

## Feeding predation in some commercially important scombrid fish: a molecular perspective

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The feeding habits of different types of fish can be studied by analyzing their stomach contents. However, identification of prey items found within the stomach becomes an impossible task when the prey is partially or fully digested. The use of DNA sequencing for identification of prey species becomes very useful in such instances. In this study, the stomach contents of the commercially important fish species, skipjack tuna (*Katsuwonus pelamis*), kawakawa (*Euthynnus affinis*), frigate tuna (*Auxis thazard*) and bullet tuna (*Auxis rochei*) were analyzed for prey identification. Initially a qualitative analysis was carried out for the morphologically identifiable prey items found in the stomachs of the fish. Subsequently, DNA barcoding was carried out for the prey items that were partially degraded, which could not be identified morphologically. The mitochondrial COI region of 13 prey items were amplified and sequenced for identification using already established protocols. Prey items identified by sequencing were cephalopods, while crustaceans and some fish species were also identified. The fish species identified were *Amblygaster sirm* (spotted sardinella), *Sardinella longiceps* (Indian oil sardine), *Euthynnus affinis* (kawakawa), *Selar crumenophthalmus* (bigeye scad) and *Trachinocephalus myops* (lizardfish). Cephalopods identified were *Amphioctopus aegina* (sandbird octopus), *Uroteuthis duvauceli* (Indian Ocean squid) and *Sepia pharaonis* (Pharaoh cuttlefish), while the crustaceans identified were *Penaeus indicus* (Indian prawn), *Metapenaeus dobsoni* (kadal shrimp) *Solenocera crassicornis* (coastal mud shrimp), *Lysiosquillina maculata* (zebra mantis shrimp) and *Percnon guinotae* (crab). The identification of *Euthynnus affinis* as a prey item of frigate tuna shows that these fish feed on juveniles of their own group. These prey item identifications confirmed that the fish species skipjack tuna, kawakawa, frigate tuna and bullet tuna are all nonspecific feeders. This exhibits the value of molecular tools in the identification of prey species which have lost their distinguishable features due to digestion.

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