

# NUTRITION & HEALTH

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## The content of antioxidants – phenolic compounds, in red wines of Georgia “Kindzmarauli” and “Saperavi”

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**Statement of the Problem:** The special attention of researchers is attracted by grape wines– sources of a unique natural composition of antioxidants and other biologically active substances, superior in their activity to individual antioxidants. About 50 components of the phenolic complex exhibit radioprotective, anti-radiation, bactericidal, antioxidant, antisclerotic, and other functional properties. Chemical analyzes of Georgian wines also showed a high content of phenolic compounds in in red wines obtained by the Georgian traditional method– aging in Qvevri. Earlier were determined the mineral content and heavy metals in wines Kindzamarauli and Saperavi and the corresponding raw materials, kindly provided by the wine enterprise Khareba.

**Methodology & Theoretical Orientation:** One of the main aims of study was to determine phenol compounds in Qvevri wines over wine, made without it. Identification of phenolic compounds was performed using HPLC (Agilent 1260). Division was carried out on the reversed phase Agilent- Zorbax Eclipse XDB-C18-01 column at the room temperature according to modified method of Jordao et.al.

**Findings:** According to obtained data, some following phenolic compounds were detected in wines: gallic acid; protocatechuic acid; (+) catechin; vanillic acid; caffeic acid; syringic acid; (-) epicatechin; ferulic acid; dihydroquercetin; rutin; o-coumaric acid; resveratrol; quercetin; p-hydroxybenzoic acid. Content of them changes during processing according chain: stem→skin→pulp→juice→wine. Total content of phenolic compounds is greatest in Saperavi wine (1120mg/l), sustained in Qvevri over wort, compared to Saperavi wines (700-750mg/l), and obtained from grape juice by European method.

**Conclusion & Significance:** According to the content of resveratrol, all the wines studied belong to class of very good (content of resveratrol is more than 7mg/l), and Saperavi of 2012 year with the content of resveratrol of 18mg/l– to selected wines. Identified phenolic compounds can act as antioxidants and increase the nutrition and medical properties of wine.

### Biography

Giorgi Maisuradze is a PhD. He graduated from the chemical faculty of Javakishvili Tbilisi State University, and then the postgraduate study of Holy Apostle St. Andrew the First-Called Georgian University of Georgian Patriarchate with honors. Thesis title: "Pollution of Atmospheric Air of Georgia and Possibility of Purification by Joint Conversion NO/CO Modified by Natural Zeolites". Works in Tbilisi State University on a Scientific Project – "Complex Study of Antioxidants and Mineral Components in Georgian Red Wines by Modern Physical-Chemical Methods", position: Researcher. Fields of specialization: heterogeneous catalysis, adsorption, ionexchange and catalytic properties of synthetic and natural zeolites; air pollution; gas chromatography and gas-liquid chromatography. He is an author of 14 scientific papers.

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