

Corn's roots dig deeper into South America

March 24 2008

Corn has long been known as the primary food crop in prehistoric North and Central America. Now it appears it may have been an important part of the South American diet for much longer than previously thought, according to new research by University of Calgary archaeologists who are cobbling together the ancient history of plant domestication in the New World.

In a paper published in the March 24 advanced online edition of the *Proceedings of the National Academy of Sciences*, U of C PhD student Sonia Zarrillo and archaeology professor Dr. Scott Raymond report that a new technique for examining ancient cooking pots has produced the earliest directly dated examples of domesticated corn (maize) being consumed on the South American continent.

Their discovery shows the spread of maize out of Mexico more than 9,000 years ago occurred much faster than previously believed and provides evidence that corn was likely a vital food crop for villages in tropical Ecuador at least 5,000 years ago.

“The domestication and dispersal of maize has been a hot topic in archaeology for decades and these are the earliest indisputable dates for its presence in South America,” Raymond said. “It has long been thought that maize may have been used south of Panama at this time for ritual purposes but this shows it was also being consumed as food.”

Raymond led the excavation of tropical village sites in western Ecuador in the early 1980s, which are the oldest known villages in the Americas.

Using pottery fragments recovered from the sites, Zarrillo obtained the charred remnants of prehistoric meals and found they contained starch granules from domesticated corn.

“Plant material typically does not preserve very well in tropical sites but it turns out that microscopic starch grains do survive very well over the years and can be used to identify exact species of plants,” Zarrillo said. “Analyzing starch from charred food residues is a new technique in archaeology and it is exciting because it will stimulate research around the world when people realize they can recover starch from cooking pots and use it to date and identify what people were using as food.”

Starch analysis was also used by Zarrillo and Raymond for a study published in *Science* last year that traced the domestication and spread of chili peppers throughout South America, Central America and the Caribbean more than 6,000 years ago.

Source: University of Calgary

Citation: Corn's roots dig deeper into South America (2008, March 24) retrieved 26 April 2024 from <https://phys.org/news/2008-03-corn-roots-deeper-south-america.html>

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