

P-112

## Optimization of the agronomical and wine-making process of Grechetto and Vermentino grape to improve the sensory and healthy characteristics

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### Abstract

In recent years the focus on natural antioxidants has greatly increased, phenolic compounds, in particular, are a class of compounds ubiquitous in the plant world and widely present in food daily. The wine contains a large number of phenolic substances the concentration of which depends both on the type of grape that the wine-making technique used. This study assessed the effect of the optimization of agronomic procedure on the content of phenolic substances in grape and the effect of the optimization of winemaking with the goal of preserving the content of phenolic substances and obtain wines that possess the highest healthy activity. Moreover, since these same substances also mainly responsible for the color, aroma, flavor and astringency, preserve it increase the potential sensory characteristic. The study was made on white grapes of the variety Grechetto and Vermentino from Umbrian winery. The determination of the polyphenolic profile through advanced analytical methods such as HPLC and head space mass spectrometry techniques, side by side in sensory tests, have allowed us to identify, for the two types of grapes, the best conditions of fermentation in order to optimize the content of functional substances. The results showed that different agronomic conduction (biodynamic, organic, conventional) induce significant differences in antioxidant content, while optimization of the wine making process (cryo-maceration and pressing in a modified atmosphere) increase the content of antioxidants (from 20 to 40%) moreover the increasing of amount and variety of aromatics compounds greatly improving the sensory profile of the finished product as evidenced by the results of panel and consumer test.

P-113

## Plant extracts in swine nutrition: Effects on some hematochemical parameters and sensory characteristics

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### Abstract

There is an increasing public interest in the use of plant extracts in livestock feed. The objective of this study was to investigate the effects of inclusion of oregano (*Origanum vulgare* L) and chestnut wood (*Castanea sativa*) extract in pig diets, on some blood parameters, and chemical and sensory characteristics of the meat pork. Ninety Suffolk hybrids pigs were randomly divided into 6 groups (3 indoor and 3 outdoor; 15 animals/group) and, after the adaptation period, both indoor and outdoor pigs were assigned to one of the following iso-nitrogenous and iso-energetic diets: a) control, a commercial pellet diet (16.0% CP, 4.3% CF, 1.0% Lysine produced by Nuovo Molino, in Bastia Umbra, PG); b) control with 0.2% oregano essential oil; c) control with 0.2% oregano + 0.2% natural extract of chestnut wood. Diets were administered for 190 d until slaughter. Blood samples were taken at the beginning (s 1), after 120 (s 2) and at the end of the trial (s 3) to check the health *status* of animals by some minerals and hematochemical determinations (Ca, P, Zn, Cu, Mg, Fe, total protein, beta-hydroxybutyrate, free fatty acids, tryglicerids, cholesterol, LDL-cholesterol) measured with an automatic analyzer (Hitachi 74); whereas the chemical characteristics and sensory quality of the pork were investigated, the first, on a mincemeat separately prepared from carcass (n. 3 animals) of each diet group and on derived matured salami, the second only on the derived matured salami. In conclusion, the diet integrated with plants extracts didn't interfere with the animal health status or the minerals and hematochemical blood parameters investigated. However, the chemical parameters of the salami showed statistically significant differences especially as regards to the content of lipids and cholesterol, lower in outdoor pigs respectively for 20% and 40%. By contrast, the "consumer test" used to assess whether the consumer perceives sensory differences on the final products showed that the salami made from indoor pigs were significantly more appreciated by consumers (P $\geq$ 0,05), regardless of the type of the diet followed by the animal. Then is possible concluded that the consumer "choice" not coincide with the healthy characteristics of meat.