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Preliminary stable nitrogen and carbon isotope analysis was undertaken to investigate whether the resulting data support current knowledge of diet as obtained by conventional approaches. Blue (*Balaenoptera musculus*), fin (*B. physalus*) and Bryde's (*B. edeni*) whales co-occur temporally and are known to feed in the Gulf of California, Mexico. Isotope measurements were taken from: known prey (three euphausiids and four sardine samples); skin biopsies (two for each whale species); and from faeces (one blue and three fin whale samples). Although the sample size was small, the range of $\delta^{15}\text{N}$ values obtained was consistent with prior knowledge of the whales feeding habits, with values increasing in the order: blue ($x=12.9$), fin ($x=15.4$) and Bryde's whales ($x=15.8$). The low value for the blue whale confirms its known stenophagous habit. The closeness of $\delta^{15}\text{N}$ values for fin and Bryde's whales coincides with the known ichthyophagous habits of the Bryde's whale and the more generalist fin whale which feeds on both fish and zooplankton. The difference in $\delta^{13}\text{C}$ values for fin ($x=16.0$) and Bryde's whales ($x=18.1$) suggests that although they feed at the same trophic level, they might use different food sources or feeding sites. Results of $\delta^{15}\text{N}$ suggest that fin and Bryde's whales share the same relative trophic level, blue whales and juvenile sardines (*S. sagax*) share a lower position, followed by the euphausiid (*Nematocelis difficilis*) and fin whale faeces, and at the lowest level blue whale faeces.

Palabras clave: biopsy sampling, blue whale, bryde's whale, fin whale, food, isotopes, Prey, techniques

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