

## **Establishment of feasible and effective pigment extraction procedure from plant sources and comparative study of the yield**

**S. Ghosh Ray, R.N. Shukla and Atul Anand Mishra**

Received September 28, 2015 and Accepted January 15, 2016

**ABSTRACT :** In the recent advances in food science and technology a necessity of organic food pigments has gained an important role for developing food process industries. Much research has been done for the need to get the products those are desired to be consumed at its nearest natural state. The study aims to optimize the extraction and purification of identified natural pigments. Organic solvent extraction procedure can be executed using different ratios of organic solvents for the efficient extraction of desirable black grape, carrot and orange peel pigments which are bound in plant cells when used as a whole or as a pre-treated form. The study showed that the over-all recovery is increasing when the raw plant sources were treated chemically. The over-all recovery of extracted pigments showed 92.30% and 51.85% for chemically and water blanched carrot while, Anthocyanins from whole black grape and chemically blanched grape peels showed around 40% and 50% recovery, respectively. Carotenoids from dehydrated orange peel showed 23% recovery of pigment. The results gave comparisons of efficiency of the pre-treatment process, final yield, spectrophotometric analysis of all pigments and color intensity and hue of the final yield of anthocyanin. It is also seen that the chemically blanched peel anthocyanin showed highest color intensity and better hue value. The stability of anthocyanin pigments was observed by incorporating the yield into processed milk which showed maximum 14 days of shelf-life under cold storage condition (4°C).

**Key Words:** Organic food pigments, organic solvent extraction and purification, over-all recovery, blanching, spectrophotometric analysis, color intensity, hue, stability.