



## E509

### **The effect of adding essential oils to liquid whole egg chemical and physical properties**

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Eggs can provide a good amount of protein as well as healthy fats. Egg proteins are considered to be high quality proteins containing all essential amino acids. Many bioactive compounds, minerals, vitamins and antioxidants are found in eggs making them good for human consumption. Eggs are nutrient dense food with relatively low costs, due to the fact that they are fragile but very essential in a human diet liquid eggs products were introduced as an alternative products. Liquid egg products are microbiologically more stable than shelled eggs which help in increasing their shelf life. The aim of this study is to create a flavored liquid whole egg product that can be cooked to create a flavored omelet. An already existing whole egg product will be used to create the mixture, Salted whole egg is mixed with 1,2,3% V/V basil, rosemary, and garlic essential oil in liquid whole eggs, then pH, color viscosity were measured to evaluate the effect in comparison to the control group. The product was baked into egg muffin and texture was tested. pH was measured at 4 °C using a portable digital pH meter (206-pH2, Testo SE & Co. KGaA, Titisee-Neustadt, Germany). Tristimulus color measurements were performed with a Konica-Minolta CR-410 chroma-meter (Konica Minolta Sensing Inc., Osaka, Japan) at 4 °C. Viscosity measurement was performed by MCR 92 rheometer (Anton Paar, Les Ulis, France) at 15 °C.

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### **Extraction of bioactive compounds of peppermint by ultrasound assisted method**

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The main purpose of our experiments was to investigate the effect of ultrasound assisted extraction (UAE) on antioxidant activity and phenols content of extracts from dried peppermint leaves. Ultrasonic extractions were performed in a stainless steel tank with stirrer. Extractions were carried out using ethanol-water mixtures (10 %, 25 %, 40 % and 55 % v/v ethanol) as solvents, a sample-to-solvent ratio 1:50 (dry peppermint leaves:solvent, w:v). The total volume of 250 mL of solvent was used for each measurement and stirring speed (3.5 rps) was set constant. The leaves were irradiated with ultrasonic wave intensities of 8 and 56.5 W/m<sup>2</sup> for 10, 20 and 30 min. After the extractions, peppermint extracts were filtered and centrifuged to separate the aqueous solution and organic phase. Centrifugal separation was operated for 20 minutes at 6000 rpm.

The antioxidant activity of peppermint extracts was determined spectrophotometrically using the FRAP method and expressed in ascorbic acid equivalent. The total phenols amount was also measured spectrophotometrically by the Folin-Ciocalteu method expressed in gallic acid equivalent. All measurements were performed in triplicate. The optimal operating parameters of ultrasound assisted extraction is determined based on analytical results