

## Comparative study on the extraction of natural dye by conventional magnetic stirring and ultrasound-assisted extraction techniques from carrot

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■ **Abstract :** In the food and dairy industry, most of the colouring agents used are artificial in nature which are reported to cause harmful effects when consumed in higher doses. Carotenoid is red orange colour pigment present in carrot and can be used as a natural dye in milk and milk products. Looking to the above fact an attempt was made for the extraction of Carotenoids by conventional magnetic stirring (MS) and ultrasound-assisted extraction techniques (UAE). A comparative study of extraction of Carotenoids from the carrot were systematically evaluated between MS and UAE. The optimum operating conditions to yield maximum Carotenoids from the carrot were fixed. The solvent used for extraction was ethanol. The power, frequency, temperature, time and agitation speed were 150 W, 40 kHz, 50°C, 25 minute and 100 rpm, respectively. It has been observed that Carotenoids yield was higher in UAE (0.008%) as compared with MS (0.006%).

■ **Key words :** Carrot, Ultrasound-assisted extraction, Magnetic stirring, Carotenoids, Natural dye

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