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HASIL PENILAIAN SEJAWAT SEBIDANG ATAU *PEER REVIEW*
KARYA ILMIAH : JURNAL ILMIAH

Judul Jurnal Ilmiah (Artikel)	:	Thin Layer Drying Kinetics of Roselle		
Jumlah Penulis	:	6		
Status Pengusul	:	penulis ke-2		
Identitas Jurnal Ilmiah	:	a. Nama Jurnal	:	Advance Journal of Food Science and Tehcnology
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		d. Penerbit	:	Maxwell Scientific Organization
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Artikel ini berisi tentang penentuan thin layer model dan effective moisture diffusity yang cocok untuk pengeringan Rosela. Semua data ditampilkan dengan cukup detail, namun dibahas secara singkat. Dalam pembahasan tidak disertai oleh referensi yang relevan. Sayang sekali, artikel ini diterbitkan oleh Jurnal yang dalam kategori cukup meragukan.

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Semarang,
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Bidang Ilmu : Teknik Kimia

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Surakarta, 28 Februari 2020
Reviewer 2

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Advance Journal of Food Science and Technology
Volume 4, Issue 1, 2012, Pages 51-55

Thin layer drying kinetics of of roselle (Article)

Suherman, B.F., Satriadi, H., Yuariski, O., Nugroho, R.S., Shobib, A.

Department of Chemical Engineering, University of Diponegoro, Semarang, Indonesia

Abstract

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This study was performed to determine the most appropriate thin layer drying model and the effective moisture diffusivity of Roselle (Hibiscus sabdariffa). Roselle with an Initial Moisture Content (IMC) of 85%, on wet basis (wb) was dried in a conventional tray dryer at temperatures of 40, 50 and 60°C. The drying data were fitted to eleven thin layer models and a thin layer model for the roselle calyx was developed by regressing the coefficients of the best fit model. The newton model was most adequate model for describing the thin layer drying kinetics of the roselle calyx. The drying constant was found to vary linearly with temperature. Also, effective diffusivity was evaluated by using Fick's second law, which varied from 1.405×10^{-10} to 2.283×10^{-10} m^2/s. The dependence of moisture diffusivity on temperature was described by Arrhenius type equation. The diffusivity constant D_0 activation energy Ea could be, respectively, estimated as 4.5×10^{-7} m^2/s and 21.02 kJ/gmol. © Maxwell Scientific Organization, 2012.

SciVal Topic Prominence

Topic: Hibiscus | Hibiscus sabdariffa | Aqueous extract

Prominence percentile: 88.746

Author keywords

Activation energy | Diffusivity | Drying | Moisture ratio | Roselle | Thin layer drying

Indexed keywords

Engineering uncontrolled terms: Adequate models | Arrhenius-type equation | Best-fit models | Diffusivity constant | Drying constants | Effective diffusivities | Effective moisture diffusivity | Fick's second law | Initial Moisture Content | Moisture diffusivity | Moisture ratio | Roselle | Thin layer drying | Thin layer model

Engineering controlled terms: Activation energy | Diffusion | Drying | Moisture | Plants (botany)

Engineering main heading: Hemp

Species Index: Hibiscus sabdariffa

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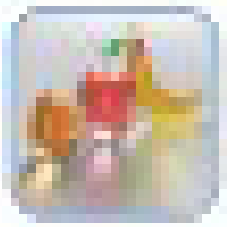
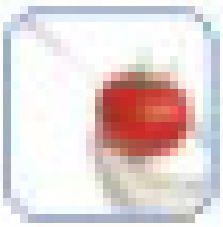


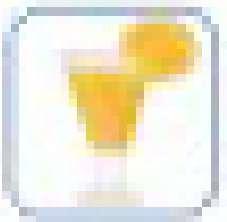

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Estimation of Nutritive Value, Organoleptic Properties and Consumer Acceptability of Fermented Cereal Gruel (OGI)

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Abstract: A gruel, locally called Ogi in Nigeria and prepared by bacterial fermentation from cereals such as maize (*Zea mays*) and (*Sorghum bicolor*) of the *Poaeceae* Gramineae family remain a major source of calorie, nutrient and probiotic factors in human diets in many West African countries including Nigeria. Therefore, knowledge on nutritive, organoleptic and safety values of OGI is hugely essential to justify its dietary utilization and fortification as weaning diets and staples and the need for improvement in cereal fermentation. In this study, we determined the indices of nutrition, palatability and preservation in Ogi made from cultivars of maize and sorghum in Nigeria using *Lactobacillus pentosus* and *L. acidophilus* as starter cultures during fermentation. Eleven cultivars of corn and sorghum sold in Nigerian markets were used for the preparation of fermented gruels using *L. pentosus* and *L. acidophilus* as single and mixed starter cultures. Gruels from these cultivars were also prepared under uncontrolled fermentation conditions and used as control. These gruels were compared by proximate composition, probiotic and organaoleptic values using standard chemical, chromatographic and spectrophotometric methods. The biochemical analysis of the fermented samples showed the concentration of acid, acetoin and diacetyl to increase in comparison to the controls indicating improved organoleptic properties. All samples showed increased levels of reducing sugars, proteins, and amino acids. Essential amino acids, lysine, isoleucine, and arginine were elicited in all fermented samples, showing desirable nutritional status. All these fermented samples exhibited some degree of inhibition on all the test bacterial cultures. The mixed culture fermented samples had higher values than the single culture fermented samples for all parameters tested indicating higher efficacy.

Key words: Arginine, isoleucine, *lactobacillus*, lysine

INTRODUCTION

Cereal based foods are a major source of inexpensive dietary energy and nutrients in developing countries. They are processed in various ways, the most popular being through fermentation. This process is known to suit the socio-economic framework of developing countries as an affordable technology for the preservation and improvement of high carbohydrate based foods (FAO/WHO, 1997). Fermentation has remained an importantThe fermentation of cereals and cereal-based products in the traditional way depends largely on chance inoculation, involving mixed cultures of bacteria, yeasts or both. The common fermenting bacteria are the species of *Leuconostoc*, *Lactobacillus*, *Streptococcus*, *Pediococcus*, *Micrococcus* and *Bacillus*. Most bacterial fermentations are usually Lactic acid fermentations, while the yeasts bring about alcoholic fermentation. In addition, some mold species such as *Aspergillus*, *Penicillium*, *Fusarium* and *Cladosporium* may be involved in certain products. Lactic acid bacteria have been reported as the major fermenting organisms in cereal fermentation. The common use of Lactic Acid Bacteria (LAB) for food fermentation in Africa is most probably due to the beneficial role of preservation, enhanced nutritional value, detoxification, rendering inedible foods edible, and production of variety in flavour intrinsic to the usage. Members of the genus Lactobacillus constitute a most important member within the LAB group and one of the most useful in food industry (Davidson and Hoover, 1998; Olasupo *et al*., 1997). Though the spontaneous process involving chance inoculation by natural microflora is the cheapest method, used in preparation, its contamination is a major cause of diarrhoeal diseases and associated malnutrition especially in children (Olukoya *et al*., 1994; Mensah *et al*., 1990; Black *et al*., 1982). Microbial fermentation has been reported to aid recolonisation in malnourished children whose microfloral balance has been altered due to acute diarrhoea (Oyetayo *et al*., 2003). There is a need for standardization of fermentation conditions so as to obtain a product with acceptable sensory properties and improved nutritional quality. The use of selected starter cultures for fermentation during processing of foods has been found to improve shelf life, nutritional status and to promote safety (Cook, 1994; Steinkraus, 1996).

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Nutrient Analysis of Some Selected Wild Edible Fruits of Deciduous Forests of India: an Explorative Study towards Non Conventional Bio-Nutrition

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Abstract: Considering the growing need to identify alternative bio-nutritional sources, 15 wild edible fruits consumed in deciduous forest zone of India were evaluated for their nutritive value in order to prioritize edible wild fruits suitable for domestication. The result showed significance of wild fruit species as important source of nutrient for rural poor. The nutritional value of many wild fruits compared well with domesticated popular fruits as mango, banana, guava, papaya, sapota, pomegranate, strawberry etc. in terms of protein, carbohydrate or Vitamin content. The carbohydrate content in wild varieties as *Mimusops elengi* (18.1%) is found to be at par with mango (17%) and pomegranate (17.1%). High concentration of sugar was noted in *Ziziphus rugosa* (20.7%) compared to domesticated sapota (21.4%), grapes (16.2%) and pomegranate (16.5%). Protein content in *Bridelia tomentosa* (3.1%), *Carissa spinarum* (3.6%) and *Polyalthia suberosa* (1.9%) was found similar to cultivated fruits, viz., guava (2.5%), banana (1.09%) and lemon (1.1%). Maximum proportion of Ascorbic acid/Vitamin-C content was seen in case of *Solanum torvum* (37.4 mg/100 g), *Terminalia citrina* (53.52 mg/100 g), which is higher to banana (8.7 mg/100 g), apple (4.6 mg/100 g), pomegranate (6.1 mg/100 g) and mango (27.7 mg/100 g). Of particular importance are *Eugenia rothii, Mimusops elengi, Ziziphus oenoplia, Ziziphus rugosa, Bridelia tomentosa* and *Carissa spinarum* that had significant level of micronutrient and minerals and therefore were identified as promising species for promotion as backyard planting especially farming systems suffering from crop loss, food shortage and chronic malnutrition.

Key words: Anitioxidants, mineral, protein, phenol, terminalia, wild fruit, ziziphus

INTRODUCTION

In many tropical countries, rural people traditionally harvest wide range of leafy vegetables, roots, tubers, fruits from wild because of its taste, cultural uses, as food supplements or to tide over food shortage. Labeled as famine or hunger food, wild plants have been recognised to have potential to meet household food and income security (Guinand and Dechassa, 2000; Kebu and Fassil, 2006). Many wild fruits notably, Amla, Harida, Bel, Elephant apple have been exploited from wild for centuries across Indian subcontinent on account of its food and medicinal properties. Even today in Mediterranean Europe, gathering of wild fruits is a common practice; so is picking of wild mushroom in northern Europe (Pardo-de-Santayana *et al*., 2007). Non cereal plant foods from forests contribute significantly to the diets of local residents in Africa (Getachew *et al*., 2005). In rural countryside of many developing nations, wild fruits are often the only fruits consumed as people cannot afford cultivated commercial fruits as apple, grapes, pomegranate or orange. In India, the indigenous fruits collected from wild play significant role in the food and nutrient security of rural poor and tribal. Some wild fruits have been identified to have better nutritional value than cultivated fruits (Eromosele *et al*., 1991; Maikhuri *et al*., 1994). As a result, in recent years, a growing interest has emerged to evaluate various wild edible plants for their nutritional features (Nazarudeen, 2010; Aberoumand and Deokule, 2009; Musinguzi *et al*., 2007; Nkafamiya *et al*., 2007; Glew *et al*., 2005). Inventory of wild food resources, ethno-botanical information on its adaptability coupled with nutritional evaluation can only establish the non cultivated variety as real substitute for domesticated or cultivated species. Scrutiny of plants of various tropical forest areas through constituent analysis may lead to selection of valuable wild species that can be taken through crop improvement and hybridization process to establish it as cultivated variety.

Of the estimated 2800 species of vascular plants of Orissa state (India), about 150 wild edible fruit species occurring in different parts of eastern India's deciduous forests are consumed in various quantities by rural communities (Mahapatra and Panda, 2009). The wild edible species are gathered mostly for home consumption and mainly by forest dwellers, tribal and marginalized rural communities. But some fruits as Chironji, Mahua, and Cashew are collected from forests for sale as well since it fetch good price. Most fruits in India are collected from wild in small quantity for consumption or at time

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