Abstract

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Production and evaluation of some extruded food products using spirulina algae

In this study, spirulina which is one of the blue-green algae rich in protein 61.57% and contains a high proportion of essential amino acids (38.81% of the protein) and a source of naturally rich in vitamins especially vitamin B complex such as vitamin B12 (193 µg / 100 g) and folic acid (9.66 mg / 100 g), which helps the growth and nutrition of the child brain, also rich in calcium and iron it containing (1043.62 and 338.76 mg / 100 g, respectively) to protect against osteoporosis and blood diseases as well as a high percentage of natural fibers. So, the spirulina is useful and necessary for the growth of infants and very suitable for children, especially in the growth phase, the elderly and the visually appetite. It also, helps a lot in cases of general weakness, anaemia and chronic constipation. Spirulina contain an selenium element (0.0488 mg/100 g) and many of the phytopigments such as chlorophyll and phycocyanin (1.472% and 14.18%), and those seen as a powerful antioxidant. It ensures the whole food and alkaline balance of the body. The spirulina used in the production of snack food by some addition percentages zero, 2.5, 5, 7.5, 10 and 12.5%. Data of sensory evaluation results showed that the adding spirulina by ratio 12.5% had lower score for most properties compared to other tested. The chemical analysis was done, the obtained data showed that the add spirulina a large role in increasing protein ratio and ash where the results were (9.43 - 18.11%) and (1.31 - 2.67%) for the samples the control sample and 10% spirulina. The physical properties measurement were done, such as density, the expansion rate, grain index, WSI and WAI, the results showed that the adding rate of spirulina was improvment the physical properties of the snacks. It was safety study microbiology samples prepared by adding snack spirulina and all samples were microbiologically safe. Rheological properties were measured for snacks samples by using (Instron universal testing machine model 4301) for measuring textures, all texture parameters were improved and increased constants textures add spirulina and was at the same time economical cost and therefore can be produced for domestic use as well as can be exported abroad.