

**A New Way to Determine the Stomach Content of the Exotic fish  
*Pterois volitans* in the Mexican Caribbean**

**Una Nueva Forma Para Determinar el Contenido Estomacal del Pez Exótico  
*Pterois volitans* en el Caribe Mexicano**

**Un Nouveau Moyen de Déterminer les Contenus Stomacaux des Poissons Exotiques  
*Pterois volitans* dans les Caraïbes Mexicaines**

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**EXTENDED ABSTRACT**

The exotic lionfish *Pterois volitans* in the Mexican Caribbean, has become a species of great concern because of their predatory habits and rapid expansion onto the Mesoamerican coral reef. This is the first report of DNA identification of stomach contents of lionfish using the Barcode of Life Reference Database (BOLD) using the DNA barcoding method. The material studied comes from several collections of lionfish along the Mexican region of the Mesoamerican Coral Reef. After analyze 30 adults specimen of lionfish, we found that all of them matched with Indo-Pacific *Pterois volitans* with over 99% similarity. Of the 157 stomachs examined, 144 had measurable contents. In total, 330 prey items were obtained but about 90% were mostly digested specimens. We confirm with barcoding that only *Pterois volitans* is apparently present in the Mexican Caribbean. Based on DNA matches in the Barcode of Life Database (BOLD) and GenBank, we identified fishes from five orders, 14 families, 22 genera and 34 species in the stomach contents. The families with the most species represented were Gobiidae and Apogonidae. Some prey taxa are commercially important species. Seven species were new records for the Mexican Caribbean: *Apogon mosavi*, *Coryphopterus venezuelae*, *C. thrix*, *C. tortugae*, *Lythrypnus minimus*, *Starksia langi* and *S. ocellata*. DNA matches, as well as the presence of intact lionfish in the stomach contents, indicate some degree of cannibalism, a behavior confirmed in this species by the first time. We obtained 45 distinct crustacean prey sequences, from which only 20 taxa could be identified from the BOLD and GenBank databases. The matches were primarily to Decapoda but only a single taxon could be identified to the species level, *Euphausia americana*. This technique proved to be an efficient and useful method, especially since prey species could be identified from partially-digested remains. The primary limitation is the lack of comprehensive coverage of potential prey species in the region in the BOLD and GenBank databases, especially among invertebrates.

KEY WORDS: Lionfish · barcode · COI · coral reef

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