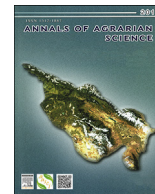




Contents lists available at ScienceDirect

Annals of Agrarian Science

journal homepage: <http://www.journals.elsevier.com/annals-of-agrarian-science>

Colored grape polyphenol concentrate

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ARTICLE INFO

Article history:

Received 19 May 2017

Accepted 21 August 2017

Available online xxx

Keywords:

Vine

Grapes

Secondary resources

Phenolic compounds

Seeds

Extract

ABSTRACT

The research is aimed at obtaining, processing-filtering of ethanol extracts enriched with a phenolic complex of grape skins and stone remained as a result of processing environmentally clean local color grape varieties (whose cultivation process does not envisages the use of pesticides and other chemicals), and assessing their quality indicators. The extraction process of separate samples was carried out in two phases by using the extracting agents of different concentration and polarity. In both phases, the extraction temperature was within 48–52 °C. Other extraction parameters (time and pulsation frequency) were optimized experimentally.

The content of bio-flavonoids in the obtained extracts was determined in accordance with their optical density, with the presence of aluminum chloride on a spectrophotometer, but antioxidant activity was evaluated by using DPPH (2,2-Diphenyl-1-picrylhydrazil) – method. The grape-stone bio-flavonoids are widely used as the drastic antioxidants in nutritional supplements producing in European countries and USA. In a blood plasma they represent the active sorbents of superoxide and hydroxyl radicals. Phenol compounds protect vitamins from early acidification, and improve their functional activity. The composition of the obtained condensed extracts contain 1980 mg/100 ml of phenolic compounds and 173,9 mg/100 ml of monomeric anthocyanins, but antioxidant activity in the case of dissolution factor $F = 300$, is 79,7%.

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Introduction

The deterioration of environmental radioculacid background, chemistry of food and unhealthy lifestyle characterized by the fall of the immune system and the antioxidant balance of the planet's autotrophic and heterotrophic organisms. The pathology of the immune system, even in the short term, is disastrous for the living organism. (see [Tables 1 and 2](#))

Therefore, at the modern stage, it is relevant and scientifically confronted with a problematic task, developing technological additives and concentrates technologies enriched by biologically active compounds of vegetable origin characterized by high antioxidant and radioactive activity. In this regard, it is particularly interesting irritating colored grape raw, which is characterized by a rich composition of phenolic compounds [1,2], but wine-processing factories do not receive due to the increased content of antioxidant diglucoside forms, and the fact that the villagers are employed in

the viticulture field is very painful.

Georgian researchers are also intensively involved with the world's leading scientists in research and production of rich food additives with biologically active compounds. This is confirmed by the preparation of “Kaprimi” (Kakheti-Primoria), a Georgian researcher “Georgian Vitae rimas XXI”, etc.

Even sophisticated propellers such as “cystamine” and “calamus” as well as biogenic amines “Indraline” and “naphthysine” are recommended only prior to irradiation, and even after a short duration of radiocul acid background they do not produce effective and desirable results [3,4].

Many years of research by the University of Kentucky, USA, confirmed that red grapes skin and pepper extract have no analogues in combating different pathologies caused by irradiation. Especially biologically active compounds of grape seed extract activates some types of JNK proteins in the human body, which in turn regulates the signaling pathways for the destruction of cells of malignant cells, so that grape cells remain harmless [5].

Fig. 1 shows the dynamics of the development of cardiovascular pathologies in the European countries, which is in the proportional dependence of vineyard cultivation dynamics, which is more

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Peer review under responsibility of Journal Annals of Agrarian Science.

<https://doi.org/10.1016/j.aasci.2017.08.004>1512-1887/© 2017 Production and hosting by Elsevier B.V. on behalf of Agricultural University of Georgia. This is an open access article under the CC BY-NC-ND license (<http://creativecommons.org/licenses/by-nc-nd/4.0/>).

Table 1
Paranoids content in "Zeibel" and "Isabella" Grape seed extract is acidified ethanol, mg/100 ml.

Seed Extracts		Plavono-Imeretians 80-82% C ₂ H ₅ OH	Catchiness 80-82% C ₂ H ₅ OH	Leikoanto-cyan 80-82% C ₂ H ₅ OH	between them anthocyanin 1% of the acidified 12% C ₂ H ₅ OH
"Zeibel"	The crude mass	373.38	89.56	86.57	84.98
	Weight of	426.14	110.63	102.23	98.56
"Isabella"	The crude mass	369.25	87.99	82.41	82.66
	Weight of	422.34	101.53	95.25	95.63

Table 2
Grape skin and grape seed extracts condensed.

Compound Title	"Zeibel" and "Isabella" and skin Seed 65% of the condensed concentrate
The total number of phenols, "Folin Ciocalteu" - a method	1980 mg/100 ml Concentrate
Monomeric anthocyanin quantity-Contrapuntal polyphony, pH differential method	173.89 mg/100 ml Concentrate
Antioxidant activity, DPPH radical 50% inhibitors	79.7% (Dilution factor F = 300)

commonly used by the population of any country as grape vascular products are less cerebral and tumors [6] (see Fig. 2).

The red grapes and the bile of bioflavonoids in the grape exceeds the gap in white grapes and their grape seeds. Although many plant organisms are characterized by the phenolic complex, but red grapes and skin are not analogous in autoractic organisms in this direction.

Research goal

Imereti viticulture zone, polluting or toxic chemicals without using colored grapes cultivated secondary resources (skin and seeds) and their use in research was the study of extracts ethanol powerful antioxidant, radio protective and therapeutic-preventive concentrates Production.

Objectives and methods

The object of the research was the ethanol extracts of the skin and the seeds of the "zibel" and "isabela" of the varieties of

cultivated vine varieties in Imereti viticulture and winemaking micro-zone and their concentrates.

Selection of these varieties for the production of strong antioxidant and polyphenol concentrations was taken into account by their characteristics. Namely Zeibel selection because its skin does not contain any of the antioxidant diglucoside forms [7] and is characterized by a muscular aroma. As for Zeibel, her selection was due to the expressed musical flavor.

Cultivation of both grapes raw material is done in our country without toxic chemicals. At the same time, each kilogram is estimated to contain 10 g of phenolic compounds, and most of them (3% of dry mass) are in the skin (see 2) and localized in cinnamon [8].

We evaluated the qualitative indicators of grapes and grapes extracts of selected varieties of grapes according to international standards, namely:

- The total number of polyphenol content: ISO 14502-1- according [9].

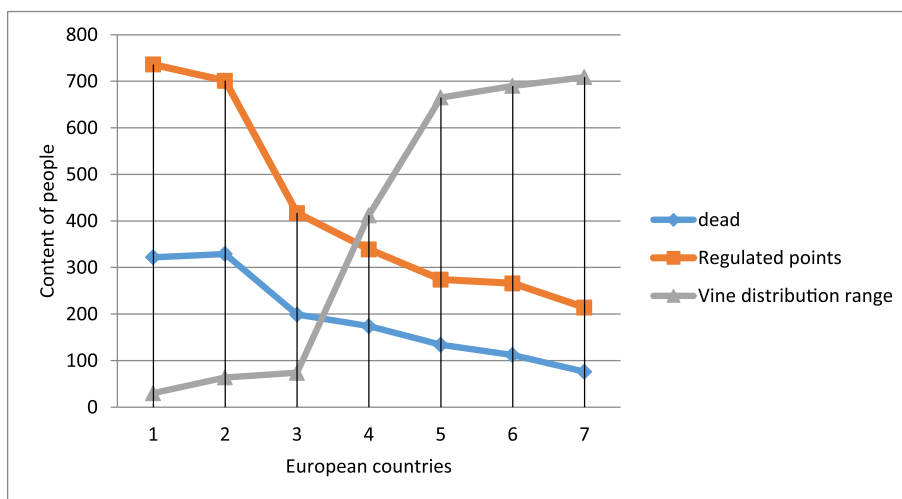


Fig. 1. Cardiovascular pathologies (registered number of deaths and diseases) and the dynamics of the spread of the vine European countries. 1. Great Britain, 2. Scandinavian countries, 3. Belgium, 4. Germany, 5. France, 6. Italy, 7. Spain.

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