

## Phenolic Compounds, Antiradical Activity, and Antioxidant Efficacy of Satureja hortensis - Extracts in Vegetable Oil Protection

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**Abstract :** Vegetable oils and fats are recognized as important components of our diet. They provide essential fatty acids, which are precursors of important hormones and control many physiological factors such as blood pressure, cholesterol level, and the reproductive system. Vegetable oils with higher contents of unsaturated fatty acids, especially polyunsaturated fatty acids (PUFAs) are more susceptible to oxidation. Protective effects of *Satureja hortensis* (SE) extracts in stabilizing soybean oil at different concentrations (200 and 400 ppm) were tested. Results showed that plant extracts could significantly ( $P < 0.05$ ) lower the peroxide value and thiobarbituric acid value of oil during storage at 60 °C. The IC<sub>50</sub> values for methanol and ethanol extracts were  $31.5 \pm 0.7$  and  $37.00 \pm 0$  µg/ml, respectively. In the β-carotene/linoleic acid system, methanol and ethanol extracts exhibited  $87.5 \pm 1.41\%$  and  $74.0 \pm 2.25\%$  inhibition against linoleic acid oxidation. The total phenolic and flavonoid contents of methanol and ethanol extracts were ( $101.58 \pm 0.26$  mg/g) and ( $96.00 \pm 0.027$  mg/g), ( $44.91 \pm 0.14$  mg/g) and ( $14.30 \pm 0.12$  mg/g) expressed in Gallic acid and Quercetin equivalents, respectively. These findings suggest that *Satureja hortensis* extracts may have potential application as natural antioxidants in the edible oil and food industry.

**Keywords :** *satureja hortensis*, antioxidant activity, oxidative stability, vegetable oil, extract

**Conference Title :** ICFSN 2015 : International Conference on Food Security and Nutrition

**Conference Location :** Istanbul, Türkiye

**Conference Dates :** June 18-19, 2015