

11<sup>th</sup> World Congress on

# Biotechnology and Biotech Industries Meet

July 28-29, 2016 Berlin, Germany

## Determination of correlations between electrical conductivity, dry matter, total polyphenolic content and antioxidant capacity of chamomile extracts (*Matricaria recutita L.*)

Maja Benkovic, Ana Jurinjak Tusek, Davor Valinger, Tamara Jurina and Ana Belscak-Cvitanovic  
University of Zagreb, Croatia

Chamomile, as one of the most widely used herbs in households and folk medicine is known to have beneficial effects on human health. It is often used to treat inflammation, fever, muscle spasms and gastrointestinal disorders. These beneficial effects are often contributed to a wide array of bioactive compounds present in chamomile: Chlorogenic and caffeic acid, apigenin, luteolin, quercetin, rutin, naringenin, etc. Besides the analysis of chemical antioxidant compounds present in herbal extracts, analysis of physical properties of the extracts has also proven very useful. Among others, these physical properties include extraction yield (determined as dry matter content) and electrical conductivity of the extracts. In this research, electrical conductivity (SevenCompact, Mettler Toledo, Switzerland) and dry matter content (AOAC method), as physical properties, were correlated to total polyphenols (Folin-Ciocalteu reagent) and antioxidant capacity (ABTS method) as chemical properties of chamomile/water extracts. Extractions were conducted at three different temperatures (40 °C, 60 °C, 80 °C) and the samples for analysis were taken at regular intervals (0.5, 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 15, 20, 25, 30, 35, 40, 45, 50, 55, 60, 70, 80, 90 min). Simple regression models were used for the correlation analysis of physical and chemical properties of chamomile extracts. Strong positive correlations were obtained between electrical conductivity, total polyphenolic content and antioxidant capacity at all given temperatures. Furthermore, at all analyzed temperatures, a strong positive correlation was also obtained between dry matter content, total polyphenols and antioxidant capacity of the chamomile extracts.

### Biography

Maja Benkovic has completed her PhD at the Faculty of Food Technology and Biotechnology in Zagreb in 2013. She is currently working as a Senior Scientific Assistant at the Department of Process Engineering at the Faculty of Food Technology and Biotechnology in Zagreb and as a Researcher on 2 scientific projects. She has published 26 papers in reputed journals and has presented her scientific work on numerous international scientific conferences.

[mchenkovic@pbf.hr](mailto:mchenkovic@pbf.hr)

### Notes: