

Amazon farmers discovered the secret of domesticating wild rice 4,000 years ago

October 9 2017



Monte Castelo excavation in progress -- collecting samples. Credit: University of Exeter

Amazonian farmers discovered how to manipulate wild rice so the plants could provide more food 4,000 years ago, long before Europeans

Increase in size from wild to domesticated rice phytoliths. Credit: University of Exeter/L Hilbert

The archaeologists analysed 16 samples of microscopic plant remains from ten different time periods found during excavations during 2014 led by the University of São Paulo in South West Amazonia. More phytoliths, hard, microscopic pieces of silica made by plant cells, were found at higher ground level, suggesting rice began to play a larger role in the diet of people who lived in the area - and more was farmed - as time went on.

Changes in the ratio of husk, leaf and stem remains found at different ground levels also suggest the Amazon residents became more efficient harvesters over time, bringing more grain and fewer leaves to the site. The rice grown, *Oryza* sp, also became bigger over time compared to the [wild rice](#) first cultivated by the South Americans. This area has been occupied by humans for at least 10,000 years.

Professor Jose Iriarte, from the University of Exeter, who led the research, said: "This is the first study to identify when wild rice first began to be grown for food in South America. We have found people were growing crops with larger and larger seeds. Even though they were also eating wild and domesticated plants including maize, palm fruits, soursop and squash, wild rice was an important food, and people began to grow it at lake or river edges.



Team arriving Monte Castelo and wild rice. Credit: University of Exeter

"During a time when the climate was getting wetter and the wetlands expanding, this critical seasonal resource that is ripe at the peak of the flooding season when other resources are dispersed and scarce, residents of Monte Castelo began to grow larger rice"

Evidence for mid-Holocene rice domestication in the Americas by Lautaro Hilbert and Jose Iriarte from the University of Exeter, Elizabeth Veasey, Carlos Augusto Zimpel, Eduardo Goes Neves and Francisco Pugliese from the Universidade de São Paulo, Bronwen S. Whitney from Northumbria University and Myrtle Shock from the Universidade Federal do Oeste de Pará, is published in the journal *Nature Ecology and*

Evolution.

More information: Lautaro Hilbert et al, Evidence for mid-Holocene rice domestication in the Americas, *Nature Ecology & Evolution* (2017).
[DOI: 10.1038/s41559-017-0322-4](https://doi.org/10.1038/s41559-017-0322-4)

Provided by University of Exeter

Citation: Amazon farmers discovered the secret of domesticating wild rice 4,000 years ago (2017, October 9) retrieved 22 September 2024 from <https://phys.org/news/2017-10-amazon-farmers-secret-domesticating-wild.html>

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