

2nd Global summit on
Food Science and Nutrition

October 30, 2021 | Webinar

Poster



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Effect of incorporation of hydrocolloids on oil absorption during frying and sensory acceptability of vegetable nugget & batata vada (Gram Flour Coated Potato Balls)

Megha Choudhary

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Fried foods are very popular but may contain up to 40% of their total mass as an absorbed fat, a concentrated source of energy, from the frying medium which is associated with various health risks and diseases like obesity, CVD, diabetes, etc. This concern has gained interest in the field of research where several studies have been conducted focusing on strategies to reduce oil absorption during frying. Use of hydrocolloids was found to be one of the effective strategies. Hydrocolloids are non-digestible polysaccharides exhibiting thermo-gelling property by which they reduce oil absorption during frying. However, there are limited studies in context to commonly consumed fried foods of India and effect of hydrocolloids on their oil absorption. Hence, the present study was undertaken to assess the effect of incorporation of hydrocolloids namely, Carboxymethyl cellulose (CMC) and Carrageenan at concentration of 0.2%, 0.5% and 1% on oil absorption and sensory acceptability of Vegetable Nugget & Batata Vada (Gram flour coated potato balls). Difference in the weight of oil before and after frying was used to calculate oil absorption. Sensory evaluation was conducted using 5-point hedonic scale with 10 consumer panelists. The obtained data was statistically analyzed using one tailed t-test.

The results indicated that, there was a significant reduction in oil absorption after incorporation of hydrocolloids in both the recipes. Highest level of reduction in oil absorption was obtained for batata vada sample (55.01%) containing 1% CMC. Highest mean sensory acceptability score was obtained for batata vada sample containing 1% carrageenan. Therefore, study concluded that hydrocolloids can significantly reduce oil absorption and retain the sensory properties. Hence, use of hydrocolloids in commonly consumed fried foods can be recommended in day-to-day life leading the Indian population towards good snacking habits.

Biography

Megha Choudhary is a meritorious student who recently completed her MSc in home science specializing in food processing and preservation from College of Home Science Nirmala Niketan, Mumbai. She has worked as an intern in one of the leading snacking industries, Mondelez India Foods Pvt. Ltd. for a period of two and a half months in Consumer Science, R&D Function where she successfully worked on a qualitative project titled "Influence of food marketing on eating preferences of kids". She has also interned in marketing function of rasoi magic foods Pvt. Ltd. for duration of one month. She is a certified Internal Auditor (Dutch-HACCP) and has also gained training as a food safety supervisor (Manufacturing Level II). Her research proposal has won consolation prize in 15th Avishkar research convention 2021, an intercollegiate research proposal competition of the University of Mumbai.

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Antioxidant potential of the formulation of spices (*sygizum aromaticus*, *thymus vulgaris*, *laurus nobilis*): contribution to the control of type 2 diabetes

Ndifongwa Bisi Shu Nina

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Problem statement: Type two diabetes mellitus (T2DM), a condition which develop in late adulthood, is now more frequently diagnosed in young adults and adolescence worldwide. It has been observed by researchers that, despite the availability of healthy diet, blood sugar monitoring and exercise to control blood sugar levels, many still face the difficulty in managing the T2DM, notwithstanding the threats to many lives. The traditional medicinal system based on the use of herbal remedies still plays an important role in the health care system. The purpose of this study is to examine the mechanisms that link oxidative stress to micro and macro vascular complications in subjects with type 2 diabetes and to consider the therapeutic opportunities that are presented by; *sygizum aromaticus*, *thymus vulgaris*, *laurus nobilis*, currently used therapeutic agents with antioxidant potentials. Method and results: To examine the phyto-constituents present in the formulation of these plant extracts, various solvents where used. Our combined powder plants were macerated in different solvents within 48 hours then evaporated using a rotatory evaporator to obtain extract.

The qualitative and quantitative analysis of the phyto-constituents in the extract was done employing standard procedures and different phyto-constituents were identified in the extracts. The solvent medium used for extraction determined the presence or absence of the phyto-constituents and the physiological properties of the formulation. We used the method of Folin Ciocalteu and AlCl₃, respectively, to estimate the total of polyphenols and flavonoids. Conclusion: The findings of this study reveal that these plant formulations have potential phytochemical compounds that are important for type 2 diabetes control. The flavonoids of selected plants have a good antioxidant activity and can be used for medicinal and therapeutic applications.

Biography

Ndifongwa Bisi Shu Nina is a passionate, creative and effective high school teacher in the food, nutrition and health department. She is innovative, currently doing a master's research program in engineering processes in the specialty of Ari-food, nutrition and biochemical nutrition at the University of Douala. She is Ambitious in attaining a high level of education, build a career in the food industry to enable communities and individuals attain sustainable development goals.

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The beneficial effect of oligosaccharides on the lipid profile of type 1 diabetic rats

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Oligosaccharides are potential prebiotics promoting the growth and activity of beneficial gut bacteria. These carbohydrates are resistant to digestion and their fermentation by the intestinal bacteria leads to the production of short-chain fatty acids (SCFA), that act as ligands to several receptors and exert a number of positive effects on human health. This has contributed to their wide use in the treatment of many chronic diseases including diabetes. In our study we examined the effect of the prebiotics xylooligosaccharide (XOS) and galactooligosaccharide (GOS) on parameters of the lipid profile of rats with streptozotocin-induced diabetes type 1. The rats were divided into four groups: 1) diabetic rats treated with XOS; 2) diabetic rats treated with GOS; 3) diabetic rats on a standard diet and 4) healthy rats on a standard diet. The obtained results showed that diabetic rats treated both with XOS and GOS have lower serum total cholesterol concentration compared with the diabetic rats on a standard diet ($p=0.023$ and $p=0.014$ respectively). A proposed mechanism for the reduction of the serum cholesterol levels by the dietary oligosaccharides includes reduced cholesterol absorption and increased excretion in the feces. Although the difference is not statistically significant ($p>0.05$) XOS and GOS supplementation also managed to slightly decrease the serum triacylglycerol (TAG) levels compared with the diabetic rats on a standard diet. The reduction of the TAG levels might be due to increased production of SCFA that bind to several G-protein coupled receptors and lead to a release of anorectic peptides such as protein YY. In summary, the obtained results show that both oligosaccharides exert a beneficial effect on the serum concentration of total cholesterol and TAG and could be used in the complex therapy of diabetic patients as well as for prevention of cardiovascular complications that are typical of diabetes.

Biography

Mariya Choneva graduated from the medical university of plovdiv in 2019 and has a master's degree in pharmacy. Since early 2020 she is an assistant professor in the department of medical biochemistry in medical university – plovdiv and is currently working on her PhD thesis that includes studying the beneficial effect of prebiotics on the metabolism of diabetic rats. She has participated in several conferences and has one published article and another one that is accepted and about to be published.

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Antihypertensive and hypolipidemic properties of fagopyrum esculentum (buckwheat) in patients of early stage hypertension

Nigar Naqvi

Era's University, India

Introduction: Fagopyrum esculentum (Buckwheat) is proposed to have antihypertensive and lipid lowering properties due to the presence of antioxidants and phytochemicals like quercetin, rutin and epicatechin-dimethylgallate.

Methodology: This study was aimed to evaluate the therapeutic effects of buckwheat flour on newly diagnosed stage 1 and 2 adult hypertensive patients along with standard of care treatment. Fagopyrum esculentum (Buckwheat) flour was given in the form of flatbread orally for 3 months to the study subjects. The control group was advised to follow life style modification and antihypertensive medication only. Biochemical (lipid profile), anthropometric (weight) and clinical (blood pressure, pulse rate) parameters were recorded at baseline and after 2 weeks, 6 weeks and 12 weeks for both the groups.

Results: At the end of 12 weeks; biochemical, anthropometric and clinical parameters improved in the cases as compared to controls.

Conclusion: Fagopyrum esculentum (Buckwheat) consumption is beneficial for hypertensive patients and has favourable impact on lipids. Further studies with large sample size are required to validate the findings.

Keywords: Anti-hypertensive, Hypolipidemic, Buckwheat.

Biography

Nigar Naqvi had done MSc in food nutrition and dietetics from Allahabad Agriculture Institute, Allahabad. She is Pursuing PhD in food and nutrition from Era's University, Sarfarazganj, Hardoi road Luck now. She is working as "Consultant Dietician" in Era's University.

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