



NJF Seminar 399

Beneficial health substances from berries and minor crops –

- How to increase their concentration in cultivated species, eliminate losses in processing and enhance dietary use

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Bioactive berry phenolics

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In Finland, berries are part of the traditional diet significantly contributing to the intake of flavonoids and other phenolic compounds. Compositional data on phenolic compounds in berries has been rapidly accumulating and readily included in the national food composition data base. Among the different bioactive substances in berries, phenolic compounds including flavonoids, tannins, and phenolic acids have received considerable interest due to their effects in food and health. A great amount of in vitro evidence exists showing that berry phenolics are powerful antioxidants. Antioxidant activity i.e. inhibition of oxidation of lipids and proteins as well as radical scavenging activity of berry phenolics have been related to the onset of many diseases including cardiovascular diseases and cancer. However, the antioxidant effect of berry phenolics is strongly dependent on the choice of berry raw material, as the antioxidant activity differs between the different phenolic constituents, including anthocyanins, ellagitannins, and proanthocyanidins. In foods, the antioxidant effect is also influenced by the structure of food. Tannin containing berries also exhibit antimicrobial properties against pathogenic bacteria, thus offering many new applications for food industry. Much of the interest in berry phenolics has focused in cranberries and both cultivated and wild blueberries, although also other berries including black currants, cloudberries, lingonberries, and red raspberries possess promising bioactivities that may have relevance to human health.

References

Heinonen, M. 2007. Antioxidant activity and antimicrobial effect of berry phenolics - a Finnish perspective. *Mol. Nutr. Food Res.*, in press.