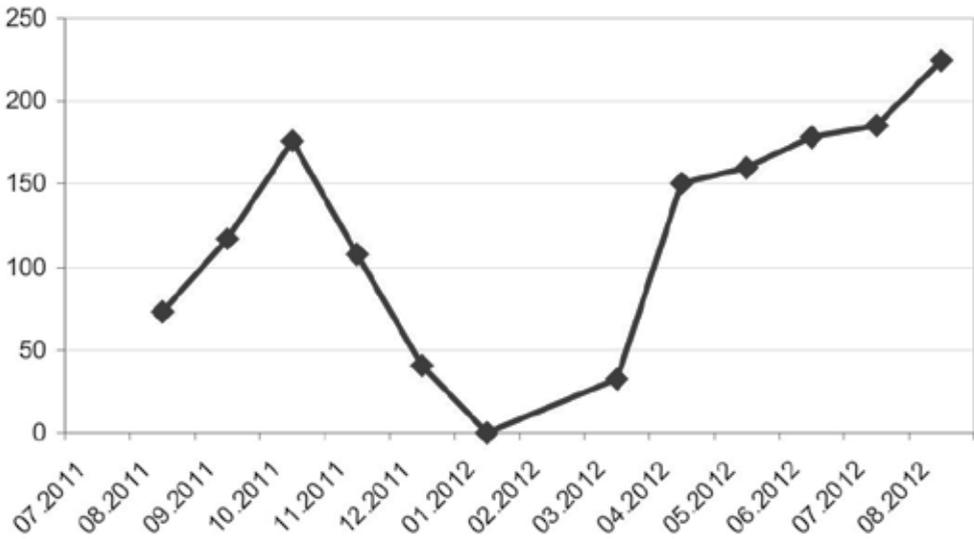


Figure 4. The amounts of consumed energy by juvenile of European pond turtles.

I calculated energy requirement per month using the above formula for the average weight of the animals.

RESULTS

The juvenile of European pond turtles consume an average 4.5% (range from -20.5% to 36%) less kcal for the weight gain in August – November and March – May months than was calculated in feeding methodology. The animals have been kept at an ambient temperature of 20-24°C. Animals are less active at a lower temperature, and this results in lower energy consumption (Parmenter & Harold, 1990). June – August a part of them were kept in outdoor enclosure for adaptation in natural conditions where they found natural foods so I didn't include this period into calculations also.

CONCLUSIONS

The prepared methodology of the feeding European pond turtle juveniles up to one year essentially satisfies calculations of the gathered data in rearing practice. More reliable data will be gathered after longer study of European pond turtle rearing in captivity. The juveniles needed 16-36 kcal energy to put on weight 1 g when ambient temperature was 20-24°C.

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REFERENCES

- Jansen, W. L. & Nijboer, J. 2003. Zoo Animal Nutrition Tables and Guidelines. European Zoo Nutrition Centre, Amsterdam, 119 p.
- Parmenter, R. R. & Harold, W. A. 1990. The Feeding Ecology of the Slider Turtle. Life History and Ecology of the Slider

Turtle. j. W. Gibbons. Washington, D. C., Smithsonian Institution, 257-266.

Dennert, C. 2008. Ernährung von Landschildkröten . Natur und Tier-Verlag, 144 p.