

Octopus vulgaris as new species for the diversification in the Mediterranean aquaculture

Editorial

Mancuso M

Institute for Coastal Marine Environment (IAMC) - National Research Council (CNR) -Section of Messina, Spianata S. Raineri 86, 98122 Messina, Italy.

Abstract

Octopus vulgaris (common octopus) is considered a new species for the diversification in Mediterranean aquaculture. *Octopus vulgaris* like other cephalopods is carnivorous (Lee, 1994). One of the most important problems related to the production of new species is the diet, The study of digestive enzymes it is important to know the nutritional habits of the new species to breed in order to create appropriated diets protocols.

Keywords: Aquaculture, Diversification, *Octopus Vulgaris*.

*Corresponding Author:

Monique Mancuso,
Institute for Coastal Marine Environment (IAMC) - National Research Council (CNR) -Section of Messina, Spianata S. Raineri 86, 98122 Messina, Italy.
E-mail: monique.mancuso@iamc.cnr.it

Received: November 25, 2014

Published: December 11, 2014

Citation: Mancuso M (2014) *Octopus vulgaris* as new species for the diversification in the Mediterranean aquaculture. *Int J Marine Sci Ocean Technol.* 1(1), 1-2.

doi: <http://dx.doi.org/10.19070/2577-4395-140001e>

Copyright: Mancuso M[©] 2014. This is an open-access article distributed under the terms of the Creative Commons Attribution License, which permits unrestricted use, distribution and reproduction in any medium, provided the original author and source are credited.

Introduction

Octopus vulgaris (common octopus) is considered a new species for the diversification in Mediterranean aquaculture.

In the Mediterranean countries the introduction of *Octopus vulgaris* as potential aquaculture candidate is under consideration thanks to: the adaptation to captivity, fast growth (between 3 and 15% body weight/day), high food conversion rates, incorporating 40-60% of ingested food into tissue, high fecundity, producing from 100- 500 thousand eggs per female with well developed hatchlings compared to other molluscs and the size and price of its market in the Mediterranean and high commercial value and fast growth [1,7,8,4]. The commercial culture of common octopus in NW Spanish waters is limited to on-growing sub-adult individuals captured from the wild [2], in fact also if the reproduction is easy with an elevated number of hatched eggs, the long and complicated paralarval phase is a limiting step in its culture, both with respect to time and feeding concerns [6,5].

Octopus vulgaris like other cephalopods is carnivorous [3]. One of the most important problems related to the production of new species is the diet, in fact it is important to know the nutritional habits of the new species to breed in order to create appropriated diets protocols.

Mancuso et al. in 2014 studied the digestive physiology of common octopus. The attention given to the intensive rearing of common octopus has stimulated the research of suitable nutritional protocols, which depends, in turn, on the knowledge of enzymatic patterns. The results provided that common octopus is well equipped with a wide range of digestive enzymes; therefore under normal conditions they could be able to efficiently digest important dietary substrates, confirming previous findings reported by Vaz-Pires et al, (2004) [9], who showed that *O. vulgaris* has a very rapid digestive rate (12 hours at 18-19°C) compared with other octopuses. All these studies confirm that *Octopus vulgaris* is a good candidate for the aquaculture, in fact the results of digestive enzymes will help to better understand which food components are responsible for the growth in common octopus and thus contribute to the formulation of new diets more suitable to the species; also the studies carried out on the high digestive rate and the consequent high rate of growth will help to better understand what protocols choose in order to achieve optimum production of this species.

References

- [1]. Iglesias J, Otero J.J, Moxica C, Fuentes L, Sanchez F.J (2004) The completed life cycle of *Octopus (Octopus vulgaris, Cuvier)* under culture conditions: paralarval rearing using *Artemia* and zoeae, and first data on juvenile growth up to 8 months of age. *Aquaculture International* 12(4-5):481-487.
- [2]. Iglesias J, Sánchez F.J, Otero J.J, Moxica C (2000) Culture of *Octopus (Octopus vulgaris, Cuvier)*: present knowledge, problems and perspectives. Recent advances in Mediterranean aquaculture finfish species diversification. *Cahiers Option Méditerranées* 47: 313-322.
- [3]. Lee P.G (1994) Nutrition of cephalopods: fuelling the system. *Marine Freshwater and Behaviour Physiology* 25(1-3):35-51.
- [4]. Mancuso M, Giordano D, Denaro M.G, Caruso G (2014) Study of digestive enzymes in wild specimens of *Sepia officinalis* (Linnaeus 1758) and *Octopus vulgaris* (Cuvier 1798) *Cahiers de Biologie Marine* 445-452

- [5]. Navarro J.C., Villanueva R (2003) The fatty acids composition of *Octopus vulgaris* paralarvae reared with live and inert food: deviation from natural fatty acid profile. *Aquaculture* 219:613-631.
- [6]. Solorzano Y, Viana M.T, López M.L, Correa J.G, True C.C, et al (2009) Response of newly hatched *Octopus bimaculoides* fed enriched *Artemia salina*: Growth performance, ontogeny of the digestive enzyme and tissue amino acid content. *Aquaculture* 289(1-2): 84-90.
- [7]. Vanni A, Fichi G, Cardeti G, Cersini A, Perrucci S, et al (2013) a. Potenziali patogeni in popolazione naturale ed in soggetti stabulati in *Octopus vulgaris*. *Abstract XIX Convegno Società Italiana di Patologia Ittica* (SIPI). Siracusa (Italy), 14-16
- [8]. Vanni A, Susini F, Fichi G, Lenzi C, Verin R, et al (2013) Fauna parassitaria del polpo (*Octopus vulgaris*) in condizioni di allevamento. *Abstract XIX Convegno Società Italiana di Patologia Ittica* (SIPI). Siracusa (Italy) 14-16
- [9]. Vaz-Pires P, Seixas P, Barbosa A (2004) Aquaculture potential of the common octopus (*Octopus vulgaris*, Cuvier, 1797): a review. *Aquaculture* 2238(1-4):221-238