

Characterization of mint (*Mentha spicata*) essential oil using electronic sensing system and sensory techniques

Shema Hanna Mathew*, B S Varnashree, S Nagarajan, KS Somashekar and Maya Prakasha



Council of Scientific and Industrial Research–Central Food Technological Research Institute, India

Abstract

Mint (*Mentha Spicata*) is the one of the most popular and widely used aromatic spice oil for their antiseptic and antispasmodic effects and its essential oil is used in chewing gum, alcoholic beverages, cosmetics, perfumers, toothpastes and mouthwashes. Mint oil extracted by cleavenger hydro- distillation method and subjected to sensory and instrumental analysis. The sensory threshold measurement of mint aroma was 0.008µg/ml. The interaction between mint flavor and different taste compounds such as sucrose, stevia, sodium chloride and citric acid indicated that, in the presence of sucrose, the flavor enhancement pronounced followed by stevia. However in the presence of salt and citric acid, the mint flavor enhancement was less; exhibiting synergistic and antagonistic behavior of flavors. Sensory odor profiling identified impact making odor notes much as fresh, cooling, menthol, minty, and camphor like. The health beverage prepared with mint was evaluated among trained panelists using Quantitative Descriptive Analysis scale (QDA) depicted high acceptance for overall quality. Electronic Nose and electronic tongue analysis showed aroma pattern of mint aroma and taste pattern of beverage with different concentrations respectively. GC-MS analysis identified 30 compounds. Major ones are E-Caryophyllene, Carvone, and β -Cubebene. Antioxidant property of beverage was determined using DPPH assay method showed; antioxidant percentage depends on mint essential oil content in the beverage.

Keywords: Mint oil; beverage; sensory; GC-MS; antioxidant; E-nose; E-tongue

Biography

Shema Hanna Mathew is an Assistant Professor at Council of Scientific and Industrial Research–Central Food Technological Research Institute, India.



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