



# Abstracts

**FOR**

## 5<sup>th</sup> International Symposium on Phytochemicals in Medicine and Food

**(5-ISPMPF)**

**AUGUST 25 – SEPTEMBER 01 2021, NANCHANG, CHINA**



## PP87: Chemical characterization and antioxidant capacity evaluation of blueberries and currants subjected to different types of production

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In recent years, with the increasing consumers' awareness regarding the beneficial properties of antioxidant fruits for health, small red fruits have been extensively produced. This tendency has led to the search of new and more sustainable ways of organic and integrated production, replacing conventional agriculture, to improve the quality of the fruits, and therefore meet consumers' expectations<sup>[1-3]</sup>. The main interest of this study was the chemical characterization (fatty acids (GC-FID), free sugars (HPLC-RI), organic acids (UFLC-PDA), tocopherols (HPLC-fluorescence), and phenolic compounds (HPLC-DAD/ESI-MS)), and antioxidant properties assessment (TBARS and OxHLIA assays) of blueberry and currant fruits subjected to different types of production (conventional and applying a biological fertilizer, *Ecoser*), providing information that allows a comparison and a more conscious choice of the most suitable production type.

The results showed that the chemical composition of blueberry and currant fruits is influenced by the production methodology. Blueberries fertilized with *Ecoser* revealed higher concentrations of  $\gamma$ - and  $\delta$ -tocopherol, monounsaturated and polyunsaturated fatty acids, oxalic acid, quinic acid, and malic acid, while blueberries grown in the traditional way showed high levels of glucose and fructose, as well as saturated fatty acids, quinic acid, and phenolic compounds. Regarding currants, those grown organically showed high concentrations of lipids, fructose, glucose, ascorbic acid, saturated and monounsaturated fatty acids, phenolic acids, and flavonoids, whereas currants grown in conventional agriculture showed high levels of sucrose, polyunsaturated fatty acids, and anthocyanins. On the other hand, in the antioxidant activity assessment, a better inhibition of lipid peroxidation was evidenced by the currants produced in biological mode and in the blueberries produced in a conventional way. In terms of the inhibition of oxidative hemolysis, the best results were achieved by the currants and blueberries cultivated in biological mode. This study can serve as a basis to determine the most suitable production parameters, depending on the intended application of the fruits in industry, or the consumers' preferences.

### Acknowledgments:

The authors are grateful to the Foundation for Science and Technology (FCT, Portugal) for financial support through national funds FCT/MCTES to CIMO (UIDB/00690/2020). National funding by FCT, P.I., through the institutional scientific employment program-contract for C. Pereira and L. Barros contracts and A.K. Molina PhD grant (2020.06231.BD). To the European Regional Development Fund (ERDF) through the Regional Operational Program North 2020, within the scope of Project GreenHealth – Norte-01-0145-FEDER-000042.

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