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Short Communication **Published Date:- 2022-12-23**

Role of CRISPR-Cas9 in agricultural science

Clustered regularly interspaced short palindromic repeat (CRISPR), a potent gene-editing tool was found in 2012. CRISPR is a genetic engineering technique that enables genome editing in living creatures and is based on the bacterial CRISPR-Cas9 antiviral defense mechanism. It is simpler, less expensive, and more accurate than previous gene editing techniques. It also has a wide range of valuable uses, including improving crops and treating genetic diseases. Plant science has benefited more from the CRISPR/Cas9 editing technique than medical science. CRISPR/Cas9 has been used in a range of crop-related research and development domains, including disease resistance, plant development, abiotic tolerance, morphological development, secondary metabolism, and fiber creation, as a well-developed cutting-edge biotechnology technique. This paper summarized the role of the CRISPR-CAS9 tool in modern agricultural science.

Research Article **Published Date:- 2022-12-20**

The impact of climate variability on agricultural food crop production and output: the case of some selected communities in Offinso South District of Ghana

In Ghana, there is evidence of the direct influence of climate change on the environment, such as rising temperatures, variable rainfall, and precipitation. These manifestations affect various facets of Ghana socio-economic structure especially with its high reliance on sectors that are particularly sensitive to climate change like agriculture. In the settlements of Bonsua and Amoawi in the Offinso South District, the study concentrated on the influence of climate change variables on food crop production and how farmers are adapting to the various climate change measures. Out of the total of 650 staple food crop farmers in the dorminated selected communities namely, Amoawi and Bonsua, 160 farmers were chosen for the study using systematic random sampling. The study included both primary and secondary data. Descriptive cross sectional survey was employed for the study. The data collection instrument employed was Structured and semi-structured interviews. SPSS was used to analyse the data. The data collected for the study were analysed using both descriptive and inferential analytical tools. Findings from the study indicate that climate change is a challenge to food crop production since agriculture activity in the two communities are mostly rain feed (97.5%). The majority of the crops grown in the two areas are climate change vulnerable. Another study finding reveals that most respondents have modified their coping mechanisms such as such as growing different crop varieties, early and late planting, irrigation and soil conservation to deal with how climate change is affecting agriculture. Therefore, the study suggests that both government and non-governmental organizations should support farmers in building irrigation systems to continuously irrigate their food crops during the dry season, increasing their farm productivity.

Review Article **Published Date:- 2022-11-16**

Interdictory contribution of Vitamin D to prevent corona virus infections

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The impact of vitamin D on the musculoskeletal system is well known. The diverse role of vitamin D is well supported by the functionality of vitamin D receptors and vitamin D activating enzymes (hydroxylase) present in tissues and cells. Hypovitaminosis D causes rickets, osteomalacia, hyperparathyroidism, and an increased risk of bone fracture. Vitamin D has immune-stimulatory effects on both the innate and adaptive immune systems. Vitamin D induces antimicrobial peptide cathelicidin and defensin that can inhibit viral replication of pro-inflammatory cytokines that regulate inflammatory encasement. Moreover, several studies on vitamin D have shown its interdictory role in the immune and respiratory systems. This global crisis, the COVID-19 pandemic condition has increased the risk of acute respiratory tract infection by immune dysregulation along with cytokine storm, which further progress into acute respiratory distress syndrome. Vitamin D has immunomodulatory and anti-inflammatory properties which are effective against respiratory viral infections. Vitamin D supplementation has shown a compatible effect on viral infection. This review article discusses the role of vitamin D in reducing the risk of respiratory infections including the severity of COVID-19 infections. This review focuses on the therapeutic role of vitamin D to improve clinical outcome during COVID-19 infection and suggest its possible role in the prevention and treatment of respiratory infections.

Case Study **Published Date:- 2022-11-15**

Beneficial effects of a ketogenic diet in a woman with Charcot-Marie-Tooth disease

Objective: To evaluate the effects on quality of life and body composition of a Ketogenic Diet (KD) in a woman with Charcot-Marie-Tooth (CMT) disease.
Methods: Physical (PCS) and mental (MCS) health conditions were evaluated with the SF-36 questionnaire; dual-energy x-ray absorptiometry was used to determine body composition; parameters were determined at baseline and after 12 weeks of KD.
Results: At baseline PCS and MCS were 20.6 and 20.7 respectively with 37.9% fat mass. After 12 weeks SF-36 values significantly improved: PCS 55 and MCS 66.1 with 33.9% fat mass.
Conclusion: KD improved the patient's quality of life and decreased fat mass. Further studies will be needed to better elucidate the beneficial effects of KD among people with CMT.

Literature Review **Published Date:- 2022-11-15**

An updated review of published human health risk-benefit assessment studies in the scientific literature

Background: Public health policies in the area of food and diets tend to separate recommendations on food safety and nutrition. However, food products can simultaneously have risks and benefits. Risk-benefit assessment (RBA) seeks to integrate the assessment of both risks and benefits to aid complex decision-making using a multidisciplinary approach. In this study, a systematic literature review of recent RBA studies was performed, focusing on food consumption and human health following earlier reviews by Boué, et al. (2015) and Thomsen, et al. (2021).
Results: A total of 50 new RBA studies were reviewed since 20 May 2014. Our current literature review shows that the majority of RBA studies conducted in recent years remain focused on seafood, with studies on fish alone comprising 34% of all studies; the focus being on the benefits of fish consumption versus contaminant exposure. Most of the studies have been conducted in Europe
(n = 31) and Asia (n = 11).
Conclusion: RBA has the potential to be applied more widely to other food choices such as alternative proteins, yet application remains limited to specific applications and contaminant/nutrient case studies. In recent years, a few RBA studies have been reported on less mainstream food sources and one specifically on novel foods. Novel foods offer a unique application space for RBA as their development is focused heavily on the benefits to the consumer, society, and environment, yet there remains uncertainty as to their safety.

Literature Review **Published Date:- 2022-10-13**

Pretreatments, dehydration methods and packaging materials: effects on the nutritional quality of tomato powder: a review

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Pretreatments and drying are commonly used before drying tomatoes to inactivate enzymes, improve the drying process, and improve the quality of dried tomato powders. In this review, the effects of different pretreatments (osmotic solutions), dehydration methods, and packaging materials on the quality attributes of tomato powder were summarized. These include pretreatments and osmotic agent solutions (potassium metabisulfite, calcium chloride, sodium metabisulphite, ascorbic acid, citric acid, sodium chloride, and sodium benzoate), thermal blanching (steam blanching and hot water) and non-thermal-processes-like-freezing, sulfuring, etc. and drying methods (oven, sun, and indirect solar dryer). The tomato powders were dried to preserve, store, and transport them. Drying implies not only physical changes, which the consumer can easily detect through visual inspection but also chemical modifications. These are responsible for alterations in color, flavor, and nutritional value, which compromise the overall quality of the final tomato powder. Maximum lycopene, vitamin A, and C contents were found in freeze-dried and direct sundried than samples dried using other methods at low drying temperatures. Freeze driers showed in keeping the nutritional quality of tomato powder with a combination of different pretreatments. Different pretreatments including osmotic agent solutions have their own merits and demerits for the final tomato powder. To overcome the drawbacks of nutritional quality, non-thermal pretreatment categories may be a better alternative to thermal blanching, and more fundamental research is required for better design and scale-up.

Opinion **Published Date:- 2022-09-02**

Food insecurity in America Latina and Caribbean: reflections in a pandemic context

According to the Food and Agriculture Organization [1], it's possible to conceptualize food security from four dimensions: physical availability of food, economic and physical access to food, food utilization and stability of the other three dimensions over time. A situation of food security is found in these four dimensions are fulfilled simultaneously.

Review Article **Published Date:- 2022-08-30**

The "manna" extracted from the ash trees still cultivated in Sicily from mythical food to pharmaceutical and nutraceutical resource

"Manna" is the product obtained from the solidification of the elaborate sap that comes out of the incisions made during the summer season on the stem and on the main branches of some species of the genus Fraxinus (Oleaceae). The cultivation of manna ash trees dates back to ancient times in Sicily and elsewhere ash trees – known as sacred trees, a symbol of abundance and therefore auspicious – was increasingly widespread until the middle of the last century. Subsequently, however, the crop underwent a progressive decline, remaining relegated to restricted areas of Sicily, in particular in the Madonie district (Palermo, Italy). In this brief review, the essential characteristics of the manna and the ash trees from which it is extracted are summarized. The aspects of the current productivity of manna in the Sicilian territory and the implications of a potential recovery and increase of an ancient craft, ash tree cultivation, are also reported in a perspective of sustainable development and green economy for the Mediterranean area and beyond. Finally, the authors remember what has been done to ensure the conservation not only of the active cultivation of manna ash but also of all the relative agro-biodiversity. The conservation of the living germplasm of the ancient cultivars recovered in the Madonie area (Palermo, Sicily) represents one of the most qualifying results.

Opinion **Published Date:- 2022-08-18**

Health literacy as a means of empowering people

This article is part of a larger work carried out within the framework of a UNESCO Latin America financed Project, conducing to a publication supported by the National Institute of Statistics, Geography and Informatics of Mexico (INEGI) and Virtual Educa. The book is currently being edited for publication.

Research Article **Published Date:- 2022-08-08**

[Mapping of Local Therapeutic Foods (LTF) and Micronutrients (MN); their logistics in community-based management of Severe Malnutrition (SAM, SUW) as a benchmark in tribal Melghat, Maharashtra]

Background/Introduction: WHO recommended ‘ready to use therapeutic food’ (RUTF) for community-based management (CMAM) of severely malnourished children (SMC). This is often rejected by children. The objective is to identify and map the locally produced and socio-culturally acceptable food items to treat SMC.
Methods: Through community participation, eight varieties of MAHAN Local therapeutic foods (LTFs) were prepared by tribal females at our center as per WHO norms with a shelf life of 4 weeks. LTFs with micronutrients were given at the feeding centers in the villages under supervision 3 - 4 times a day.
Results: Multiple, palatable, culturally acceptable, safe, feasible with local womanpower, and cost-effective recipes were developed. Hence, our LTFs are qualitatively superior to other therapeutic foods. This mapping exercise provides a ready reference to other government or non-government organizations for CMAM.
Conclusion: MAHAN-LTF is a multiple, palatable, generalizable, and sustainable therapeutic food and are being used in other tribal blocks of India.

Research Article **Published Date:- 2022-05-03**

[Willingness to pay and sensory acceptability for minimally processed vegetables: behavior of consumers with different household incomes]

Willingness to pay (WTP) and sensory acceptability for minimally processed (MP) vegetables were studied. A total of 116 participants of two different household incomes (HI) were considered. Two types of preparations (bags with whole vegetables and trays with MP vegetables), and two types of presentations (mix vegetables for soup and mix vegetables for salad), were evaluated. Low income (LI) participants offered more money in general than the medium-high income (MI) participants. However, the offers of the two preparations (soup and salad) did not show significant differences. The 4 samples (two preparations: soup and salad; and two presentations: bags and trays) had good sensory acceptability with values between 6.5 and 8.3, on a scale of 1-9. MI consumers had higher acceptability for mixed vegetables for soup than for salad vegetables; however, LI participants showed no difference between the types of preparation, observing for both samples (soup and salad) high acceptability. For both HI, Check All That Apply (CATA) questions showed that phrases such as “It is unreliable” and “I distrust how it was prepared” were associated with the trays, while the phrase “It takes time to prepare or cook” was associated with bags.

Review Article **Published Date:- 2022-01-10**

[Agaricus brasiliensis (Sun mushroom) and its therapeutic potential: A review]

In recent decades, the chemical, nutritional, and functional properties of edible mushrooms have attracted considerable attention, resulting in numerous reports on their health-associated benefits. One among such edible mushrooms, Agaricus brasiliensis, is native to Brazil and is an important food supplement. This review discusses the therapeutic potential of Agaricus brasiliensis and summarizes the current studies on this edible mushroom.

Review Article **Published Date:- 2022-01-04**

[The sugarcane byproducts to a food security in an ecofriendly way: A review]

This article addresses, in an integrated way, the main aspects of the by-products obtained from sugarcane processing summarizing their most important and economic characteristics, their composition, and most relevant uses as options for industrial diversification, all taken as a review.
