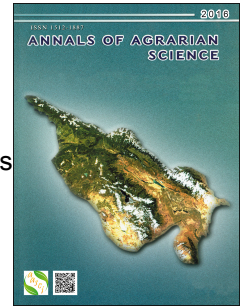


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# Anthocyanins And Antioxidant Activity of Red Wines Made From Endemic Grape Varieties

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## ABSTRACT

The article deals with the research of qualitative and quantitative content of monomeric anthocyanins of the red wine samples obtained from grapes of endemic varieties (Alexandrouli, Mujuretuli, Saperavi, Otskhanuri Sapere, Ojaleshi), spread in different regions of Georgia, and studied by UPLC-MS and HPLC methods. 9 anthocyanins have been identified and quantified. As a result of the analysis, we established: the difference between the varieties according to quantitative contents of the anthocyanins; the directly proportional correlation between quantitative content of wine anthocyanins and antioxidant activity; the reduce of the monomeric anthocyanins number and antioxidant activity after a year of wine aging.

**Keywords:** Red wine, Bioactive compounds, Anthocyanins, Antioxidant activity, Grape varieties, Biochemical indicators

## 1. Introduction

The production of red wines is a priority in many countries of the world and the demand for them increases every day. Red wines, with the exception of good organoleptic indicators, are characterized by a significant and multifaceted biological activity. Organic compounds with a number of antioxidant properties have been found in red wine made from different varieties of grapes. They are mostly found in the skin of grapes, seeds and stems. These include: resveratrol, monomeric flavonoids, anthocyanins, catechins, epicatechins, polymeric proanthocyanidins, phenolic acids, and others. According to the research conducted in recent years, the composition of polyphenols and phenolic complexes, their quantity, antioxidant and antiradical properties of wine depend on a number of factors: grape varieties, location of vineyards, climatic conditions, soil type and wine-making technology. The red pigments of grapes are anthocyanins, which mainly exist in the form of monoglycosides of anthocyanidins. The phenolic compounds are characterized by different physiological effects: antithrombotic, antimutagenic, anticarcinogenic, antisclerotic, anti-inflammatory, antiallergic, radioprotective, bile, antispasmodic, antioxidant [1,2].

The present research deals with the qualitative and quantitative composition of biologically active compounds of grape varieties and wines made from them [3-12]

The objectives and goals of the work is to study the quantitative content of monomeric anthocyanins and the antioxidant activity of the red wine made from grapes of endemic varieties (Aleksandrouli, Mujuretuli, Saperavi, Otskhanuri Sapere, Ojaleshi), spread in different regions of Georgia.

## 2. Objectives and Methods

### *Plant material*

Five different grape varieties were taken from different regions of Georgia: Alexandrouli (Racha), Mujuretuli (Racha), Saperavi (Kakheti), Otskhanuri Sapere (Imereti), Ojaleshi (Samegrelo).

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