

# Proximate, Energy and Fatty Acid Profile Activity in Breads Supplemented with *Spirulina Platensis* Powder

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**Abstract**—*Spirulina*, which is commercially known as *Arthospira*, is one of blue-green algae due to presence of chlorophyll, carotenoid and phycoyanin pigments. It is a simple one celled form of algae that thrives in warm, alkaline fresh-water bodies. *Spirulina* has many nutritive values and many bioactive compounds, vitamins and polyunsaturated fatty acids. So, *Spirulina platensis* powder was utilize to develop value added product in bakery i.e breads and analyzed for its proximate composition, energy and fatty acid profile. Value added breads with *Spirulina platensis* powder were developed at the ratio of 98:2, 96:4, 94:6 and 92:8 per cent level. The prepared breads were evaluated for its sensory characteristics i.e. color, flavor, texture and taste. The sensory evaluation of the breads were compared with the standard bread prepared from wheat flour. On the basis of their organoleptic acceptability, *Spirulina* supplemented breads up to 6 per cent level were further selected for nutrition composition. Among the supplemented breads, 6 per cent *Spirulina* powder incorporated breads exhibited higher amount of all the nutritional parameters. Results of the proximate analysis showed that *Spirulina platensis* powder addition significantly ( $p < 0.05$ ) increased the protein (13.00 – 15.43%) and crude fibre (1.52-1.96%) and decreased carbohydrate (78.52-76.19%), fat (4.59-4.45%) and energy (410.36-408.37 Kcal) at 2, 4 and 6 per cent, respectively. Whereas, palmitic, oleic,  $\alpha$ -linolenic and  $\gamma$ -linolenic were increased significantly at 2, 4 and 6 per cent level of supplementation i.e (38.55-39.79%), (15.43-17.15%), (0.30-0.92%) and (0.62-1.99%), respectively.

**Keywords:** *Spirulina platensis* powder, Supplementation, Breads, Organoleptic acceptability, Nutritional parameters.