



POSTER

DNA SPOTLIGHT ON SHARK MEAT IN CHINESE E-COMMERCE: LABELING AND TRACEABILITY OPACITY

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Introduction and Scope. shark meat products fall under diverse regulatory and conservation frameworks although their characterization at the retail level can be hindered by umbrella terms and limited provision of species-specific information. These limitations reduce transparency and the ability to assess product identity. Within this context, the present work provides an exploratory case study focused on shark meat products available on a major Chinese e-commerce platform during a defined survey period, integrating commercial information, labeling assessment and molecular authentication.

Materials and Methods. a total of 63 products were collected through keyword-based screening on Taobao, and 165 tissue samples were analysed (1-3 samples according to the items count within each product). Products encompassed both salted/dried and frozen items, presented as whole specimens, butterfly-cut formats or cut pieces. For each product, trade name, processing type, presentation, declared production origin and price were recorded. Delivered items were classified as prepackaged or non-prepackaged, and prepackaged products were evaluated for compliance with the Chinese National Standard GB 7718-2011. Species identification was performed using COI and cytb markers, applying target-specific similarity thresholds and cross-validation through BLAST and BOLD reference databases.

Results. product descriptions relied exclusively on generic trade names and lacked scientific nomenclature, with trade name variability associated with processing type and product presentation. The products included salted/dried items (73.0%; 46/63) and frozen items (27.0%; 17/63), marketed as cut pieces (61.9%; 39/63), whole specimens (17.5%;

11/63) or butterfly-cut formats (20.6%; 13/63), and delivered either as prepackaged (69.8%; 44/63) or non-prepackaged (30.2%; 19/63). Among prepackaged products, 34.1% (15/44) had no label, and none of the labeled items met all mandatory requirements, with ingredient lists (17.2%; 5/29) and product standard codes (10.3%; 3/29) being the least reported elements. Non-prepackaged items arrived without any verifiable labeling. Molecular analysis yielded 170 PCR products from 165 tissue samples (42 COI and 128 cytb amplicons). Specifically, cytb was required for 123 samples lacking COI amplification and for 5 additional cases in which COI did not allow species-level assignment. Overall, 84 samples (50.9%) achieved species-level identification, supporting the detection of 12 species and 3 genus-level assignments. A total of 160 sequences (97.0%) corresponding to 61 products were molecularly identified as belonging to shark taxa, including species listed as Near Threatened, Vulnerable, Endangered and Critically Endangered on the IUCN Red List, several regulated under CITES Appendix II. Two products contained non-shark taxa, representing cases of non-conformity between molecular identity and declared information. Overall, discrepancies between online descriptions, labeling practices and genetic results highlight structural limitations in traceability within online retail channels.

Conclusions. the results underscore the contribution of molecular approaches for documenting species composition in e-commerce seafood markets and reveal substantial gaps in labeling accuracy and information completeness. These findings provide a preliminary baseline for broader investigations aimed at improving transparency, regulatory compliance and consumer protection.

Keywords: shark meat; Chinese e commerce; DNA barcoding; traceability gaps.