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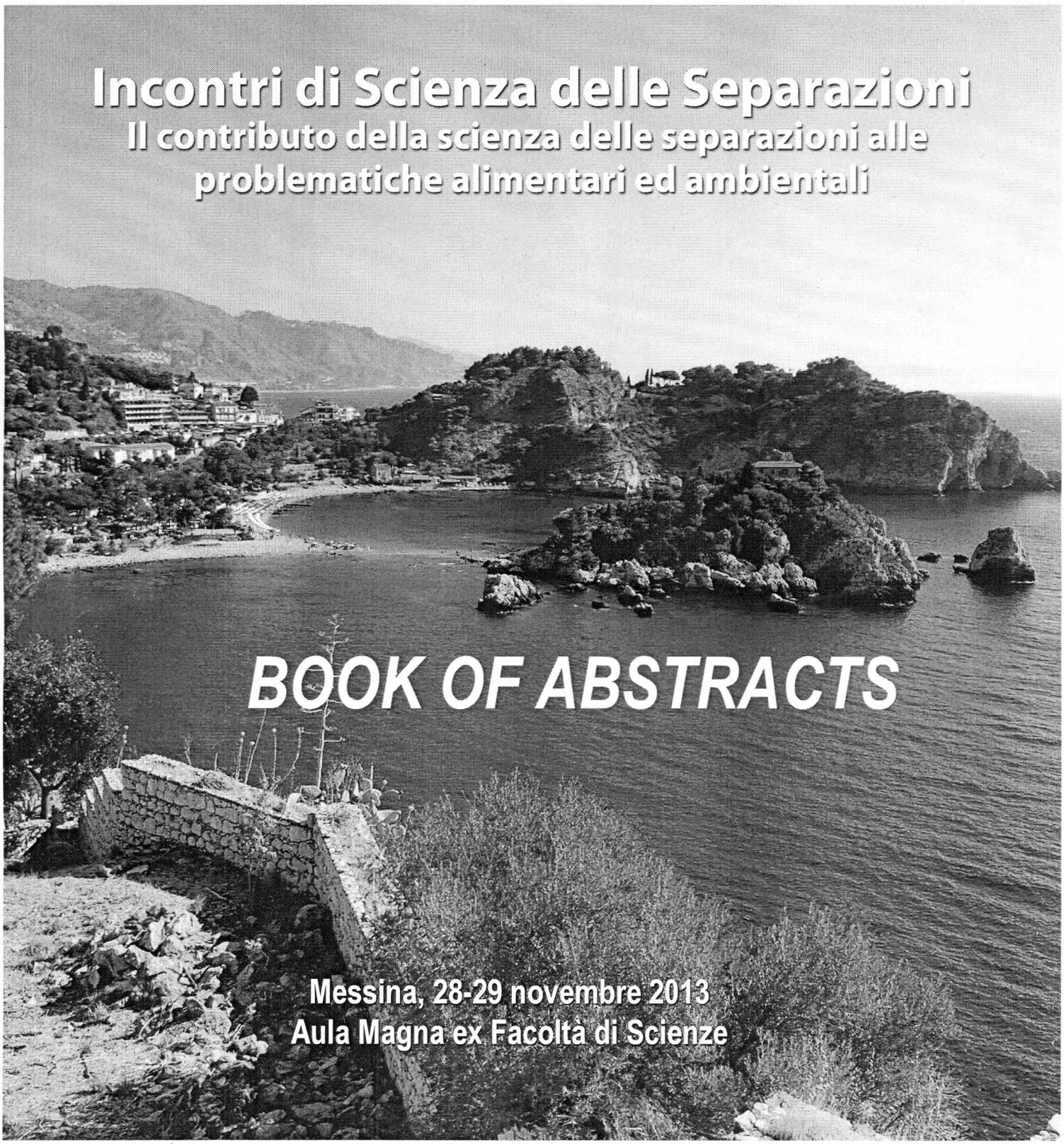

BOOK OF ABSTRACTS

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ACCURATE IDENTIFICATION AND PROFILING OF ELLAGITANNINS IN STRAWBERRIES AND WOODLAND STRAWBERRIES: THE INFLUENCE OF CULTIVAR ON THE CONCENTRATION AND COMPOSITION OF ELLAGITANNINS

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Strawberries (*Fragaria ananassa* Duch.) are one of the most consumed berries. Although the composition of strawberry fruit has been extensively studied, the detailed characterisation of ellagitannins and especially the most abundant one agrimoniin has been only recently univocally identified **[1, 2]**. Ellagitannins recently gained much attention in light of the experimental evidence of their anticancer, antiproliferative, and antibacterial activities. Furthermore agrimoniin is a known bioactive compound.

The establishment of an HPLC protocol for the HPLC separation of the ellagitannins has been already published for the study of the ellagitannins in *Rubus* species **[3]**. The isolation and characterisation of strawberry ellagitannins and ellagic acid derivatives, allowed us their accurate identification and quantification of in 6 different varieties of strawberry and in 2 woodland strawberry. The separation of 23 ellagitannins and 3 ellagic acid conjugates in the strawberry extracts was performed in *Fragaria* species by HPLC-HDMS. Differences on the composition and on the concentration of ellagitannins were observed in the ellagitannins profiling among the cultivars **[2]**.

Woodland strawberry was the richest in terms of absolute concentration of ellagitannins and as consequence these data confirm that the wild species are the most interesting in term of nutritional relevance. We observed major qualitative and quantitative differences in the amount and profile of ellagitannins and ellagic acid conjugates in *Fragaria x ananassa* and *Fragaria vesca* species, as well as several qualitative differences in some minor ellagitannins in the *Fragaria x ananassa* cultivars. This information suggests that the ellagitannin profile could also be interesting for characterising cultivars. Among the fruits which contain ellagitannins, strawberries are the most widely consumed, and agrimoniin is therefore suggested to be one of the most widely present ellagitannins in the human diet.

References:

[1] Vrhovsek U. et al., *J. Agric. Food Chem.* **60**, 2507, (2012)

[2] Gasperotti M. et al., *J. Agric. Food Chem.* **61**, 8597, (2013)

[3] Gasperotti M. et al., *J. Agric. Food Chem.* **58**, 4602, (2010)