

Total phenols, α -tocopherol and β -sitosterol and related antioxidant capacity in olive oil with different Jean index values

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Aim: Total phenols, α -tocopherol and β -sitosterol are important compounds in human nutrition. However the concentration of this molecules is related to the pedoclimatic conditions and at the different ripening phase. The aim of this study is monitoring the concentration of these compounds during ripening phase (Jean index).

Methods: The olive oil has been saponified and the unsaponifiable fraction extract with n-hexane. The analysis have been performed by HPLC, a fluorimetric detector has been used for α -tocopherol and an U.V. detector for β -sitosterol. The total phenols have been quantify by Folin-Ciocolteau method and the antioxidant capacity by crocin bleaching metod.

Results: The phenol increase during the ripening phase and reach the higher value with an Jean index of 2.6, instead the α -tocopherol, show a decrease during the ripening phase with a minimum at 2.3 Jean index value and the β -sitosterol concentration reach it is higher Jean index value at 1.5 and it is minimum at 3.4 of Jean index value. The lipidic and hydrophilic antioxidant capacity show a similar trend even if with different values..

Conclusion: In conclusion we can say that the hydrophilic and lipidic antioxidant capacity are linked between them, the total phenols, α -tocopherol and β -sitosterol, show different trend, probably due to a different environmental condition during the ripening phase, and their concentration influence the antioxidant capacity in different ripening phase.