ISMS 2018
VI International Symposium on Marine Sciences

*VI International Symposium on Marine Sciences*
*Vigo (Spain), 20-22th June 2018*

# EFFECTS OF TISSUE PRESERVATION ON CARBON AND NITROGEN STABLE ISOTOPE SIGNATURES IN SYNGNATHID FISHES

**A. Paltrinieri[1], M. Planas[*1]**

[1] Department of Ecology and Marine Resources, Instituto de Investigaciones Marinas (CSIC), Vigo, SPAIN.
*alex.paltrinieri.acq@gmail.com, mplanas@iim.csic.es,*

**Abstract:** The analysis of stable isotopes (SIA) is a useful non-invasive tool to infer the composition of natural diets in fishes. However, the method of preservation applied to samples may affect the results of SIA. In the present study, stable isotope signatures were assessed for $\delta^{13}C$ or $\delta^{15}N$ in adults (dorsal fin clipping) (Valladares and Planas, 2012) or juveniles (entire individuals) of four species of Syngnathidae fishes: reared seahorses *Hippocampus abdominalis, H. guttulatus, H. hippocampus* and *H. reidi*, and wild caught (Ría de Vigo, NW Spain) pipefishes *Syngnathus acus* and *S. typhle.* Three types of preservation (>2 weeks) procedures were compared: 95% Ethanol, 4% Formaldehyde and freezing at -80 °C. In adults (n=21), isotopic signatures for $\delta^{13}C$ or $\delta^{15}N$ in seahorses and pipefishes differed significantly (Kruskal-Wallis test, $p<0.05$) due to differences in their diets but no significant differences were observed when comparing the three preservation procedures. In juveniles (23 batches of seahorse newborn), *H. reidi* and *H. abdominalis* showed similar signatures, differing from those of *H. guttulatus.* As for adults, signatures in juveniles were not significantly affected by the preservation methodology applied. Useful conversion factors of signatures in Syngnathids for the three preservation methods tested are provided. The results achieved in this study may be helpful for comparative purposes and in field sampling when immediate freezing of samples is not available.

**Key words:** Stable isotopes, preservation, live prey, Syngnathids.

**Acknowledgments:** This study was funded by projects CGL2015-68110-R (Spanish Ministry of Economy, Industry and Competitiveness) and 1541S/2015 (Spanish Agriculture, Food and Environment Ministry - National Parks Autonomous Organism). We are grateful to Alex Chamorro for helping with rearing and sampling.

## References:

Valladares, S. and Planas, M. (2012). Non-lethal dorsal fin sampling for stable isotope analysis in seahorses. Aquatic Ecology, 46: 363-370.