

## EFFECT OF DIFFERENT FORMULATED DIETS AND REARING CONDITIONS ON GROWTH PARAMETERS IN THE SEA URCHIN *PARACENTROTUS LIVIDUS*

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**ABSTRACT** World annual production of sea urchins has increased regularly since 1980, and many countries, such as France, are currently confronted with the problem of overexploitation of stocks. For this reason, aquaculture of the sea urchin is a possible solution for the future. The study undertaken here aimed to determine physiological responses (growth) of *Paracentrotus lividus* given three different feed types varying in quality (vegetable or animal) and biochemical composition and under variable environmental conditions (temperature, light). Experiments in land-based tanks revealed that growth was greater when individuals were fed a mixed formulated feed containing both animal meal and plant meal or containing only animal meal, than when fed a feed containing only plant meal or a natural food, the seaweed *Cymodocea nodosa*. Maintaining a temperature of 20°C and rearing the sea urchins in the darkness did not have any noticeable effect on growth rate. The growth model established with data obtained from the tank studies for individuals fed the mixed feed indicated that the growth of the sea urchin can be maximized by appropriate feeding. Finally, the different treatments did not bring about any differences in the relative importance of the various body parts (gonads, gut, test, lantern) although the gonadal index in reared sea urchins was very high, even for small individuals (20–25 mm).

**KEY WORDS:** Sea urchin, aquaculture, growth, formulated feeds, *Paracentrotus lividus*