

***BIOLOGICAL STUDIES ON RED RICE EXTRACT PRODUCED BY
MONASCUS PURPUREUS FUNGUS***

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ABSTRACT:

Monacolin k (MK) was produced using *Monascus purpureus* fungus (DSMZ 1379) cultivation on broken rice medium moistened to 35% and incubated at 28°C for 17 days. The resultant materials had been analyzed as chemical composition and HPLC determination. The results indicated that MK in red rice yeast was 0.36%. Also, protein, fat, ash and total carbohydrate contents were 20.43%, 6.84%, 0.933% and 72.357% respectively. Biological investigation had taken place in three rat groups with concentrations of Monacolin k, 0.2%, 0.4% and 0.8% /ml extract/day orally treated beside two control groups. Data showed that Monacolin k extract improved lipid profiles by lowering plasma total cholesterol and triglyceride concentrations compared with the HF and NC groups. The plasma HDL-cholesterol concentration was higher in the Monacolin k extract treated groups than in the HF group, however, the ratio of HDL-cholesterol /Total-cholesterol was significantly increased by 37.58%, 61.67% and 79.95% of treated samples with 0.2, 0.4 and 0.8% MK/ml extract/day, respectively. Histopathological diagnosis reported that there were a good prognosis of the tested liver and heart slides of the pretreated hypercholesterolemic experimental rats specially 0.2% and 0.4% MK/ml extract/day groups.

Key words: *Monascus purpureus* – Monacolin k -Fermented red rice- Lovastin-
Angkak.

PRODUCING OF GLUTEN FREE BISCUITS FOR CELIAC PATIENTS

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ABSTRACT:

Free gluten corn biscuits were prepared from corn flour and partially substituted by different levels (5, 7.5, 10, and 12.5%) of cocoa, turmeric and carob powder. The proximate composition, minerals content, physical properties and organolyptic attributes of the produced free gluten biscuits were evaluated. Non significant ($P > 0.05$) differences were noticed among all replacement levels of all type in density, thickness and specific volume. While, significant ($P \leq 0.05$) increases in diameter, thickness and spread ratio were observed with cocoa and turmeric powder. Significant ($P \leq 0.05$) increases in fat, ash, and fiber contents were observed by increasing the substitution levels. Carbohydrate contents of corn biscuits decreased significantly ($P \leq 0.05$) at 7.5% and 12.5% replacement levels. Generally, significant ($P \leq 0.05$) increases were observed in protein and fat content to replacing corn flour with different levels of cocoa powder. Mineral contents (Ca, K, and Zn) of gluten free corn biscuits increased by replacing corn flour with carob, turmeric and cocoa powder compared to biscuits made from corn flour. The highest overall acceptability was recorded for the corn biscuits substituted with 10% cocoa powder followed by 5% turmeric and 10% carob powder.

Key words: Celiac disease, gluten free, biscuits, cocoa, turmeric, and carob powder.

CHARACTERISTICS OF ANTIOXIDANT ISOLATED FROM SOME PLANT SOURCES

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ABSTRACT:

Antioxidant characteristics of ginger roots, guava leaves, guava seeds, orange peel, sesame coat, rice bran and wheat germ as affected by ethanol, ethyl acetate, chloroform, hexane and petroleum ether were evaluated. Petroleum ether extract of ginger roots, ethanol extracts of guava leaves, guava seeds, orange peel and sesame coat and ethyl acetate extracts of rice bran and wheat germ appeared to possess higher antioxidant activity than those from other solvents. Ginger roots, orange peel and guava leaves exhibited higher antioxidant activity than that of α -tocopherol, while guava seeds, sesame coat, rice bran and wheat germ had lower antioxidant activity than that of α -tocopherol. Guava leaves extract had the highest total phenolics content among the other plant material extracts followed by ginger roots, sesame coat and orange peel extracts. However, total flavonoids content was the highest in ginger roots extract followed by guava leaves extract. Ferulic was the highest phenolic compounds in guava leaves and sesame coat extracts. However, chlorogenic acid was the highest phenolic compounds in ginger roots extract. . Antioxidants in ginger roots, guava leaves and sesame coat extracts as well as α -tocopherol were heat stable with 73.1, 73.8, 66.7 and 71.6% activity, respectively, after heating at 100°C for 180 min. Induction periods of sunflower oil containing 2% guava leaves and 2% ginger roots extracts were increased by 230.6% and 226.7%, respectively. However, induction period of sunflower oil containing sesame coat was increased by 174.1%, at 0.5% concentration. Similar increment was found for the protection factor. Ginger roots, guava leaves and sesame coat might be promising sources of natural antioxidant to be used in food products.

Key words: Antioxidative activity, ginger roots, guava leaves, sesame coat and rancimat