

# **NSFT- 2018**

## **PROCEEDINGS**

**International Conference on  
Nutritional Science  
and Food Technology**

**July 02 - 03, 2018**

**Rome, Italy**



**Supporting Journals**

**Journal of Nutrition and Health Sciences**

**Journal of Obesity and Overweight**

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# Scientific Program

*NSFT-2018*



## Day 1 July 02, 2018

09:00-09:30 Registrations

09:30-10:00 Opening Ceremony

NSFT-2018

### Keynote Forum

10:00-10:50

**Structuring liquid oils for enhancing the physiochemical properties of food**

*Farnaz Maleky, Ohio State University, USA*

Networking & Refreshment Break 10:50-11:10 @ Foyer

11:10-12:00

**New mobile app increases vegetable-based preparations by household cooks**

*Susan H Evans and Peter Clarke, University of Southern California, USA*

### Speaker Sessions

**Session Chair:** Hye-Jin Park, Gachon University, South Korea

**Session Co-chair:** Samanta S. Khora, Vellore Institute of Technology, India

### Session Introduction

12:00-12:30

**Anti-inflammatory effect of *Phellinus linteus* grown on germinated brown rice on dextran sodium sulfate-induced acute colitis in mice and LPS-activated macrophages**

*Hye-Jin Park, Gachon University, South Korea*

12:30-13:00

**Omics technologies and new approaches in food microbiology**

*Tiziana Maria Sirangelo, University of Modena and Reggio Emilia, Italy*

13:00-13:30

**Effect of probiotic nutrition on episodic memory performance**

*Muge Arslan, Bahcesehir University, Turkey*

Lunch Break @ Main Hall 13:30-14:30

14:30-15:00

**Production of dried *Lactobacillus Plantarum* HI-15 culture for inhibition growth of mycotoxin producing fungi in food**

*Tri Marwati, Assessment Institute for Agricultural Technology Yogyakarta, Indonesia*

15:00-15:30

**Commoditization of the agrifood system in ventaquemada, boyacá: A vulnerability feature of the nutrition and welfare in children under 2 years**

*Bibiana Bernal, Pedagogical and Technological University of Colombia, Colombia*

15:30-16:00

**Climate change – Malnutrition, hunger among world's children and women**

*Ravi Sharma, Dr. B. R. Ambedkar University, India*

Networking & Refreshment Break 16:00-16:20

End of Day-1

Keynote Forum

10:00-10:50	<b>Caloric restriction, fasting-mimicking diet and time restricted diet for the prevention of chronic diseases</b> <i>Alessandro Laviano, Sapienza University of Rome, Italy</i>
Networking & Refreshment Break 10:50-11:10 @ Foyer	
11:10- 12:00	<b>Nutritional value, sensory characteristic, microbial profile, functional property and economical benefit of environmentally friendly “Quick Tempe”</b> <i>Hanny Wijaya, Bogor Agricultural University, Indonesia</i>
12:00- 12:50	<b>Health risks of seafood borne parasitic diseases</b> <i>Samanta S. Khora, Vellore Institute of Technology, India</i>

Poster Sessions 12:50- 13:15

Lunch Break @ Main Hall 13:15-14:00

Speaker Sessions

Session Chair: Samanta S. Khora, Vellore Institute of Technology, India

Session Co-chair: Hanny Wijaya, Bogor Agricultural University, Indonesia

Session Introduction

14:00-14:30	<b>Micro-Nutrients and sensory properties of breakfast cereals formulated from flour blends of rice, african yam bean and orange flesh sweet potato</b> <i>Ngozi Okoronkwo, University of Nigeria, Nigeria</i>
14:30-15:00	<b>Production and evaluation of breakfast cereals from blends of acha, mung bean and orange fleshed sweet potato</b> <i>Ifeoma Elizabeth Nwaoha, University of Nigeria, Nigeria</i>
15:00-15:30	<b>Degradation of sesaminol triglucoside in sesame milk fermentation by <math>\beta</math>-glucosidase producing <i>Lactobacillus plantarum</i> Dad 13</b> <i>Ulyatu Fitrotin, The Assessment Institutes for Agricultural Technology of West Nusa Tenggara, Indonesia</i>
15:30-16:00	<b>Iron fortified fruit bars: A novel intervention to combat anemia in child bearing aged group females</b> <i>Syeda Mahvish Zahra, University of Sargodha, Sargodha-Pakistan</i>

Networking & Refreshment Break 16:00-16:20

Certificate Felicitation and Awards/Closing Ceremony

## Poster Presentations

Poster Judge: Hanny Wijaya, Bogor Agricultural University, Indonesia

- NSFT-001 **Characteristic of chocolate candy produce from cocoa bean fermentation with *Lactobacillus Plantarum* HI-15 culture**  
*Titiek Farianti Djaafar, Assessment Institute for Agricultural Technology Yogyakarta, Indonesia*
- NSFT-002 **Protective effects of tyrosol against oxidative damage in L6 muscle cells**  
*Sang Yoon Choi, Korea Food Research Institute, Republic of Korea*
- NSFT-003 **Prognostic nutritional index and C-reactive protein levels predict survival in patients with advanced head and neck cancer treated with induction chemotherapy**  
*Kei Ashizawa, University of Yamanashi, Japan*
- NSFT-004 **Immune-enhancing activity of *C. militaris* fermented with *Pediococcus pentosaceus* (GRC-ON89A) in CY-induced immunosuppressed model**  
*Dong Ki Park, Cell Activation Research Institute, South Korea*
- NSFT-005 **Effects of chitosan oligosaccharides on microbiota composition of silver carp (*Hypophthalmichthys molitrix*) determined by culture-dependent and independent methods during chilled storage**  
*Shiliang Jia, China Agricultural University, China*
- NSFT-006 **Effect of chitosan-limonene coating in combination with modified atmosphere packaging on postharvest properties of cucumber fruit**  
*Gisoo Maleki, Ferdowsi University of Mashhad, Iran*



# Supporting Journals

July 02-03, 2018

*NSFT-2018*



International Conference on

## **Nutritional Science and Food Technology**

June 02-03, 2018 | Rome, Italy

# JOURNAL OF NUTRITION AND HEALTH SCIENCES

## NSFT Conference:

**Journal of Nutrition and Health Science (JNH)** is highly rated peer-reviewed, scholarly open access journal. JNH focuses on the relationship between nutrition and health and publishes the latest research on topics in the field of nutrition, Health science and related fields. JNH invites clinicians, practitioners, researchers, and scholars to contribute their appreciative work.

Nutrition is the combination of catabolism and anabolism of food in the body. It interprets the interaction of nutrients and other substances in food i.e., maintenance, growth, reproduction and health. It includes food intake, absorption, assimilation, biosynthesis, catabolism, and excretion. Good nutrition promotes biological development in human beings and helps in the eradication of poverty. Malnutrition and its consequences are large contributors to deaths and disabilities worldwide.

NSFT 2018 is one of the greatest events and it's a great opportunity to learn advances in food technologies and Nutritional sciences. It is bringing food experts from around the corner of the world under single roof and representing all divisions of the Nutrition Science.

## Editorial Board



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# JOURNAL OF OBESITY AND OVERWEIGHT

## NSFT Conference:

**Journal of Obesity and Overweight (JOO)** is international, open access, peer review journal dedicated to various disciplines of obesity. Journal publishes manuscripts like Original research and review, Mini-reviews and letters to the editor. In addition to original research the JOO also publishes reviews, patient reports, and short communications. The proceedings and abstracts of the **International Conference on Nutritional Science and Food Technology** are published in this journal.

Obesity among adults has increased significantly in all over the world. This increase is not limited to adults but has also affected young people. Obese is considered for the teens between 12 to 19 years. The obesity has a substantial implication on health. The risk of many diseases and health conditions includes Arthritis, Coronary heart disease, Gallbladder disease, High blood pressure (hypertension), High cholesterol (dyslipidemia), Sleep apnea, Stroke, Type 2 diabetes. Obesity affects almost all of the cardiovascular disease risk factors, excess cholesterol, and diabetes.

Sugary drinks cause people to put on weight. Alcohol is also calorific and linked to bowel, breast, liver, mouth, and throat, esophagus and stomach cancers. It is the whole diet that matters - not just giving up sugars or salami. We recommend people to cut down fast and processed convenience foods.

## Editorial Board



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# List of Open Access Journals

Journal of Environmental Toxicology and Analytical Research		Journal of Neuroscience and Neuropsychology	
SAJ Biotechnology		Journal of Nanoscience and Nanotechnology Applications	
SAJ Cancer Science		Journal of Infectious Diseases and Pathogenesis	
SAJ Pharmacy and Pharmacology		Journal of Pediatric Disorders and Neonatal Care	
Journal of Nutrition and Obesity		Journal of Gastroenterology and Metabolism	
Journal of Forensic and Crime Studies		Journal of Oral Health and Dental Science	
Journal of Human Genetics and Genomic Medicine		Journal of Hormonal Disorders and Endocrine Research	
Journal of Cardiac Disorders and Therapy		Journal of Biomedical Studies	



Journal of Pancreas and Advanced Research		Journal of Dermatology and Skin Care	
Journal of Ophthalmology and Eye Infections		Journal of Psychiatry and Rehabilitation Studies	
Journal of Diabetic Complications and Research		Journal of Palliative and Medical Care	
Journal of Pulmonology and Respiratory Disorders		Journal of Bioanalytical Techniques and Studies	
Journal of Aging Research and Gerontology Studies		Journal of Medicinal Chemistry and Drug Designing	
Journal of Spine and Neurological Disorders		Journal of Vaccine Research	
Journal of Parkinsonism and Research		Journal of Clinical Trials and Reports	
Journal of Neurodegenerative Diseases and Treatment		Journal of Environmental Toxicology and Analytical Research	
Journal of Psychology and Neuropsychiatry Studies		Journal of Otolaryngology Research	

Journal of Rheumatology and Arthritis Research		Journal of Blood Pressure and Hypertension	
Journal of Addiction Research and Preventive Medicine		Journal of Nursing and Healthcare Management	
Journal of Ergonomics Studies and Research		Journal of Orthopaedics and Bone Research	
Journal of Medicinal Research and Biological Studies		Journal of Neonatal Studies	
Journal of Nephrology and Renal Disorders		Journal of Genetic and Hereditary Case Studies	
Journal of Emergency Medical Care		Journal of Virology and Pathogens	
Journal of Psychiatry Studies		Journal of Vascular Surgery and Research	
Journal of Human Health Research		Journal of Cytology and Cell Anatomy	
Journal of Waste Resources and Reprocessing		Journal of Waste Management and Disposal	



Journal of Environmental Pollution and Management		Journal of Angiology and Circulatory System	
Journal of Industrial Pollution Effects and Control		Journal of Alzheimers Research and Treatment	
Journal of Advancements in Plant Science		Journal of Veterinary and Animal Research	
Journal of Innovations in Energy science		Journal of Material Science and Metallurgy	
Journal of Food Technology and Food Chemistry		Journal of Molecular Biology and Biochemistry	
Journal of Sleep Disorders and Medicine		Journal of Mathematical and Statistical Analysis	
Journal of Horticulture Science and Forestry		Journal of Gynecology and Women Healthcare	
Journal of Aquatic Sciences and Oceanography		Journal of Anaesthesia and Therapeutics	
Journal of Public Health and Disease Preventive		Journal of Radiology and Diagnostic Methods	



<p>Journal of Surgical Science and Operative Care</p>	
<p>Journal of Microbiology and Laboratory Science</p>	
<p>Journal of Blood Disorders and Therapeutics</p>	
<p>Journal of AIDS and Immune system</p>	
<p>Journal of Advances in Stem Cell Therapy</p>	
<p>Journal of Oral Infection and Pathology</p>	

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# Keynote Forum

July 02, 2018

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International Conference on

## **Nutritional Science and Food Technology**

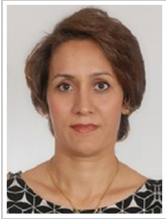
June 02-03, 2018 | Rome, Italy



International Conference on

# Nutritional Science and Food Technology

July 02-03, 2018 Rome, Italy



## Farnaz Maleky

Department of Food Science and Technology, Ohio State University, USA

### Structuring liquid oils for enhancing the physiochemical properties of food

#### Abstract

Despite the ongoing debate on the exact relationship between dietary intake of saturated fatty acids (FSA) and human health, both saturated and trans fatty acids are suggested to be avoided in food products. In response to this demand, food researchers and manufacturers try to replace these lipids by mono/polyunsaturated fatty acids. The challenge, however, is to produce these new healthy foods while maintaining their desirable sensory quality and textural characteristics. In this study, we introduce our recent oil structuring techniques that are promising for the production of healthy food with desirable attributes. Different vegetable oils were solidified into semi-solid networks, and their physical and chemical stabilities were examined. The stable networks were introduced into few food products and the products sensory quality were evaluated through a trained sensory panel. The results confirmed that the developed oil networks have the potential to be expanded into other food products that aim to help the health of the society.

#### Biography

Dr. Maleky holds a B.Sc. degree in chemical engineering and M.Sc. and Ph.D. degrees in Food Science. She is a faculty member in the Department of Food Science and Technology at the Ohio State University. The most active area of her research is advancing the understanding of food structures and their characteristics at different length scales. Her research team focuses on developing new competitive processes/technologies that can address major issues in food quality and food development for health initiatives. Dr. Maleky's research outcomes propose new insights for better selection of raw materials, improving food processing, enhancing sensory attributes, and eventually providing health benefits

Dr. Maleky has over 60 peer-reviewed journal, patents, book chapters and scholarly publications and currently serves as an associate editor of Journal of Food Research International and the chairperson of the Edible Application Division in the American Oil Chemist's Society.

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**Susan H Evans**

University of Southern California, USA



**Peter Clarke**

University of Southern California, USA

## New mobile app increases vegetable-based preparations by household cooks

Susan H Evans, Ph.D, Peter Clarke, Ph.D, Deborah Neffa-Creech, M.A  
University of Southern California, USA

### Abstract

Vegetables in the diet contribute to better health, yet remain under-consumed, especially among low-income people. In response, we built a mobile phone app designed to increase household cooks' use of vegetables in meals and snacks. The app, Quick Help for Meals, provides practical kitchen help, such as recipes and other food ideas. The app was tested in a randomized field trial at 15 community food pantries serving low-income people. In the experimental group, household cooks and a 9-14-year-old child were given a smartphone, loaded with the app, and a 3-month data plan. Mom and child learned to use the app at the same time. The experimental group also received additional vegetables for four consecutive weeks. The control condition also consisted of moms and a 9-14-year-old child. The control group received additional fresh vegetables (the same types and quantities as the experimental group) for four consecutive weeks, but they did not have access to the app.

Personal interviews, phone interviews, and electronic capture revealed extensive use of the app by both mother and child. Cooks in the experimental condition prepared 38 percent more vegetable-based meals and snacks than control cooks. Baseline and final interviews, spanning 10-11 weeks, also showed that use of a broad array of vegetables increased among experimental households, but did not increase among control households. Experimental cooks often reported healthier eating by their families and a sense of increased mastery of kitchen skills, whereas control cooks seldom described these experiences.

Our experiences of building and testing the app suggest principles of effective communication that may contribute to healthier eating by many publics, not just low-income people.

### Biography:

Peter Clarke (Ph.D., University of Minnesota) and Susan Evans (Ph.D., University of Michigan) teach and conduct their research at the Annenberg School for Communication and Journalism, University of Southern California, Los Angeles. Together, they direct two projects that improve nutrition among low-income people. These are From the Wholesaler to the Hungry, which has launched 157 programs at charitable food banks across the U.S. that distribute 3+ billion pounds of fresh vegetables and fruits to more than 30 million people each year, and Quick Help for Meals, a mobile app that helps recipients of fresh foods prepare healthy meals and manage their food consumption in other ways. This work by Clarke and Evans recently received the 2018 Award for Applied Research by the International Communication Association, and has won earlier recognitions and awards from the U.S. Department of Agriculture and others.

Evans is also an award-winning producer of multi-media tools in health outreach and patient education. Clarke and Evans wrote *Surviving Modern Medicine* (Rutgers Press), which helps readers discover how to establish better communication with their doctors, make more thoughtful choices among options for care, and get support from friends and family that promotes healing and wellness.

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# Speakers Sessions

July 02, 2018

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**Chair****Hye jin Park**

Department of Food  
Science and Biotechnology,  
Gachon University,  
South Korea

**Co-Chair****Samanta S. Khora**

Department of Integrative  
Biology,  
Vellore Institute of Technology,  
India

- |                |  |
|----------------|--|
| <b>Title-1</b> | <p><b>Anti-inflammatory effect of <i>Phellinus linteus</i> grown on germinated brown rice on dextran sodium sulfate-induced acute colitis in mice and LPS-activated macrophages</b></p> <p><i>Hye-Jin Park, Gachon University, South Korea</i></p>         |
| <b>Title-2</b> | <p><b>Omics technologies and new approaches in food microbiology</b></p> <p><i>Tiziana Maria Sirangelo, University of Modena and Reggio Emilia, Italy</i></p>  |
| <b>Title-3</b> | <p><b>Effect of probiotic nutrition on episodic memory performance</b></p> <p><i>Muge Arslan, Bahcesehir University, Turkey</i></p>  |
| <b>Title-4</b> | <p><b>Production of dried <i>Lactobacillus Plantarum</i> HI-15 culture for inhibition growth of mycotoxin producing fungi in food</b></p> <p><i>Tri Marwati, Assessment Institute for Agricultural Technology Yogyakarta, Indonesia</i></p>                |
| <b>Title-5</b> | <p><b>Commoditization of the agrifood system in ventaquemada, boyaca: A vulnerability feature of the nutrition and welfare in children under 2 years</b></p> <p><i>Bibiana Bernal , Pedagogical and Technological University of Colombia, Colombia</i></p> |
| <b>Title-6</b> | <p><b>Climate change – Malnutrition, hunger among world’s children and women</b></p> <p><i>Ravi Sharma, Dr. B. R. Ambedkar University, India</i></p>   |



International Conference on

# Nutritional Science and Food Technology

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## Anti-inflammatory effect of *Phellinus linteus* grown on germinated brown rice on dextran sodium sulfate-induced acute colitis in mice and LPS-activated macrophages

MinjungSong<sup>a</sup> and Hye-JinPark<sup>b</sup>

<sup>a</sup>Konkuk University, Seoul, Korea

<sup>b</sup>Gachon University, South Korea

### Abstract

**E**thnopharmacological relevance and aim of the study: *Phellinus linteus* is a herb used in traditional Asian medicine to treat stomachache, inflammation, and tumors. Recent studies show that the extract of *Phellinus linteus* has anti-inflammatory and antitumor activities. However, *Phellinus linteus* extract has limitation of high cost and limited availability because of supply shortage. Here, we grew *Phellinus linteus* on germinated brown rice to address the issue of supply shortage and investigated anti-inflammatory effect in vivo as well as in vitro.

**Materials and methods:** *Phellinus linteus* grown on germinated brown rice (PBR) were extracted using filtration steps, which included gamma-aminobutyric acid (GABA). The PBR (200, 500 mg/kg/day) was applied into the mouse model of dextran sodium sulfate (DSS)-induced colitis and lipopolysaccharide (LPS)-stimulated mouse macrophage RAW264.7 cells. We used sulfasalazine as a reference drug. In addition, mechanism related to anti-inflammatory was investigated by Western blotting.

**Results:** In the mouse model of DSS-induced colitis, PBR ameliorated the pathological characteristics of colitis such as shortening of colon length and improved the disease activity index score. In addition, we showed that PBR reduced the expression of nuclear factor-kappa B (NF-kappa B) in colitis. Western blotting showed that PBR decreased the expression of inducible nitric oxide synthase (iNOS) and cyclooxygenase-2 (Cox-2) proteins. Further, PBR treatment reduced the expression of mitogen-activated protein kinases (MAPKs) (e.g., extracellular signal-regulated protein kinase (ERK) and p38) in the mouse model of DSS-induced colitis.

**Conclusions:** Treatment of RAW 264.7 macrophages with a combination of PBR and LPS showed a significant concentration-dependent inhibition of nitric oxide (NO) and prostaglandin E2 (PGE(2)) production. In addition, we determined the ability of PBR to reduce the iNOS and tumor necrosis factor (TNF)-alpha expression. PBR inhibited the expression of iNOS, NF-kappa B, and Cox-2 proteins in LPS-stimulated RAW264.7 macrophages. This study presents the potential use of PBR as a drug candidate against colitis.

### Biography

Dr. Hye-Jin Park is currently working at Cell Department of Food Science and Biotechnology, Gachon University, South Korea.. She published many articles in reputed journals and attended international conferences.

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International Conference on

# Nutritional Science and Food Technology

July 02-03, 2018 Rome, Italy

## Omics technologies and new approaches in food microbiology

Tiziana Maria Sirangelo

University of Modena and Reggio Emilia, Italy

### Abstract

The research in food microbiology has enormously changed. It is known that conventional culture methods are limited for studying food microbiota and that recent approaches, as high-throughput sequencing, omics technologies instead allow to deepen the behaviour of microbial ecology. Indeed, the development of advanced omics methods and bioinformatics has contributed to the investigation of food science topics considered unthinkable few years ago. At the same time, new omics platforms have recently been made available; as a result, these approaches are producing a larger volume of data at a price that is decreasing, and they may become a relevant tool for food microbiology and its application fields. Several omics platforms used to study food microbiota include metagenomics which it is essential to deepen food microbiota. Metatranscriptomics, metaproteomics and metabolomics may be considered enormous complements to metagenomics for these studies. However, no single omics analysis can fully unravel the complexities of food microbial community just providing a partial view of the food ecosystem. Therefore, it is emerging the need to adopt a multi-omics approach based on the integration of different omics methods and able to show more evidence for food biological mechanisms.

This review discuss several approaches, as metagenomics, metatranscriptomics, metaproteomics, and metabolomics and on their impact on food microbiology. Relevant omics studies concerning different food microbiology fields, as food fermentation, food safety, food quality are treated.

At the moment, only a few examples combining different omics approaches have been found in food microbiology study. The current scenario and examples of recently multi-omics works are highlighted, showing the usefulness to adopt this integrated approach in different food microbiology applications. Some limitation are also outlined. In fact, even today, we are aware that the food microbiota complexity and the relatively low number of biological samples can make multi-layer datasets integration a challenging issue.

### Biography

Dr. Tiziana Maria Sirangelo is currently studying at Department of Life Sciences, University of Modena and Reggio Emilia, Modena, Italy. She published many articles in reputed journals and attended international conferences.

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International Conference on

# Nutritional Science and Food Technology

July 02-03, 2018 Rome, Italy

## Effect of probiotic nutrition on episodic memory performance

Muge Arslan  
Bahcesehir University, Turkey

### Abstract

**Background:** Probiotic nutrition had an effect on episodic memory and those who consume probiotic products have better memory performance.

**Aims:** To examine the effects of consumption of probiotic products on episodic memory.

**Study Design:** Case-control study.

**Methods:** Two groups of participants who are either probiotic product consumers or non-probiotic product consumers participated to the study. In addition to this, participants have received a self-reported questionnaire for the measurement of their probiotic consumption behavior. Consumption frequency of each subtype of food is scored as 30 for every day. It is calculated by the sum of the points according to frequency. The experiment is conducted in a possibly isolated room from sound and bright light. Stimuli are presented from a 21" LCD monitor with a 1024X768 fixed resolution. All responses gathered by using left mouse button on a computerized experimental design which is coded with C# software. Gathered data is analyzed with SPSS v18.

**Results:** A significant difference for dairy product consumption  $t(28) = 8,44, p=0.000$ ; fruit and vegetable product consumption  $t(28) = 5,73, p=0.000$ , fat and desert consumption  $t(28) = 2,98, p<0.01$ , and fast-food consumption  $t(28) = -2,9, p=0.000$  is found between two groups. Especially dairy product consumption is considered in accordance with the purpose of this study, and probiotic product consumers ( $M = 112,53$ ) found to have a higher score for their dairy probiotic consumption than non-probiotic product consumers ( $M = 57,73$ ). Probiotic product consumers were found to have significantly more correct answers ( $M = 26,33$ ) than non-probiotic product consumers ( $M = 21,47$ ),  $t(28) = 4,93, p=0.000$ . On the other hand, they were found to have significantly less incorrect answers ( $M = 13,67$ ) than non-probiotic product consumers ( $M = 18,53$ ),  $t(28) = -4,93, p=0.000$ .

**Conclusion:** Results showed better memory performance for participants who consume probiotic products.

### Biography

Dr. Muge Arslan is working as Assistant Professor at Bahcesehir University, Bursa, Turkey. She completed her Ph.d at Okan University. She is a experienced Dietitian with a demonstrated history of working in the health wellness and fitness industry. Skilled in Nutrition Education, Coaching, Wellness Coaching, Fitness Training, and Functional Training. Strong healthcare services professional with a Graduate focused in Public Health from Marmara University.

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International Conference on

# Nutritional Science and Food Technology

July 02-03, 2018 Rome, Italy

## Production of dried *Lactobacillus Plantarum* HL-15 culture for inhibition growth of mycotoxin producing fungi in food

Tri Marwati<sup>1</sup>, Irene P.P. Lamadoken<sup>2</sup>, Titiek F. Djaafar<sup>1</sup>, Tyas Utami<sup>2</sup> and Endang S. Rahayu<sup>2</sup>

<sup>1</sup>Assessment Institute for Agricultural Technology Yogyakarta, Indonesia

<sup>2</sup>Gadjah Mada University, Yogyakarta, Indonesia

### Abstract

*Lactobacillus plantarum* HL-15 is known to be able to inhibit the growth of mycotoxin producing fungi. To support the application of that culture, the research aims to produce dried *L. plantarum* HL-15 and observe its stability during storage was conducted. Production of dried culture was started by fermentation of *L. plantarum* HL-15 then centrifuged to get the pellet. The pellet was mixed with filler (rice flour or tapioca) with a ratio pellet: filler (10%) = 1:1 (v/v) then dried. Drying machine used in this research were spray dryer with inlet temperature 105°C and outlet temperature 65°C. Dried culture was packaged in aluminium foil and sealed then stored at 4°C. Result showed that viable cells of dried inoculum with rice flour filler was  $11,99 \pm 0,01$  log CFU/g and its water content was  $9,08 \pm 0,05\%$  and dried inoculum with tapioca filler was  $11,90 \pm 0,04$  log CFU/g and its water content was  $10,11 \pm 0,08\%$ . Spray dried *L. plantarum* HL-15 was proved being able to inhibit the growth of *Aspergillus niger*. This is shown from the control *A. niger* growth diameter was  $3,66 \pm 0,31$  cm respectively decreasing to  $0,47 \pm 0,04$ ;  $0,41 \pm 0,05$ ;  $0,5 \pm 0,03$ ;  $0,48 \pm 0,05$  and  $0,63 \pm 0,12$  cm with spray dried *L. plantarum* HL-15 using filler rice flour, which has been stored for 0,1,2,3, 4 and 5 months and respectively decreasing to  $0,53 \pm 0,06$ ;  $0,37 \pm 0,03$ ;  $0,37 \pm 0,04$ ;  $0,46 \pm 0,02$  and  $0,73 \pm 0,12$  cm with spray dried *L. plantarum* HL-15 using filler tapioca which has been stored for 0,1,2,3 and 4 months. Viability loss of spray dried *L. plantarum* HL-15 culture using rice flour is lower than dried culture using tapioca as filler. *Lactobacillus plantarum* HL-15 spray dried cultures could be stored at 4°C for 4 month for tapioca and 5 months for rice flour as filler. *Lactobacillus plantarum* HL-15 spray dried cultures could inhibit the growth of *Aspergillus niger* so it could be used as a culture for inhibiting the growth of mycotoxin producing fungi in food.

### Biography

Ir.Tri Marwati is currently working as a Young Researcher in Postharvest Department at Assessment Institute for Agricultural Technology Yogyakarta, Indonesia. She published many articles in reputed journals and attended international conferences.

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International Conference on

# Nutritional Science and Food Technology

July 02-03, 2018 Rome, Italy

## Commoditization of the agrifood system in ventaquemada, boyacá: A vulnerability feature of the nutrition and welfare in children under 2 years

Bibiana-Matilde Bernal-Gómez

Pedagogical and Technological University of Colombia, Colombia

### Abstract

#### Introduction:

Rural Food security in Ventaquemada could be the major responsible of vulnerability on the food chain in rural áreas leading to children malnutrition. It should produce effects like a biological conditioner. Health and nutrition educational skills in families should improve in community in order to accomplish aims of sustainable development goals (SDG). If the mother learns what is a suitable nutritional pyramid It will be helpful to control some environmental and cultural factors that may play a rol in malnutrition.

#### Methods:

Inside the SDGs aim's (Zero hunger) the research group has compiled secondary information about food prices, marketing routes, the presence of crops in rural locations and It has been compared with the additional type of food provided by the Instituto Colombiano de Bienestar Familiar on these places. At the same time, a sample of rural children under 2 years had been measured in order to obtain two points on a data base related with weight and high between a communitary intervention that includes an inquist about diet.

#### Results:

Breastfeeding up to six months of age as part of health goals had been identified and practical community knowledge of an appropriate complementary diet made with local products has been reinforced as a preliminary result. Malnourishment on the basis in brain development and misuse of empty calories has not been proved.

#### Conclusion:

Breast-feeding in children under 2 years old is the basis of healthy growth and development and It is the best alternative for prevention of cardiovascular and neurodegenerative disease in adults (1). Hunger during their gestation and fist 5 years has left a higher incidence of type 2 diabetes mellitus and Alzheimer's disease over the world(1,2,3). Brain underdevelopment is still difficult to measure until the school.

#### Biography

Dr. Bibiana-Matilde Bernal-Gómez is currently working as a Professor at Pedagogical and Technological University of Colombia, Colombia. She published many articles in reputed journals and attended many international conferences and presented so many papers. Her main research interests are General and Internal Medicine, Pathology, Immunology, Public Health, Occupational Health, Nutrition and Diets, Tropical Medicine, Infectious Diseases and Oncology.

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International Conference on

# Nutritional Science and Food Technology

July 02-03, 2018 Rome, Italy

## Climate change – Malnutrition, hunger among world’s children and women

Ravi Sharma

Dr. B. R. Ambedkar University, India

### Abstract

Children and women are the very important entities of our society so their health, growth and nourishment needs to be looked after and handled with proper care to protect them from the ripple effects of climate change, the biggest threat to humankind, influencing everything from air quality to water contamination, nutrition and food safety. It is said that there is more than enough food produced in the world to feed everyone, yet 815 million people go hungry. Today, one of the greatest challenges the world faces is how to ensure that a growing global population - projected to rise to around 10 billion by 2050 – has enough food to meet their nutritional needs. Millions of children and women are at risk from malnutrition and hunger. Women who suffer malnutrition are less likely to have healthy babies. Malnourished mothers are more likely to give birth to underweight babies. Underweight babies are 20 percent more likely to die before the age of five. Around half of all pregnant women in developing countries are anaemic. This causes around 110,000 deaths during childbirth each year. Deficiencies in nutrition inflict long-term damage to both individuals and society. Compared with their better-fed peers, nutrition-deficient individuals are more likely to have infectious diseases, which lead to a higher mortality rate. Malnutrition during pregnancy causes the child to have increased risk of future diseases, physical retardation, and reduced cognitive abilities. In this context it is well said: hungry mothers, hungry daughters: addressing the cycle of malnutrition. When adolescent girls and mothers are malnourished, their daughters and sons grow up malnourished, and continue this cycle. Half a billion women of reproductive age worldwide suffer from anemia, which impairs health of mother and child. Further, nearly half of all child deaths, i.e., 3.1 million children per year are due to malnutrition.

### Biography

Ravi Sharma is Ex-Founder Principal ESS College of Education, Dayalbagh, AGRA and Formerly Prof. & Head Department of Botany K. R. College Mathura. At present working as Retired Professor Botany Agra College, Agra. He holds PhD (1982) from Agra University, Agra UP India on 'Physiology of plant tolerance to salinity at early seedling stage' and is presently working for DSc Degree of Dr. B.R. Ambedkar Univ., formerly Agra Univ., Agra UP India on 'Strategy for sustainable improvement of selected crops production under saline conditions emphasizing bio-control of salinity'. He was awarded a Teacher Research Fellowship by University Grant Commission New Delhi for Higher studies 1979-1981. He holds fellowship and position of responsibility in various National and International Professional Societies. He has been elected as Academic Member Communication Institute of Greece in 2014. He has presented and published about 140 papers and articles and a book on Plant Physiology and 4 books are under completion. He has attended more than 100 National and International Conferences and Seminars, has been Key Note and Invited Speaker, Organizing Committee Member and Chaired Technical Sessions.

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# Keynote Forum

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June 02-03, 2018 | Rome, Italy

International Conference on

# Nutritional Science and Food Technology

July 02-03, 2018 Rome, Italy



**Alessandro Laviano**  
Sapienza University of Rome, Italy

## Caloric restriction, fasting-mimicking diet and time restricted diet for the prevention of chronic diseases

Alessandro Laviano  
Sapienza University of Rome, Italy

Global statistics reveal that average human lifespan steadily increased over the last decades. However, a similar increase of average human healthspan has not been observed due to the close link between longevity and chronic diseases. Among other factors, nutrition plays a role in improving lifespan and delaying the onset of chronic diseases. Caloric restriction (i.e., restricting energy intake by 20%-40% below requirements without causing malnutrition) has been demonstrated to reduce the incidence of chronic diseases and prolong survival in many experimental models. In healthy humans, long-term caloric restriction is associated to improved surrogate markers of longevity (i.e., body weight, blood pressure, core temperature, heart rate, etc.), but compliance remains disappointing. To improve long-term compliance a 5-day hypocaloric dietary regimen eliciting similar biochemical and clinical effects of long-term caloric restriction, has been developed (i.e., Fasting-Mimicking Diet, FMD). Monthly cycles of FMD showed improved lifespan and healthspan in animal models. In healthy humans, cycles of DFMD improved surrogate markers of longevity. These effects persist over 3 months and suggest that cycles of FMD can be repeated every 4-6 months. More recently, cycles of FMD have been preliminarily shown to represent a potential adjuvant treatment for chronic diseases, including cancer, type 1 diabetes mellitus, multiple sclerosis. Modulation of timing of eating may also contribute to increase longevity and healthspan. Maintaining a daily feeding/fasting cycle of 12h/12h (feeding in the active period) has been shown to yield to improved metabolic profile in animal models. Recently, a pilot study showed that obese menopausal women observing a daily feeding /fasting cycle of 8h/16h doubled their body weight loss when compared to controls receiving the same diet but eating ad libitum. Modulation of the composition of the diet and of the timing of eating represent easily achievable strategies to promote lifespan and healthspan.

### Biography:

Alessandro Laviano, MD, is associate professor of Internal Medicine at the Department of Clinical Medicine, Sapienza University of Rome, Italy. He holds a clinical position at the Internal Medicine and Clinical Nutrition Unit, University Hospital "Policlinico Umberto I" of Rome. Also, Dr. Laviano holds a position of Visiting Research Professor at Upstate Medical University, Syracuse, NY, USA. Dr Laviano received his MD degree at the Sapienza University of Rome, Italy, where he also completed the residency programmes in Internal Medicine and Nephrology.

Dr. Laviano's main research interests are: regulation of food intake under physiological and pathological conditions, disease-associated anorexia and cachexia, hyperphagia and obesity, impact and treatment of hospital malnutrition. In particular, Dr. Laviano has been studying the role of brain activity in the pathogenesis of cancer anorexia and cachexia, and the potential benefit deriving from the integration of a pharmacologic and nutritional approach to cancer patients.

In the period 2010-14, Dr. Laviano has been the chairman of the Educational and Clinical Practice Committee of the European Society for Clinical Nutrition and Metabolism (ESPEN). He is currently the Director of the ESPEN LLL programme, as well as Coordinator of the Supervisory Board of the ESPEN project, nutritionDay. In the period 2005-2009, Dr. Laviano served as European Co-Editor of Nutrition. In the period 2011-2013, Dr. Laviano served as First Editor of British Journal of Nutrition. In 2017, he served as Section Editor of Elsevier's Reference Modules. Dr. Laviano is currently: Editor in Chief of Nutrition; Associate Editor of Clinical Nutrition; Associate Editor of Journal of Cachexia, Sarcopenia and Muscle; Section Editor of Current Opinion in Clinical Nutrition and Metabolism. Dr. Laviano's studies have been funded by private and public institutions, including the Italian Ministry of Scientific Research. Dr. Laviano has a total of more than 200 publications in international peer reviewed journals.

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International Conference on

# Nutritional Science and Food Technology

July 02-03, 2018 Rome, Italy



## Hanny Wijaya

Bogor Agricultural University, Indonesia

### **Nutritional value, sensory characteristic, microbial profile, functional property and economical benefit of environmentally friendly “Quick Tempe”**

Hanny Wijaya

Bogor Agricultural University, Indonesia

#### **Abstract**

"Quick Tempe" is tempe made by speeding up the acidification stage using Glucono Delta Lactone (GDL) as acidulant to reduce soaking time and minimize water waste. This research has been started since 2006. Several experiments have been done including study on the qualities of nutritional, microbial profile, bioactivity and sensory evaluation compared to the conventional tempe. The Quick tempe was able to reduce the production time from three to only two days. The quick tempe with back-slopping technique has been able to reduce total cost by 4.8% and increase total profit up to 49.9%. The protein quality of quick tempe was not significantly different compared to the conventional one and both were better than casein. The anti-nutritional factors i.e. phytic acid and trypsin inhibitor were significantly reduced by tempe making, however, there was no significant difference between the quick and conventional tempe. The difference of soaking process did not impact the nutritional value. There was also no significant difference in microbial profile and antioxidant, lipase and amylase inhibition capacities of both tempe. The texture attribute of conventional tempe sensorially was more preferred by panelists than the quick tempe. However, there was no significant difference between the overall sensory attributes in sensory acceptance. The quick tempe has been able to be implemented in medium and small scale industries as well as to support the ingredient of big-scale industry.

#### **Biography**

Dr. Hanny Wijaya is currently working as a Professor at Department of Food Science and Technology, Faculty of Agricultural Engineering and Technology, Bogor Agricultural University. She published more than 10 publications in reputed journals in last three and attended many international conferences.

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International Conference on

# Nutritional Science and Food Technology

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## Samanta S. Khora

Vellore Institute of Technology, India

### Health risks of seafood borne parasitic diseases

Samanta S. Khora

Vellore Institute of Technology, India

#### Abstract

Parasites are the most prevailing infectious agents transmitted through food make the significant global burden of diseases and financial damage. Parasites are found in/on Seafood comprise of edible marine shellfishes (mollusks and crustacea), finfishes (cartilaginous and bony), mammals (seals, whales and dugong), and other organisms pose novel risks to public health. It has been implicated in 10-25 percent of total food borne diseases (FBDs) outbreaks. More than 70 etiologic agents of protozoan, helminths and acanthocephalan are responsible for many debilitating diseases and syndromes. Protozoan parasites associated with seafood borne infectious diseases are Giardiasis, Cryptosporidiosis and Toxoplasmosis. Whereas, helminthic diseases are Nematodiasis, Cestodiasis and Trematodiasis. The nematodiasis associated with seafoodborne infectious diseases are Anisakidosis, Capillariasis and Trichinellosis. Similarly, cestodiasis re-emergence diseases are Diphyllbothriosis and Diplogonoporosis through a few species of marine and anadromous fishes. Only digenetic trematodes implicated trematodiasis are a group of neglected tropical diseases (NTDs). Depending on the species, trematodes transmitted by the ingestion of seafood may reach sexual maturity in the liver and their diseases termed as Clonorchiasis and Opisthorchiasis, or lung called Paragonimiasis. Further, Clonorchiasis and Opisthorchiasis are associated with cholangiocarcinoma and adenocarcinoma, respectively. Heterophyiasis are enteric by intestinal trematodes incriminating Heterophyiasis, Metagonimiasis and Nanophyetidiasis. Acanthocephaliasis in humans appears to be rare and accidental with seafood. High risks of parasitic diseases are prevalent in certain ethnic groups who favor the consumption of raw or partially cooked seafood as well as harvested from defined geographical areas. The global pervasiveness of seafood borne diseases requires expanded surveillance and monitoring proficiency to counter these emerging diseases and to ensure risks free seafood.

#### Biography

Dr. Samanta S. Khora is currently working as a Professor at Vellore Institute of Technology, India. He published many articles in reputed journals and attended many international conferences and presented so many papers.

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# Speaker Sessions

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## **Nutritional Science and Food Technology**

June 02-03, 2018 | Rome, Italy

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**Chair****Samanta S. Khora**

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**Co-Chair****Hanny Wijaya**

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**Title-1**

**Micro-Nutrients and sensory properties of breakfast cereals formulated from flour blends of rice, african yam bean and orange flesh sweet potato**

*Ngozi Okoronkwo, University of Nigeria, Nigeria*

**Title-2**

**Production and evaluation of breakfast cereals from blends of acha, mung bean and orange fleshed sweet potato**

*Ifeoma Elizabeth Nwaoha, University of Nigeria, Nigeria*

**Title-3**

**Degradation of sesaminol triglucoside in sesame milk fermentation by  $\beta$ -glucosidase producing *Lactobacillus plantarum* Dad 13**

*Ulyatu Fitrotin, The Assessment Institutes for Agricultural Technology of West Nusa Tenggara, Indonesia*

**Title-4**

**Iron fortified fruit bars: A novel intervention to combat anemia in child bearing aged group females**

*Syeda Mahvish Zahra, University of Sargodha, Sargodha-Pakistan*



International Conference on

# Nutritional Science and Food Technology

July 02-03, 2018 Rome, Italy

## Micro-Nutrients and sensory properties of breakfast cereals formulated from flour blends of rice, african yam bean and orange flesh sweet potato

\*Okoronkwo, N.C., Mgbakogu, C.D. and Mbaeyi-Nwaoha, I.E.

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### Abstract

Ready-to-eat breakfast cereals were formulated from flour blends of local rice, malted African yam bean and orange flesh sweet potato. The raw materials were processed into flour by washing, drying and milling. The three flours were blended at different ratios with malted African yam bean being constant (10 %) while Adani rice and orange flesh sweet potatoes varied. The blended flours were conditioned, pre-heat treated (for 10 minutes), aged (4°C for 6 hours), cut, toasted (120°C for 1 hour), and packaged. The breakfast cereal blends were subjected to sensory evaluation using a 9 point hedonic scale with 20 panelists while micro-nutrient analysis were carried out using standard method. The samples were coded into different codes for sensory evaluation; sample R (100 % rice flour), RA (90 :10; rice: malted African yam bean flour), RAP1 (80:10:10; rice: African yam bean: orange flesh sweet potato flour), RAP2 (70:10:20; rice : African yam bean :orange flesh sweet potato flour), RAPS (60:10:30; rice: African yam bean :orange flesh sweet potato flour) and RAP4 (50:10:40; rice: African yam bean: orange flesh sweet potato flour). Fortification increased the vitamin A (0.13 to 0.25mg/100g), calcium (11.32 to 42.20mg/100g) and iron (11.33 to 54.20mg/100g) content of the products. The mean scores for overall acceptability for sensory ranged from 7.30 to 7.60 with sample RAP4 and RA having the highest value. The sensory evaluation conducted showed that the six samples had the same level of preference. There was no significant ( $p>0.05$ ) difference between the samples.

### Biography

Dr. Okoronkwo, N.C, is working as a Senior Lecturer at Department of Food Science and Technology, University of Nigeria, Nigeria.

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International Conference on

# Nutritional Science and Food Technology

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## Production and evaluation of breakfast cereals from blends of acha, mung bean and orange fleshed sweet potato

\*Ifeoma Elizabeth Nwaoha, I.E. and Odo, J.E.

University of Nigeria, Nigeria

### Abstract

Ready-to-eat breakfast cereals was produced from acha (*Digitaria exilis*), mung bean (*Vigna radiata*) and orange fleshed weet potato flours (*Ipomea batatas*). Acha, mung bean and orange fleshed sweet potato were processed into flour. Bulk density and water absorption capacities of the flours were determined. Preliminary studies were carried out to determine the best blend from acha: mung bean flours (100:0, 90:10, 80:20, 70:30, 60:40 and 50:50). Seven samples of flaked breakfast cereal were produced from flour (acha and mung bean) with graded levels of orange fleshed sweet potato flour (90:10, 80:20, 70:30, 60:40, 50:50) with 100 % acha and 100 % mung bean serving as controls. Salt, sugar and water were added and breakfast cereals produced by mixing, steaming, cooling, ageing, flaking and toasting. The samples were analysed for proximate,  $\beta$ -carotene, microbial and sensory properties using standard procedures. The result showed that bulk density of acha, mung bean and orange fleshed sweet potato flours were 0.81, 0.70 and 0.65 g/cm<sup>3</sup> respectively and differed significantly ( $p < 0.05$ ) while the water absorption capacity of the flours were 119.70, 155.10 and 264.90 % respectively and also differed significantly ( $p < 0.05$ ). The moisture (5.66 – 9.83 %), protein (8.50 – 18.92 %), ash (2.84 – 6.10 %), fat (0.24 – 2.63 %), fibre (3.81 – 4.84 %) and carbohydrate (62.75 - 75.62 %). The  $\beta$ -carotene content ranged from 0.11 – 3.04 mg/100 g, differed significantly ( $p < 0.05$ ) and increased as the blending level of orange fleshed sweet potato increased in the product. The microbial count indicated that the total viable count ranged from  $3.1 \times 10^3$  -  $6.1 \times 10^3$  while no mould growth. The sensory scores revealed that the samples were generally acceptable to the panelists. The blending of acha, mung bean and orange fleshed sweet potato improved the nutritional quality of the resultant flaked breakfast cereals.

### Biography

Dr. Ifeoma Elizabeth I. Nwaoha, was born on 5th March, 1971, in Ibadan, Oyo State, she hails from Ndiuhu, Amuzi, Ikenanzizi, Obowo Local Government Area, Imo State. She holds a Bachelor of Science (Microbiology), 1997 and a Master's Degree of Science in Food Science and Technology with bias in Food Quality and Assurance, 2005. She also holds a doctoral degree in Food Microbiology and Biotechnology, 2011, all from University of Nigeria, Nsukka. She is ICT-compliant. She is an academic staff of Department of Food Science and Technology, Faculty of Agriculture, University, Nigeria, Enugu State. University of Nigeria, Nsukka. She possess over thirty-two scientific publications consisting of journals, conference proceedings and chapter in a books.

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International Conference on

# Nutritional Science and Food Technology

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## Degradation of sesaminol triglucoside in sesame milk fermentation by $\beta$ -glucosidase producing *Lactobacillus plantarum* Dad 13

\*<sup>1</sup>Ulyatu Fitrotin, <sup>2</sup>Umar Santoso, <sup>2</sup>Pudji Hastuti, <sup>2</sup>Tyas Utami

<sup>1</sup>The Assessment Institutes for Agricultural Technology of West Nusa Tenggara, Indonesia

<sup>2</sup>Gadjah Mada University, Indonesia

### Abstract

Sesaminoltriglucoside is a bioactive compound in sesame milk which has antioxidant activity. Sesaminoltriglucoside exhibits higher antioxidant activity when it is hydrolyzed by  $\beta$ -glucosidase. The aims of this research are to study the increase of antioxidant activity and the decrease of sesaminoltriglucoside concentration during sesame milk fermentation by *L. plantarum* Dad 13. Sesame milk was inoculated with *L. plantarum* Dad 13 and incubated at 37°C for 18 h. The viable cell,  $\beta$ -glucosidase activity, sesaminol triglucoside concentration and antioxidant activity were monitored during fermentation. The crude extract of sesaminolglucosidelignan from defatted sesame seed was hydrolyzed using  $\beta$ -glucosidase. The antioxidant activity and the decrease of sesaminol triglucoside were analyzed. The results showed that *L. plantarum* Dad 13 grew well in sesame milk fermentation and produced  $\beta$ -glucosidase during fermentation. The antioxidant activity of sesame milk fermentation increased 2.34 times and sesaminol triglucoside concentration decreased 56.4%. Hydrolysis of  $\beta$ -glucosidase on sesaminolglucosidelignan crude extract resulted in decrease of sesaminoltriglucoside concentration and increase its antioxidant activity. It can be concluded that the increase of antioxidant activity was due to the degradation of sesaminoltriglucoside by  $\beta$ -glucosidase that produced by *L. plantarum* Dad 13.

### Biography

Dr. Ulyatu Fitrotin is currently working at The Assessment Institutes for Agricultural Technology of West Nusa Tenggara, Indonesia. He published many articles in reputed journals and attended many international conferences.

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International Conference on

# Nutritional Science and Food Technology

July 02-03, 2018 Rome, Italy

## Iron fortified fruit bars: A novel intervention to combat anemia in child bearing aged group females

Syeda Mahvish Zahra<sup>\*1</sup>, Sarfraz Hussain<sup>1</sup>, Shahid Mahmood<sup>1</sup>, Muhammad Nadeem<sup>1</sup>, Muhammad Yousaf Quddoos<sup>1</sup>, Muhammad Naeem Safdar<sup>2</sup>, Mehboob ur Rehman<sup>3</sup>, Shan e Zahra<sup>4</sup>, Nagina Altaf<sup>1</sup>, Wajiha Saeed<sup>1</sup>, Ayesha Rafique<sup>1</sup>, Komal Masood<sup>1</sup>, Anam Mukhtar<sup>5</sup>, Itrat Fatima<sup>1</sup>, Madiha Balooch<sup>1</sup>, Harmain Rasool<sup>1</sup>, Muhammad Qamrosh Alam<sup>1</sup>, Muhammad Mudassar Ali Nawaz<sup>1</sup>, Abdullah bin Masood<sup>1</sup>, Mehvish Fatima Zaidi<sup>6</sup>, Syed Muhammad Adnan Rizvi<sup>1</sup>, Syed Mujtaba Haider<sup>7</sup> and Syed Muhammad Askari<sup>8</sup>

<sup>1</sup>University of Sargodha, Pakistan,

<sup>2</sup>National Agricultural Research Centre, Pakistan,

<sup>3</sup>Civil Hospital (DHQ), Pakistan,

<sup>4</sup>University of Agriculture Faisalabad, Pakistan,

<sup>5</sup>University of Sargodha, Pakistan,

<sup>6</sup>Baqai Medical College, Pakistan, <sup>7</sup>Air University, Pakistan, <sup>8</sup>University of Engineering and Technology, Pakistan

### Abstract

Reduction in blood transport of O<sub>2</sub> due to deficiency in red blood cells and iron is known as Anemia. Pakistan NNS- 2011 indicated that 51 % non-pregnant women were anemic on the basis of Hb concentration. Child bearing aged females are more affected because of menstrual losses, iron malabsorption, basal losses and growth requirements. Risk factors in females could be pregnancy, and nutritional inadequacy. PhD thesis research was conducted at Institute of Food Science and Nutrition, University of Sargodha to do efficacy study of iron fortified fruit bars in anemic University girls. Hostel availing females were approached from different departments of University, after DRCE approval, the research work was discussed with them in detail and information, education and communication (IEC) material were provided and informed consent was taken from agreed ones. Selected the anemic girls on basis of hematological identification of anemia iron at baseline, fortified fruit bars (with natural as well as synthetic salt based) were intervened along with placebo bars for 90 days, results were collected after 2<sup>nd</sup> hematological analyses at end line, interpreted the data through statistical analyses, then it was concluded that placebo had negating effect, though synthetic salt FeSO<sub>4</sub>.7H<sub>2</sub>O fortified fruit bars showed positive results but naturally iron fortified bars (powdered *Mentha spicata* L. and ground apricot kernel of *Prunus armeniaca* L.) had improved hemoglobin (11.58 g/dL to 12.29 g/dL), hematocrit (36.01 % to 37.31 %), serum iron (25.54 µg/dL to 40.42 µg/dL and serum ferritin levels (19.46 µg/dL to 30.97 µg/dL) significantly.

### Biography

Dr. Syeda Mahvish Zahra is currently working at Institute of Food Science and Nutrition, University of Sargodha, Sargodha-Pakistan. He is also working as Managing Editor at International Journal Of Scientific Innovations. He is also a reviewer for African Journal of Food, Agriculture, Nutrition and Development. He published many articles in reputed journals and attended many international conferences.

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# Poster Sessions

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**Poster Judge****Hanny Wijaya**

Department of Food Science  
and Technology,  
Bogor Agricultural University,  
Indonesia

- Title-1**      **Characteristic of chocolate candy produce from cocoa bean fermentation with *Lactobacillus Plantarum* HI-15 culture**  
*Titiek Farianti Djaafar, Assessment Institute for Agricultural Technology, Indonesia*
- Title-2**      **Protective effects of tyrosol against oxidative damage in L6 muscle cells**  
*Sang Yoon Choi, Korea Food Research Institute, Republic of Korea*
- Title-3**      **Prognostic nutritional index and C-reactive protein levels predict survival in patients with advanced head and neck cancer treated with induction chemotherapy**  
*Kei Ashizawa, University of Yamanashi, Japan*
- Title-4**      **Immune-enhancing activity of *C. militaris* fermented with *Pediococcus pentosaceus* (GRC-ON89A) in CY-induced immuno suppressed model**  
*Dong-Ki Park, Cell Activation Research Institute, South Korea*
- Title-5**      **Effects of chitosan oligosaccharides on microbiota composition of silver carp (*Hypophthalmichthys molitrix*) determined by culture-dependent and independent methods during chilled storage**  
*ShiliangJia, China Agricultural University, China*
- Title-6**      **Effect of chitosan-limonene coating in combination with modified atmosphere packaging on postharvest properties of cucumber fruit**  
*Gisoo Maleki, Ferdowsi University of Mashhad, Iran*



International Conference on

# Nutritional Science and Food Technology

July 02-03, 2018 Rome, Italy

## Characteristic of chocolate candy produce from cocoa bean fermentation with *Lactobacillus Plantarum* HL-15 culture

Titiek Farianti Djaafar<sup>1</sup>, Laurentia Oktaviani Palupi<sup>2</sup>, Tri Marwati<sup>1</sup>, Tyas Utami<sup>2</sup> and Endang S. Rahayu<sup>2</sup>

<sup>1</sup>Assessment Institute for Agricultural Technology, Indonesia

<sup>2</sup>Gadjah Mada University, Indonesia

### Abstract

Chocolate candy is a food product that liked many people. The presence of mycotoxin producing fungi is a problem in chocolate product. The objective of this research is to observe the characteristic of chocolate candy produce from cocoa bean fermentation with *L. plantarum* HL-15 culture. The cocoa bean (47.5 kg) was fermented by adding *L. plantarum* HL-15 culture about 500 mL ( $10^{10}$  CFU/mL) in the new and old fermentation box and in the another new and old fermentationbox without adding culture. Chocolate candy processing is done based on standard processing of chocolate candy. The results shown that the addition of *L. plantarum* HL-15 culture in cocoa bean fermentation and use of the new fermentation box give lower fungi concentration on chocolate candy, reduce 1 log cycle from  $1.7 \times 10^3$  to  $< 10^2$  colony/g. While, the addition of *L. plantarum* HL-15 culture in the old fermentation box is not effect. The average aw value of chocolate candy is 0.64 and pH value is 6.7. Fat content of chocolate candy about 44.9 % - 46.2 %.

### Biography

Dr. Titiek Farianti Djaafar is currently working as a Researcher in Postharvest Department at Assessment Institute for Agricultural Technology Yogyakarta, Indonesia. She published many articles in reputed journals and attended international conferences.

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# Nutritional Science and Food Technology

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## Protective effects of tyrosol against oxidative damage in L6 muscle cells

Kwang Min Lee, JinyoungHur and Sang Yoon Choi  
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### Abstract

Tyrosol (2-(4-hydroxyphenyl) ethanol) is a phenylethanoid present in olive oil, with anti-oxidative, anti-inflammatory, and cerebrouneural protection effects. In this study, the protective effect of tyrosol against oxidative damage was measured in L6 muscle cells. Tyrosol effectively inhibited H<sub>2</sub>O<sub>2</sub>-induced L6 cell death in part through inhibition of ERK, JNK, and p38 MAP kinase and increased ATP production. In addition, it increased HO-1 expression in the cell. Based on results, tyrosol is effective in inhibiting oxidative damage of muscle cells.

### Biography

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International Conference on

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## Prognostic nutritional index and C-reactive protein levels predict survival in patients with advanced head and neck cancer treated with induction chemotherapy

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### Abstract

Induction chemotherapy (IC) with docetaxel, cisplatin, and 5-FU (TPF) has been shown to improve the outcomes of patients with advanced head and neck cancer (HNC) without compromising compliance. However, since these studies were commonly conducted in discreetly selected patients, we aimed to identify the prognostic factors of tolerance and survival in unselected HNC patients treated with TPF-IC.

**Methods:** We retrospectively analyzed the data of 113 patients with HNC who underwent TPF-IC at our institution between January 2008 and December 2016. IC comprised 1–3 courses of docetaxel (60 mg/m<sup>2</sup>), cisplatin (70 mg/m<sup>2</sup>), and 5-fluorouracil (750 mg/m<sup>2</sup>) every 3–4 weeks. Further, local therapy was performed following IC, including surgery, radiotherapy, chemoradiotherapy, or bio-radiotherapy. The prognostic factors were identified using the cox-proportional hazard model, and the analyzed variables included patient age, body mass index, tumor T-stage, the pre-treatment level of C-reactive protein, albumin, and lymphocytes. We also evaluated the modified Glasgow prognostic score (mGPS), which reflects the degree of tumor-associated inflammation and cancer cachexia, and the prognostic nutritional index (PNI), which is based on serum albumin concentration and peripheral blood lymphocyte count.

**Results:** The median patient age was 65 (range, 18–83) years. Performance status was 0 or 1. Grade 3/4 toxicities during TPF-IC were reported in 99% of the patients, including 62% febrile neutropenia and 3% kidney failure. Based on mGPS, 14% (n = 16) of the patients were classified as cancer cachexia and 8.8% (n = 10) indicated low PNI. For five-year overall survival, the two most significant independent prognostic factors were mGPS and PNI. There were three treatment-related deaths that were classified as cancer cachexia and indicated low PNI.

**Conclusions:** In patients with advanced HNC treated by TPF-IC, mGPS and PNI are the potential prognostic indicators of lower tolerance and overall survival.

### Biography

Dr. Kei Ashizawa is currently working as Assistant Professor in Department of Otorhinolaryngology at University of Yamanashi, Japan. His main research interests are mass spectrometry-based diagnosis of head & neck tumor. Dr. Kei Ashizawa has published more than 25 publications in international peer reviewed journals.

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## Immune-enhancing activity of *C. militaris* fermented with *Pediococcus pentosaceus* (GRC-ON89A) in CY-induced immunosuppressed model

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<sup>2</sup>Cell Activation Research Institute, South Korea

### Abstract

**Background:** *Cordyceps militaris* (*C. militaris*) is reported to exert various immune-activities. To enhance its activity, we fermented *C. militaris* with *Pediococcus pentosaceus* ON89A (GRC-ON89A). In this study, we investigated the immune-enhancing activity of GRC-ON89A using an immunosuppressed model.

**Methods :** Immunosuppression was induced by intraperitoneal injection of cyclophosphamide (CY). Each group was orally administered distilled water, GRC-ON89A or GRC, respectively. The phagocytic activities against IgG-opsonized FITC particles were measured using a phagocytosis assay kit. The contents of  $\beta$ -glucan, cordycepin and SCFA were measured using  $\beta$ -glucan kit, liquid chromatography-mass spectrometry analysis and Gas chromatography-mass spectrometry analysis, respectively.

**Results:** Among GRC fermented with different probiotic strains (*Pediococcus pentosaceus* ON89A, *Lactobacillus pentosus* SC64, *Weissella cibaria* Sal.Cla22), GRC-ON89A induced the highest elevation of nitric oxide production and enhanced phagocytic activity of RAW 264.7 cells. In primary cultured murine macrophages from normal and CY-treated mice, GRC-ON89A increased phagocytic activity, compared to that in control cells. GRC-ON89A also significantly induced the mRNA expression of TNF- $\alpha$  and IL-10 and the levels of phosphorylated Lyn, Syk and MAPK. The contents of  $\beta$ -glucan, cordycepin and SCFA in GRC significantly increased after ON89A fermentation, compared to those in unfermented GRC.

**Conclusion:** These results indicate that GRC-ON89A exerted enhanced immunostimulatory activity and contained more nutritional components, compared to unfermented GRC. Our results suggest that GRC-ON89A may be applied as an agent for immune boosting therapy in immune-suppressed patients.

### Biography

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International Conference on

# Nutritional Science and Food Technology

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## Effects of chitosan oligosaccharides on microbiota composition of silver carp (*Hypophthalmichthys molitrix*) determined by culture-dependent and independent methods during chilled storage

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### Abstract

This study evaluated the effects of chitosan oligosaccharides (COS) on the changes in quality and microbiota of silver carp fillets stored at 4 °C. During storage, COS treated samples maintained good quality, as evidenced by retarding sensory deterioration, inhibiting microbial growth, attenuating the production of total volatile basic nitrogen (TVB-N), putrescine, cadaverine and hypoxanthine (Hx), and delaying degradation of inosine monophosphate (IMP) and hypoxanthine ribonucleotide (HxR). Meanwhile, the microbiota of silver carp fillets, subjected or not to COS treatment, was investigated by culture-dependent and culture-independent 16S rRNA gene sequencing methods. Variability in the predominant microbiota in different samples during chilled storage was observed. As storage time increased, the control and 1% (w/v) COS treated samples were rejected by sensory panelists at day 6 and 8, respectively. At the time of sensory rejection, *Pseudomonas*, followed by *Aeromonas*, *Acinetobacter*, and *Shewanella* became the main spoilers in the control samples. However, COS inhibited the growth of *Pseudomonas*, *Aeromonas*, and *Shewanella* significantly. Consequently, *Acinetobacter* followed by *Pseudomonas* became the predominant microbiota in 1% (w/v) COS treated samples. Therefore, COS improved the quality of fillets during chilled storage, which was mainly due to their modulating effects on microbiota.

### Biography

Dr. Shiliang Jia is currently working at Beijing Advanced Innovation Center for Food Nutrition and Human Health, College of Food Science and Nutritional Engineering, China Agricultural University, China. He published many articles in reputed journals and attended international conferences.

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International Conference on

# Nutritional Science and Food Technology

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## Effect of chitosan-limonene coating in combination with modified atmosphere packaging on postharvest properties of cucumber fruit

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### Abstract

Since cucumbers suffer from a short postharvest life, applying different technologies is increasingly used as effective ways to increase their shelf life and quality. In this study a combination of chitosan-limonene coating and MAP storage has been used as a postharvest treatment to maintain cucumber quality. Samples were stored in three different packages: A (21% O<sub>2</sub>, macro-perforated package to be in equilibrium with air); package B (active MAP, starting concentrations 10% O<sub>2</sub> + 5% CO<sub>2</sub>); package C (passive MAP starting concentrations 21% O<sub>2</sub> + 0.1 % CO<sub>2</sub>); they were stored at three temperatures (20, 10, and 4 °C). Quality parameters of cucumber such as pH, total soluble solid, firmness, chlorophyll content, microbial growth, and overall sensory acceptability were determined. Interactive effects of coating, package, temperature, and storage time showed that coating and MAP in general had positive effects on several quality aspects. Coating combined with active MAP had the most positive effect on most postharvest attributes. However, using active MAP at higher temperature led to quality problems and is only useful if storage time is short. The combined usage of MAP and chitosan-based coating on cucumber represents an innovative and interesting method for commercial application.

### Biography

Dr. Gisoo Maleki is pursuing her Ph.d at Ferdowsi University of Mashhad, Iran. She published many articles in reputed journals and attended international conferences.

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# Nutritional Science and Food Technology

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## The prevalence of malnutrition and its associated risk factors among women of reproductive age in Ziway Dugda district, Arsi Zone, Oromia Regional State, Ethiopia

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### Abstract

**Objectives:** Adequate nutrition is an important factor to determine the health and wellbeing of women, children and society as a whole. Although various nutritional policies were formulated and aimed at reducing malnutrition at the global level, the magnitude of malnutrition (body mass index [BMI] <18.5 kg/m<sup>2</sup>) among women remained between 10% and 40% in most low- and middle-income countries. We aimed to determine the prevalence of malnutrition and to identify the associated risk factors among women of reproductive age. Study design: A cross-sectional study was conducted in Ziway Dugda district in Ethiopia among 430 women of reproductive age between September 20 and November 21, 2015.

**Methods:** A systematic sampling method was used to select the study participants. Descriptive statistics and logistic regression were used to determine the prevalence of malnutrition and to identify associated independent risk factors such as women's age, housing conditions, drinking water sources, habits of hand washing, dietary intake and food insecurity.

**Results:** The mean values of weight, height and BMI of the study participants were 51 kg, 157 cm and 18.1 kg/m<sup>2</sup>, respectively. Prevalence of malnutrition (BMI <18.5 kg/m<sup>2</sup>) among women of reproductive age was found to be 48.6%. Being in the age group of 26 e35 years (adjusted odds ratio [AOR] 1/4 0.50, 95% confidence interval [CI] 1/4 0.26 e0.84), thatched housing conditions (AOR 1/4 1.83, 95% CI 1/4 1.16 e2.89), unprotected sources of drinking water (AOR 1/4 1.65, 95% CI 1/4 1.06 e2.57), lack of habit of hand wash after using the toilet (AOR 1/4 1.62, 95% CI 1/4 1.06 e2.47), consumption of fish (AOR 1/4 2.12, 95% CI 1/4 1.12 e3.99), consumption of dairy products (AOR 1/4 2.40, 95% CI 1/4 1.42 e4.03) and food insecurity (AOR 1/4 2.44, 95% CI 1/4 1.50 e3.95) were considered as independent predictors of risk for having malnutrition among women of the same age group compared to women from food secured households.

**Conclusions:** High prevalence of malnutrition (48.6%) was observed among women of the reproductive age. Although nutrient rich foods were available, their consumptions had not been enough so far. Hence, it is strongly recommended to have behavioural change communication for enhancing the adequate intake of diversified diet, and to promote environmental and hygienic condition of women through improving their socio-economic status.

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## Fatty acid composition of different Indian foods and oils using gas chromatography

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### Abstract

**Background:** Fatty acid profiles of various food samples ranging from different kinds of oils, snacks, biscuits, beef, chicken, fish, margarines, legumes, rices, nuts, beverages and indigenous indian foods and snacks was extracted using gas chromatography (GC). The fat was extracted from different classes of food samples using cold extraction method, Acid digestion method, Rose Gottlieb Method and soxhlet Method. Extracted triglycerides were converted to Fatty acid methyl esters (FAME) using Methanol Toluene Bromotrifluoride (MTB) solution (trans-esterification reaction).

**Methods:** Gas Chromatography method used for the analysis of the obtained methyl esters was enhanced on two different fused silica capillary columns.

**Results:** Good resolution of all fatty acids commonly found in the various food samples was achieved. The results were validated using the FAME Mix standard purchased from Sigma Alderich Chemical Co.

**Discussion:** The method was applied to qualitative and quantitative detection of the fatty acid content in different food samples: edible oils, diary products rich in omega 3 fatty acids, snacks, chicken, food supplements, Beef, etc.

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## Sustainable food and nutrition security using humannutrition enriched crop based cropping pattern: An eco-friendly and profitable approaches

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### Abstract

The main challenge of the new millennium is to increase per unit production by at least 50% and to match food production with increasing population and changing climate. There is very little scope of increasing cultivable land horizontally but there is some scope for increasing cropping intensity up to four hundred percent by improving the existing cropping pattern through introducing nutrition enriched pulses, oilseed and vegetables, short duration as well as low input used crops like mustard, lentil, garden pea, wheat, potato, mungbean and T. Aus rice into the rice based cropping pattern.

A field experiment was conducted at the Regional Agricultural Research Station of Bangladesh Agricultural Research Institute (BARI), Jessore, Bangladesh for four consecutive years (2012 to 2016) to evaluate the agronomic performance and economic return of improved cropping patterns in comparison with the current practice, with the aim of increasing cropping intensity as well as food and nutrition security through crop intensification in this rice based cropping system. The experiment comprised treatments with the following cropping patterns: CP1=Transplanted Aman rice (BINA dhan-7)– Mustard (BARI Sarisha-14) -Mungbean (BARI Mung-6)– Transplanted Aus rice (Parija); CP2 = T. Aman- Potato (Diamant) - Mungbean-T.Aus ; CP3 = T. Aman– Gardenpea (BARI Motorshuti-3)– Mungbean –T. aus ; CP4 =T. Aman- Lentil (BARI Masur-7)- Mungbean-T.Aus; CP5 =T. Aman- Wheat (BARI Gom-26)-Mungbean-T.Aus and CP6 = T. Aman – Fallow – Boro rice – Fallow (Traditional practice). The experimental design was RCB with four replications.

The results showed that the average highest rice equivalent yield (REY) were obtained in CP2 (20.23 tha-1, 44.23%), CP3 (18.57 tha-1, 39.67%), CP4 (18.37 tha-1, 38.32%), CP1 (13.19 tha-1, 13.89%) and CP5 (13.14 tha-1, 13.70% ) compared to farmer's pattern CP6 (11.29 tha-1), respectively due to inclusion of potato, gardenpea, lentil, mustard, wheat and also mungbean. The average highest marginal benefit cost ratio (MBCR) 2.34, 1.80 and 1.35 with highest systems profitability of BDT 474, BDT 432 and BDT 378 per hectare per day were obtained from the cropping pattern CP4, CP3 and CP2, respectively. The average highest production efficiency 66.66, 66.63, 63.56 and 55.32 kg ha-1day-1 were recorded from the cropping pattern CP2, CP3, CP6 and CP4, respectively. The average highest sustainable yield index 82.20%, 74.51% and 72.52% were recorded from the cropping pattern CP2, CP3 and CP4, respectively.

Therefore, potential adoption of these improved cropping patterns intensifying mustard, potato, gardenpea, lentil, wheat and also mungbean in rice based cropping system would generate employment and additional income for the rural poor and save foreign exchange through producing more of these crops without any ecological imbalance. So, it is clear that these improved cropping patterns suggest a great opportunity to increase cropping intensity and ensure sustainable food and nutrition security especially in the context of Bangladesh.

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## Survival status and factors associated with treatment outcome of severely malnourished children admitted to Ayder referral hospital: a cross-sectional study

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### Abstract

**Background:** Severe acute malnutrition remains the major cause of morbidity and mortality for children under five years of age in developing countries. The prevalence of wasting, underweight and stunting has remained high in Ethiopia and even unacceptably higher in Tigray region. The objective of the study is to assess the survival status and treatment outcome of patients with severe acute malnutrition and to identify contributing factors for poor treatment outcome.

**Methods:** An institutional-based cross-sectional study was conducted on 195 patients, selected using systematic random sampling technique, from 24-Mar-2015 to 7-Jun-2015 in Ayder Referral Hospital. Logistic regression was carried out to identify factors associated with treatment outcome. Rates of mortality associated with the disease were determined using Kaplan-Meier survival analysis. A Log Rank, Breslow, and Tarone-Ware test were employed for the overall comparisons of the survival curves. Statistical significance was declared at  $p$  – value  $<0.05$ .

**Result:** Out of 195 children admitted with SAM, the cure, death, defaulter, non-respondent and transferred-out rates were 22.1%, 3.6%, 43.6%, 9.2% and 21.5% respectively. Overall, 43.6% of the children were recovered from their disease. The mean length of stay of a ‘recovered’ child in the hospital was  $21.56 \pm 1.27$  days (95% CI: 19.04–24.09 days). Free from acute febrile illness (AOR = 4.20, 95% CI: 1.10–16.09,  $p < 0.036$ ) and usage of deworming medications (AOR = 0.36, 95% CI: 0.14–0.93,  $p < 0.036$ ) were significantly associated with positive and negative treatment outcomes respectively. Children with  $>70\%$  of weight for height (WFH) and mid-upper arm circumference (MUAC) of  $>12$  cm at admission had a better treatment outcome than children with WFH of  $\leq 70\%$  ( $p < 0.038$ ) and MUAC of  $\leq 12$  cm ( $p < 0.090$ ). Treatment using ready-to-used therapeutic food (RUTF) provided a longer all-cause mortality protection than the treatment using F-75 and F-100 ( $p < 0.010$ ).

**Conclusion:** The cure rate in this study was found to be sub-optimal. Absence of acute febrile illness and deworming medication use were factors contributing to good treatment outcome. A WFH of  $>70\%$ , MUAC of  $\geq 12$  cm and treatment using RUTF provided a longer all-cause mortality protection.

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## Effect of nutritional counseling on nutritional status of hemodialysis patients in Shifa International Hospital Islamabad

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### Abstract

Kidneys play an important role in nutrients metabolism however the patients whose kidneys work properly will face malnutrition. Among hemo-dialysis patients due to malnutrition morbidity and mortality rates are at high level. In order to prevent malnutrition dietary compliances is important and determination of creatinine, phosphorus, blood levels of urea and the amount of weight gain between dialysis treatments should be included for the patients with chronic renal diseases. This study was designed to assess the effect of nutritional counseling on the nutritional status of hemo-dialysis patients in the dialysis center in Shifa International Hospital Islamabad, Pakistan. Total 200 patients were enrolled in the study divided into case and control groups. Case being the group, received nutritional counseling by Dietitian.

The results indicated that's there was a significant association between family type and kidney disease. Similarly, the results of gender showed that males are at more risk to develop renal failure as compare to female. The marital status, occupation and income showed significant association with renal failure and number of dialysis. It was evident from the results that End stage renal disease (ESRD) was found 57% in Case and 54% in control which showed significant result that ESRD is more common and reason for dialysis of the subjects than as compare to other type of kidney diseases. Clinical Characteristics i.e, vomiting in case group 66% and in control 68% showed significant association that vomiting is common in dialysis patients and it is the main cause of poor nutritional status of the patients. Nutritional status was assessed by anthropometric measurements using body mass index, the BMI of pre and post of cases and control showed significant differences. The biochemical parameters (Creatinine, Potassium, Phosphorus, Serum Albumin and BUN) showed significant differences before and after nutritional counseling of the Case group. Dietary data was taken with the help of 24-hour dietary recall method, which showed significant improvement in caloric intake of case group as compare to control group after nutritional counseling and dietary interventions.

The study hence, demonstrates that the impact of nutritional counseling and dietary interventions with the help of a Dietitian improved the quality life and nutritional status of the patients undergoes hemo-dialysis.

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## Species Richness: an indicator for measuring biodiversity in food systems

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**Background (context and aim):** Food system (FS) sustainability is increasingly a global priority, evident by SDG 2's goal to improve nutrition and promote sustainable agriculture. Nutrition and agriculture are disciplines that utilise different indicators, and as such separate targets are set. Biodiversity is important for sustainability and are commonly used to measure biodiversity in landscapes and ecosystems, however no indicators are proposed to measure biodiversity of individual diets. This research aimed to evaluate if a single biodiversity indicator can measure biodiversity in the FS.

**Methods:** Feasibility of applying 3 common biodiversity indicators (species richness [SR], functional diversity, Simpsons) to diets was tested by applying to dietary intake data (24-hour recalls) (n=6226), from 7 rural country settings. A random-effects model evaluated ability of biodiversity indicators to predict diet quality. To understand the operational relevance of biodiversity indicators, an analysis of biodiversity in one site (Vietnam) FS was completed. A cluster randomised controlled trial (N=170) was then conducted in Vietnam to evaluate if promoting increased SR of food groups (through farmer-to-farmer groups) could increase SR of the local FS (in production and diets).

**Findings:** All 3 biodiversity indicators were successfully applied to dietary intake data and positively correlated with micronutrient adequacy, SR performed the strongest. The production SR was higher than dietary SR. The number of different species in the local production systems was 231 and total species found consumed was 123. Per farm, average SR of production across the year was 24 and average daily dietary SR was 4.2. After the 12-month RCT intervention, SR increased in the local FS. The average SR in the production system increased by 2 species (P<0.05). The average number of species consumed daily increased by 1 and 4 in women and children respectively (P<0.001 for both). In addition, the quantity of the nutritious food groups also increased.

**Interpretation:** The production data included a recall of all species produced year-round, whereas the diet data only considered the species consumed within two periods of the year when the dietary recall was applied. Analysing SR per food group identified opportunities to increase the production and consumption of species from micronutrient rich food groups. It is recommended to apply SR as an indicator to measure biodiversity in production systems and diets for sustainable FS interventions and further evaluate its relevance in different farming and agroecological systems.

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## Quality Assurance and health efficiency

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### Abstract

**Objective:** To understand the literature of guarantee and efficiency in the provision of health services.

**Method:** Systematic review of the literature based on two descriptors validated by DeCS (Quality of Healthcare, Organizational Efficiency) in the SciELO and PubMed database resulting in five articles based on the present study.

**Results:** The use of computer systems and protocols for healthcare demonstrated a higher quality and efficiency, the provision of healthcare by a multidisciplinary team resulted in a higher quality of service, despite the slow process as well as the provision of healthcare professionals with more years of experience demonstrated greater efficiency.

**Conclusions:** The quality and efficiency of healthcare are achieved by a multidisciplinary team or professionals with more experience and computer systems that support clinical decision making.

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## Characterisation of principal chemical constituents, vitamin and mineral elements of Nigerian tea clones

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### Abstract

Agronomic traits have been used severally to assess the quality of commercially grown tea plants (*Camellia sinensis*) in Nigeria but there is a dearth of information on the principal chemical constituents of Nigerian Tea leaves for industrial use. Thus, this study evaluated the chemical composition of some tea clones grown in Nigeria. Ten (10) Clonal genotypes of Tea plant, *Camellia sinensis* (L.) O. Kuntze grown in Nigeria were analysed for epigallocatechin gallate (EGCG), epigallocatechin (EGC), epicatechin gallate (ECG), epicatechin (EC), Caffeine, and vitamin (water and fat soluble) contents using High Performance Liquid Chromatography while selected mineral elements were determined using Atomic Absorption Spectrometry. Results showed that Nigerian tea clones contain 11.78-64.75, 0.09-1.25, 0.6-6.67, 1.06-4.66 and 0.60-2.51 (mg/g) EGCG, EGC, EC, EGC and caffeine respectively. Vitamin C, B1, B2, B3, B6, B9 and B12 content also ranged between 2.00 and 3.99, 2.80 and 3.59, 18.73 and 40.87, 1.80 and 11.48, 1.97 and 3.77, 30.95 and 60.56 and 2.57 and 8.94 mg/g, respectively. Vitamins A, D and K were below 0.1 mg/g while vitamin E ranged between 0.26 and 0.27 mg/g. Cu, Mn, Ca, Mg, Na and K ranged from 0.22 to 1.03, 0.08 to 0.29, 4.59 to 10.44, 12.67 to 155.60, 9.39 to 12.02 and 0.91 to 0.99 (mg/g) respectively. This study revealed the principal chemical constituents of Nigerian tea clones.

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## Nutritional status and maternal breast feeding in a group of children aged 1 to 24 months in the city of Kenitra, Morocco

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### Abstract

**Background:** Breastfeeding practices play a key role in the nutritional status of children, as breastfeeding from birth to age two is recognized as a means to promote optimal growth, health and nutrition of development. Objective: The objective of this study is to evaluate different breast feeding practices and its interactions with socio-economic and anthropometric factors in children under 2 years old in two sentinel health centers (Urban-Rural) in the province of Kenitra, Morocco. Methods: The study included 147 children accompanied by their mothers for vaccination in two sentinel centers in Kenitra province. It was a descriptive cross-sectional survey that was conducted using a structured questionnaire and anthropometric measurements to determine nutritional status. The study also includes the measurement of cranial perimeter. Results: breastfeeding is maintained in 89.1% of the women surveyed, including 67.3% breastfeeding and 21.8% mixed breastfeeding, on the other hand our study reveals that 4.1% of children are underweight, 6.8% in height deficit, 2.7% in emaciation and 1.4% in microcephaly. Our results also showed that breastfeeding practices among women are significant with the mother's level of education, place of residence and underweight ( $p < 0.05$ ). Conclusion: Maternal breastfeeding promises to be serious in the study area. Strategies to encourage women to use maternal nutrition should identify at-risk populations and advocate for more aggressive nutrition communication.

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International Conference on

# Nutritional Science and Food Technology

July 02-03, 2018 Rome, Italy

## Hematological parameters and anemia prevalence among school children in Morocco

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### Abstract

Hemoglobin, hematocrit, mean cell volume (MCV), and red blood cell distribution width are hematologic tests that are commonly used to assess iron status.

**Aims:** The objective of the present study is to evaluate the hematological profile among school children healthy in Morocco.

**Methods:** 295 pupils aged from 6 to 16 years old composed the study group. Blood samples were collected for measuring hemoglobin (Hb), serum ferritin (SF), serum iron and other hematological indices (MCV, TCMH, Ht, GB, GR), and subjects were screened for anaemia and iron deficiency

**Results:** The mean ferritin level was  $27.26 \mu\text{g/l} \pm 16.88$  whereas the mean serum iron  $2.4 \text{ mg/l} \pm 1.0$  and the mean haemoglobin concentration was  $12.45 \text{ g/dl} \pm 1.02$ . A significant difference by sex is observed for the number of red blood cells, values of hemoglobin and hematocrit ( $p < 0.005$ ). However, no significant difference by sex is noted for MCV, MCHC and MCH. There were significant correlations between the levels of Hb and SF, mean corpuscular volume (MCV) and SF were found to be significantly related to Hb.

**Conclusion:** Our study showed a positive correlation between hemoglobin and ferritin and a strong positive correlation between hemoglobin and MCV suggesting that anemia in children surveyed is dominated by microcytic anemia by iron deficiency.

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## The effect of time's exposure and thickness of material on efficacy of microwave energy in some different stages for some storage insects

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### Abstract

Dates artificially infested with eggs and larvae of *Ephestia cautella* and corn seed artificially afflicted with *Sitotroga cerealella* have been exposed to Microwave 1000 Watt at different exposure time (0, 20, 25, 30, 35, 40, 45 second). The results have indicated that the Microwave has high capacity on killing eggs and larvae of *E. cautella* and *S. cerealella*; besides this effect gets increased by increasing the exposure time. Ratio of killing eggs reached to 92% and 100% during time of exposure 40, 45 second consequently, in comparison with 23%, 38% at exposure time 20, 25 second. The results have not indicated the spiritual differences in ratios of killing when dates arranged with one layer or two layers when being exposed to ray. In respect to larvae processing, the percentage of killing reached to 93%, 97% during exposure time 40, 45 sec consequently in comparison with 20%, 35% at exposure time 20, 25 sec. In treatment of the larvae, results indicated that mortality was 93%, 97% at 40, 45 sec exposure time compared with 20%, 35% at 20, 25 sec exposure time. In respect to corn seeds, mortality of larvae of *S. cerealella* moths was 97% at 45 sec exposure time compared with 34%-36% at 20 sec exposure time. Results have not indicated to any effects on germination of corn seeds. Results have explained that the efficacy of microwave on controlling fig moth insect that afflicted stored dates played as an alternative method for Methyl Bromide in stored corn seeds.

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International Conference on

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July 02-03, 2018 Rome, Italy

## **Socio-economic condition, dietary pattern and nutritional status of pre-school children among settlers and ethnic communities in Bandarban district of Bangladesh**

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### **Abstract**

Nutrition is foundation to ensure good health. The geographic and demographic factors affect food and nutrition. Life of the tribal people is diverse and distinct. This study focuses socio-economic condition, dietary pattern and nutritional profile of preschool children among ethnic minorities and settlers at a single point in a specified time. This area was conveniently selected to collect sample because both settlers and ethnic groups reside here concurrently. Each union/ward was one cluster and from each cluster sample was collected by visiting door to door. The dietary energy intake was determined by 24 hour recall method. Nutritional status was determined by ENA for SMART - Software. Mean age of the children was  $4.07 \pm 0.87$  (ethnic) and  $4.09 \pm 0.84$  (settler). Average weight and height of ethnic and settler children was 14.94 kg and 96.38 cm as well as 13.91 kg weight and 94.37 cm. Normal and underweight ethnic children were 73.80% and 26.20% whereas 67% and 33% among settler. Distribution of normal and stunted ethnic children were 67.30% and 32.70% and among settler it was 54.50% and 45.50%. About 11.30% and 15% children were wasted among ethnic and settler. Significant association was found between condition of latrine and source of drinking water with ethnic children nutritional status (WAZ). Average calorie intake of ethnic and settler children was 1066.88 and 981.48 per day. Mean protein and carbohydrate intake of ethnic children was higher than settler which was statistically significant. Nutritional status of ethnic children was comparatively better than settlers.

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July 02-03, 2018 Rome, Italy

## Microencapsulation of citrulline extract from watermelon (*CitrullusLanatus*) rind by spray drying using response surface methodology (Rsm)

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### Abstract

Citrulline is a non-essential amino acid present in watermelon (*Citrulluslanatus*), which has antioxidant, vasodilator and free radical scavenger properties, which may present instability to environmental factors such as light, temperature, pH, among others, so that encapsulation can improve its stability and expand its applications in the food field. The objective of this research was to optimize the microencapsulation of citrulline extract obtained from watermelon rind (Santa Amelia) by spray drying, using the response surface methodology through a Box-Benhken design, concentration of commercial pectin (0-0.125% w / v), experimental pectin (0 - 0.125% w / v) and temperature (150-170 ° C) in maltodextrin up to 20% solids and as response variable encapsulation performance (%), humidity (%), water activity, dissolution (seconds) and encapsulation efficiency (%) with five repetitions at the central point and 95% confidence. The morphology was also evaluated by SEM to determine the particle size, using software ImageJ®. Encapsulation yields were obtained between 48.5 - 78.67%, moisture content (3.66 - 6.24%), water activity (0.107-0.371), dissolution (172-383.96 seconds) and encapsulation efficiency (32.77-52.53%). Optimal conditions are obtained with commercial pectin (0.0%), experimental pectin (0.0%), and 150.9 ° C but to obtain low humidity, a low concentration of pectin must be used. To achieve higher yields, high concentrations of commercial pectin must be used, to obtain low dissolution, a low concentration of pectins must be used, and to obtain greater efficiency, a high pectin concentration should be used. The efficiency values found indicate that the encapsulation of citrulline extract could be established by spray drying using commercial and / or experimental pectin as encapsulating matrix because the powders obtained had a semi-spherical shape with dents on their surface with a particle size of  $8.50 \pm 0.24 \mu\text{m}$ .

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International Conference on

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## Healthy Caregivers-Healthy Children: Promoting pediatric nutrition in preschool children

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### Abstract

**Background:** There is a need for pediatric nutrition based programs that target young children in an effort to reduce the obesity epidemic. Obesity in children associates with elevated cholesterol and elevated blood pressure and tracks from childhood to adulthood. Currently, the science needed to promote successful implementation of primary prevention practices, under naturally occurring conditions, is poorly developed. We describe here the outcomes of “Healthy Caregivers, Healthy Children (HC2)” an obesity prevention program with young children. **Methods:** A randomized controlled trial was conducted with 1101 children ages 2 to 5-years-old. The Intervention focused on three components to support and encourage cardiovascular health: environmental changes related to food consumption and physical activity in the centers, a classroom curriculum, and family and teacher education regarding healthy role modeling behaviors. The primary outcome was the child’s body mass index (BMI). **Results:** At 6 months post-intervention, children in the intervention centers were significantly more likely to consume fresh vegetables fruits (p.006) and vegetables (p.001) as compared to the control centers. 91% of parents who increased buying vegetables had children whose BMIs either stayed the same or improved (p=.01), and 92% of parents who increased buying fruit had children whose BMI either stayed the same or improved (p=.03). **Conclusions:** The goal of this project was to develop and evaluate a multifaceted obesity prevention intervention targeting low-income, multiethnic children ages 2 to 5. These findings support efforts to implement healthy weight programs in the childcare setting as a means of primary prevention.

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## Study on molecular characteristics of alternaria species isolated from tomatoes based on Rflp-Pcr Technology

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### Abstract

Most commercial cultivars of tomato, *Lycopersicon esculentum* Mill., are susceptible to early blight (EB), a devastating fungal (*Alternaria solani* Sorauer) disease of tomato in the parts of the world. The disease causes plant defoliation. *Alternaria* spp. cause yield loss in tomato and many other agriculturally important plants. Information on population structure is critical in breeding for resistance to *Alternaria* blight in tomato.

This study was carried out to characterize *Alternaria* isolates through PCR-RFLP. *Alternaria* spp. isolates were recovered from local cultivars from different tomato growing districts of Turkey. The PCR based assay was developed for the detection and identification of *Alternaria* spp.. Using specific primers designed from nuclear ribosomal ITS (Internal Transcribed Spacer). Approximately 600 bp amplicons were obtained from ITS, The PCR products were cut with Hind III, EcoR I, TaqI, Hinf, Hah I and uncut with Pst I restriction endonucleases. There was no polymorphism among *Alternaria* spp. isolates at ITS regions.

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International Conference on

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July 02-03, 2018 Rome, Italy

## Production of value added products from cereal by-products

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### Abstract

Various cereal milling by-products such as wheat (bran, germ and shorts), rice (bran, germ and husk) and corn (bran, germ and germ meal) (wheat, rice and corn) were investigated for proximate composition, functional characteristics and certain anti-nutritional factors to assess their potentiality as source of protein, fat and dietary fiber sources. The major findings of this study are as follows: crude protein ranged from 10.45- 29.90%, fat 3.90 -47.53%, total dietary fiber 20.20-41.13%, bulk density 0.25-0.79 g/ml, water absorption 122.71-510.02 g/100g, fat absorption 89.51-235.12 g/100g and free fatty acids 6.75-19.94%. Significant variations were observed with regard to color of different cereal milling by-products. The presence of anti-nutritional factors in cereal milling by-products is one of the major factors for limiting their nutritional and food quality such as Phytic, trypsin inhibitor, oxalates which restrict direct utilization of some cereal milling by-products in diet. The study has been made to assess the presence of anti-nutritional components in different cereal milling by-products. All cereal milling by-products had a wide range of phytic acid (3354.48-4005.05 mg/100g). High oxalate content was observed in rice husk (0.478%) and minimum value was observed in corn germ (0.313 %). Trypsin inhibitor activity was ranged from 30.73 to 174.37 TIU/g.

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## Effect of inclusion of tigernut flour on nutritional, functional and pasting properties of wheat flour and acceptability of the plain cupcakes

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### Abstract

Flour produced from tigernut (*Cyperus esculentus*) was incorporated into wheat (*Triticum sp.*) flour at different ratios (100:0 (control-A), 90:10-B, 80:20-C, 70:30-D, 60:40-E, 50:50-F; wheat-tigernut flour-WF:TNF). The flour blends were analyzed for proximate, micronutrient, functional and pasting properties using standard methods. Plain cupcakes were produced from the different blends and the control. All the products were evaluated for sensory attributes such as: colour, flavour, taste, aftertaste, mouth feel and overall acceptability. There were significant ( $p < 0.05$ ) differences in the proximate composition (%) of the flour blends (moisture;  $12.21 \pm 0.23$ - $12.37 \pm 0.27$ , protein;  $10.30 \pm 0.05$ - $12.16 \pm 0.16$ , ash;  $3.57 \pm 0.21$ - $3.78 \pm 0.70$ , fat;  $2.11 \pm 0.12$ - $2.67 \pm 0.20$ , crude fibre;  $3.25 \pm 0.17$ - $3.40 \pm 0.27$  and carbohydrate;  $69.70 \pm 7.76$ - $71.93 \pm 5.63$ ), respectively. The mineral contents of the blends (Calcium, Magnesium, Potassium and Phosphorus) increased with more tiger nut flour inclusion and functional properties: oil absorption capacity ranged from  $93.18 \pm 0.24$ - $95.00 \pm 0.06$  whereas water absorption capacity of the flour increased from  $101.07 \pm 0.24$ - $120.75 \pm 1.15$ , respectively. There were no significant ( $p > 0.05$ ) differences in the bulk densities of the flour blends. The pasting properties: pasting temperature ( $^{\circ}\text{C}$ ), final and setback viscosities (RVU) of sample F (50:50) was higher than other samples while all products cooked within seven minutes. Sample B (90:10) was highly rated among other blended products and was most overall acceptable in all sensory attributes.

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# Upcoming Conferences

SICMS-2018

**SCON International Conference on Materials Science**  
**December 02-03, 2018, Las Vegas, USA**  
**[materialsscience.scholarenaconferences.com](http://materialsscience.scholarenaconferences.com)**  
**Email: [sicms@scon.online](mailto:sicms@scon.online)**

SSHA - 2018

**SCON Summit on HIV and AIDS**  
**December 02-03, 2018, Las Vegas, USA**  
**[hivaids.scholarenaconferences.com](http://hivaids.scholarenaconferences.com)**  
**Email: [ssha@scon.online](mailto:ssha@scon.online)**

SSVI - 2018

**SCON Summit on Vaccines Research and Immunization**  
**December 02-03, 2018, Las Vegas, USA**  
**[vaccines.scholarenaconferences.com](http://vaccines.scholarenaconferences.com)**  
**Email: [ssvi@scon.online](mailto:ssvi@scon.online)**

SICN -2018

**SCON International Conference on Nanotechnology**  
**December 02-03, 2018, Las Vegas, USA**  
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Journal of Nutrition and Health Sciences | Journal of Obesity and Overweight

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**2<sup>nd</sup> International Conference on Nutritional Science and Food Technology**

**August, 2019, USA**

**[nutritionalscience.scholarenaconferences.com](http://nutritionalscience.scholarenaconferences.com)**