

ANTIFUNGAL AND ANTISTALING EFFECTS OF SOME VEGETABLE WASTES ON BALADY BREAD

A.A. El-Bedawey(1),M.S. Zaki(1),E.A. Abd â€“ EL Rahim(2),M.A. Aseal (2)
(1) Food.Sci. & Tech. Dept., Faculty of Agric., Minufiya Univ.,(2) Food Tech. Res.
Institute, Agric Res.center, Egypt.,

ABSTRACT:

This study was carried out to investigate utilization of some vegetable wastes. (Jews mellow JM, okra O, and taro T) in balady bread. The vegetable wastes during the processing operation were about 70% in Jews mellow, 22% in okra and 18 % in Taro. Vegetable wastes are rich in nutrients such as dietary fiber, minerals, polyphenols, carotenoids, flavonoids, vitamins C and E and mucilage. These nutrients could be used in human nutrition as ingredients to overcome antistaling and mold inhibitor in bread. Effect of replacement wheat flour 82 % with dried vegetable wastes at levels of 5, 10 and 15% on sensory evaluation, bread staling, fungal inhibition during storage at room temperature were carried out. Effect of total antioxidants (total phenol, carotenoids, and total flavonoids) on mycelia growth incubated for 72 hours and inhibition rate were also determined. Macro- and micro-elements K, Na, Ca, P, Zn, Fe, Cu, Mg and Mn were found to be higher in vegetable wastes than cereal. Treatments led to increase shelf life of balady bread from 2 days in control to 5 days in treatments. Samples also increased freshness from 56.6 % for control to 73.56 % for JM, O, and T) treatments after 72 hrs. Balady bread produced by Treatments was similar with control in sensory evaluation with the exception of samples which contained 15% from either JM or O. Finally samples balady bread of different treatments had the best levels of antioxidants and elements while samples which contained T was the best in sensory evaluation.

Key words: Vegetable wastes-Jews mellow waste- Okra waste-Taro waste-antioxidants from vegetable wastes.

CHARACTERISTICS OF ANTIOXIDANT ISOLATED FROM SOME PLANT SOURCES

A.A. El Bedawey, E. H. Mansour, M. S. Zaky, Amal, A. Hassan
Department of Food Science and Technology, Faculty of Agriculture, Minufiya
University, Shibin El-Ko,,,

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