

Improving the Oxidative Stability of Sunflower Oil by adding Anthocyanin Extract

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Many lipids are highly susceptible to thermal and oxidative degradation, leading to the formation of adverse flavors and compounds. Consequently, antioxidant protection is needed. Generally, synthetic antioxidants are used, but because of restricted use of some synthetic antioxidants and an increased consumer's demand for natural ingredients, natural antioxidants received high interest as friendly alternatives. Plant extracts rich in polyphenols with known antioxidant properties are widely investigated for food and pharmaceutical applications. Among phenolics, anthocyanins which are water soluble plant pigments, have received increased attention because of their health benefits based on their strong antioxidant properties.

The aim of the present paper was: (i) to determine the antioxidant effect of a crude anthocyanin extract from *Vaccinium myrtillus* added to sunflower oil in emulsion system; (ii) to compare the results to those obtained from sunflower oil treated with mixed tocopherols. A set of oil samples were stored at 40°C. Peroxide values (AOCS 1996) was monitored over a 10-day period for the untreated control, oil samples treated with lecithin as surfactant, oil samples treated with mixed tocopherols, and oil samples treated with anthocyanin extract. The determined anthocyanin content of the investigated bilberry extract was 307.95 mg 100g⁻¹ FW. Results showed that sunflower oil with added anthocyanins had remarkable lower levels of lipid oxidation during storage at 40°C in comparison to control and samples containing mixed tocopherols. Significant differences were registered for peroxide value after several day's storage. We do not exclude synergistic effects between the present antioxidants and lecithin. In conclusion, anthocyanin extracts proved efficient natural antioxidant potential to stabilize unsaturated lipids. We further undergo work to accurately evaluate the potential and limitations of anthocyanins in controlling and prevention of lipid oxidation as natural antioxidant strategy in food, cosmetic and pharmaceutical industry.

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