

THE EFFECT OF ADDING DIFFERENT OILS ON LIQUID EGG PRODUCTS CHEMICAL AND PHYSICAL PROPERTIES

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Abstract

Egg products are widely used and are known for their easy use and long shelf life when compared to regular eggs. In the food industry the most used egg product is pasteurized liquid whole eggs, it's usually used in bakery products, fresh and dried pasta, and ice cream. 20% of total egg consumption around Europe is represented by egg products. According to European regulation the term "egg product" is all processed egg foodstuffs that are intended for human consumption. Adding flavors and fortifying egg products with oils to check the effect it has on its properties is the aim of this study. Olive oil, and sunflower oil have a great antioxidant activity and phenolic content, olive oil for example is known for its positive effect on inhibiting foodborne pathogens and enhancing cardiovascular health. On the other hand about 90% of fatty acids that are found in sunflower oils are unsaturated oleic and linoleic acids that can decrease plasma lipoproteins and total cholesterol.

2.5, 5, 7.5% V/V of olive oil, and sunflower oil were added to pasteurized liquid whole eggs. Then pH, color, and viscosity were measured to evaluate the effect. pH was measured at 4 °C using a portable digital pH meter (206-pH2, Testo SE, Germany). Tristimulus color measurements were performed with a Konica-Minolta CR-410 chroma-meter (Konica Minolta Sensing, Japan) at 4 °C. Viscosity measurement was performed by MCR 92 rheometer (Anton PaarFrance) at 15 °C.

Adding both oils did not significant effect on liquid whole egg pH significantly, on the other hand both oils effected L*, b* and a* color parameter significantly in comparison to the control group. Sunflower oil effected a* values significantly in comparison to control and significantly in comparison to all other kinds of oils. Regarding the viscosity of liquid whole eggs, both oils changed Herschel-Bulkley parameters, Tau0, K and n changing the flow behavior of liquid whole eggs from shear thinning to shear thickening fluid.

Adding olive and sunflower oils to liquid whole egg can affect its chemical and physical properties.

Key words: Liquid Egg products, Liquid whole Eggs, Olive Oil, Sunflower Oil.