A. Box, S. Deudero, A. Blanco, A. M. Grau, F. Riera, (2010). **Differences in δ13C and δ15N stable isotopes in the pearly razorfish *Xyrichtys novacula* related to the sex, location and spawning period**
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Abstract: In the present study, *Xyrichtys novacula* (Labridae) were sampled at five locations around the islands of Ibiza and Formentera (western Mediterranean Sea). Isotopic signatures of δ13C, δ15N and the C:N ratio were analysed in relation to locality, sex and size differences. δ13C and δ15N partitioning was also studied in the reproductive spawning period. There were significant differences in the δ13C signature between localities for both sexes, but not for δ15N. Sex differences were also found with a mean ±s.e. value of −17·38 ± 0·06‰δ13C and 8·36 ± 0·05‰δ15N for females and −17·17 ± 0·07‰δ13C and 8·80 ± 0·06‰δ15N for males. Increasing total length in both sexes was positively correlated with δ15N enrichment and a significant positive linear regression was established for both variables. During the reproductive spawning period, there were changes in δ13C fractioning with enrichment in postspawning females and males (with respect to prespawning and spawning periods) and δ15N impoverishment in postspawning females (with respect to prespawning and spawning periods). *Xyrichtys novacula* uses local food sources, as confirmed by δ13C and δ15N, and females and males use different food sources, thus avoiding intraspecific competition. This was confirmed by δ15N enrichment as size increased. Spawning leads to special requirements for gonad maturation, which is reflected in the isotopic signatures for both sexes.

Keywords: isotopic signature, ontogenic changes, reproduction, western Mediterranean