

Abstract for the 2019 DNA Barcoding Conference, Trondheim, Norway

Section: Authentication of Food, Feed & Medicinal Plants

Title: Successful field application of a novel universal method for rapid fish species identification.

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Background: DNA barcoding has exposed the extent to which commercial fish species are mislabelled worldwide. This rampant phenomenon poses a risk in terms of consumers' health, economic loss, and hinders resource and conservation management. Despite the success of DNA barcoding in improving seafood traceability and enabling public awareness, leading to more stringent regulations in the European Union, there remains a need for simple, rapid, and portable DNA authentication tools. Rapid and cost-effective solutions for the authentication of specimens have been made possible by targeting segments of the mitochondrial COI barcode region with a set of fluorescent probes and by visualizing the melt curves using a portable real-time PCR instrument. In order to evaluate the portability and practicality of such a method, we tested the protocol aboard the R/V Cefas Endeavour during a three weeks survey in the South West coast of England and the English Channel. **Results:** The pelagic ichthyofauna was collected using a mid-water trawl and allowed us to sample commercially important fish species. We successfully and rapidly identified most fish species sampled aboard the R/V Cefas Endeavour. We operated in rough weather, and devised a procedure that can become a reliable field tool for species authentication purposes, in both seafood market and wildlife forensic contexts. **Significance:** We successfully identified commercially important species using a fast and portable method in harsh field conditions without the need to sequence extracted DNA. Such methods could allow for the rapid and inexpensive identification of mislabelled or illegally traded species along the supply chain, without resorting to DNA sequencing.