



Development and Characterization of Natural Food Colorant from Microalgae *Chlorella* sp. (Abca-17) and its Use in Food Products

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Abstract: Present study was undertaken for development of stable natural food colorant from microalgae *Chlorella* sp. (Abca-17) and its characterization, techno-economic feasibility and use in the food products was studied. Stable natural colorant was developed from the chlorophyll extracted from microalgae *Chlorella* sp. (Abca-17) by making its metallo complex with copper to form copper chlorophyllin. Characterization of pigment revealed that it was free from heavy metals; having moisture content of 3.49 percent and total copper 4.16 percent. Pigment was fat soluble and insoluble in water and sugar solutions. Pigment was stable at low pH and high temperature. Pigment retention was 100 percent at pH range 2 to 9 whereas pigment retention ranged from 100 to 81.21 per cent from temperature range 30 °C to 100 °C and was 88.72 percent even at 90 °C. Copper chlorophyllin was used as natural colorant in sour cream dip and pan burfi and was suitable as natural colorant in pan burfi but was not a compatible food colorant for sour cream dip. Level of addition of 200 ppm of pigment in pan burfi was most desirable. Natural food colorant from microalgae *Chlorella* sp. (Abca-17) presented economical, environment friendly and sustainable approach.

Keywords: *Chlorella* sp., Microalgae, Natural food colorant, Sustainability
