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New technology for speedy preparation of samp

from hours to minutes

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Samp is a popular African dish consisting of dried and crushed corn kernels. Due to a time-consuming preparation of the dish, this product has not yet released its potential. We have developed a technology that results in a convenient ready-to-heat canned samp.

Samp is a tasty and flavourful, comforting and filling dish. Since it requires only a handful of ingredients, it is affordable and accessible to all households. It can be cooked on a household stovetop or open fire. Samp dishes are so popular that they are widely used at community or family gatherings like weddings, funerals, Christmas, and Easter.

The only drawback of samp is the long cooking time. In a modern world when people are busy at work and want to spend their spare time on leisure activities instead of cooking for hours, samp is losing ground as an everyday staple food alternative to more convenient dining options.

Technology for easy and accessible food

In Work Package 4 'Food Processing and Product Innovation' of the InnoFoodAfrica project, MSc-student Eda Coskun, on an Erasmus scholarship from Ankara University, has therefore developed a convenient ready-to-heat canned samp prototype. Eda has been supervised by Nofima researchers Dagbjørn Skipnes and Trond Løvdal, and Professor Ferruh Erdogdu at Ankara University. The newly developed samp product can be stored for a long time (years) at ambient temperatures and is simply heated for a few minutes in a casserole, mixed with other ingredients of choice, and is ready to serve. Thus, the preparation time is reduced from over two hours to a few minutes. We found two ways for achieving this. The most effective way was to shake the product back and forth at a speed of 80 strokes per minute during heating. In this way samp and water was mixed during the sterilization process, resulting in a homogenous well distributed product in the aluminium can. The other effective alternative was sterilisation by microwaves. As for the shaking process an overpressure microwave autoclave was used in a sealed retort, but this time samp and water was premixed before dosing in plastic containers. The heating time needed was even shorter than for the shaking process but resulted in a less homogenous product.

Compared to traditional static retorting, both novel technologies save water and time and there is a potential to reduce the energy consumption as well. It is therefore a potential for sustainable mass-production of nutritious samp that is affordable to low-income households. Another possible application would be as emergency supplies. The prototype has similar taste, texture and colour as traditionally prepared samp, and it is free of dangerous microorganisms due to sterilization processing. Additionally, the corn kernels, often perceived as a low value side stream by the corn processing industry, is utilized and added value.

Samp tradition

Samp is known under many different names. The word ‘samp’ is of native American origin, coming from the Narragansett word ‘nasaump’ which translates to cornmeal porridge. However, in South Africa, samp is the name of a complete dish, but also refers to one of the base ingredients – a mash of dried, stamped corn kernels. It is called ‘isitambu’ in Zulu, and ‘umngqusho’ in Xhosa. Variants of samp are also traditional dishes in many other African countries. In Ethiopia it is called ‘mullu boqqolla’ or ‘shummoo boqqolla’ (boqqolla meaning maize) in Oromiya, and ‘nifro boqqollla’ in Ahmara. Samp is also eaten by the Lozi and Tonga people of Zambia with sugar and sour milk. Samp can be served with gravy and various additives. Samp is most often cooked with beans and may be served with beef, lamb, poultry and in stuffings, or with for example ‘chakalaka’, a refreshing spicy tomato and bean relish.

Fig. Ready-to-heat canned samp