



Appreciation of the Chemical Ingredients of Black Grapes Structures *Vitis vinifera L.* and Identify the Impact Against oxidation

Ashraq Monir Mohamed, Hind Kamal Ali, Nidal Mohamed Saleh

Department of food science, Agriculture of collage, University of Baghdad, Iraq

Correspondence Author: Ashraq Monir Mohamed, Department of food science, Agriculture of collage University of Baghdad

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Abstract

You had estimated the chemical composition of grape *Vitis vinifera L.* black structures and humidity were 10.65 and 8.04% and protein 5.63 and 5.87% and carbs 80.43 82.21% fat ratio and 0.36 and 0.39% And ash 2.93 and 3.49% and 60.72 fibers and 67.83% respectively. Phenols also estimated flavonoid, broanthosianidin ratio was 87.7%, 92% and 7.5% respectively. Alcohol extraction process was conducted for the Structures of black grapes as well as testing the Effect of extracted anti-reductionist us anti oxidation and iron binding force.

Key words: grapes structures *Vitis vinifera L.*, Antioxidant, chemical composition of grape

INTRODUCTION

Natural compounds in fruits and vegetables, spices and Traditional medicinal plants play traditional preventive against many diseases caused by oxidation and microscopic Biology of infection [17]. These simple and complex phenols ingredients and compounds that contain sulfur and the phenol compounds had large aspect of attention to what its from The importance of reducing risk in dead from diseases including allergies and diseases caused by microorganisms [3,8]. Natural antioxidant won In the plants used as food so much attention because of the tathermdadat of industrial health side as well as antioxidants that some physical qualities such as unacceptable Tbatitha in general temperature and volatility [29]. Given that the diet is a source of antioxidants that help protect the body from damage Caused by free radicals, And prove that plants that contain flavonoids compounds possess powerful antioxidants properties [5]. Since he found it working on the consistency of the food by delaying and impeding the Rancidity phenomenon and prolong shelf life [7] believes that oxidative stress for fat factor However in the progression of atherosclerosis [10].

A number of studies have demonstrated that flavonoideh like (Qurecetin) is the main contributor to antioxidant activity [18] grape seed is Castanascatichen hand sources Catechin) and abikatekyen (EC) and soldering acid Gallic and broanthosianid and is suitable for the production of raw materials Food antioxidants. Faria *et al.*, [13] is one of the richest grape fruits and most beneficial and profitable, and that his active role in body building and repairing tissues evaluated and treat many diseases and illnesses as well as.

The possibility of eating it year round in mushy or dried, and grape fruits a Fast digestion with high nutritional value, and his aptitude for calculating representation during any body. Hammer [14].

The role of phenolic compounds in inhibiting oxidation (Low Density Lipo Protein) within the living body through extraction of Catechin compounds (Catechin, Procyanidin).

Additions types (B8, B6 and B4 and B3 and B1) and isolation and purification of grape seed, and found that all of the Catechin (C) and white Catechin (EC) possessing the highest effective antioxidant, and vehicles Gallic acid-like Singularity and alkorstin (Quircetin) and Caffeic acid and Rutin routine), a group of vehicles that contain B6 and Ellagic acid her low effectiveness against oxidation. And containing Peeling grapes to large quantities of flavonoids as well as on other vehicles multiple Alvin and so with the red and white grapes, soy and other [16].

Grape structures represent remnants of food processing can be utilized in several areas, so the research was conducted to study the chemical composition of the main components of grape black intensity structures as well as efficient vehicles and estimate asses its effectiveness as antioxidants.

MATERIALS AND METHODS

Collecting samples:

We choose sample of grape Grove was located in the alsragi / Balad / Salahuddin province during the trial period of the season. Hull is separated from the seed and pulp were washed with tap water and then dried up by electric furnace with the temperature of 40 m and kept in opaque boxes inside the refrigerator at temperatures 8 m until use.

Assess the key components of the structures of black grapes Vitis vinifera L.:

Estimation of humidity: estimated percentage of moisture as contained in A.A.C.C. [1]

Estimation of protein:total protein form a way Kjeldhal [2].

Estimating fats: followed A.A.C.C. (9 estimating fatty substances in your soxcilat with ether).

Estimate the percentage of ash: just ash estimated standard contained in the A.O.A.C. A.A.C.C. [1].

The proportion of fiber: estimated by the method used by Delaly and Alhakim [12].

Estimate the carbohydrate compounds: estimated by the method described by Delaly and Alhakim [12].

MATERIALS AND METHODS

Extraction:

Blending 10 grams of powdered black grapes structures with 50 ml of ethyl acetate solution and distilled water by 10:90 in the flask and close the jug and then leave 24 hours to the magnetic vibrator, then nominated filter paper (1 No What then put the extracted in the Suppression of separation and process repeated added HCH four times with 25 ml each time to separate the oil from Catechin, gallic mixture containing nominated during the nomination paper containing sodium sulfate anhydrous Na₂SO₄, and focused evaporator rotor temperature of 40 m drying oven was remaining electrical extraction temperature of 40 m [22] and re t ramp add 5 ml distilled water, sterilize present nomination papers to extract maikrobiologi 0.45 micrometre aperture.

Quantification of some active ingredients in grape structures:

The measuring curve was prepared for each of the phenol broanthosaindin the adoption of standard vehicles Gallicacid, Catechin, Proanthocyanidin from the order as shown in figures 1, 2, 3 the same order too. He held the quantification of three active ingredients as follows:

1-Estimate of total phenols:

Folin -ciocalteu fallen detector method adopted by adding 2.5 ml to 0.5 ml (grape structure) extract (1 mg/ml), with the addition of 2 ml sodium carbonate Na₂CO₃ 7.5%. Then leave the mixture 30 minutes at room temperature and then measured the absorbency 760 nanometer wavelength and calculate the amount of total phenols adoption curve measurement of gallic acid [6] (Figure 1).

2. Assessment of flavonoids:

Been mixing 1 ml extract grape structures (1 mg/ml) with 5 ml distilled water, then add to mixture 0.3 ml solution NaNO₂ 5%) After 5 minutes, add 0.6 ml lotion AlCl₃ 5%, After five more minutes, add 2 ml sodium hydroxide NaOH and complete the volume to 10 ml (volumetric), then measured the absorbency wavelength 510 nanometers. And estimated amount of flavonoids by adopting the standard curve Catechin (Figure 2) [25].

3. Broanthosianidin assessment:

Melt 1 mg grape structures extract powder 1 ml Methyl alcohol with add 9 ml reagent alvanlin and put on the mixer for 10 seconds then put in the incubator at 19-21 ° and after 15 minutes measured absorbency the wavelength 500 nanomitm quantification of surrogate broanthosianidin adoption curve measurement for compound record for this compound [11].

Anti oxidant effect estimation:

1. Portability - Chelating ability:

In accordance with the method described by Su *et al* [28] uses abstract in different starting 10 to 50 mg/ml mixing 1 ml of each concentration with 0.2 ml iron chloride (mM2) and then add 0.2 ml Hydroxy compound quinoline-8 Instead of 5 mM (Ferrozine) and leave the mixture at room temperature 10 minutes then all tested concentrations measured the absorbency wavelength nanometers 562, Spur gearbox, susceptibility of Ascorbic acid to bind the ferrous ion by adopting a reference for comparison according to the following equation:

$$\text{Competence the Union\%} = 1 - \left(\frac{\text{Read the absorbency of the form}}{\text{Read the absorbency to control sample}} \right) \times 100$$

2. Measure the reductionist force to extract:

Followed the method described [9]. She attended concentrations extracted from (2, 4, 6, 8, 10) and mix 1 ml of extract 2.5 ml potassium cyanide Potassium cyanide Ferric iron (1%), 2.5 ml of daraei phosphate (PH 6.6, 0.2 M) and put the mixture in the incubator 50 ° for 20 minutes, then add the unzipped Trichloroaceticacid (TCA) 1% for the purpose of stopping the interaction and then centrifuged at rpm3000 for 10 minutes, ignore the deposit, and added to lucid 1 ml ferric chloride 1% and leave for 10 minutes. Measured absorption coefficient to 700 nanometers and adopted industrial antioxidant BHT as a reference for comparison.

RESULTS AND DISCUSSION

Analysis of the basic components of grape structures (black intensity) found that the percentage of moisture was 10.65% protein was 0.415 percent. Either your carbs by 1.956%, Are carbohydrates important nutrients for their sugars and their derivatives such as cellulose and pectine materials being the source Foundation in thermal power body processing, And fat were estimated using Petroleum ether petroleum ether), the ratio was 1.31%. and the estimated percentage of ash were 1.8% and estimated proportion of fibers and amounted to 60.72%. table (1). And the proportions were similar with most updated Al-samrae (2011).

Table 1: Percentages of key ingredients for black grape structures.

Sn	Base component	Percentage% Structures of black grapes
1.	Moisture	10.95
2.	Crud Protein	0.415
3.	Fat	1.31
4.	Total Carbohydrate	1.956
5.	Ash	1.8
6.	Crud Fiber	60.72

Table 2 focus of some active ingredients in grape extract of the biological structures of diverse events, the ratio of 87.7% amounted to phenols adoption curve Gallic acid standard form (1) recalling the high content of these compounds in grape structures. This leads to pause for thought in making use of these plant residues of phenolic compounds and recent content role in many events can be exploited in various areas of medicine or feeding animals, food preservation, especially when compared to obtained from phenol in waste with other plants or food products, higher content of phenols in grape plant content reflects the structures of plant phenols phenolic acids include flavonoidat simple, as well as several other phenols other phenolic compounds show totals hydroxyl group linked to hydrocarbon mechanistic aspects [20].

Recent studies have shown a number of plant products include multiple tanins like flavonoids and various plants and herbal extracts shown do antioxidant [15].

Flavonoids ratio was 29%, depending on the composition of Catechin standard form (2) it is also a good percentage of these structures effective ingredients content it represents one third of the phenol content of the structures

Boat with presenting her findings to Salih AL-Janabiet [19]. Walflavonoidat well its role of biological multi [26] broanthosianidin ratio was 7.5%, and estimated amount of broanthosianidin based on standard broanthocyanidin compound shape (3) this compound increased interest in looking for sources that contain what has many biological events. As still effective ingredients containing ratios structures we can say high benefit drawn from them for the purpose of this cheap and renewable source for such important components, broanthosianidin is high in concentrations of grape skin (peeling grapes) and grape seed, lemon tree weklv Gulf Pine pineapple and Cranberries and Hazel nut tree leaves and two of the most well known sources and more sources beach and the richest known sources of grape seed extract passes weklv[23].

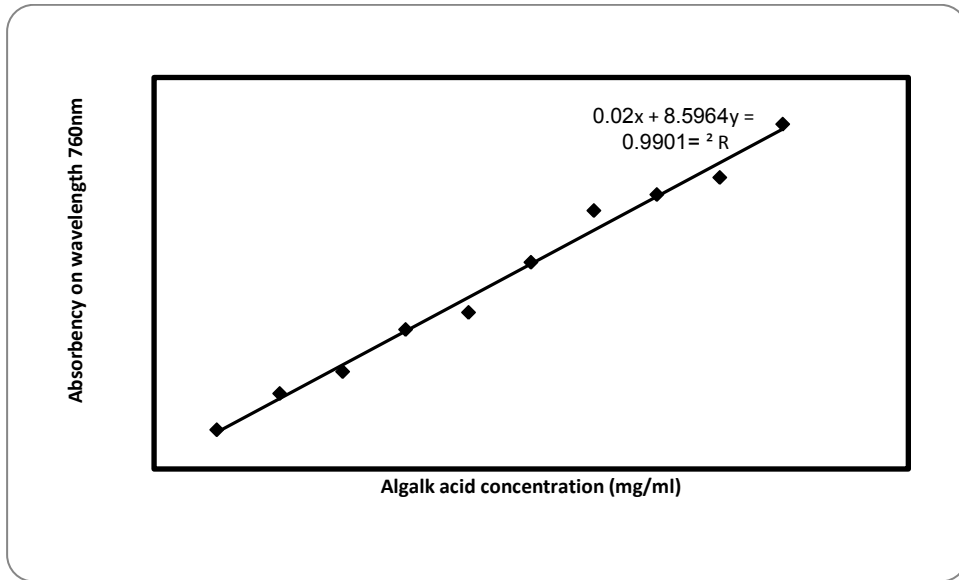


Fig. 1: Standard curve for Gallic acid.

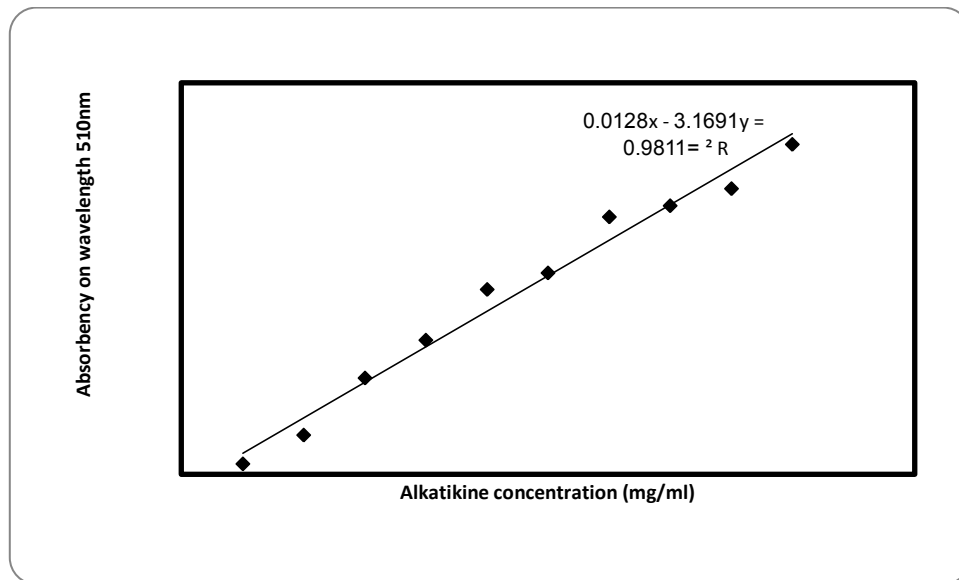


Fig. 2: Standard curve Catechin.

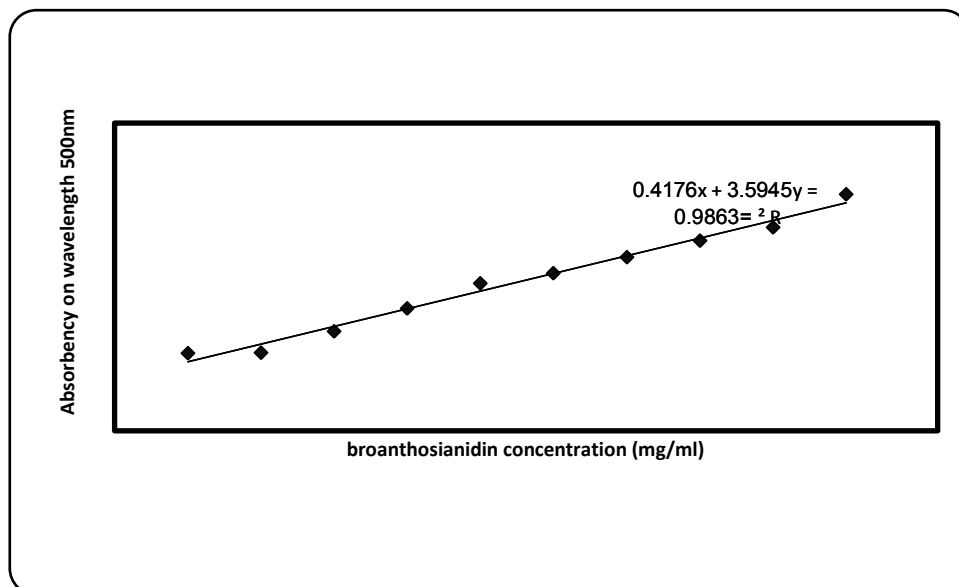


Fig. 3: Standard curve broanthosianidin.

Table 2: Quantitative detection of active compounds in the extract of black grapes structures.

Detect	Percentage of boat in abstract
Phenols	%87.70
Flavonoids	%29
broanthosianidin	%7.50

Figure 4 shows the effectiveness of antioxidants to ferrous ion binding capability to extract grape structures compared with BHT graduated to effectively Spur gearbox, to 25.3% from the lowest concentration (10 mm/ml) at 102.9% at the highest concentration was selected (50 mg/ml), either industrial antioxidant BHT connectivity gave higher than only abstract when the last three concentrations 50, 40, 30 mg/ml, if susceptibility to anti-84.66%, 110.00%, while the corresponding order 135.56 interconnectivity extracted when the same last three concentrations by 87.5% 79.4% sequence, 102.9% Note the increase among the majority of the few abstract and BHT with increased susceptibility to increased concentrations. But at minimum, final laboratory focus followed by opening the same form of connectivity were higher for abstract of BHT phenolic compounds may return to diversity and proportionally affected comparability and mechanisms that are owned as antioxidants. factors are important in terms of rancidity fat in food and iron stimulates interaction During the show the peroxides types of structures for other different concentrations or grapes varieties that demonstrated by other studies and geographical distribution and the biological effectiveness and effective vehicles vary depending on varieties and seasons, Pantelidis *et al* [21].

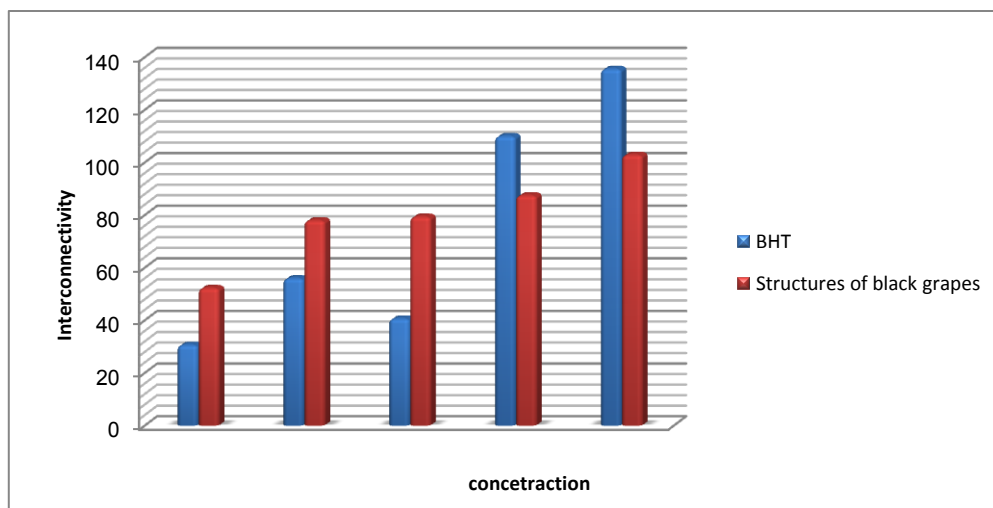


Fig. 4: Black grapes structures extract portability to connect ion.

Iron compared with BHT:

Effective mechanisms or mechanics back antioxidant compounds, including estimating the reductionist force according to the results shown in figure (5) clear difference between search and extract Ascorbic acid the latter is strongly reductionist overtook about abstract and all concentrations are chosen. Reductionist force amounted to 13.9% and Ascorbic acid extracted, 30.65% respectively at the lower concentration (2% mg/ml) while to 21.4%, 88.53% respectively when the Supreme focus Lab (10 mg/ml) indicate the strength-giving compounds reductionist electrons, and act as antioxidants secondary raw and secondary sorts of antioxidants are able to break the chain of free radicals within 2hrs to hydrogen atoms Shimada *et al.*, [27]. While branthosianidi compound extracted from the leaves and stalks and joints and soft Fine roots from a plant *Grevillearobusta*, Effective higher antioxidant Ascorbic acid and BHA industrial measuring antioxidant mechanism as the roots. You may even cause portability curb free radicals to weakened effectiveness varied readings antioxidant extract applicable methods (procedures) sufficient capacity for broanthosianin compound and its effects the health beneficial defensive already from cardiovascular and curb the free radicals.

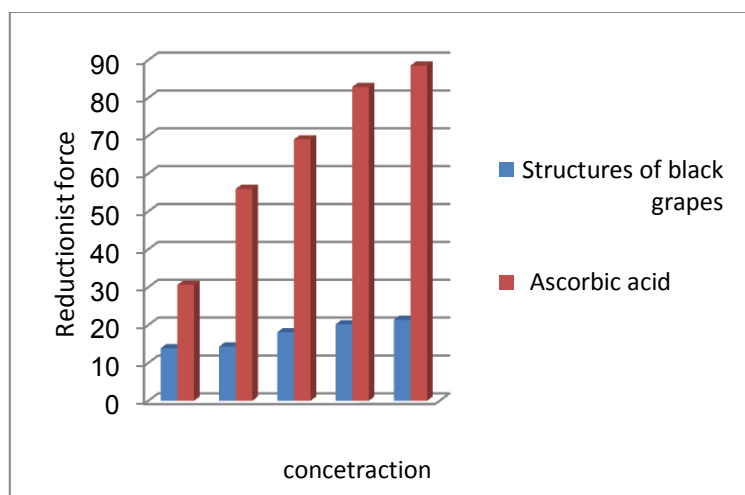


Fig. 5: Reductionist force to extract the black grapes structures Compare with Ascorbic acid.

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