DIAMETER, WET WEIGHT, AND DRY WEIGHT IN PELAGIA NOCTILUCA (FORSKÅL)

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Recent "bloom" conditions of the scyphomedusa Pelagia noctiluca, observed in last years in the Mediterranean Sea, promoted studies on different aspects of its biology, especially occurrence patterns and reproduction. Our knowledge of the feeding, metabolism, and growth of this jellyfish is, however, still very poor.

The study of growth rates should include analysis of rates according to developmental stage, age, and environmental conditions as well as rates of chemical reactions that control body composition and its dynamics. This comprehensive growth picture is rarely acomplished and usually less exhaustive aspects of growth are reported: alternation in body dimensions and biomass, changes in chemical composition. Unfortunately, little work has been done on growth of Pelagia noctiluca and even this basic aspects are still missed.

This contribution presents the results on Pelagia noctiluca bell diameter, wet weight, and dry weight and their relationship. These data were obtained to determine the size characteristics of fresh animals and to establish the reliable conversion factors.

Pelagia noctiluca were collected in buckets by hand from the eastern part of the Gulf of Trieste (Northern Adriatic). After measuring the bell diameter (live material) the organisms were drained and their wet weight was determined. Individual Pelagia noctiluca were put in a light crucible and dried to constant weight, at 60° C.

The diameter and weight minima and maxima for measured animals are presented in Table 1.

Table 1. Pelagia noctiluca diameter, wet weight, and dry weight

	No. of measur.	Min.	Max.
Diameter (mm)	442	10	65
Wet weight (mg)	434	90	32700
Dry weight (mg)	144	60	8540

In different marine animals it has been found that weight varies as some power of lenght, and that can be described by general equation:

$$W = a \cdot L^{b}$$

Within the measured Pelagia noctiluca the linear relationship between log bell diameter and log wet and dry weight, was found, as well as between wet and dry weight (all correlations were significant, $P < 0.01$).

The relationship between bell diameter (in mm) and wet weight (in mg) can be described by the equation:

$$WW = 0.91 \cdot D^{3.02} \qquad (n = 442, \quad r = 0.92)$$

which indicates isometric growth in bell diameter and wet weight.

The log diameter - log dry weight relationship found was:

$$DW = 0.34 \cdot D^{2.19} \qquad (n = 145, \quad r = 0.86)$$

and log wet weight - log dry weight:

$$DW = 2.4 \; WW^{0.67} \qquad (n = 141, \quad r = 0.86)$$

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