

Improper Labeling of Fish Sold as Sushi in Central Ohio (P04-036-19)

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Objectives: Sushi has become a very popular style of food in many regions of the United States, including Ohio. Recent reports of inconsistent or improper labeling of fish sold in other countries has led this group to ask whether such mislabeling occurs locally as well, especially in fish sold at sushi restaurants far from their coastal ports of entry.

Methods: Raw fish samples were obtained from sushi establishments throughout central Ohio; samples were labelled according to the species name used by the restaurant. DNA was extracted from 100 mg of each tissue sample, and a 655 base pair region of the mitochondrial cytochrome c oxidase subunit 1 (COI) DNA was eluted using standard published methods from Bio-Rad Corp. Extracted DNA was amplified by PCR, cleaned up, and sequenced by an independent lab. Sequenced DNA results were submitted to the Barcode of Life Initiative (iBOL)

where the DNA sequences were compared to archived DNA of millions of organisms.

Results: To date 91 fish samples have been analyzed; of these, 23 (25.3%) have been mislabeled in the restaurant as a different genus and species than that which the DNA records indicate. The most commonly mislabeled fish samples have been those sold as Red Snapper, a more expensive sushi product than that identified through DNA analysis. No other specific patterns of mislabeling were found.

Conclusions: It is unclear where in the supply chain the mislabeling is occurring, but since one expensive species appears to be often mislabeled it might well be intentional. The likelihood of accidental mislabeling seems more remote, given that in most cases the fish are easily distinguishable from each other in both color and form. While the major effect of this mislabeling may be purely economic, and the skirting of regulations, there is some concern that mislabeling of fish, as with any food product, may have negative effects on those with allergies to certain proteins.

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