

Maize (*Zea mays*) consumption in the southern andes (30 degrees-31 degrees S. Lat): Stable isotope evidence (2000 BCE-1540 CE)

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Abstract

Objectives: The timing and dietary role of maize agriculture is central to archaeological discussions in the Andean region. In the semi-arid region of northern Chile (SARNC), archaeological models propose that maize was adopted during the Early Ceramic period in tandem with pottery and sedentism. Through stable isotope (SI) analyses, of bone collagen and apatite, this study assesses the timing of maize introduction, diachronic changes (2,000 BCE to 1,540 CE.), and synchronic dietary variability in the prehistoric SARNC.

Materials and Methods: Fifty-two prehistoric individuals from SARNC were analyzed for delta C-13(ap), delta C-13(col), and delta N-15. Descriptive statistics were used to characterize the results by period and location (inland and coast). Between-periods (ANOVA or Kruskal-Wallis tests), and synchronic comparisons (inland vs. coast; Student's t-tests), were conducted. A SIAR model was run to further evaluate dietary changes. Dietary interpretations are based on food web data.

Results: Coastal groups show significant changes in the diet during the Middle (900-1,000CE; enrichment in delta C-13), and Late Intermediate periods (100-1450CE; when the Delta(13C)(ap-col) is above 5.2 parts per thousand). In the inland, significant changes in SI occurred in the Late Intermediate period (delta C-13 enrichment). In the Late period, the inland diet became enriched for delta C-15. Synchronic comparisons showed coastal individuals to have higher delta N-15.

Discussion: The popularization of maize in the SARNC was not associated with the appearance of pottery and/or sedentism, and its role as a dietary staple was a late phenomenon (c.a. 1,000CE). The results obtained in this study show that the adoption and consumption of maize varied dramatically in the Southern Andes.

Keywords

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