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Bio-Plex suspension array immuno-detection of *Listeria monocytogenes* from lettuce and spinach using virulence protein inducing charcoal-activated enrichment media

James B Day

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Statement of the Problem: *Listeria monocytogenes*, the causative agent of listeriosis in humans, is a gram-positive bacterium that is contracted via the consumption of contaminated foods. Various leafy green vegetables, including lettuce and spinach, have been implicated in human listeriosis cases. Molecular methods and immuno-based techniques for detection of *L. monocytogenes* in these food matrices can be difficult due to the presence of assay inhibiting elements.

Methodology: In this study, we utilize a novel enrichment media containing activated charcoal as the key ingredient that induces overexpression and secretion of *L. monocytogenes* virulence proteins. The Bio-Plex suspension array system, based on Luminex xMAP technology, can then be utilized to specifically detect accumulated *L. monocytogenes* virulence proteins via a magnetic bead-antibody complex. Iceberg lettuce and packaged ready-to-eat spinach were treated with *L. monocytogenes* and incubated in preenrichment broth (Buffered Listeria Enrichment Broth) followed by incubation in charcoal activated media. The supernatant fraction was TCA precipitated and *L. monocytogenes* lysteriolysin O (LLO) was collected using magnetic microspheres conjugated to LLO specific antibody. A newly developed antibody that exclusively recognizes *L. monocytogenes* LLO was used as the biotin conjugated secondary antibody and analysis was conducted using the Bio-Plex 200 system.

Findings: As few as 1 CFU/ g of *L. monocytogenes* were detected in both foods tested. Whole cell fractions from 14h activated charcoal enrichments were also analyzed using antibody that recognize both pathogenic and non-pathogenic *Listeria species* which also resulted in a detection limit of 1 CFU/ g. Internal control beads were also utilized to ensure proper instrumentation function, integrity of assay reagents and to eliminate the possibility of non-specific interactions.

Conclusions & Significance: This method is the first to specifically recognize and differentiate *L. monocytogenes* among other nonpathogenic *Listeria species* in various leafy greens using immune-detection. The total presumptive detection time can be achieved in less than 24h.

Biography

James B Day is a Research Microbiologist at the U.S. Food and Drug Administration in College Park, Maryland, where he is involved in developing detection methodologies for bacterial pathogens in contaminated foods. He has developed techniques for rapid identification of *Francisella tularensis*, *Salmonella enterica* and *Listeria monocytogenes* in various food matrices and recently established a novel macrophage-based assay for enrichment of intracellular bacterial pathogens for enhanced identification. He earned his PhD from the University of Miami School of Medicine (UM), where he worked on bacterial pathogenesis of *Yersinia pestis*. At UM, he developed a widely used system to measure virulence protein secretion and host cell translocation. He went on to complete his Postdoctoral studies at Harvard Medical School, where he worked on type III secretion mechanisms of *Salmonella enterica* as well as regulatory factors that control virulence protein induction.

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Effect of frying on chemical quality of edible oils

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Edible oils are widely used throughout the world. Deep-fat frying is the most oldest and popular food preparation method around the globe. The study is undertaken to observe deep-fat frying phenomenon performed at high temperatures under atmospheric pressure. Deep frying results in deterioration of physical, chemical, nutritional and sensory properties of oil, which ultimately affects our health. It also results in the production of volatile products such as aldehydes and non-volatile fraction which remains in the frying medium. Some of these remaining products have been implicated in producing adverse health effects. Highly oxidized oils may also produce poly aromatic hydrocarbons, which have carcinogenic effect. This work was intended to evaluate the effect of frying on chemical properties of edible vegetable oils. Sunflower oil, olive oil and canola oil were used to fry French fries. Acid value, iodine value, peroxide value, saponification value and total polar compounds were measured by the standard ISO methods and traditional methods of determining these parameters. Acid values of all oils used were determined, that ranged between 0.3 and 28 (mg of KOH/g) but least value was of canola oil i.e., 0.561. Similarly, least iodine value is of fresh olive oil i.e., 75.94 and the highest value was obtained in multiple times used sunflower oil. Peroxide value of canola oil was least i.e., 4 (meqO₂/kg) and the highest value was multiple times used canola oil. The results showed that all these parameters in all the oil types increased linearly with frying time. The influence of oil type on the content of total polar compounds, peroxide and acid value in used oil was significant, but the effect of food type on these parameters was not observed.

Biography

Nayab Batool Rizvi has her expertise in Clinical Biochemistry. Her main area of interest is Biochemistry and Food and Nutrition. She has done a lot of work on antioxidants and currently working as an Assistant Professor in the Institute of Chemistry (Biochemistry Section) University of the Punjab, Lahore, Pakistan. She has supervised more than 10 graduate and post-graduate students.

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Effect of de-hulling process on milling and nutritional quality of millets

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Statement of the Problem: Investigating the effect of de-hulling process on milling and nutritional quality of millets. Millet grain is highly nutritious with good quality protein, rich in minerals, dietary fiber, phyto-chemicals and vitamins. The milling characteristics and retention of nutrients in the de-hulled millets depends on the process of de-hulling and the type of machinery employed.

Methodology & Theoretical Orientation: De-hulled millets obtained from the abrasive type mill and centrifugal de-huller was analyzed for recovery, broken, nutritional quality and shelf life under ambient conditions.

Findings: The study reveals that the recovery of de-hulled millet was around 10% more in centrifugal type (where the bran is retained) with 95% de-hulling efficiency compared to abrasive mill. The breakage was 4-5% in centrifugal type and there was only 1-2% in abrasive type. The nutritional content (carbohydrate, protein, fat, ash, calcium, phosphorus, iron and fiber) of the all five de-hulled millets (little millet, proso millet, foxtail millet, barnyard millet and Kodo millet) tested were resulting in superior quality in centrifugal de-huller.

Conclusion & Significance: The shelf life of de-hulled millets obtained from the abrasive mill was four times more than that of centrifugal type due to lesser amount of fat presence

Biography

Varadharaju N, PhD, is having expertise in reducing the post-harvest losses in perishables, for which he has contributed and established a Food Processing Business Incubator at the Post Harvest Technology Centre, TNAU, Coimbatore. His contributions in the development of processing machinery are noteworthy to mention. He has operated three international and four national research projects. He was instrumental in design and development of double chamber centrifugal de-huller for millets, for which he was conferred with a national award. He has got three decades of teaching and research experience in the field of Food and Agricultural Process Engineering. He has published 25 international and 40 national research papers in reputed journals.

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A critical analysis on irrational fixed dose combinations of nutraceuticals in India

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The significance is that these irrational combinations of vitamins have their own complex effects in the body and many drug-kinetics interactions. These FDCs are freely available and widely consumed by consumers under over the counter in India. The objective of our study to analyze the rationality of vitamins and minerals combinations available in India; to provide comprehensive data of irrational combinations having excess and sub sufficient quantity of vitamin and minerals than recommended by Nutritional Guidelines of India. This observational study and analysis was done between April and September 16. Data was collected from current index of Drugs and Medical Specialty, India. Rationality assessment was done using national list approved drug combinations by Central drug standard control organization (CDSCO) and essentially was cross checked using World Health Organization essential drug list 2015. Adequacy was analyzed using dietary reference intake (DRI). In our analysis, we have found 1184 irrational nutraceutical preparations available in India market. Out of 461(38.9%) are based on fat soluble vitamins, 190(16.4%) based on B-complex vitamins based and 5339(45.1%) related to essential minerals. Among 461 fat soluble vitamins, 104 contain excessive level, 334 contain substandard levels. Similarly 128 and 62 vitamin B-complex based preparations are having excess and less quantity than recommended levels respectively and almost all the mineral combinations except four are not prepared following guidelines. None of these combinations were included in national essential list of medicines. Multivitamins are generally considered safe; these are irrationally prescribed and taken as self-medication by public. Many of the ill effects are often unnoticed and under reported. Government of India should regulate the manufacture and sale these nutraceuticals to promote rational use of drugs and to promote well-being and safety of Indian population which is primary objective of 'health for all'.

Biography

Krishnan Venagaragava Chary has done his Post-graduation from Stanley Medical College. He is an eminent Pharmacologist, well known for his teaching skills. He has won many prizes including a Best Poster in IPS Conference at Bangalore, India. He is Research Coordinator at the Saveetha Medical College and Consultant for few ethics committee and contract research organization at Chennai. He is a Reviewer of Science and Engineering Research Board (SERB), Government of India and few biomedical journals.

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Nonlinear food production problems by fixed point theory

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Most of the natural and physical phenomena in the universe are not straight forward, since there is nonlinear nature of phenomenon in the area of sciences that are not continuous and involve jumps or discontinuity, such as effect of discontinuity or jumps of environment and heat stress on the agricultural food production, body growth, milk production, semen production, female reproduction of animals and also plant characters. Again, almost all such natural and physical phenomena involve the decay or growth, that is, the change in the state with respect to the time period. Increase in temperature and carbon dioxide can increase some crop yields in some places. The effects of climate change also need to be considered along with other evolving factors that effects agricultural food production. Agriculture is an important sector of the Indian economy. Agriculture and fisheries are highly dependent on the climate. Therefore, some of these types of problems may be formulated as nonlinear differential and integral equations involving discontinuous terms. Nonlinear differential and integral equations of arbitrary order play an important role in branch of nonlinear analysis and their applications in biological sciences. In this paper, we prove the existence solution or such type of nonlinear differential and integral equations and its applications. From the present investigation, it is concluded that the fixed point method which is powerful tool for existence solution of such type nonlinear differential and integral equations in Banach Spaces.

Biography

Karande B D is an Assistant Professor in Mathematics at Maharashtra Udayagiri College, India. He presented his research papers in countries like Malaysia, Thailand and Norway. Till today, he has published 29 research papers in national and international journals. He has also presented many research papers in national and international conferences. He is the Life Member of Indian Science Congress, Indian Mathematical Society and Marathwada Mathematical Society.

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Ultrasound assisted extraction of bioactive enriched fractions from button mushroom stalks waste

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E edible mushrooms possess interesting functional components like homo- and hetero- β -glucans [$\alpha(1\rightarrow3)$, $\alpha(1\rightarrow4)$ and $\alpha(1\rightarrow6)$ glycosidic linkages], chitins, ergosterols, bioactive polysaccharides and peptides imparting health beneficial properties to mushrooms. Some of the proven biological activities are antioxidant, antimicrobial, immunomodulatory activities and cholesterol lowering activity by 3-hydroxy-3-methyl-glutaryl CoA reductase (HMGCR) inhibition. Application of novel extraction technologies like high power ultrasound offers clean, green, faster and efficient extraction alternatives with enhanced and good quality extracts. Ultrasound assisted extraction (UAE) was applied to recover bioactive enriched fractions from industrial white button mushroom (*Agaricus bisporus*) stalk waste using environmentally friendly and GRAS solvents i.e., water and water/ethanol combinations. The UAE treatment was carried out by placing 50 g of chopped fresh mushroom stalks and 75 ml of 80% ethanol using ultrasonic-water-bath (USB) of two frequencies (25 KHz and 35 KHz) for various treatment times (10, 20 and 30 min) at room temperature followed by 3 hours of agitation at 25°C at 50 rpm in incubator shaker. The collected supernatant was filtered and characterized for its total proteins and phenolic content (TPC). USB with 25 KHz frequency with 30 min pre-treatment time had the highest TPC (15.65 mg GAE/g dry extract) with highest protein content of 1.65%. The freeze dried mushroom stalk powder was characterized for its compositional parameters (dry weight basis) showing 19.12% total protein, 7.21% total fat, 31.2% total dietary fiber, 7.9% chitin (as glucosamine equivalent) and 1.02% α -glucan content. Effect of ultrasonication on the recovery of crude polysaccharides and protein content with amino acid profile in different fractions will be presented.

Biography

Bibha Kumari holds a degree in Food Processing and Technology from Central Food Technological Research Institute (CFTRI), Mysore, India. She has done her BSc in Agricultural Sciences. She is currently pursuing her PhD in Agriculture and Food Science from University College Dublin (UCD), Ireland. She is involved in a project titled, "The effect of novel processing on the levels of phytochemicals in brewer's spent grains, mushroom stalks and potato peels". Her research focuses on application of novel extraction technologies like ultrasonication and pulse electric field in bioactive extraction from plant sources. She has research interests in the area of Food Biotechnology.

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Halal industrialization into food production-global perspective, scientific gaps and proposed solutions

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Halal food is associated with billions of people with expected market worth 2.5 trillion USD at current and 4 as future estimation. It's logical to predict that any problem with halal food can give birth to serious food-crises with huge losses to economics, market, food and energies along demand of huge shift of funds and food provision camps to cope it and cover up the need of food of halal user. If a food set up have some benefits then the same set up must have some drawbacks as well, especially when it's not under scientific lines. Wise approach is to see the drawbacks, gaps and their expected solution as crises management relief. These gaps start from its definitions, conceptual level, production/farming, processing, certifications, marketing, consumer level, till sustainability. There is no or ineffective presence of any scientifically proven literature of halal standardization of products, halal food science, halal health, halal farming SOPs and halal R&D. Use of word "halal" as prefix with every industry and product other than food product from land to water without proper workout is not a wise approach as well. The absence of halal food grading system and halal standardization is the big hurdle in establishment of halal branding sustainably. A baseline scientific reference based on structural, function and nutritional profiles in determination of difference between Halal and Non-Halal are a vital and unavoidable question of future and market competition. The role of halal sharia expertise need to be well defined, standardize and lemmatized if halal food industry need to get develop on scientific lines as an open food of choice. Some research base definitions against following terminologies can be a good start toward development of actual halal science: halal sensory and chemical features, halal standardization, halal characterization, one unanimous halal definition and procedure, halal structural profile, halal nutritional profile, halal farming, halal scientific research & development. The outcome conclusions will serve as base line pilot study for many other studies

Biography

Raja N A Khan has his expertise in research, writing, planning and policy analysis regarding food and animal sciences. He is the author of two books and two research publications and producer of dozens of farmer extension TV program. As PhD student in Animal Sciences, he started research work on current emerging segregation in food industry, halal food. His research based on critical thinking and market trend analysis highlighted the gap areas in to halal food production, the key gap is none sufficient research and development approach..

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The effect of drying methods and varieties on carotenoid retention and functional properties of trifoliate yam (*Dioscorea dumetorum*) flour

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The effect of drying methods and varieties on the carotenoid retention, anti-nutritional factors and functional properties of trifoliate yam (*Dioscorea dumetorum*) flour were investigated. Flour was produced from yellow and white varieties of trifoliate yam using sun drying, solar drying, oven drying (40°C), cabinet drying (40°C). The pH, bulk density, dispersibility, water absorption index, oil absorption capacity, emulsion capacity ranged from 5.77 to 6.65; 0.66 to 0.76 g/ml; 16.67 to 50.33%, 135.47 to 189.87%; 118.33 to 136.67%, and 43.00 to 50.67%, respectively. The effect of variety and drying method on the functional properties were significantly different ($p < 0.05$) except water binding capacity and foaming capacity. There were also significant differences in the effect of drying method and variety on the particle size distribution ($p < 0.05$) on the flours. The anti-nutritional factors showed that, different drying method reduced anti-nutrient compared to the raw tuber with values ranging from 5.83 to 13.15% for alkaloid and 0.01 to 0.38% for tannin. There were significant difference on the drying method and variety. The carotenoid content and retention was significantly affected by the drying method and variety with values ranging from 0.94 to 33.48 $\mu\text{g/g}$ and 0.05% to 0.34%, respectively. Cabinet dried flour samples retained the highest amount of carotenoids while sun dried flours recorded the highest losses. The study showed that variety and drying had significant effect on the carotenoid retention, functional properties and anti-nutritional factors.

Biography

Adegunwa M O is working as a Lecturer at Federal University of Agriculture, Abeokuta, Nigeria. She has extended her valuable service for many years and has been a recipient of many award and grants. Her international experience includes various programs, contributions and participation in different countries for diverse fields of study. Her research interests reflect in her wide range of publications in various national and international journals.

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Development and production of indigenous milk product, lauz

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Lauz is a traditional dairy product specially prepared by Muslim community on the occasion of Eid. Very rarely it is prepared in some part of India, therefore very few people know about this product. It is prepared either by oven or deep frying in oil. The product is prepared by using suji (semolina), khoa, sugar, etc. As it is known to very few people nobody knows the correct method of its preparation. Therefore present investigation was carried out to standardize this concentrated deep fried or oven dried dairy product. Considering the initial investigation, the effect of three different levels of sugar, suji and khoa were studied on the sensory quality of this product. Sensory evaluation of fresh samples was done on a 9-point hedonic scale. It is observed that the control sample T1 got highest score (8.88) for the flavor as compared to the rest combinations. After this the sample T3 got highest score (8.66). For the body and texture the sample T1 got highest score than the rest of samples. The body and texture of (T1) this sample also was appreciated by all the judges and might be due to this reason this sample awarded with highest score. As the suji quantity increased the body and texture score decreased. As the suji content increased the product got brownish color, therefore the panelists gave more to product. Therefore as the suji content increased the score also increased. From the present investigation it is concluded that the best quality of indigenous milk product lauz can be prepared by using 300 gm of khoa, 350 gm of suji, 300 gm of sugar and 50 gm of ghee for the combination of 1000 gm of product.

Biography

Gaikwad S M did his PhD in Dairy Science. His expertise is in standardization of various traditional milk products. He is engaged in teaching, research and extension activities and has 13 years of teaching experience of graduate college. He has published 35 research papers in national and international journals and presented many research papers in national and international conferences. In 2015, he was felicitated with Young Scientist Award by SAADC, Pattaya, Thailand. He also won BOBLME travel award to participate in international conference and workshop held in Sri Lanka in the year 2014.

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Amino acid biosensor based on L-amino acid oxidase immobilized onto Ag₂O/CNT/ND/ Sago in *Parkia speciosa* juice

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Natural food-derived peptides have attracted a great deal of interest among researchers due to the importance of a healthy diet. *Parkia speciosa* (stink bean), a Southeast Asian legume, is composed of medicinal chemicals which exhibit biological activities. *Parkia speciosa* has been reported to be anticancer, antibacterial, antioxidant, antiangiogenic and demonstrates hem-agglutinating activity. The compositional analysis of amino acids in *Parkia speciosa* seeds have been reported through hydrolysis using alcalase enzyme. Cyclic voltammetry (CV) using biosensor is a well-established technique with broad applications in nutrition analyses. A novel electrochemical Ag₂O/CNT/ND biosensor, comprising silver-oxide, nano-diamond (ND) and carbon nanotube (CNT), has been fabricated on a copper sheet and used as the working electrode. In order to increase the stability of the biosensor, Sago, a natural biopolymer, was added to the composite. The Ag₂O/CNT/ND and Ag₂O/CNT/ND/Sago biosensors exhibited irreversible reaction free oxidation with reduction peaks at -1.25 and -1.16 V in 10 mM buffer phosphate solution/*Parkia speciosa* (pH 6.8), respectively. Amino acid biosensor was fabricated after the immobilization of L-amino acid oxidase on the Ag₂O/CNT/ND/Sago electrode to estimate the level of amino acids in *Parkia speciosa* juice. The analysis of results suggested that the irreversible electro-chemical process was simultaneously adsorption and diffusion-controlled. The developed biosensor displayed a very good electro-catalytic activity toward the oxidation of amino acid to release H₂O₂ and NH₃ as a result of the reaction between the active sites and the *Parkia speciosa* ingredient. This was also confirmed by a drop in the pH value from 6.8 to 6.55 and a change in the color of the solution from green to yellow. An increase in the charge transfer resistance at potentials higher than -1 V could be also explained by the formation of hydrogen peroxide (H₂O₂) and water on the electrode surface.

Biography

Soraya Hosseini has done her PhD in Chemical Engineering from University Kembangan Malaysia in 2010. It was then followed by a series of Post-doctoral positions at University Putra Malaysia from 2010 to 2016. Her PhD and the subsequent Post-doctoral research have led to about 45 research papers published in high-profile scientific journals in the field. She has been actively involved in environmental research and catalyst fabrication; however, her main research interest falls in the area of the fabrication of anhydrous membranes in fuel cell application. She has also been developing a growing interest in the area of advanced materials and electrochemical reactions. She has also conducted in-depth research on the fabrication of biosensors, employed in a range of food and energy. Her current research is concentrated around the fabrication of biosensors and probing into their performance by means of electrochemical reaction and impedance spectroscopy.

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Large-scale drift gill-netting: Effect on food safety and environmental protection

Shaukat Hussain

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Large-sized gill-netters engaged in catching tuna and tuna like species through drifting gill-nets on the high seas is a great threat to food security and oceanic ecosystem worldwide. These gill-netters stay at sea from two (02) to four (04) weeks and bring back this high valued fish in such a deteriorated and un-wholesome condition that it fetches only 0.6 % of the price of the international market. A part from lack of proper preservation system on-board, the retention of net with entangled / gilled fish in water for around 15 to 20 hours has great contribution towards its spoilage. The second most important factor is that these drifting nets are major threat to oceanic pelagic ecosystem. Plenty of slack of netting between float-line and lead-line encourage entanglement of non-targeted species and marine mammals during fishing operations. Besides, the lost or discarded netting continue to act as “ghost fishing” for indefinite period of time which also entangle birds and marine mammals near the sea surface. Most of the data / information were collected from different sources which include statistical data published by Government departments, NGOs, fisheries organizations, interviewing skippers & crew of the boats, direct measurement of specification of net by the author, visits of fish landing sites and conducting sensory evaluation / organoleptic examination of landed catch, press media reports etc. The technical drawing of a typical gill-net specifies the netting material, hanging ratio (E), mesh size, floatation etc. Way forward and recommendations: Although many countries have taken number of steps to reduce the overall length of the drift gill-net up to 2.5 km; however, it seems that day by day increase in length of fishing boats will not satisfy the fishermen due to the reason that a net of only 2.5 km long will not be economically feasible for such large boats. Therefore, in order to avoid over capacity and to achieve co-management (i.e. environmental protection and food safety), these boats may be converted to use alternate environmental friendly fishing methods or less destructive fishing gears & practices (like tuna long-liners) with on-board preservation / freezing facilities, which will be very much welcomed by the fishermen as they will get best prices due to quality improvement. A pilot project focusing conversion of only 5-8 gill-netters into tuna long-liners (instead of introducing new tuna long-liners or allowing foreign flag tuna long-liners to operate in the EEZs of coastal states) will automatically attract the owners of fishing boats for conversion.

Biography

Shaukat Hussain has completed his MSc in Industrial Fishing from Astrakhan Technical University of Fisheries, Astrakhan, Ex-USSR (Russian Federation). He has worked in the Marine Fisheries Department, Government of Pakistan, was the former Director General in the year 2015. Presently, he is working for M K Sons (Pvt) Ltd., for the development of new fish harbor in Gadani, as per the International Food Safety Standards as the Managing Director.

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Studies on recent techniques in detection of adulterants in milk

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Milk is a product of biological origin and can accommodate any additive without apparent changes in its appearance. Milk is almost the perfect food that supplies all necessary nutrients; hence its quality is needed to be checked for adulteration. In the present investigation, milk samples were collected from local dairy farmers (cow and buffalo breed) and analyzed in the laboratory for quality testing, specifically adulteration in milk. The received raw milk samples were tested in laboratory for electrical conductivity and refractive index as control (T0) and then adulterated with water, sugar, starch, urea and salt of the concentration as treatment T1 (1%), T2 (2%), T3 (3%), T4 (4%), and T5 (5%), of the milk sample each respectively. The efforts were made to detect adulterants as to render the values of electrical conductivity and refractive index for these adulterants. The existing methods also were used to confirm these adulterants. Lots of tests are generally carried out to test the various adulterants hence lots of rupees are also spent. The cost of production can be minimized by testing electrical conductivity and refractive index. If sample showing lower or higher electrical conductivity or refractive index means it is adulterated. Therefore only suspected samples should be separated and tested for specific test. In this way one can save cost of production and time on milk processing. From the present investigation, it is concluded that various cow and buffalo breed milk has a specific value of electrical conductivity and refractive index, and the electrical conductivity and refractive index of milk changes due to the adulteration with water, starch, sugar, urea and salt.

Biography

Dande K G has earned his MSc (Agri) in Animal Husbandry and Dairying in 1982, MPhil in Zoology (1997) and PhD in Dairy Science in 2012. Presently, he is working as an Associate Professor and Head of Department of Dairy Science. His research areas include livestock nutrition and management, dairy science, histological, histochemical and epidemiological studies in arthropod insects and parasites. He is the Ex-honorary Animal Welfare Officer, Animal Welfare Board of India, Ministry of Environment and Forest, Government of India. He was the member of Academic Council and member and Chairman of Board of Studies in Dairy Science SRTM University. He is a frequent reviewer of national, international and indexed journals, and has published 10 research papers in national and 14 in international journals till date.

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Effect of dietary supplementation with ginger continuously or intermittently in comparison with prebiotics on broiler performance and physiological and immunological response

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Broiler chickens (n=140), 7 days old, were used in a straight-run complete randomized experimental design. The broilers were distributed among four treatment groups with five replicates per treatment and seven chickens per replicate. During the experiment period (7-42 days old), the chickens were fed iso-caloric and iso-nitrogenous diets with ginger level of 0.5 given either continuously or intermittently (two treatments), and mannan oligosaccharide of 0.05%, and the un-supplemented control. The intermittent treatment was given as two days per week. Feeding 0.5% ginger resulted in higher body weight gain, European production index (EPI) and economic efficiency (EE) than mannan oligosaccharide, however, feed conversion ratio was similar among different experimental groups. Ginger level of 0.5% continuously decreased serum aspartate aminotransferase, increased serum globulin, and 0.5% ginger intermittently increased antibody titer to Newcastle disease. Ginger given continuously or intermittently significantly decreased meat's lipids and plasma glucose with intermittent supplementation showed stronger effect on meat's lipids than continuous supplementation. Hence, it can be concluded that 0.5% ginger continuously gave better results than mannan oligosaccharide and had no negative effects on productive performance, carcass traits, meat quality, blood constituents and immune response as compared with the control and this warrant further investigation for improving food producing animals in respect to health and product quality and safety.

Biography

Youssef A Attia has his expertise in evaluation feedstuffs and improving the health and wellbeing of the chickens. He has published about 200 scientific full research papers. Recently, his research focuses on using phyto-genic and natural products as safe and environmental friendly growth promoters for animal nutrition.

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***In vitro* antioxidant properties of *Agaricus bisporus* protein hydrolysates and their membrane ultrafiltration fractions**

Benard Muinde Kimatu

Nanjing Agricultural University, China

In the recent years, attention has been directed towards enzymatic generation and use of bioactive peptides from food protein sources as natural antioxidants. Several reports have indicated that the activities of these peptides depend on the protein source, enzyme specificity, molecular weight, the degree of hydrolysis and amino acid composition. *Agaricus bisporus* (white button mushroom) is an edible fungus and the world's leading cultivated mushroom with yields accounting for 70% of the total edible fungi. Several bioactivities from *A. bisporus* have been reported including ACE inhibitory activity, hypoglycemic, antioxidant and antimicrobial. However, no reports have been made on the antioxidant potential of *A. bisporus* protein hydrolysates. In this study, *A. bisporus* mushroom protein isolate (MPI) was hydrolyzed using single (alcalase, pancreatin and flavourzyme) and sequential (alcalase-pancreatin and alcalase-flavourzyme) enzymatic processes. The obtained hydrolysates (MPHs) were ultra-filtered to generate peptide fractions (UFs) of molecular sizes (<1, 1-3, 3-5 and 5-10 kDa). The electrophoretic profile results indicated that the enzymatic systems were efficient in hydrolyzing the MPI into low molecular weight peptides. Hydrolysate yields of >57% and protein recoveries of >43% were obtained. Effective concentration that scavenged 50% (EC50) of DPPH radicals was similar for the MPHs, while inhibition against linoleic acid oxidation was strongest (66.49%) for alcalase-flavourzyme hydrolysate on day 5 of incubation. UFs exhibited a concentration-dependent ferric reducing antioxidant property (FRAP), with the highest activity for fractions from alcalase and pancreatin recorded in 1-3 kDa. Considering the yield and the antioxidant activity, the pancreatin 1-3 kDa fraction was also used in the DNA damage assay, where it demonstrated significant oxidative protection against damage induced by Fenton's reagent. The antioxidant activities of MPHs and their UFs suggested that they could be potential bioactive ingredients for use in the formulation of functional foods as well as natural antioxidants in lipid food systems.

Biography

Benard Muinde Kimatu has been working on bioactive molecules especially peptides, since 2014. He has co-authored several articles while working at the Nanjing Agricultural University, China, under the leadership of Professor Qihui Hu. Over the years, he has gained experience in the generation of bioactive peptides from food protein sources, their purification and determination of their amino acid sequence and their possible application as functional foods and nutraceuticals. Before joining Professor Hu's laboratory, he had been teaching at the Department of Dairy and Food Science and Technology, Egerton University, Kenya.

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Food & Nutrition

May 22-24, 2017 Las Vegas, USA

Incidence of aeromycoflora over the groundnut field from Latur district

Chate D B

Mahatma Basweshwar College, India

Groundnut or peanut (*Arachis hypogaea* Linn.) is an important oil seed crop in many tropical and warm temperature regions of the world. Oil seeds account for one ninth of the total agricultural production in India. The vegetable oil is extensively used for cooking purposes and in the manufacturing of soap and other by product. The residual cake is rich in nitrogen and is used as cattle feed or as manure for crop plants. During present investigation more emphasis has been given on the fungal components of air spora. Such aerobiological study is useful for obtaining an efficient forecasting system and preventing ground nut crop from the attack of disastrous airborne disease. The importance of studies of air spora over the groundnut crop field is to understand the dissemination and spread of airborne microbial components including pathogen in the atmosphere. The present investigation was carried out in two groundnut sampling fields i.e., Wagholi and Ausa. The present investigation was carried out to calculate the concentration of air borne pathogen causing groundnut diseases and to study the close relationship between the spore concentration, disease incidence, meteorological factors and growth stages of the groundnut crop. In present investigation air monitoring survey is carried out by using air sampler. Supporting to this work air sampler petri plates exposure method was used for 15 days regular interval. Two diseases are common over groundnut nut tikka leaf spot disease caused by *Cercospora arachidicola* Hori and *Cercospora personatum*. During the present investigation the major fungal group Deuteromycetes, Basidiomycetes and Ascomycetes have been found.

Biography

Chate D B is presently working as the Head and as an Assistant Professor of Botany. He has 22 years of teaching and research experience. He has published 14 research papers in national and international journals. He has also presented and attended many national and international conferences. He is working as a reviewer of some national and international journals. He has worked as the Board Member of the College and University Development. He is a recipient of the Rajashri Shahu Maharaj National Teacher Award. He is also working as the General Secretary, Teachers Association, SRT-MUCTA, Swami Ramanand Teerth Marathwada University, Nanded. He is a life member of *Bionano Frontiers Journal* and Indian Aerobiological Society. He is also working as an Editor-in-Chief of *Vision Research Journal*.

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Food & Nutrition

May 22-24, 2017 Las Vegas, USA

Urban agriculture for sustainable livelihood: A case of migrant women in Johannesburg

Njenyuei Gideon Agho^{1,2} and Janet Cherry¹¹Nelson Mandela Metropolitan University, South Africa²University of Pretoria, South Africa

The objective of the research was to examine how urban agriculture contributes to the sustainable livelihood of migrant women living in the inner city of Johannesburg, South Africa. The study focuses on the Cameroonian women community living in Turffontein. The study assesses the impact of urban agriculture on sustainable livelihood in the lives of Cameroonian women living in this suburb. It also examines the constraints encountered by these women in the practice of urban agriculture for sustainable livelihood. The study is based on a purposeful sample of Cameroonian migrant women living in the inner city of Johannesburg practicing urban agriculture. It uses a mixed method of approach with a transect walk to the area where this women practice the urban agriculture. It also included an in-depth face to face interactive interview and written sources such as journals, books and research reports where combined to gather relevant data. Thematic content analysis was used to analyze the data. The findings of this study reveal that urban agriculture is used as a strategy for sustainable livelihood among several Cameroonian migrant women in Turffontein. The study has also shown how through urban agriculture, these migrant women have been able to raise substantial income to support their respective families both in South Africa and in Cameroon. The study also shows the need to facilitate a proactive program that will support urban agriculture by low-income urban residents. And this can be done mostly through government policies and also through the municipal city's review processes. The government should support the provisional use of urban farm projects and also encourage gardening in small spaces in the inner city of Johannesburg.

Biography

Njenyuei Gideon Agho is a Post-doctoral Fellow at the Faculty of Business and Economic Sciences, Nelson Mandela Metropolitan University, South Africa. He has extended his valuable service for many years and has been a recipient of many award and grants. His experience includes various programs, contributions and participation in different events for diverse fields of study. His research interests reflect in his wide range of publications in various national and international journals.

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Food & Nutrition

May 22-24, 2017 Las Vegas, USA

Physicochemical and sensory properties of a dairy product fortified with vegetables and dietary fiber

Amira-Liliana Rodríguez-Amaya, Luis-Felipe Gutiérrez, Jairo-Hernando Moreno and Carlos Fernando Novoa
National University of Colombia, Colombia

Vitamin A and dietary fiber are nutrients of public health concern, because a deficiency in their consumption could increase the morbidity or mortality. Deficiency of vitamin A is a major problem in the child population of the developing countries. It is the main cause of the preventable childhood blindness, and contributes to various health problems during pregnancy and lactation. Moreover, the dietary fiber intake is still lower than that recommended by the FAO/WHO, although it is well known that it contributes to lowering the risk of weight gain, diabetes, cardiovascular disease, and colon cancer; diseases that now-a-days affect an important percentage of the world population. The purpose of this study was to investigate the physicochemical and sensory properties of a Petit-Suisse fortified with carrot and fructo-oligosaccharides. Various concentrations of both functional ingredients were evaluated, in an effort to develop a product that could be labeled as “good source of vitamin A and dietary fiber”. The obtained products were characterized in terms of their proximate composition, pH, acidity, syneresis index, total fructans, color, texture, vitamin A, mineral content, and fatty acids composition during 28 days of storage at 4°C. The sensory properties were evaluated with a trained panel, through the score tests. It was found that products elaborated with 35% carrot puree, and fructo-oligosaccharides at a concentration equivalent to 20% of the daily recommended intake, displayed adequate physicochemical and sensory properties. These results indicate that fortification of dairy products with vegetables and dietary fiber has high potential to improve the nutritional value and health promoting effects of the dairy goods, since they can enhance the intake of nutrients of public health concern. From the market point of view, this study contributes to the development of new value-added dairy products, as a response of the current consumers’ demands.

Biography

Amira-Liliana Rodríguez-Amaya is a Chemical Engineer specialized in Food Process Engineering and Biomaterials, with a PhD in Food Science and Technology and a Master’s degree in Agri-Food Engineering. He is a Full Professor at the Instituto de Ciencia y Tecnología de Alimentos of the Universidad Nacional de Colombia Sede Bogotá, since 2008. He is the Leader of the research group in Food Biomolecules. He has his research interests in the extraction and purification of bioactive molecules for their application in nutraceutical products and functional foods, as well as, on the design of processes for a profitable utilization of food industry by-products. In the last five years, he has carried out research studies in the development of functional dairy products.

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Food & Nutrition

May 22-24, 2017 Las Vegas, USA

Effect of fish cultivation water on food grade of fishes

Kadam K N

Shri Kumarswami Mahavidyalaya Ausa, India

Present investigation was carried out to study the effect of water quality on food quality of fishes. India is agriculture based country. Indian economy is mostly based on agricultural yield. In recent years due to global warming and El Niño effect, draught and heavy rainfall frequency is increased. Government of India is monitoring these changes in the environment and the government introduced various schemes including agricultural ponds. Farmers of India are accepting the changed situations and in accordance with that the agricultural ponds build by farmers. These ponds were used for supplying water for crop cultivation. Beside, these fishes get cultured by farmers in agricultural ponds. From the present investigation, it is concluded that the fishes which were cultured in agricultural pond coated by polythene, grow rapidly and were less infected by parasites like cestodes. In this study, fishes of natural water body were infected by cestodes, mostly as compared to artificial ponds.

Biography

Kadam K N is working as an Associate Professor in Zoology at Shri Kumarswami Mahavidyalaya Ausa, Latur (India). He was the recipient of Gold Medal during his Post-graduation in 1997. He did his PhD in 2002. He has 18 years of teaching experience to graduate students. He worked as Board of Study Member at Swami Ramanand Teerth Marathwada University, Nanded. He has attended many national and international conferences. He has published 8 research papers in national and international reputed journals.

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Food & Nutrition

May 22-24, 2017 Las Vegas, USA

Development and quality evaluation of multi millet cookies

Malathi D, Padma A and Subbulakshmi B

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Statement of the Problem: Standardization of cookies from multi millet grains. Millet is one of the oldest foods known to mankind and possibly the first cereal grain used for domestic purposes. Today millet ranks as the sixth most important grain in the world, sustains 1/3 of the world's population. India is the largest producer of many kinds of millets, which includes sorghum (*Sorghum vulgare*), pearl millet (*Pennisetum americanum*), finger millet (*Eleusine coracana*), and other small millets like little millet, foxtail millet, Kodo millet, proso millet and barnyard millet. India accounts for 40% of global millet production. Millet grain is highly nutritious with good quality protein, rich in minerals, dietary fiber, phyto-chemicals and vitamins. Small millets have potential benefits to mitigate or delay the onset of complications associated with diabetes. Millets, being high fiber foods contribute to well-being in various ways by reducing the risk of cardiovascular diseases, constipation, diabetes mellitus and cancer. They are also valued for natural antioxidants and minerals and are gaining importance as complete nutrient source.

Methodology & Theoretical Orientation: The present study focuses on standardizing cookies incorporated with four different millet flour viz., Kodo millet, little millet, foxtail millet and finger millets with wheat flour at different levels (20 - 80 percent) and organoleptically evaluated using nine point hedonic scale.

Findings: The cookies prepared from wheat flour, Kodo, little, foxtail and finger millet flours at each 20 per cent level were highly acceptable. Moisture, carbohydrate, protein, fat, fiber, calcium and iron content of the standardized cookies were found to be 2.99%, 61.55 g, 5.88 g, 28.22 g, 0.44 g, 51.22 mg and 4.65 mg/100 g, respectively.

Conclusion & Significance: Hence, millet is an amazing grain offering great opportunities for diversified utilization and value addition.

Biography

Malathi D, PhD, is specialized in the field of Food Science and Nutrition and has thirty five years of experience in teaching, research and extension. She is expert in various processing techniques and value added products from different food crops. She is involved in popularizing the developed technologies through demonstrations, radio talks, etc., that created awareness about the preservation, processing and therapeutic values. She has attended 13 national and 4 international training programs. She is conducting training programs on fruits and vegetables preservation, development of therapeutic bakery products, confectionery products and instant food mixes to farmers, industrial persons, entrepreneurs and general public. She has worked in 12 national and 4 international research projects and published 36 international and 75 national research papers.

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Food & Nutrition

May 22-24, 2017 Las Vegas, USA

Effect of parboiling (thermal treatment) on de-hulling and cooking qualities of little millet (*Panicum sumatrense*) and foxtail millet (*Setaria italica*)

Varadharaju N and Ganesan S

Tamil Nadu Agricultural University, India

Statement of the Problem: Investigating the effect of parboiling on de-hulling process and cooking qualities of millets. Millet grains are considered to be one of the most important sources of dietary proteins, carbohydrates, vitamins, minerals and fiber for people all over the world. The nutrient composition of millets compares well with other cereals. The tiny "grain" is gluten-free and contains nutrients such as magnesium, calcium, manganese, tryptophan, phosphorus, fiber and antioxidants.

Methodology & Theoretical Orientation: De-hulling of little millet (*Panicum sumatrense*) and foxtail millet (*Setaria italica*) is a cumbersome process since husk and bran layers are bound tightly on the endosperm and their removal needs a special treatment. To ease the milling process, these millets were subjected to hydrothermal treatment at different levels of soaking temperature (60, 70 and 80°C), soaking time (6, 7 and 8 h), steaming periods (10, 15 and 20 min), shade dried and milled in a centrifugal de-huller. The milled samples were analyzed for hulling efficiency, head rice recovery, degree of parboiling, hardness, color, cooking time, water up take and swelling index using standard procedures.

Findings: Increase in hulling efficiency (20.8-26.5%) was recorded over control in little millet and foxtail millet (20.5-25.3%) and the head rice recovery enhanced by 26.7% and 24.8% in little millet and foxtail millet respectively over the range of experiments conducted. The increase in temperature of soaking, soaking time and steaming period increased the degree of parboiling, hardness (30.8-34.2 N in little millet and 32.6-34.5 N in foxtail millet) and cooking time (10.4-10.8 min) for both millets. Water uptake and swelling index decreased appreciably due to hydrothermal treatment. The treated samples were dark in colour compared to raw grains and the change in L*, a*, b* values were highly significant.

Conclusion & Significance: The parboiling treatment increased the hulling efficiency and enhanced the head rice recovery in little millet and fox tail millet.

Biography

Varadharaju N, PhD, is having expertise in reducing the post-harvest losses in perishables, for which he has contributed and established a Food Processing Business Incubator at the Post Harvest Technology Centre, TNAU, Coimbatore. His contributions in the development of processing machinery are noteworthy to mention. He has operated three international and four national research projects. He was instrumental in design and development of double chamber centrifugal de-huller for millets, for which he was conferred with a national award. He has got three decades of teaching and research experience in the field of Food and Agricultural Process Engineering. He has published 25 international and 40 national research papers in reputed journals.

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Food & Nutrition

May 22-24, 2017 Las Vegas, USA

Mushrooms cultivation as an alternative to rural development in south of Brazil

Aline Neutzling Brum and Alexandre Antunes Brum
Federal University of Pelotas, Brazil

This article is going to focus on cultivated mushrooms, describing the opportunities and facilities that mushroom cultivation develops in rural areas affected by economic crisis. The Colonial Fungi Research Center aims for research and rural development, which is located in Pelotas, South of Brazil. This area had an important contribution to chicken production until the end of last year. Considering the failure of the local chicken agroindustry, farmers are in debit and without expectation to production. The structure of chicken production can be adapted to mushrooms cultivation and this research center is putting efforts on this new way. Mushrooms have been widely used as food and very often as delicious and nutritious food. Their medicinal values include wound-healing, immunity-enhancement, and tumor-retarding effects. As the amount of wild mushrooms is rare in South of Brazil, cultivated mushrooms would not only provide food security, but also sustainable agriculture and more nutritious diets. The rapid growth and market expansion of the mushroom business is a great incentive of rural development driven by bio-innovation and technological diffusion. It is also an excellent example of rural economic development and poverty alleviation as well as typical recycle-economy and sustainable agriculture. One of the low-cost, appropriate technologies for rural development is the production of the tropical mushroom, in this case oyster mushroom. The expansion of the commercial production of the oyster mushroom could be the result of several complementary factors: technology available and climate favorable, manpower available and high demand for the product.

Biography

Aline Neutzling Brum has graduated in Biological Science, since 1997, she started to investigate tropical agriculture and animal production. She started her studies focusing in herd modeling and biostatistics looking for alternatives to promote rural development. During the last ten years, she was based on GAUG University in the Department for Animal Sciences in Germany participating in research for tropical areas. Actually, she is the Coordinator for Research and Investigation at Colonial Fungi Research Center and is working at the Federal University from Pelotas in Brazil.

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17th International Conference on

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Development of prebiotic bakery products from millets and xylooligosaccharides

Malathi D, Subbulakshmi B and Padma A

Tamil Nadu Agricultural University, India

Statement of the Problem: Development and standardization of bakery product (cookies) from millet and xylooligosaccharides (XOS). Prebiotics are defined as non-digestible food ingredients that beneficially affect the host by selectively stimulating the growth of one or a limited number of bacterial species in the colon such as *Bifidobacteria* and *Lactobacillus*, which have the potential to improve host health. XOS, a class of non-digestible food ingredients having low degree of polymerization are produced during the hydrolysis of xylan and have been generally recognized as safe by Food and Drug Organization. Millets are recognized as important substitutes for major cereal crops to cope with food shortage and to meet the demands of increasing population of developing countries. Development of low cost nutritious foods using millet will go a long way in combating the malnutrition. The diet from millet based to refined wheat and rice diets contributed to increased prevalence of diabetes and other health ailments.

Methodology & Theoretical Orientation: Xylooligosaccharides were extracted from rice bran and finger millet seed coat was used in the preparation of bread and cookies. The xylooligosaccharides was used as a replacement for sugar, both bread and cookies are made out of refined wheat flour (50%) and millet flour (50%). The nutrient content and sensory attributes of developed products were analyzed.

Findings: The nutritional analysis indicated that in products with xylooligosaccharides from finger millet seed coat (FXOS) to the level of 30% in cookies (millet cookies and refined wheat flour cookies) and to the level of 10% in bread (millet bread and white bread) was having higher amount of slowly digestible starch and resistant starch.

Conclusion & Significance: Xylooligosaccharides enriched bread and cookies give prebiotic functional foods to the consumer.

Biography

Malathi D, PhD, is specialized in the field of Food Science and Nutrition and has thirty five years of experience in teaching, research and extension. She is expert in various processing techniques and value added products from different food crops. She is involved in popularizing the developed technologies through demonstrations, radio talks, etc., that created awareness about the preservation, processing and therapeutic values. She has attended 13 national and 4 international training programs. She is conducting training programs on fruits and vegetables preservation, development of therapeutic bakery products, confectionery products and instant food mixes to farmers, industrial persons, entrepreneurs and general public. She has worked in 12 national and 4 international research projects and published 36 international and 75 national research papers.

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Food & Nutrition

May 22-24, 2017 Las Vegas, USA

Effect of Geographical Factors on Food Habitat of India

Godbole B M

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Food plays a very important role in Indian culture. There are different types of food habitats present in different religions. Every religion has its separate festival and in those festivals they prepare their own dishes. Deepawali is the festival of light and sweet, but it is not celebrated except Hindus. But they invite their other communities' friends to enjoy with them prepared dishes. Shirkhurma is the famous sweet prepared only in Muslim communities and they also invite their other communities' friends to enjoy with them. In this way in India food is not just important for eating but it helps in socializing, getting together friends and families. For food habitat India can be divided into four parts i.e. East, west, south and North but the common thing in this part is the people of these region enjoys pickles, chutneys, carbohydrate staples such as rice and bread as well as desserts. It is said that world is decorated differently due to geographical diversity. With geographical diversity human nature changes. Biodiversity is not only found in human being, but also in whole world, means from small lives up to huge animals, i.e., tropical area, subtropical and polar region. Geographical factors affects on all these factors. This effect can be seen in human being, animals and plants, i.e., when the particular area changes this effect can be clearly seen in human being. For example India has four zones i.e. north, south, east and west with different food habit, physical characteristics, language, color, human occupation and thinking power in human being. It is observed that development of human brain is completely based on what kind of food is consumed by that particular human. In east and west coastal area of India particularly rice, fishes, coconut and vegetables are strictly consumed. In north India especially wheat, rice, corn, pulses, mustard oil, milk and milk product are largely consumed. In east India rice, fishes and flesh are generally consumed, whereas in west India wheat, rice, pulses are largely consumed. It is observed that in west and east India very few people consume meat and meat products.

Biography

Godbole B M is presently working as Assistant Professor in Geography. He won Best Teacher Award from national organization two times. He did his Ph.D. in Geography. He has 24 years of teaching and research experience. He has published 14 research papers in national and international journals. He also presented and attended many national and international conferences. He is working as a Reviewer of some national and international journals. He delivers lectures for the welfare of society (Environment and Disaster Management). He is winner of Bharat Shiksha Ratan Award by Global Society for Health and Educational Growth, New Delhi. He is the winner of the Travel Award funded by BOBLME (Bay of Bengal Large Marine Ecosystem) to attend science presentation skills workshop and WinC 2014 international conference, Sri Lanka (to cover the cost of return air ticket in economy class). He secured captain rank in National Cadet Corps. Government of Maharashtra, and was felicitated with the best ANO (Associate National Cadet Corps Officer) award. He worked as Board of Studies Member (Board of Defense Study and Board of Geography) at University Level.

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17th International Conference on

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Construction & operation of Gaddani Fish Harbour-Mini Port–Food Safety, Quality & Traceability.

Malik Muhammad Khan

M K Sons (Pvt) Ltd., Pakistan

Gaddani fish landing jetty is located at Gaddani, District- Lasbela, Balochistan in the apex of Arabian Sea and at the mouth of the Persian Gulf. It is approximately 45 Km North West of Karachi. Around 40,000 fishermen of Gaddani and surrounding area depend upon the income from fishing. MK Pakistan (Pvt) Ltd company sister concern of MS S.A. Builders & Developers has entered into a partnership with Balochistan Coastal Development Authority (BCDA) to construct state-of-the-art Fish Harbour-Mini Port at 172 acres of open land at Gaddani beach to achieve the following major objectives:

- To provide structural and operational facilities to around 5000 fishing boats of Gaddani area for unloading, landing and display of catch for sale under satisfactory hygienic conditions meeting the international food safety standards.
- To facilitate fish processors / exporters in establishment and operation of processing units in line with international requirement of food safety, quality and traceability.
- To diversify around 500 to 1000 fishing boats from Karachi Fish Harbour to Gaddani Fish Harbour-Mini Port to reduce over congestion at Karachi Fish Harbour.
- To develop Mini Port for small commercial vessels.
- To promote tourism, ferry services at separate picnic point.

Fishing in Balochistan area is considered as more sustainable as the fishermen community itself is against destructive fishing gear / methods including trawling. Besides, majority of small scale fishing boats undertake one or two days fishing trip and bring prime quality fish. However; in order to reduce post harvest losses, there is a dire need to facilitate them with modern auction hall with handling, transportation and other associated facilities to meet the international food safety standards for export to EU and other importing countries.

Biography

Malik Muhammad Khan is the Chairman of MK Pakistan (Pvt) Ltd / Gaddani Fish Harbour-Mini Port. He is highly experienced and renowned businessman who has grip over the business dealings and maintains good public relation at the political and business forums. He will welcome the technical assistance in planning and development of facilities under modern food safety standards.

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Food & Nutrition

May 22-24, 2017 Las Vegas, USA

A novel technology for medicinal mushrooms production based on enzyme profile

Alexandre Antunes Brum, Aline Neutzling Brum and Margarida Mendonça
Federal University of Pelotas, Brazil

Basidiomycetes are fungus able to grow and produce fruiting bodies on lignocellulose substrates due to their ability to produce hydrolytic and oxidative enzymes, which are excreted to the extracellular environment. As a result they degrade lignocellulose and produce mycelial biomass. Monitoring degradation and biomass production may provide important information on the efficiency of lignocellulose bioconversion into fungal biomass. Our objectives were to identify the lignocellulosic enzymes of *Agaricus subrufescens* on different substrate conditions of a traditional (composted) and alternative axenic systems (non-composted). The dynamic of enzymatic activity, biomass production and lignocellulose degradation were evaluated as well as the analysis of Klason lignin, infrared spectroscopy (FTIR), pH and C/N ratio. *A. brasiliensis* produced as lignocellulolytic enzymes, laccase, manganese peroxidase, β -glucosidase and xylanase, in both substrates. Laccase activity was higher when compared to Mn peroxidase, particularly in the non-composted substrate. Xylanase was mostly active on the composted substrate. The traditional system, composted substrate yielded higher fungal biomass. Laccase and protein were correlated to biomass on the traditional cultivation system. In relation to the changes in the substrate an increase on relative lignin concentration occurred on the axenic system whereas the value was reduced on the traditional system. The FTIR spectra evidenced a higher consumption of polysaccharides (1110 cm^{-1}) in the traditional system. The pH changes showed a decrease in both substrates. C/N ratio was reduced in the traditional system but increased in the axenic substrate suggesting that the species has higher ability to produce higher biomass on pre-fermented substrates nevertheless growth is possible in both substrates. Strategy of lignocellulosic degradation is different depending on the type of substrate produced indicating the effective use of a new production strategy for this specie.

Biography

Alexandre Antunes Brum has done his Bachelor's degree in Biological Sciences in 2001 from the Federal University, Brazil. He has done his Master's in Biotechnology (Federal University from Santa Catarina, 2005). He is a Professor at Anhanguera Faculty (Plínio Leite University Center), where he is also a Coordinator of Biological Sciences Graduation Course. He is a Doctoral student at Biotechnological Post-graduate Section of Federal University from Pelotas, Brazil..

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Food & Nutrition

May 22-24, 2017 Las Vegas, USA

Determination of heavy metals in some imported and locally produced edible oils marketed in Addis Ababa, Ethiopia

Yemataw Addis Alemu
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The concentrations of heavy metals (Cd, Cr, Cu, Mn, Ni, Pb and Zn) in edible oil samples collected from different retailers in Addis Ababa, Ethiopia were determined by flame atomic absorption spectrophotometer after wet digestion using a mixture of 69% HNO₃ and 30% H₂O₂ (2:1 v/v). The contents of the analyzed heavy metals ranged from ND-0.063 (Cd), ND-0.207 (Cr), 0.182–1.01 (Cu), 0.652–2.022 (Mn), ND-0.296 (Ni), ND-0.303 (Pb) and ND-15.20 (Zn) µg/g. Mn and Cu were found in all edible oil samples. Zn was also detected in all samples except in Orkide. Four metals (Cd, Pb, Ni & Cr) were found below the method detection limit in the majority of the samples except for Cd in Viking; Pb in Pflanzenol and Hayat; Ni in Viking and Orkide; and Cr in Viking and Orkide. The detected heavy metal contents of edible oils were found above the allowable limits set by different organizations except for Zn in some samples (Chief, Oki, Fortune, Hatun, Hayat, Pflanzenol and Viking). The levels of the majority of detected metals in the present study were found to be higher than the other literature values in many of the samples. However, due to the much lower estimated daily intake as compared to the TDI, consumption of these edible oils could not be a significant source of toxicity because of the assessed metals

Biography

Yemataw Addis Alemu has done his BSc degree in Applied Chemistry and MSc degree in Pharmaceutical Chemistry in 2006 and 2011, respectively. He has worked in Hawassa University, Ethiopia as Academic Staff in Chemistry department from 2006-2015. Currently, he is a second year Erasmus Mundus student of Chemical Innovation and Regulation by four European universities (University of Algarve, Portugal; University of Barcelona, Spain; University of Bologna, Italy and University of Heriot Watt, UK). He has teaching and research experiences.

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Food & Nutrition

May 22-24, 2017 Las Vegas, USA

Production and proximate analysis of zobo-tigernut drink (Tybo drink)

Ezeh Chidimma Francisca

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Beverages are essential for their thirst quenching function as well as their ability to provide nutrients especially the micro nutrients. That is why there is a renewed interest in naturally sourced beverage in preference to the artificially flavoured beverages. Zobo has a unique taste that makes it pleasurable to all classes of people in Nigeria. Tigernuts on the other hand are remarkably nutrient dense, high in iron, potassium, zinc, phosphorus, vitamin E and C. This research was therefore carried out to produce a nutritious drink from blend of zobo and tigernuts. 500grams of zobo and tiger nuts were purchased, sorted and washed. Zobo drink was prepared by cooking and extraction. The tigernuts were washed ground and milk extracted. The blending was done using different ratios of tigernuts juice/milk (100mils to 500mils of zobo, 200mils of tigernuts to 500mils of zobo etc). The sample that was blended with 200mils of tigernuts was the best in colour and taste and was selected for proximate analysis. The proximate analysis carried out showed that the tybo drink has 40.8 mg of ascorbic acid, 6.6mg of calcium, 2.4 gram of potassium, 4.6 g of phosphorus, 2.1g of sodium, 5.4g of protein and 2.7g of fat. Developing a nutritious drink from zobo and tigernuts will help individuals meet their daily required intake of micro nutrients.

Biography

Ezeh Chidimma Francisca is working at Federal University of Technology, Nigeria. She has extended her valuable service for many years and has been a recipient of many awards and grants. Her international experience includes various programs, contributions and participation in different countries for diverse fields of study. Her research interests reflect in her wide range of publications in various national and international journals.

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Food & Nutrition

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Assessment of some performance characteristics in broiler finisher chickens fed rations with or without a probiotic (RE3)

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High unemployment level among the youth, including fresh university graduates, is presently a worrying social problem in Ghana. In tackling the problem head on, the University of Cape Coast has introduced mandatory courses in entrepreneurship for all its students; this skill must be demonstrated in final year project dissertations to graduate. The subject matter for my studies, as a student of agriculture, covered profitable small-scale poultry production utilizing modern developments in the industry. Probiotics are live microbial feed supplements which beneficially affect host animal by improving microbial intestinal balance. The field study assessed effects of a probiotic (RE3) on growth performance of broiler finisher chickens. Eighty day-old Ross breed broiler chickens were brooded together for four weeks and assigned randomly thereafter to ten floor pens, representing two treatments: a broiler finisher control diet i.e. without RE3 (T2) and the same diet with RE3 incorporated at a rate of 68 ml per 45 kg of feed (T1). Birds were finished on the experimental diets for four weeks on deep litter; treatments had five replicates, each with eight birds. Birds were offered feed and water *ad libitum* and consumption of each measured daily for each pen. Weekly body weight gain and feed conversion efficiency on the feed additive were not significantly ($P>0.05$) improved compared with the control. Similarly, birds in both treatments did not show significant ($P>0.05$) improvements in feed and water intake, as well as in dressing percentage. It was concluded that inclusion of the probiotic RE3 in the diet of broilers at the finisher stage, under conditions of this study, did not have any significant ($P>0.05$) effect on the performance characteristics assessed, as claimed by the manufacturers. These results were contrary to several other studies that appeared to show positive effects of inclusion of the additive on performance. Based on results from this trial, it is recommended that small-scale poultry producers, particularly fresh graduates trying to earn a living, should exercise caution before deciding to take on the extra cost of using the additive, as profit margins are already quite small and effects of additive are reported to vary depending on sanitary conditions on farms. It might be necessary to also test samples of the RE3 on sale for their efficacy under local storage conditions

Biography

Bridgette N D Tagoe is currently an MPhil student at the Crop Science department of the School of Agriculture, at the University of Ghana, Legon. She holds a BSc degree in Agriculture from the University Cape Coast and a Diploma in Post-harvest Technology also at the University of Ghana. She is also a trained Teacher by profession with fourteen years of teaching experience.

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Existence solution of nonlinear biological problems by fixed point theory

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Most of the natural and physical phenomena in the universe are not straight forward, since there is nonlinear nature of phenomenon in the area of sciences that are not continuous and involve jumps or discontinuity, such as effect of discontinuity or jumps of environment and heat stress on the agricultural food production, body growth, milk production, semen production, female reproduction of animals and also plant characters. Again, almost all such natural and physical phenomena involve the decay or growth, that is, the change in the state with respect to the time period. Increase in temperature and carbon dioxide can increase some crop yields in some places. The effects of climate change also need to be considered along with other evolving factors that effects agricultural food production. Agriculture is an important sector of the Indian economy. Agriculture and fisheries are highly dependent on the climate. Therefore, some of these types of problems may be formulated as nonlinear differential and integral equations involving discontinuous terms. Nonlinear differential and integral equations of arbitrary order play an important role in branch of nonlinear analysis and their applications in biological sciences. In this paper, we prove the existence solution or such type of nonlinear differential and integral equations and its applications. From the present investigation, it is concluded that the fixed point method which is powerful tool for existence solution of such type nonlinear differential and integral equations in Banach Spaces

Biography

Biradar U V is Associate Professor and Head of the Department of Physics and Electronics. Presently, he has been working as an Incharge Principal of Mahatma Baweshwar College, Latur (M.S.). He is a research guide in Physics. He has presented his research paper in Thailand. He has published and presented many research papers in National and International Journals. He was chief organizer for national and international conferences in different subjects and also edited proceedings. He has published books with ISBN number. He was the member of various committees constituted by Swami Ramanand Teerth Marathwada University, Nanded.

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