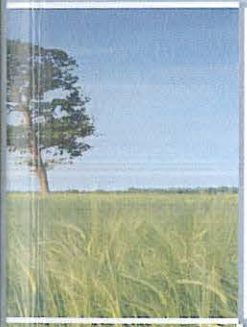
The First North and East European Congress on Food

NEEFood - 2012

April 22 -24, 2012
St. Petersburg, Russia

Book of Abstracts



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European Federation of Food Science and Technology

GHI
Global Harmonization Initiative

European Hygienic Engineering & Design Group
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Institute of Technology
(TechnicalUniversity)

In cooperation with:

eCooking – Better food by cooking in seconds

Huub Lelieveld, Hennie Mastwijk, Govert van Oord, Hans Roelofs, Jeroen Knol, Annemarie Barbier, Internet

To get the nutrients we need to survive, we must destroy the cell membranes that protect the precious nutrients of the food that we consume. For millions of years, chewing food was required most of the day. The discovery of fire, less than 100,000 years ago, caused a major change in these chewing habits: heating of the food for a few hours also destroys cell membranes and instead of most of the day, chewing was needed for just minutes. The next big step in food preparation is the use of pulsed electric fields (PEF). PEF too destroys membranes and at the same time heats the food to the adjusted, desired temperature. This process takes less than a second and the neither flavor nor nutrients are destroyed. As a bonus, the energy needed to prepare the food is in the order of 10% of what is needed for traditional cooking.

DRYING BEHAVIOUR OF TWO CHESTNUT FRUITS (CASTANEA SATIVA MILL.) VARIETIES

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Portugal is an important chestnut fruit (Castanea sativa Mill.) producer. However, its preservation represents a critical problem for both producers and industrials. Fruit weight loss and development of moulds during storage, as well as size variability, are some good examples. In this context, the fruit drying can be regarded as a preservation method, allowing its stabilization and subsequent production of other high value chestnuts based products.

In Trás-os-Montes region (NE, Portugal), the most important varieties are Longal and Judia. Thus, in the present work, preliminary studies on the drying behaviour of these varieties are reported. Upon harvest, the axial dimensions of all fruits were determined. The drying experiments were performed in a forced convection oven at 50 °C. Moisture ratios, drying rates and apparent diffusivities were determined. Two models, namely the Page and Two-term, were applied. Simultaneously, colour (L*,a*,b*) of both varieties were measured along the drying process.

When the calculated moisture ratios curves were regressed against the single-layer drying models, good fits were obtained. Adjusted r-squares higher than 0.90 were determined. Even though no differences were observed in the moisture ratios curves of the two varieties, the drying rates curves and the apparent diffusivities were slightly different. Nevertheless, only the falling rate period was observed. Furthermore, in

terms of colour, no differences were observed along the drying time but the mean values of L*,a*,b* of Longal were always lower than those obtained with Judia. These data indicate that convective drying can be regarded as an industrial preservation alternative, with apparently reduced differences between both varieties.

DRYING BEHAVIOR OF THE MARKETED MUSHROOMS LACTARIUS DELICIOSUS AND AGARICUS BISPORUS

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Wild edible mycorrhizal mushrooms have great commercial importance, as well as beneficial properties, linked to their nutritional value, delicacy and flavor. Lactarius deliciosus is appreciated worldwide, being frequently used in the preparation of several culinary dishes. On the other hand, Agaricus bisporus is a commercial mushroom also quite used. However, mushrooms are extremely perishable and shelf life of fresh mushrooms is very short. Therefore, they are frequently processed, being dehydration one of the possible preservation methods.

The aim of the present work was to compare the forced convective hot-air drying of L. deliciosus and A. bisporus in respect to their drying kinetics. Slices of both species were obtained, immediately weighed and placed into Petri dishes. Afterwards, these slices were hot-air dried at 45ºC, being samples removed and weighted at regular interval of times. Moisture contents, drying rates and moisture ratios were determined.

L. deliciosus and A. bisporus had 92.64±0.58% and 89.21±1.90% initial moisture contents (wet basis). It could be seen for both species that moisture removal was very fast at the beginning of the drying process, having the drying rate slowed down as the drying had proceeded. Some differences were detected between both species. 36 minutes were necessary to achieve a final moisture content of 1 g water/g dry matter with the A. bisporus, on contrary to the 70 minutes needed for the L. deliciosus.

In order to simulate the drying behavior of these species, the suitability of some mathematical models was determined by statistical analysis. Adjusted r-squares higher than 0.95 were obtained.

1st North European Congress on Food
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This letter confirms that Mrs. ELSA RAMALHOSA participated in the 1st North European Congress on Food NEFood – 2012 held on 22-24 April 2012 in St. Petersburg, Russia.

President NP «RUSFoST» Shamtsyan MM

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