

Goffredo S., Radetic' J.; Airi V., Zaccanti F.:

Sexual reproduction of the solitary coral *Leptopsammia pruvoti* (Scleractinia, Dendrophylliidae) in the Mediterranean.

Abstract

Leptopsammia pruvoti is a common azooxanthellate coral living in the Mediterranean Sea and along the Atlantic coast from Portugal to southwestern of England. It lives in shaded habitats from shallow water to a depth of more than 100 meters. The annual cycle of sexual reproduction in this species is studied in an area nearby Leghorn (Tuscany, Italy). *L. pruvoti* is a gonochoric and brooder. Testes require 1 yr to reach maturity with a maximum spermary diameter of 340 micrometers. Oogenesis lasts 2 yr with a maximum diameter of 680 micrometers. The rate of gonadic development increases significantly during December and January, fertilization takes place from February to May and planulation in June. Embryos have a maximum diameter of 740 μ m in the first stages (periblastula), and 860 micrometers in mature gastrula. Released larvae have a maximum diameter of 1000 micrometers. The annual cycle of photoperiod and water temperature seems to coincide with the reproductive cycle. Different sex allocation has been detected between males and females of *L. pruvoti*. Volume occupied by male gonads has been found to be 4 times bigger than volume occupied by female gonads. In the self-fertilizing hermaphrodite *Balanophyllia europaea*, a close relative species studied in the same area, male and female gonads occupied the same volume. According to sex-allocation theory, a self-fertilizing species require a smaller male allocation than the cross-fertilizing species, in order to guarantee successful reproduction.