

## Preliminary report on antioxidant activity of spices commercialized in north Greece

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### Abstract

Spices are important in all cuisines, as they give each cuisine a unique aroma and unique taste. They give each meal a rare, nice, and sweet taste and smell. Spices are low in calories, and fairly inexpensive. Their use is necessary, especially in people who follow a weight loss diet program as they reduce the added fat in a variety of recipes in this way. Many of the spices also have antioxidant properties and substitute the various preservatives that often harm human health, which the public does not know very well.

The aim of this study was to assess the antioxidant properties of different spice extracts. A total of 9 packed and 27 unpacked samples representing different types of spices were collected randomly from different North Greek market and bazaars (Xanthi, Thessaloniki, Florina). The spices included in this study were black pepper (*Piper nigrum*), turmeric (*Curcuma longa*), ginger (*Zingiber officinale*), cinnamon (*Cinnamomum verum*), pimpinella anisum (*Illicium verum*), macis (*Myristica fragrans* Houtt.), tsimeni (*Trigonella foenum-graecum*), saffron (*Crocus sativus*) and clove (*Syzygium aromaticum*).

The FOLIN-CIOCALTEU method was used to determine the total phenolic content while the determination of the antioxidant capacity of samples measured using the ABTS and DPPH methods.

According to our data the variations of antioxidant capacity measurements of spices are extremely different from region to region. This may be due to the conditions of storage, processing time or even the quality of the sample itself. High antioxidant capacity was found in clove spices, cinnamon, saffron and pimpinella anisum.

The cinnamon, pimpinella anisum, saffron and clove spices showed a high total phenolic content in all cases, while the maces and turmeric spices showed a high total phenolic content in some samples. The ginger, black pepper, and tsimeni spices exhibited moderate total phenolic content

More experimental data should be gathered to gain a better understanding of the antioxidant activity of spices used in Greek cooking.



### Biography:

Paraskevi Mitlianga has completed her PhD in Biological Chemistry from University of Ioannina Medical School and postdoctoral studies from MDA Anderson University of Texas Medical School at Houston. She now is a full professor of Chemistry and Biochemistry at the Department of Chemical Engineering, University of Western Macedonia, Greece.

### Speaker Publications:

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4. Kasapidou E, Giannenas I, Mitlianga P, Sinapis E, Bouloumpasi E, Petrotos K, Manouras A & Kyriazakis I. (2014). Effect of *Melissa officinalis* supplementation on growth performance and meat quality characteristics in organically produced broilers. *British Poultry Science* 55:774-784.
5. Eleni Kasapidou, Charikleia Papadaki, Paraskevi Mitlianga and Evangelia Sossidou. Family produced laying hen meat and eggs in Greece - Nutritional indices for the health conscious consumers. *Europ. Poult. Sci.*, 79. 2015, DOI: 10.1399/eps.2015.74

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