INTRODUCTION

Most sea urchins are typical plant feeders. They are the major consumers of huge standing stocks produced by macroalgae and seagrasses in various coastal environments (Lawrence, 1975). Their natural populations are important to control and keep constant the crops of many seagrasses (Boudouresque & Verlaque, 2007; Zupo, 1994), and their trophic role is usually played as large and abundant macroherbivores (Zupo, Alexander, & Edgar, 2017). Their natural diets are quite complex and contain, in addition to the main plant tissues, several items (Zupo, 1993) including small animal prey and various epiphytes, indispensable to complete the assortment of feeding principles ingested (Mazzella et al., 1992). Therefore, they could be considered as opportunistic herbivores (Zupi & Fresi, 1984).

In addition, each species of sea urchin is adapted to local ecological conditions and evolved specific dietetic patterns (Lawrence, 2007). The sea urchin Paracentrotus lividus (Lamark, 1816) is quite common throughout the Mediterranean Sea (Boudouresque & Verlaque, 2007), from the North Atlantic coasts of Ireland to southern Morocco (Bayed, Quiniou, Benrha, & Guillou, 2005; Symonds, Kelly, Caris-Veyrat, & Young, 2007). It is an important resource since the last century (Koehler, 1883), both as a marketable good (Devin, 2002; Williams, 2002) and an animal model for research in the life sciences (Buitrago et al., 2005; Yamabe, 1962). Its importance for