

# How we discovered that people have been cooking plants in pots for 10,000 years

January 24 2017, by Julie Dunne

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Credit: cottonbro studio from Pexels

The benefits of eating vegetables is one of the first lessons we try to teach our often reluctant children. Six million years ago, they wouldn't have had a choice. Our early ancestors ate nothing but greens, and relied

on raw plants for all their dietary needs. But we have [now discovered](#) the earliest evidence of humans cooking up nutritious pots of plants – 10,000 years ago.

Prior to this, our species evolved to eat meat and it led to an [increase in brain size and a decrease in gut size](#). The subsequent use of fire and the discovery of cooking helped underpin many of these physiological changes by broadening the diet and allowing more calories to be extracted from a variety of foods – including plants.

Cooking breaks down collagen, the connective tissue in meat, and softens the cell walls of plants to release their stores of starch and fat, providing significant nutritional benefits. It also kills harmful organisms such as parasites and increases the digestibility of food. We know that early humans would have grilled their meat or veg over open fires or roasted them in fires or pits. They probably also made baskets which they could fill with heated stones to boil foods.

A huge technological leap for the human species was the [invention of pottery](#), which occurred firstly in the Far East around 16,000 years ago, and then in North Africa around 12,000 years ago. The durable nature of fired pottery vessels and their thermally resistant properties meant they could be used to boil foodstuffs over heat for prolonged periods. This meant that prehistoric people could prepare their food in new ways, increasing the availability of [new energy sources](#) and allowing previously unpalatable or even toxic plants to be cooked.



Some of the analysed pottery. Credit: Sapienza University of Rome, Author provided

We have now identified the [first evidence](#) for cooking plants in early prehistoric cooking vessels from the Libyan Sahara around 10,000 years ago.

It's hard to imagine now, but the arid desert of today's Sahara was a vastly different place back then. Known as the "Green Sahara", it comprised vast grasslands roamed by extensive herds of large game and species such as elephant and giraffe. Large rivers and lakes were home to crocodile and hippopotamus. Groups of hunter-gatherers lived across the region, exploiting these abundant resources. Later, domesticated animals such as cattle, sheep and goat appeared in North Africa and the

people adopted a pastoral way of life, moving with their animals in search of water and grazing.

Analysing 10,000-year-old pottery from two archaeological sites in the Libyan Sahara, we found evidence of the cooking of several different plant types. The technique we used is called organic residue analysis, and uses information from chemicals preserved within the fabric of unglazed cooking pots. These chemicals are the fats, oils and waxes of the natural world, and their specific make up tells us whether they come from an animal carcass or milk fats, or fish, or plants.

The chemical profiles extracted from the pottery residues show that a broad range of plant types were processed in the vessels, including seeds, grains, the leafy parts of land plants and water plants which would have grown in nearby lakes and rivers. The organic residue results were confirmed by the botanical remains found at both [archaeological sites](#), which were in remarkable condition, likely because of the prevailing arid conditions, which halted decay.





Seeds from 8,000 years ago. Credit: Sapienza University of Rome, Author provided

### **First signs of our five a day**

Large quantities of grass seeds which looked like they could have been harvested yesterday, were found in 8,000-year-old parts of the site. The grains from these may have been cooked to make a porridge-type meal or ground to flour and cooked. Other plant remains found at the site that may also have been cooked in the pots include varieties of bullrush plants and figs. One of the aquatic plants found at the sites is the *Potamogeton*, of which the leaves, stems and starchy roots are all edible.

Grindstones used to process plants, were also found in large numbers.

These plant signs were found in the earliest pots in the region and their use appears to have continued for more than 4,000 years. This suggests that the consumption of [plants](#) was important in the diets of both the early hunter gatherers and the later pastoralists.

We now have an entirely different picture of the way early pottery was used in the Sahara compared to other regions in the ancient world. Elsewhere, it seems the use of pottery in cooking was for meat and milk products. Our ancestors experienced [different patterns](#) of plant and animal domestication in Africa, Europe and Asia. Some learned the benefits of a hot bowl of cooked vegetables much earlier than others – although we don't know how easily they convinced their kids.

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