

### Determination of Thymoquinone Substance in Trace Amounts in Black Cumin Oil and in a Flavor Using High Performance Liquid Chromatography

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Antioxidants play an active role to extend the shelf life of food products. Although they are used in trace amounts, there are many substances used as antioxidants in the literature. Many substances such as Ascorbic Acid, Alpha-Tocopherol and Thymoquinone are used as natural antioxidants. Thymoquinone, which has a higher antioxidant capacity than these substances used, is determined with the help of High Performance Liquid Chromatography (HPLC). [1–3] In this study, a High Performance Liquid Chromatography (HPLC) method specific to the Thymoquinone substance found in Black Cumin Oil was developed and a recovery study was achieved with real samples. It is aimed to introduce a new method to the literature by optimizing system and method parameters such as flow rate, column temperature, injection volume and mobile phase using HPLC. As a result of the performance tests, limit of detection (LOD) and limit of quantification (LOQ) limits were obtained at very low levels (0.1 mg/L and 0.2 mg/L) in the working range of 0.01-2.0 mg/L. This method was applied to black cumin oil purchased from a manufacturer and a flavor sample that was prepared specifically for this study. Recovery results were calculated as 100.7 – 109.4%, with a relative standard deviation value of 0.4%.

**Keywords:** Thymoquinone; black seed oil; antioxidant; HPLC; flavor.

#### References

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