

**Influence of season and feeding intensity on fatty acid composition of wild cobia
(*Rachycentron canadum*, Linnaeus, 1766) in the Dungun coast, Malaysia**

ABSTRACT

Aim: This study investigates the variations in the fatty acid contents of cobia from Dungun coast, Malaysia with respect to changes in seasons and feeding intensity. **Methodology:** Cobia samples were collected from a commercial fish landing center at Dungun, Terengganu, Malaysia to analyze the gut content and fatty acid composition of muscle and liver. Specimens were immediately dissected to determine sex as well as weight of food items in the stomach. Food items were identified and categorized as fish, mollusks and crustacean. The fatty acid composition in the liver and muscle tissue samples was determined by first extracting lipids using chloroform: methanol (2:1, v/v) mixture. The physical water quality parameters (salinity, temperature, DO and pH) were measured in situ using an YSI multi parameter (model 6600, YSI, US). **Results:** Saturated fatty acids (FAs) comprised the majority of FAs in the muscle, followed by monoenes, total poly-unsaturated fatty acids (PUFAs) (n-3) and then total PUFAs (n-6) with no seasonal variation in quantity. A similar trend was observed in the liver but the total saturated FAs were significantly higher during the inter-monsoon while total monoenes significantly accumulated during the monsoon. During low feeding intensity, there was a significant accumulation of PUFAs (n-6) in the muscle tissue ($P < 0.05$). Gut content analyses showed that cobia significantly increased the consumption of molluscs during the inter-monsoon ($P < 0.05$), although bony fishes dominated their diet throughout the year with no significant seasonal differences ($P > 0.05$). **Interpretation:** Cobia lipids are composed of a significant quantity of omega-3 and omega-6 FAs, which have important health benefits. Environmental variability, especially salinity fluctuations and prey abundance that accompany seasonal changes, significantly impact the nutritional composition of cobia in Malaysian waters, however, their nutritional quality is maintained.

Keyword: Cobia; Feeding intensity; Fatty acid; *Rachycentron canadum*; Wild cobia