DISCOVER ANATOLIA

ABSTRACTS BOOK

INTERNATIONAL ANATOLIAN GRAPE CONFERENCE

Besni, Adiyaman Province, Turkey
March 9-10, 2022

IKSAD GLOBAL PUBLISHING HOUSE

INTERNATIONAL ANATOLIAN GRAPE CONFERENCE

BESNI, ADIYAMAN PROVINCE, TURKEY

MARCH 9-10, 2022

ABSTRACTS BOOK

EDITOR

Dr. Mustafa Latif EMEK

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CONFERENCE ID

CONFERENCE TITLE
International Anatolian Grape Conference

DATE AND PLACE
March 9-10, 2022 / Besni, Adiyaman Province, Turkey

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Discover Anatolia
IKSAD Institute
Besni Municipality

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NUMBER of ACCEPTED PAPERS - 62
NUMBER of REJECTED PAPERS - 97

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CONFERENCE PROGRAM

OPENING CEREMONY

March 9, 2022
Turkey Time: 13: 30 pm-14.00 pm
Venue: Conference Hall of Besni Municipality

WELCOME SPEECH

Dr. Mustafa Latif Emek
President of the Institute of Economic Development and Social Research

Mr. Eyyup Mehmet EMRE
Besni City Mayor

Mrs. Nazlı DEMİR
Besni District Governor

Face to Face Presentations

Date: 09.03.2022 | Turkey Time Zone: 14.00-16.30

MODERATOR:
Dr. Fatmagül Saklavcı

SPEAKERS INFORMATION	PAPER
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Hasan KOÇ Erdoğan ÇÖÇEN Remzi KOKARGÜL Dr. Hayri SAĞLAM Hatice ŞAHİNER ÖYLEK Nihat ÖZKAN Adil GEZER Ali KILINÇ	PHENOLOGICAL, POMOLOGICAL AND MORPHOLOGICAL CHARACTERISTICS OF 'BANAZKARA' (Vıtıs vınıfera L.) GRAPE CULTIVAR
Dr. Fatmagül Saklavcı	AN EVALUATION OF GRAPE MOTIFS IN OTTOMAN PERIOD TILES AND CERAMICS"
Lect. Dr. Besim Karabulut Assistant Prof. Dr. Suat Akyürek	BIBLIOMETRIC ANALYSIS OF STUDIES ON VITICULTURE AND TOURISM
Felicia Andrei Anca Dragomirescu	EFFICIENT USE OF GRAPE SEEDS OILS IN DERMATOCOSMETOLOGY
Ireneusz Ochmian Marcelina Krupa- Małkiewicz	FRUIT QUALITY OF NEW HYBRID CULTIVARS GROWN IN NORTHERN POLAND
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HALL-1, SESSION-1

Date: 10.03.2022 | Turkey Time Zone: 10.00-12.30

MODERATOR:
Asst. Prof. Dr. İnci Türkoğlu

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Asst. Prof. Dr. İnci Türkoğlu	"GRAPE TYPES ON CIVIC COINAGES OF ANATOLIAN CITIES IN THE ROMAN IMPERIAL PERIOD"
Dang Hoang Xuan Huy Ninh Thi Kim Anh	MEASUREMENT OF THE RELATIONSHIP BETWEEN GRAPE TOURISM, PHOTOGRAPHY AND TOURISM IN NINH THUAN PROVINCE, VIETNAM
Tedi Mana Gentian Vyshka	"WINE AND GRAPE IN THE HISTORY: BELIEFS, RELIGION AND ARTISTIC REPRESENTATİONS"
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Reza Reyhani-e-Kolaachaahi	IRANIAN GRAPE EXPORT: INTERNET-BASED ADVERTISERS, LOW-MEDIATION MARKETERS
Olena Lykholat Tatyana Lykholat	USE OF GRAPE SUGAR IN "NICHE" RESTAURANTS PRODUCTS: SIGNIFICANCE FOR THE HOSPITALITY INDUSTRY, IMPACT ON MENTAL AND PHYSICAL CONSUMER HEALTH
Dr. Kouidri Ikram	Modeling of gasketed plate heat exchanger

HALL-2, SESSION-1

Date: 10.03.2022 | Turkey Time Zone: 10.00-12.30

MODERATOR:
Assoc. Prof. Dr. Roxana Maria Madjar

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Dilhan EVCİMEN Asya Gülistan ORBAYOĞLU Mehmet VAROL	EVALUATION OF THE ENTELON'S EFFICACY AND SAFETY IN CANCER DISEASES
Priti Dhikale Varsha Mawal Aman Upaganlawar	NEED TO AWARE FARMERS ABOUT THE INTERCONNECTION BETWEEN USE OF PESTICIDES AND CANCER
Thi Hong Chuong Nguyen Ngoc Bao Uyen Ta Huynh Khanh Duy Pham Thi Thanh Dung Tran Thi Ngoc Bich Tran Hai Yen Pham Thi Thuy Van Do	COMPOUNDS ISOLATED FROM LEAVES OF ARALIA ARMATA SPECIES AND THEIR ANTITUMOR ACTIVITIES IN VIETNAM
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Dr. Muhammad Arslan Ashraf	Salinity effects and tolerance mechanısms in grapevine (Vitis vinifera L.)
Dino DAVOSIR Ivana ŠOLA Martina ŠERUGA MUSIĆ	EFFECT OF FLAVESCENCE DORÉE PHYTOPLASMA INFECTION ON PHYSIOLOGICAL PARAMETERS OF GRAPEVINE (Vitis vinifera) var. 'PINOT NOIR'
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Date: 10.03.2022 | Turkey Time Zone: 10.00-12.30

MODERATOR:
Dr. Müzeyyen BERKEL KAŞIKÇI

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Plamen Glogov Georgi Hinkov	"INFLUENCE OF INVASIVE ALIEN SPECIES ON THE DISTRIBUTION OF EURASIAN WILD GRAPE ON THE DANUBE ISLAND OF AYDEMIR, BULGARIA"
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Asha Devi. J Sumi A M. Dr. K.S Chandrasekar	VITICULTURE IN INDIA: CHALLENGES, GROWTH AND DEVELOPMENT

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Date: 10.03.2022 | Turkey Time Zone: 10.00-12.30

MODERATOR:
Prof. Dr. Halil İbrahim Yakar

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Dr. Murat TOSUN	GRAPE AND WINE: AN EVALUATION IN THE LIGHT OF ANCIENT RESEARCHES
Dr. Arzu Yılmaz Aslantürk	AGRICULTURAL TOURISM IN BRANDING OF THE CITY: AN ASSESSMENT ON ÇANAKKALE-BOZCAADA GRAPERY
Dr. Abdullah Sarman	THE EFFECT OF PRODUCTS CONTAINING RESVERATROL IN GRAPE SHELL ON THE PREVENTION OF ORAL MUCOSITIS IN PEDIATRIC CANCER TREATMENT AND USE IN NURSING CARE

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Date: 10.03.2022 | Turkey Time Zone: 10.00-12.30

MODERATOR:
Dr. Leman Albayrak

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Turkan Ahmadova Chinara Safarova	THE IMPORTANCE OF INNOVATIVE INVESTMENT IN VITICULTURE IN AZERBAIJAN AND IN THE WORLD
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Gizem Sayar Bilgin	GRAPE AND EYE HEALTH
Dr. Leman Albayrak	TRADITIONAL GRAPE GROWING AND CONSERVATION IN ARTVIN REGION

HALL-6, SESSION-1

Date: 10.03.2022 | Turkey Time Zone: 10.00-12.30

MODERATOR:
Prof. Dr. Hülya ÇİÇEK

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Prof. Dr. Hülya ÇİÇEK Rumeysa Duyuran Baran Bincan	THE EFFECTS OF RESVERATROL IN GRAPE ON HEALTH
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Lecturer Mert Demir	DETERMINATION OF APPROPRİATE PESTICIDES DOSE WITH ARTIFICIAL NEURAL NETWORK FOR VINEYARD DISEASES
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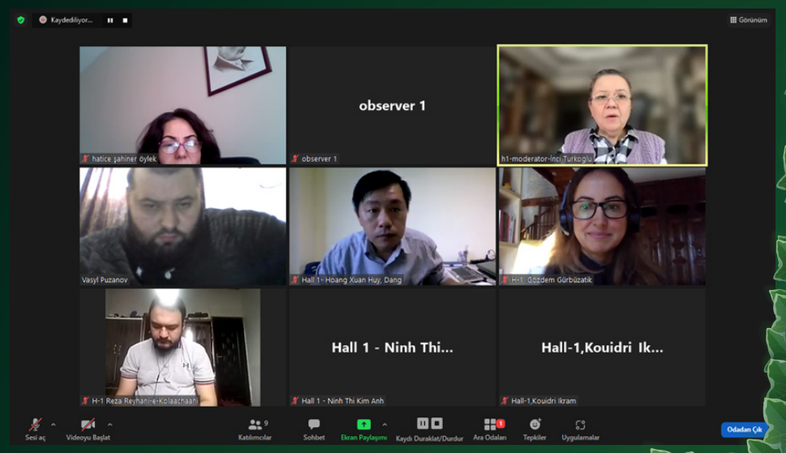
PHOTO GALLERY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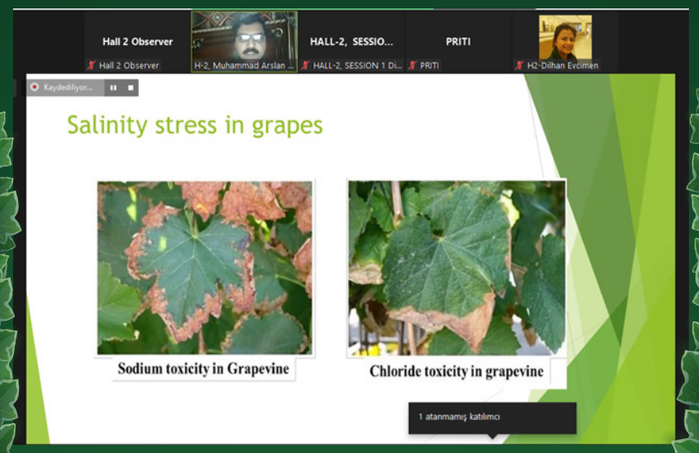
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Sodium toxicity in Grapevine
Chloride toxicity in grapevine
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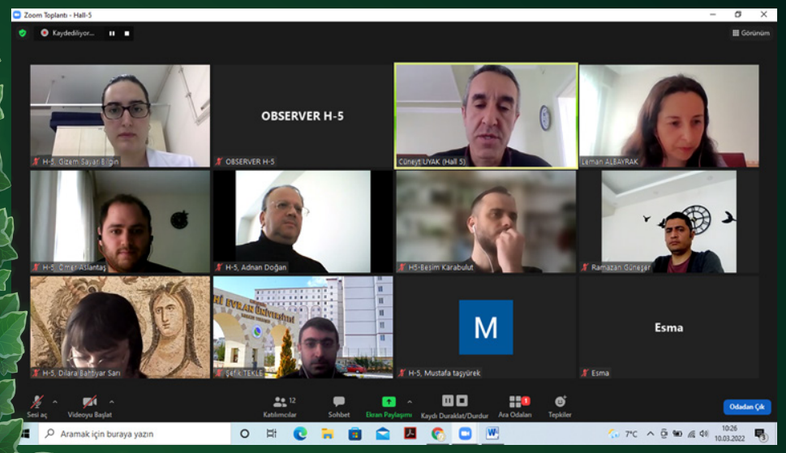
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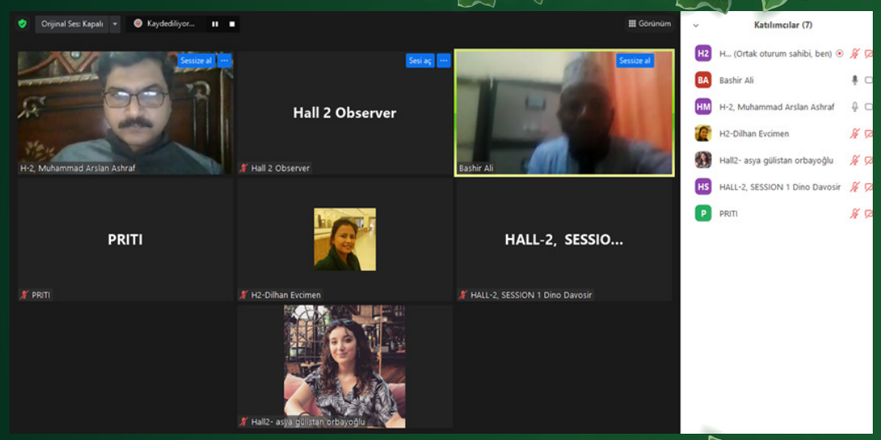
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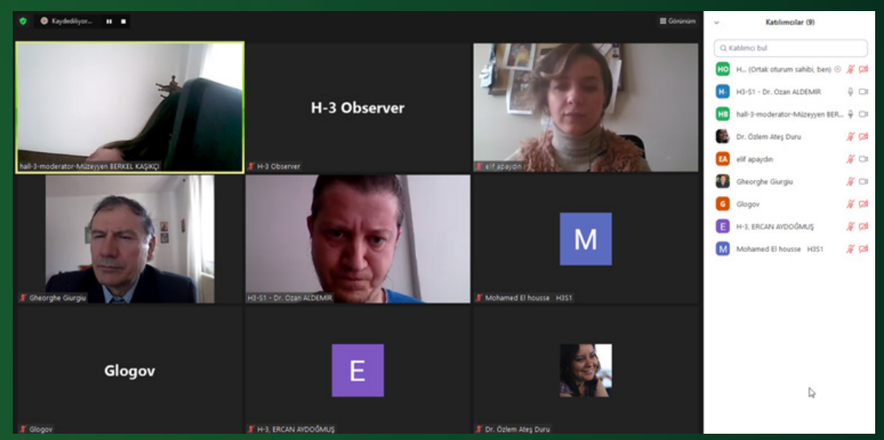
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ÜZÜM İŞLEME ATIKLARININ GERİ DÖNÜŞÜMÜ
Öğr. Gör. Dr. Şefik TEKLE, Prof. Dr. Osman SAĞDIÇ
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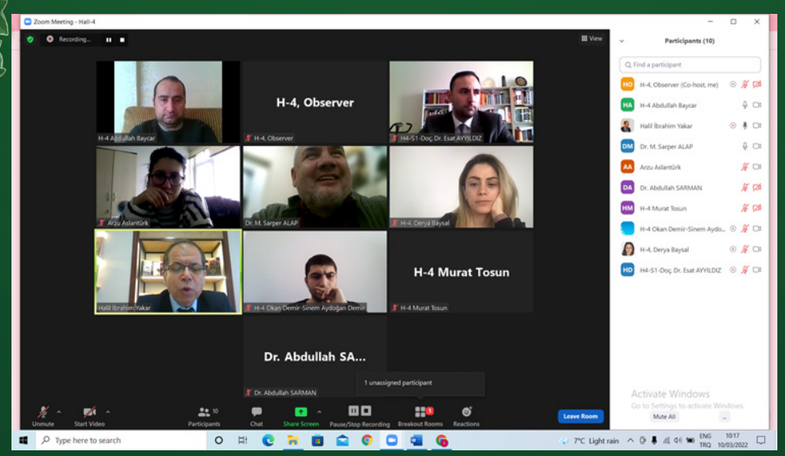
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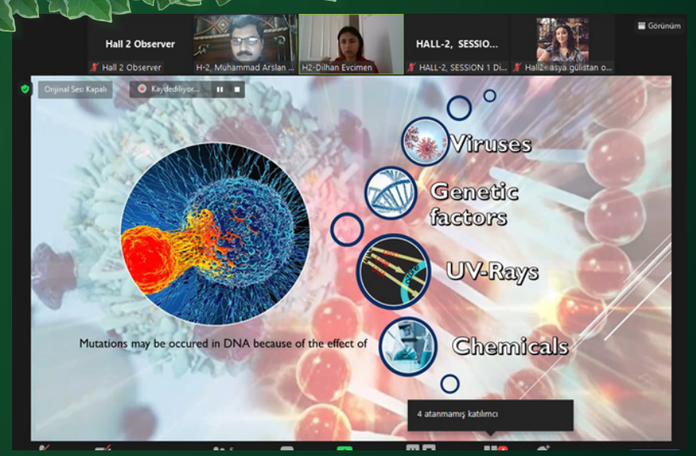
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ABSTRACTS

DISCOVER ANATOLIA

International Anatolian Grape Conference

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DETERMINATION OF THE BUD FERTILITY OF SOME GRAPE VARIETIES GROWN IN MUŞ PROVINCE

ABSTRACT

This study was carried out Hıyan Asması, Güz Üzümü, Çilistirik, Sinciri, Vakkas, Güz Kaşmiri, Elazığ Üzümü, Keçi Memesi, Dana Gözü and Elazığ Kırmızısı grape varieties grown on their own roots in Muş province in 2019. Aim of this study was to determine the winter bud fertility and the optimum pruning level in grape varieties investigated. Bud fertility of grape varieties (number of bunches/bud) were determined by counting number of bunches on shoots obtained by forcing shooting one bud cuttings which taken from 1-10. nodes of one-year old shoots. It was determined that highest bud fertility (number of bunches/bud) was 5rd node level in Vakkas (1.91), Elazığ Üzümü (1.63) and Dana Gözü (1.86) grape varieties and was 4rd node level in Güz Kaşmiri (1.52), Çilistirik (1.75), Sinciri (1.82), Keçi Memesi (1.34) and Elazığ Kırmızısı (1.72) grape varieties and was 3rd node level in Hıyan Asması (1.36) and Güz Üzümü (1.54) grape varieties. As a result of, Vakkas, Elazığ Üzümü and Dana Gözü grape varieties have to be medium-long pruned from 5rd bud and Güz Kaşmiri, Çilistrik, Sinciri, Keçi Memesi and Elazığ Kırmızısı grape varieties have to be medium-long pruned from 4rd bud and Hıyan Asması and Güz Üzümü grape varieties have to be medium-long pruned from 3rd bud.

Keywords: Pruning Level, Bud Fertility, Number of Bunches, Muş

DISCOVER ANATOLIA

International Anatolian Grape Conference

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PHENOLOGICAL, POMOLOGICAL AND MORPHOLOGICAL CHARACTERISTICS OF 'BANAZKARA' (Vitis vinifera L.) GRAPE CULTIVAR

ABSTRACT

Turkey is one of the world's leading grape producing countries. Anatolia is located in the homeland of grapes. Many local grape varieties are grown in Turkey. Determination of cultivar characteristics by making phenological, pomological and morphological descriptions of these cultivars; These are necessary studies in terms of both variety registration and breeding technique. The history of viticulture in Malatya, located in the Eastern Anatolia Region, goes back to ancient times. Many local grape varieties are grown in the province. One of them is the 'Banazkara' variety, which has a drying feature. In this study, which was carried out in Malatya Apricot Research Institute in 2018-2019, it was aimed to determine the phenological, pomological and morphological characteristics of the 'Banazkara' grape variety. In phenological observations; It was observed that the eyes were awakened between April 24 - May 4, full flowering took place on June 7-18, I fell on August 2-10, and the harvest time was on September 8-20. In the study, it was determined that the effective temperature summation request of the variety was 1879 days-degrees (gd). In pomological analysis; It was determined that the average cluster weight was 238.51 g, the grain length was 23.95 mm, the grain width was 21.08 mm and the weight of 100 grains was 348.41 g. In the study; It was determined that the SÇKM value was 22.83%, the pH value was 4.12, and the acidity value was 3.17 g/l. In ampelographic definitions made according to OIV criteria; It was determined that the cultivar formed small clusters, the grains were egg-shaped, the shell thickness was moderate and blue-black in color. It was observed that the flesh of the grains was partially hard, the core formation was complete and it had a unique taste. At the end of the study; The 'Banazkara' grape variety, which is used for drying and snacking in the province, has been registered in the name of Malatya Apricot Research Institute.

Keywords: Viticulture, Grapevine, Morphology, Fruit breeding

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International Anatolian Grape Conference

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AN EVALUATION OF GRAPE MOTIFS IN OTTOMAN PERIOD TILES AND CERAMICS

ABSTRACT

According to the archaeological and geological studies, grapes, wine, vine leaves and vineyards concepts have had various symbolic meanings in people's religious beliefs, objects they use and works of art throughout history. Grape motifs, which are considered to be the homeland of the south of the Caspian Sea, the Caucasus and the North East Anatolia regions, are among the herbal ornamental elements found in ceramics and tile art. Tile, which means Chinese work and belonging to China, is called "kaşi" and "sırça" in the sources. Items that used to be called "clay pot" or "tile pot" are now called 'ceramics' or 'keramik'. The main material of the tiles, which is painted and glazed with different techniques and baked in the oven, is soil. it is applied in the decorations of houses and ornaments. It was first applied in ancient Egypt and Mesopotamia with the use of colored glaze on brick. Umayyads preferred multi-piece mosaic and tile covering under the influence of Byzantium in architecture, examples of glazed (luster) tile or ceramic technique were found in the Abbasid period. Tile art showed a great development in Iran and during the Ilkhanate period in the 14th century and continued to develop in the Timurid architecture in the 15th century in Samarkand and Bukhara with the colored glaze painting technique. In the Islamic tradition, Central Anatolian glazed pottery techniques showed similarities with Byzantine, Syrian and Iranian traditions. During the Ottoman period between the 14-19th centuries, the art gained innovations with different techniques, patterns, styles and forms. The Turks, reflecting the culture and life of the period on the art of tiles, used many herbal, animal or geometric elements in the art of tiles. In this study, composition samples created with vine and grape motifs, which are herbal forms applied in ceramics and tiles, were evaluated and compared with different periods and cultures. A part of the research consists of 16th century Ottoman period blue-white Iznik tile plates. Other works are examples of tiles registered in architectural structures, museums and collections. These works not only shed light on the tile and ceramic art of the period, but also reflect their culture and beliefs with their symbolic meanings in the elements used in decoration. In this context, it is possible to say that the grape depictions applied in religious architecture and on plates are elements that remind heaven.

Keywords: Ottoman Period, Grape, Tile Art, Ceramics

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BIBLIOMETRIC ANALYSIS OF STUDIES ON VITICULTURE AND TOURISM

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ABSTRACT

Today, people's demands for tourism activities are increasing daily, and destination marketers and managers are developing different products to meet this demand. Especially in recent years, the increase in the number of tourists who want to experience different tourism has led to the emergence of different types of tourism and the tourism sector to be more in relation with other sectors. One of these sectors is the agricultural sector. Within the scope of niche tourism, tourism types such as gastronomic tourism, agro-tourism, farm tourism, viticulture tourism, wine tourism are just a few of the alternative tourism types that allow agriculture and tourism to be intertwined. Viticulture (wine-making) tourism is one of the new trends that offer both eating and drinking and being intertwined with nature with the increase in the urban population today. In particular, the use of vineyards owned by countries such as France, Italy, Spain, Portugal, and USA within the scope of tourism and the successful initiatives they have achieved in this direction have made it necessary for Turkey to take initiatives in this direction. Viticulture tourism can be explained as visiting the vineyards, vintage activities, wine production, and tasting festivals and recognizing the characteristics of the vineyard growing region. Anatolian lands have been home to many civilizations and where viticulture and wine-making have been practiced for a long time, have extensive vineyards and essential resources in rich grape production. These resources can offer significant benefits opportunities within the scope of tourism. It is considered essential to take such steps to increase incomes, gain competitive advantage, ensure regional development, and provide higher benefit from the products obtained from viticulture activities, both within the scope of viticulture and tourism. Most importantly, to meet the demands and expectations of tourists and increase the variety of touristic products, viticulture and tourism are among the subjects that need to be more emphasized in literature. This study it is aimed to examine the articles on viticulture and tourism, taking into account some parameters. It aims to determine the general situation of the studies carried out within the scope of viticulture and tourism in Turkey, on which subjects these studies focus, and what kind of deficiencies there are in the field. The articles examined within the scope of the research were accessed through "Dergipark" and "Google Scholar". In order to reach the articles on the subject, the keywords "viticulture and tourism", "viniculture and gastronomy", "wine tourism", "viticulture tourism", "vintage" and "vineyard route" were scanned. In the light of the findings obtained, suggestions for both researchers and the sector were presented.

Keywords: Tourism, agriculture, viticulture, gastronomy, bibliometric analysis.

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EFFICIENT USE OF GRAPE SEEDS OILS IN DERMATOCOSMETOLOGY

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ABSTRACT

Unsaturated and polyunsaturated fatty acids are valuable ingredients in volatile or non-volatile, aromatic or non-aromatic oils. They are contained in different species of plants belonging to different botanical families. In general, their extraction is done directly from the plant or parts of the plant such as: roots, leaves, flowers, fruits, berries, seeds. There are usually specialized organs or structures of the plant that synthesize and store these oils and for their extraction appropriate physical or chemical techniques are used that do not alter especially the structure of these precious compounds. Also, the capitalization of the species from the ubiquitous native flora contributes to the maintenance of a stable ecological balance.

The aim of our study was to obtain quality products from what was originally food industry waste. We turned our attention to the grapes, which are used in the food industry to obtain the must and then the wine that reaches the prestigious wineries and finally to the consumer, through oenological recommendations. Grapes seeds are seen as a residual product that often poses problems for the winemakers.

In the first phase we determined the physico-chemical quality indices of the two grape seed oils of the following varieties: a white Creata or Riesling de Banat and a red Cadarca from the Recaș vineyards, Timis county , western Romania. In the next step, we subjected the plant material to the Soxhlet extraction technique. Glycerides were hydrolyzed by alkalis and converted into salts, which by acidification release fatty acids which were extracted with ethyl ether. Subsequently, we determined, by HPLC chromatography, the content in fatty acids unsaturated of these oils.

We analyzed comparatively the unsaturated fatty acid concentrations from these two oils with each other and compared to other valuable oils, already known, in order to be able to propose them for further studies revealing the dermo -cosmetic effect. The study showed the superiority of the oil from the white variety compared to the red one (with a percentage of 35% for the C18 fatty acid fraction) but also compared to the oils obtained from the seeds of other species from the Rosaceae or Rutaceae family. Such vegetable oils, rich in oleic and fatty linoleic – linolenic acids, are useful in modern dermatocosmetology, following the clinical and experimental evidence: restoration of the skin barrier, by contributing to the synthesis of ceramides, reconstitution of the skin source of fatty acids, these being the first target of oxidation from UV exposure of the skin, as well as skin nourishing and healing effect.

The study proposes the obtaining of a valuable oil from local sources: grape seeds, which could be used for the pharmaceutical and cosmetic industries. The method has a positive quality/price ratio and the components are compliant for the users. We recommend further study of this oil for dermatology and cosmetology applications.

Keywords: grape seeds, oils, dermatology, cosmetology

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FRUIT QUALITY OF NEW HYBRID CULTIVARS GROWN IN NORTHERN POLAND

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ABSTRACT

In the fight against these negative factors, breeding and selection of new cultivars showing an increased fungus resistance (PIWI (*Pilzwiderstandsfähig*) - Fungus Resistant Grape Varieties, interspecific cultivars) play an important role. Nowadays, the interest in grapevine cultivation in Poland is increasing, and new vineyards have been established where new varieties with resistances to major pests, like downy and powdery mildews dominate.

The aim of the study was to determine the quality of fruit and the wines produced from them. It was also calculated the degree of plant damage caused by frost and susceptibility to gray mold, powdery and downy mildew infections. The study included new white cultivars that are recommended for cultivation in cooler climates - shorter growing season and increased resistance to fungal diseases: Solaris, Johaniter, Muscaris, Hibernal, Helios, Souvignier Gris, Seyval Blanc - hybrids, Riesling (*V. vinifera*). Plants were grown in north-western part of Poland - Szczecin. Due to changes in the law in the European Union, which dictate a reduction in the use of plant protection products, and the withdrawal of mancozeb - based products from the market as of 2022, the vines were grown to an organic standard.

The average growing season temperature between 2012 nad 2021 was 13.7 C. Precipitation during this period ranged from 242 mm to 448 mm. There were also several days every year when day temperatures exceeded 30 C and did not fall below 20 C at night. In combination with frequent rainfall occurring during fruit ripening, this creates good conditions for fungal development.

Among the tested 'Souvignier Gris' was characterized by the highest resistance to fungal disease. Even in the most warm and rainy years, only a single fruit in a cluster was affected by diseases. The fruits of 'Solaris', on the other hand, were most infected by gray mold, and of 'Riesling' by powdery mildew. In rainy years, infections also appeared on 'Seyval Blanc'.

When appropriate agrotechnical measures were applied, adjusted to the weather (removal of leaves, reduction of grapes to 6-8 tons/ha), all cultivars obtained suitable parameters for wine production - Brix 23-29, acidity up to 8 g/L, pH 3.7-4.4, YAN (Yeast Assimilable Nitrogen) 190-340 mg/L.

The most unfavorable influence on sensory properties of fermented beverages is exerted by isobutanol and aryl alcohols (sum of 2 and 3-methylbutanol), which cause unpleasant solvent aroma and taste. The amount of isobutanol produced during fermentation is significantly influenced by yeast, with a reduction in the amount of higher alcohols being achieved by using nitrogen for fermentation. All wines made from these cultivars had low levels of fermentation by-products. Appropriate selection of yeasts for the individual cultivars resulted in all wines scoring positively in the sensory test. The individual cultivars have a specific bouquet - Muscaris and Johaniter are floral (rose/muscat), while Hibernal is fruity.

As the climate warms, viticulture will shift northward. Currently, there are already quite a few plantations established in this region, mainly from cultivars that are hybrids, but already more and more typical *V. vinifera*.

Keywords: Fruit quality, wine quality, grey mould, powdery and downy mildew, interspecific hybrids

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PROFOUND LEARNING FOR GRAPE ASSORTMENT ACKNOWLEDGMENT BY TOP-TECH ACADEMY IN PAKISTAN

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ABSTRACT

The improvement of food in a naturally and monetarily acceptable in Pakistan way is of basic importance today. In Pakistan, Rural producers are dynamically being joined by parts of Agriculture well form, for instance, automation and dynamic assistance. This work shows a delineation of how the digitization of viticulture can be on a very basic level maintained by Deep Learning and significant learning component. The work presents a philosophy that can overcome the lack of human capacity in grape recognizing confirmation by using picture affirmation systems and waiting organization structures that can be imagined and separate through design rearrangement technique by TOP-TECH academy in Pakistan. Our made model for grape ID at a grape estate shows up at an accuracy of near almost 100% of precisely seen grape arrangements.

Keywords: monetarily, digitization, viticulture, Deep Learning, affirmation systems, accuracy.

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IMPACT OF SOCIOLOGICAL CHANGES IN WINEMAKING CULTURE IN ANATOLIA DURING LAST HUNDRED YEARS

ABSTRACT

Grapevine (*vitis vinifera L.*) is one of the most important plants in human history. It is the most widely cultivated agricultural product in Anatolia, as well as in the world. For more than 8000 years, the cultivated grapevine had an important role in history not only in terms of agriculture, but also in terms of social, economical and cultural impact leaving its remarks in mythologies, laws and religious texts suggesting its strong linkage with humanity. Anatolia has always known as the homeland for *vitis vinifera* and grapes. Among products of grapes, wine production has played a key role, due to its economical benefits. Wine production has also been part of grape related products and its production in Anatolia for thousands of years has been uninterrupted. Turkey ranks as the world's 5th largest vineyard area ownership. However, there has been a severe breaking point in cultivation culture of vineyards and grapes starting by the end of 19th Century. Wars, migrations, exchange of etnic groups due to new socio-political establishments and changes in government policies affected the vineyard agriculture, farming culture for the established farmers.

In this paper, a general overview of critical change of events for the production of wine, one of the main products of grapevine are listed. The legislative and bureaucratic evolution causing several socio-economic shifts for the last century are taken as a focal example to indicate the impact of changes on the production of wine and related vineyard growing. Among these, the introduction of foreign grape varieties instead of preserving indigeneous grapevines, shifting vineyard ownership structure as well as changes in vineyard dense regions for wine production are outlined.

Keywords: winemaking, Anatolia, indigenous grape varieties, legislation, migration

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GRAPE TYPES ON CIVIC COINAGES OF ANATOLIAN CITIES IN THE ROMAN IMPERIAL PERIOD

ABSTRACT

Grape vine was taken into cultivation much later than the first settlements with agricultural character. First grains, then legumes were domesticated and they were followed by many other plants including the grape vine. In the Torah, Noah, after the flood had receded, planted the first vineyard and made the first wine becoming the first human to get drunk! *Vitis vinifera* derived from *Vitis sylvestris*, which was the first domesticated, and it was for the first time cultivated in the Caucasus, possibly in modern-day Georgia, about 5000 BCE according to the archaeobotanic evidence available. Certainly, grapes were not only eaten fresh or dried, or made wine or vinegar from but also molasses, churchkhela and fruit leather were produced and constituted an important part of cuisine, diet and economy.

In classical antiquity, Dionysus was the Greek god of wine while his name became Bacchus in Roman mythology. His cult emerged in Thrace and spread across the Greek and Roman world of the time, including Anatolia. With the city-states emerging in Anatolia and standardized coinage was introduced by the Lydians, the city-states with political and economical power started to mint coins and stamp them with symbols designating their identity. So, many Anatolian cities used Dionysus and the grapes and grape vine as types on their civic coinages since the beginning of standardized coin minting. Particularly, the cities whose economy depended on viniculture preferred such types on their coins. However, this paper focuses on the Roman Imperial period until 275 CE when civic coinage minting ended.

The coins have a variety of types involving grapes. Some coins use the bunch of grapes as the main type on the reverse. Some others use it as an attribute of Dionysus while on some others, grape bunches or grape vine are found as an additional symbol on the reverses. This paper endeavours to build a picture of Anatolia via the cities using grapes as their civic coin types during the Roman Imperial period.

Keywords: civic coinage, Roman Imperial period, Anatolian cities, grape types.

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MEASUREMENT OF THE RELATIONSHIP BETWEEN GRAPE TOURISM, PHOTOGRAPHY AND TOURISM IN NINH THUAN PROVINCE, VIETNAM

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ABSTRACT

The study measures the relationship between grape tourism, photography and *tourism* in Ninh Thuan province, Vietnam. Descriptive statistical methods, expert survey, in-depth interviews with 30 tourists and scientists with good understanding of travel photography were used in the study. The aim of this study was to see to what extent grape tourism and photography can help develop local communities and leverage the standard of living for those active in the field. Research results show that grape tourism and photography can increase and stabilize income for small-scale grape farmers as well as grape farms through diversifying income sources, contributing to for the community to develop and act as a source of additional revenue for the locality. In addition, research results on the role of photography in tourism activities indicate that quality tourism artwork contributes positively to local tourism promotion: promoting tourism through contests. Photography, artistic photography services for tourists when visiting destinations, using images to promote tourism, using images in teaching specialized tourism... From there, propose policy implications for the development of grape and photography tourism in Ninh Thuan province, Vietnam.

Keywords: Grape, photography, Tourism, Vietnam

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WINE AND GRAPE IN THE HISTORY: BELIEFS, RELIGION AND ARTISTIC REPRESENTATIONS

ABSTRACT

The prehistory of alcohol beverages followed the simple observation of the natural fermentation of fruits. Under the effect of yeast, sugar was turned into alcohol, without any need for special advertising from inexistent ethanol industry and humans tasted and consumed it freely. Everything fermentable (fruits, berries, flowers, honey, milk, corn, barley, wheat, sugar cane and so on) was found to potentially produce alcohol, and local agriculture naturally selected the characteristics of the drinking that would become familiar to a certain geographical area.

Wine is the most quoted beverage in the Holy and apocryphal texts, with Noah establishing a vineyard soon after surviving the apocalyptical flood. Wine and drinking in general has found plenty of space in literature, paintings and arts as well. In the *Book of Numbers* and other parts of the scriptures there is mentioning of grape several times. Thus, prohibiting wine was equivalent to prohibiting the consumption of grape, either fresh or dried.

A poet like Dante Alighieri still maximizes his belief in solar deities and esteems drinking of wine, in verses like 'guarda il calor del sole che si fa vino' ("look at the warmth of the sun becoming wine"). Shakespeare is more objective and pitiless, when making clear to the reader that drinking 'Lechery… provokes, and unprovokes; it provokes the desire, but it takes away the performance'… Yet another poet, whose affinity for drinking leaves no historical doubts, gives precise advice how to avoid binges and intoxication. In fact, Goethe suggests mixing wine with water. This is a very old custom, since Romans considered drinking crude wine an action of barbaric origin.

Keywords: wine; grape; consumption; scriptures; prohibition.

DISCOVER ANATOLIA

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THE PECULIARITIES OF GRAPE CULTURE IN THE OTTOMAN PERIOD OF CRIMEAN HISTORY

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ABSTRACT

Several ancient inhabitants of the Crimea were actively involved in the grape culture at once, among them the Taurus and the ancient Greeks stand out the most. However, it is worth noting that these peoples perceived the grape culture rather one-sidedly, mainly only in the context of winemaking.

Later, under agreements with the Crimean Tatars, the center of commercial winemaking shifted to the southern coast by the XIII-XIV centuries. It went to the Genoese. In the fertile valleys around Caffa (Feodosia), Soldaia (Sudak), Aluston (Alushta), they developed viticulture and wine production in every possible way. Wine from local native grape varieties was then exported for sale. Trade went briskly, huge oak barrels were already used for the export of wine. By the way, a barrel of 1000 liters is called a ton. The volume of wine export reached 2 million liters per year. As we can see, the Italians were no longer limited to winemaking alone; they also developed viticultural technologies to a great extent.

In 1475, the Turks drove the Genoese from the Crimean coast. As true Muslims, they did not encourage wine drinking and winemaking. Because the fact production of wine in Crimea has declined, but not disappeared. A significant part of the population of coastal cities and villages remained to be Christian (Greeks, Armenians, descendants of Italians), even speaking Turkic language. In addition, wine in the Middle Ages was used as an antiseptic. For example, wounds were washed with wine, and wine was also used as a medicine. And since both the Turks and the Tatars had a lot of military campaigns, a lot of wine was also required. During the Ottoman times, the development of viticulture was aimed at meeting the needs of the population in fresh grapes and non-alcoholic grape juice. Thanks to this, there are many places where the production base has been preserved (and some unique, autochthonous grape varieties; therefore, Turkey currently ranks fourth in the world in terms of vineyard area). Also, the reduction of winemaking almost to the technical level was compensated by the cult of table grapes (this period is called "raisin age"). Although Muslim vintners were punished with canes for producing the drink, Muslims were not heavily taxed, which kept winemaking profitable.

Thus, we see that if among the Greeks and other Christians the culture of grapes was mainly limited to winemaking, then the Turks discovered in the Crimea a new, unprecedentedly wide and promising range of grape use, both for food and for other purposes. Therefore, despite the fact that most Moldovan, Russian and Ukrainian historians write about the decline of the grape culture in the Crimea during the Ottoman period, we cannot agree with this. If you do not limit the grape culture to winemaking only, then it was during the Ottoman period of the history of Crimea that grapes began to be used as widely as possible for the maximum number of purposes, which in turn greatly enriched the culinary and medical tradition of Crimea.

Keywords: Crimea, Ottomans, Islam, Christianity, grape, winemaking, viticulture.

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LESSONS LEARNED FROM THE MODEL OF COMMUNITY – BASED TOURISM DEVELOPMENT IN THAI AN GRAPE VILLAGE – NINH THUAN - VIETNAM

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ABSTRACT

Ninh Thuan is a locality with suitable climate and soil conditions for growing vines in Vietnam. This is a specific crop with high economic efficiency, which annually brings a significant source of income to farmers. Particularly in Thai An (Thai An village, Vinh Hai commune, Ninh Hai district, Ninh Thuan province) is called "the green pearl of Nui Chua national park", because the grape growing area accounts for about 270 ha, ¼ of the total grape production in Ninh Thuan province. Besides being a large grape growing area of Ninh Thuan, Thai An grape village is also a pioneer in exploiting and developing the eco-tourism in the garden combined with selling grape products. Thai An Grape Village was officially established in 2015. Up to now, the model of community-based tourism development in this village, implemented in the form of tours bringing visitors and enjoying grape products right at the garden, has brought prosperity to this countryside. This type of tourism is a unique and attractive form of tourism that enhances the value of local vines. Research results show that the model of community-based tourism in Thai An grape village develops thanks to many different factors. This place has a favorable geographical position, bordering the famous tourist attractions of the province, forming a tourist complex. This area is located on road 702 connecting Ninh Thuan province with Khanh Hoa province, is one of the most beautiful coastal passes in Ninh Thuan, with one side is the immense blue sea, and the other side is Núi Chúa range majestic. Moreover, the fact that the grapes here are promoted as being grown by organic fertilizers and without preservatives is also a factor attracting tourists to visit and experience. Besides, the grapes here are also considered to be diverse, delicious, cheap and available all year round. The fact that tourists can eat directly, for free, and choose the grapes they like themselves also make this place attract a large number of tourists. It is also due to the effective coordination in tourism development policies of local governments, businesses, travel service businesses and indigenous communities. Residents regularly participate in training courses on experiences, attitudes and skills in tourism, creating satisfaction for tourists to experience here. On the basis of analyzing and synthesizing secondary documents from many reputable and reliable sources, the article focuses on researching the model of community-based tourism development in Thai An grape village, Ninh Thuan (Vietnam), thereby enriching readers' awareness, as well as drawing lessons learned about the wide applicability of this type of tourism.

Keywords: Eco-tourism in the garden, community-based tourism, community ecotourism service, Thai An grape village, Vietnam

DISCOVER ANATOLIA

International Anatolian Grape Conference

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IRANIAN GRAPE EXPORT: INTERNET-BASED ADVERTISERS, LOW-MEDIATION MARKETERS

ABSTRACT

Grape export is one of the most important areas of Iran's economic relations. Iran's grape export destinations include regional and trans-regional countries. Iran's largest grape export destinations include the United Arab Emirates, Turkey, Ukraine and the Russian Federation, respectively. Export companies and traditional grape growers in Iran are trying to increase the development rate in grape export areas as well as a more secure profit margin, by using the development of a new business development strategy. One of the most important areas of advertising for the grape export in Iran is the social networks and the Internet based export advertising and marketing. The purpose of this study is to investigate the impact of this important in the operational dimensions. The question of the present study is: What are the benefits of using targeted social networks and Internet-based export advertising and marketing in the growth of Iranian grape exports? The research findings indicate that the benefits of using targeted social networks and Internet-based export advertising and marketing in the growth of Iranian grape exports can be clearly identified: increasing the possibility of export development for independent citizens, recognizing non-core target markets, developing exporters' understanding of uncertainty Export markets and reduce the problems and costs of supply and purchase of grapes. Based on the above findings, targeted social networks and Internet-based export advertising and marketing can be used to complete the process of selling and exporting grapes and reduce export rigidity in favor of companies. The research method is explanatory and by using library and Internet resources.

Keywords: grape, Iran, social network, advertising, export

DISCOVER ANATOLIA

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USE OF GRAPE SUGAR IN "NICHE" RESTAURANTS PRODUCTS: SIGNIFICANCE FOR THE HOSPITALITY INDUSTRY, IMPACT ON MENTAL AND PHYSICAL CONSUMER HEALTH

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ABSTRACT

Increased public attention to healthy eating places certain restrictions on consumers regarding the consumption of foods containing sugar. This is usually cane or beet sugar. A good alternative may be the wider use of grape sugar (dextrose) in gastronomy. In terms of properties, organic grape sugar is a unique product consisting of such simple sugars as glucose and fructose, which are in bioactive form.

Despite the higher price of the product obtained from grape juice, the substance has many advantages.

Grape sugar is characterized by a high content of B (thiamine, riboflavin, pyridoxine, pantothenic acid, folic acid), C, PP and H vitamins, which are essential for a number of metabolic processes. This product contains trace elements, namely phosphorus, zinc, sodium, copper, iron, potassium. Vitamins and trace elements are presented in organic primary form, with a holistic structure, and therefore have the maximum benefit for the human organism. It also contains flavonoids, antioxidants and other nutrients. A characteristic feature of dextrose is also its hypoallergenicity.

The use of this concentrated source of useful vitamins and trace elements has a very positive effect on the nervous system: improves mood, maintains mental health, restores balance after stressful situations, and improves mental processes, memory and learning processes. Dextrose in combination with protein restores the physical condition of muscles after exercise. Due to the elements compounds and the ability to prevent fermentation in the intestine, the product speeds up the digestive system.

The rapid development of the hospitality industry has created the need to open "niche" restaurants that can meet the needs of consumers with special demands. First, it is the requirement for healthy baby food. The low level of sweetness allows you to add grape sugar as a natural sweetener to baby cereals and drinks, not exceeding the amount of carbohydrates and retaining all the useful elements. The product is easily absorbed by the child's organism, reduces the risk of caries, and provides an increased need for energy in the child's body.

Another consumers' contingent of dietary restaurants are people with diabetes or a predisposition to high blood sugar. Grape sugar is unconditionally accepted as allowed.

In cooking, grape sugar can be successfully added to fruit salads, desserts, pastries, cold and hot drinks. This product retains the original taste of the products without clogging them with sweetness and additional aftertaste. This phenomenon is extremely important for people switching to a healthy diet, because it prevents the stress caused by giving up favorite sweet foods.

Thus, the cost of grape sugar is not cheap, but the benefits of its use in catering establishments, both in specialized "niche" restaurants and certain restaurant products for a wide range of consumers, has obvious advantages because it expands the possibilities of visiting hospitality industry establishments by persons having special needs (consumers who follow a healthy diet, children, diabetics, physically active people).

Keywords: grape sugar, "niche" restaurants, consumer health

DISCOVER ANATOLIA

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WINE AND GRAPE IN THE HISTORY: BELIEFS, RELIGION AND ARTISTIC REPRESENTATIONS

ABSTRACT

The gasketed plate heat exchanger is widely employed in the chemical, food, geothermal and pharmaceutical process industries. The aim of this work is dimensional of the gasketed plate heat exchanger which is used to cool geothermal fluids and produce clean energy from two different methods. The first consists of fixing the pressure drop in advance with the exchange surface and studying the influence of the inlet temperature and the flow. The second consists of calculating the drops in pressure through the economic study of the exchanger. Results obtained show that the temperature difference is directly proportional to the power between the two fluids; the amount of heat exchanged between these last two is smaller. It will be better to operate the exchanger to different temperatures more at least guaranteed and to work largely on the optimization of this surface to ensure minimal cost.

Key words: plate heat exchanger, modeling, pressure drop, geothermal fluids

DISCOVER ANATOLIA

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EFFECTS OF GRAPE SEED EXTRACT ON PROSTATE AND BLADDER CANCER

ABSTRACT

Bladder cancer (BC) and prostate cancer (PC) are among the urological malignancies with the highest mortality, and statistical analysis shows that 440,864 account for new cases of BC and 1.6 million cases for PC in worldwide. Grape seeds rich sources of flavonoids and their potential beneficial effects on health are often emphasized. Grape seed extract (GSE) owing to the factory of polyphenolic compounds, which is effectively utilized as a health food supplement, represent to have potent antioxidant and anticancer activities. Based on this information, we aimed to review the biological effects of GSE on BC and PC via literature. In this study, a search was made on PubMed using the MeSH terms [“grape seed” AND “bladder cancer”] and [“grape seed” AND “prostate cancer”]. All studies were evaluated individually and the results were summarized. Procyanidin B2 3,3″-di-O-gallate (B2G2) in GSE is the potent chemotherapeutic agent to treat the PC, and B2G2 low the constitutive as well as Jagged1 (Notch1 ligand)-induced activated Notch1 pathway. Another study on lipophilic grape seed proanthocyanidin against PC, resulted in the inhibition of tumor growth, arrested the cell cycle G1-phase, decreasing the expression of cyclin-D1 and CDK-4 and increasing the expression of the tumor suppressors p21 and p27. GSE regulated various signaling pathways in PC like androgen receptor mediated transcription of genes and inhibition of the activation of ERK 1/2 with associated apoptotic effects and metastasis-associated protein-1. Our evaluation also provides a new understanding of the anticancer activity of GSE in BC. We noticed that GSPs stopped EMT via opposing the TGF-β-stimulating morphological fluctuations, boosting of mesenchymal markers N-cadherin, vimentin, downregulation of epithelial markers E-cadherin, and ZO-1 in BC cells. GSPs also inhibited TGF-β-induced phosphorylation of Smad2/3, Akt, Erk, and p38 in BC without affecting the expression of total Smad2/3, Akt, Erk, and p38. In conclusion, GSEs may be considered as a useful chemopreventive agent for BC and PC.

Keywords: Grape seed, Extract, Anticancer, Prostate Cancer, Bladder Cancer, Urological Malignancies

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EVALUATION OF THE ENTELON'S EFFICACY AND SAFETY IN CANCER DISEASES

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ABSTRACT

Cancer is defined as the formation of malignant tissue as a result of functional deterioration in cell cycle checkpoints due to genetic and environmental factors. Cancer types are classified according to the tissue they are found in and the germ layer from which they originate. The prevalence of cancer is increasing very rapidly today and it is thought that the changes in dietary habits, air pollution and increased use of tobacco products are the main reasons for this. The incidence of cancer types may vary according to age, gender and ethnicity. In the process of carcinogenesis, which is briefly defined as the formation of cancerous cells, mutations may occur in DNA due to genetic predisposition, radiation, chemicals and some viruses. These mutations can initiate carcinogenesis by activating oncogenes. There are many treatment methods used in cancer treatment, but due to their side effects, natural phytochemical compounds have become the main focus of researchers for the development of cancer therapy methods. Phytochemicals are biologically active compounds of plant origin and can exhibit anti-cancer activity by regulating the oxidative stress of the cell and blocking pro-inflammatory molecules, by reorganizing the signaling pathways involved in the carcinogenesis process, thanks to their anti-oxidant and anti-inflammatory activities. Researchers have predicted that by increasing the consumption of vegetables and fruits, the incidence of cancer and cancer-related deaths can be reduced. Grape (*Vitis vinifera* L.) is the world's largest fruit crop with an annual production of more than 67 million tons, especially grown in the Mediterranean region. Grape has been identified as antioxidant, anti-allergic, anti-inflammatory, anti-cancer, anti-hypertensive, renoprotective and anti-microbial effects by many published studies. Grape seed contains polyphenols rich in protein, carbohydrates, lipid and important secondary metabolites, depending on the variety. Entelon® is a widely used grape extract with various pharmacological effects such as antioxidant, anti-inflammatory, anti-tumor activity. Entelon (Grape seed extract) contains high levels of flavonoid polyphenolic compounds including gallic acid, (+)-catechins, (-)-epicatechins, ferulic acid and proan thocyanidin. It is stated that chronic consumption of Entelon phenolics reduces the development of obesity and related metabolic pathways, including adipokine secretion and oxidative stress. Entelon inhibits angiogenesis by suppressing the VEGF/VEGF receptor (VEGFR) signaling pathway and upregulation of IGFBP-3 (insulin-like growth factor-binding protein-3). It has been proven to inhibit tumor growth and tumor angiogenesis. We consequently think that the natural compounds contained in Entelon, which is an extract of *Vitis vinifera,* may be effective on different types of cancer and should be investigated using advanced molecular and bioinformatics techniques.

Keywords: Cancer, Entelon, Phytochemistry, Phytomedicine, *Vitis vinifera*

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NEED TO AWARE FARMERS ABOUT THE INTERCONNECTION BETWEEN USE OF PESTICIDES AND CANCER

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ABSTRACT

Cancer is one of the leading cause of morbidity and mortility worldwise. Grapes and Grapes containing bioactive components are useful in the management of various cancer as they shows good antioxidant property. To get good profit and high yield of grapes, farmers are using pesticides in higher quantity. The farmer may directly or indirectly come in contact with such pesticides and chronic exposure leads to the development of cancer. This presentation focused on the development of cancer due to pesticides in farmers from Nashik distric of India. The data generated from 2018 till date. Based on the data it is a need to aware the farmers about the safe use of pesticides and precaution to be taken.

Keywords: Cancer, grapes, antioxidants, pesticides

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COMPOUNDS ISOLATED FROM LEAVES OF *ARALIA ARMATA* SPECIES AND THEIR ANTITUMOR ACTIVITIES IN VIETNAM

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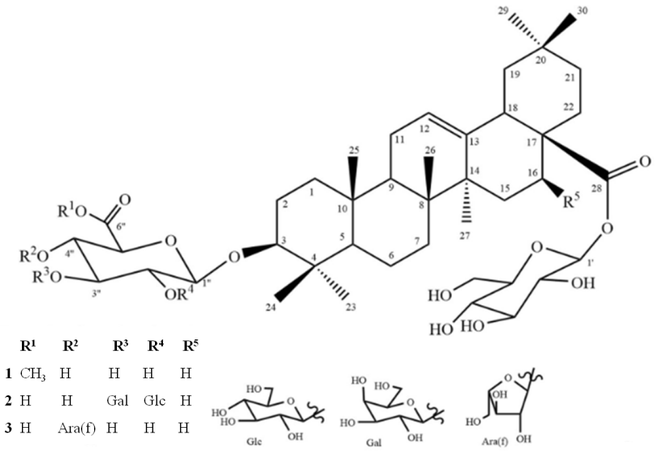
ABSTRACT

Aralia armata (genus *Aralia*, family Araliaceae) is a popular herb in the mountains of Northern Vietnam. Earlier, this plant has been used as a traditional medicine to treat several ailments such as colic, snakebite, hepatitis, arthritis, stomach ulcers, diabetes. Previous studies have published several compounds isolated from this species, including sterols, triterpenoid glycosides, diterpenoids; notably, the compounds are mainly identified as saponins. Herein, we report three oleanane-type triterpene saponins from the leaves of *Aralia armata* species in Vietnam, {oleanolic acid-[28- *O*-*ß*- D-glucopyranosyl]-3-*O*-[*ß*-D-galactopyranosyl(1→3)]-[*ß*-D-glucopyranosyl(1→2)]-*ß*-D- glucuronopyranoside (**1**), chikusetsusaponin IVa methyl ester (**2**), and chikusetsusaponin IV (**3**), namely. The structures of compounds were determined by HR-ESI-MS, 1D and 2D NMR spectra and comparison with data in the previous literature. By using the 3-[4,5- dimethylthiazol-2- yl]-2,5- diphenylte trazolium bromide (MTT) assay, these compounds were evaluated for activity against KB and HepG2 human cancer cell lines. The results exhibited that compounds 1-3 displayed weak cytotoxic for these activities, with half-maximal inhibitory concentration values (LC_{50}) ranging from 24.2 ± 0.3 to 30.1 ± 0.6 µM (for KB) and 27.1 ± 0.6 to 30.3 ± 0.8 (for HepG2) in *in vitro* assay.

Keywords: isolation, *Aralia armata*, activity, KB and HepG2 cell lines.



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FREE RADICALS SCAVENGER PROPERTIES OF RED GRAPES SKIN EXTRACTS (*VITIS VINIFERA* L.) USED AS A POTENTIAL NUTRITIONAL SUPPLEMENT

ABSTRACT

Red grapes skin constitute a cheap source for extraction of antioxidant polyphenols, which can be used as food supplements, nutraceutical products or in the production of various phytochemicals. The aim of the paper was to conduct a comparative study on the content of phenolic compounds and antioxidant properties of some red grapes skin extracts, from varieties widely grown in Romania (Transilvania areea): Cabernet Sauvignon, Pinot Noir, Fetească Neagră, in order to exploit them as potential antioxidants. By UV-VIS (Jasco, Japan, V-570 spectrophotometer) spectrometric method were determined total polyphenolic contents (TPC) expressed as gallic acid equivalent/g (mg/GAE g^{-1}) using the Folin-Ciocalteu reagent, total flavonoid contents (TFC) expressed as rutin equivalent/g (mg/RE g^{-1}), by aluminum chloride colorimetric assay, caffeic acid derivatives content (CAD_C) expressed as mg caffeic acid equivalent/g dry extract (mg/CAg^{-1}) by using Arnows' reagent in according with according to the procedure described in European Pharmacopoeia 6th edition. The total anthocyanins content (TAC) was determined by UV-VIS spectrometric using pH-differential method. The absorbance was read at 520 nm and 700 nm and the results were expressed as cyanidin-3-glucoside equivalent/g dry extract (mg/CYDg^{-1}) using in the calculation formula molar extinction coefficient of 26.900 L cm^{-1} mol^{-1} and molecular weight of 449.2 $gmol^{-1}$ for cyanidin-3-glucoside. The antioxidant properties were investigated *in vitro* non cellular assays, by: DPPH(2,2-diphenyl-1-picrylhydrazyl) free radical scavenging, ABTS (2,2'azinobis-(3-ethylbenzthiazoline-6-sulfonic acid) and chemiluminescence technique, in aminophthalhydrazide-hydrogen peroxide system, at pH 8.3. All three methods highlighted the free radicals scavenger properties in linear correlation dependent on the content of phenolic compounds, conferring thus the possibility of use of red grape skin extracts as a nutritional supplement antioxidant.

Keywords: grape, polyphenols, anthocyanins, antioxidant activity, chemiluminescence

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EFFECTS OF SODIUM CARBONATE AND SODIUM CHLORIDE ONTHE CONTROL OF BLACK ROT DISEASE OF *MANGIFERA INDICA* L. (MANGO) CAUSED BY *ASPERGILLUS NIGER*

ABSTRACT

Food loss due to diseases has been a serious problem encountered by the farmers as well as marketers and end users of fruits in tropical regions. A study to assess the effectiveness of Sodium carbonate and Sodium chloride on the control of the growth of black rot disease of mango caused by *Aspergillus niger* was conducted. Infected mango fruits (*Mangifera indica* L.) were collected from the Faculty of Agriculture, Prince Abubakar Audu University, Anyigba. The identification of fungal isolates was carried out based on cultural and morphological features using standard keys, charts and illustrations. The highest growth in-vitro effect of Sodium Chloride was observed on the control at day 5 (4.00±0.10mm) while the highest inhibitory effect (0.00±0.00mm) were observed on day 1 and day 2 at 3 g/mLand 5 g/mL respectively with a significant difference at **P>0.05** with the control as well as 1g/mL (0.37±0.33) at day 2 and day 5 (1.80±0.57) treatments respectively. Sodium Carbonate shows varying degree of inhibitory effects on the growth of *A. Niger* in Day 1 through to Day 5 at 3g/mL and 5g/mL concentrations respectively while the highest mycelia growth was observed with the 1g/mL treatments from Day 1(0.10±0.10) through to Day 5 (1.00±0.17). The result recorded on the daily growth of *AspergillusNiger* rot shows that the chemicals either acted as an inhibitory or supportive constituent for the media. These salts had significant effects on the growth of black rot disease caused by *AspergillusNiger*, with sodium carbonate being the most effective. The direct and indirect effects of the chemicals on microorganisms would be discussed concerning food safety and human health.

Keywords: Mango, *Aspergillusniger*, Sodium Chloride, Carbonate, Black rot.

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SILICON STIMULATION OF IN VITRO GROWTH OF GRAPES (*VITIS VINIFERA* L.)

ABSTRACT

The grapevine (*Vitis* L.) is a fruit plant of great economic importance. It is one of the oldest cultivated plants. The increasing popularity of this species has contributed to the search for faster cultivation methods, allowing to increase efficiency and obtain more plant material in a shorter time. *In vitro* plant cultures are an advantageous alternative to conventional cultivation. The best plant growth under *in vitro* conditions can be achieved by using the right composition of the medium for the species and even the cultivar. Silicon is the second most abundant element in the earth's crust. Silicon has been reported to improve many growth parameters, including embryogenesis and organogenesis, as well as leaf morphology, physiology and anatomy. Silicon reduces the susceptibility of plants to salinity and low temperatures, reduces metal toxicity, the incidence of excessive humidity and prevents phenolic oxidative browning in plants. More and more studies confirm the beneficial effects of silicon on fruit and vegetable plants. Hence, the aim of the research was to determine the influence of silicon on the morphological characteristics of grapes grown *in vitro*. The research material was grape shoot explants obtained from a stabilized, sterile *in vitro* culture. In the experiment, 5 combinations of media were used according to the composition of macro- and microelements of WPM (Woody Plant Medium). Five concentrations: 0, 50, 100, 200, 500 mg L^{-1} of silicon solution (containing 0.6% choline-stabilized orthosilicic acid and 2% Ca) were used. As a results, it was found that the use of silicon in higher concentrations (200 and 500 mg L^{-3}) had a negative effect on the length of the shoot and roots. Moreover, plants from the WPM medium with the addition of 500 mg L^{-1} of silicon had symptoms of chlorosis. However, grapes with the addition of 100 mg L^{-1} silicon were darker and greener compared to the control. Silicon solution treatment in the concentration of 100 mg L^{-1} was found to positively affect growth (shoot and root length, number of roots and leaves) of *V. vinifera*.

Keywords: silicon, grape, micropropagation, WPM medium, CIE Lab

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SALINITY EFFECTS AND TOLERANCE MECHANISMS IN GRAPEVINE (VITIS VINIFERA L.)

ABSTRACT

Throughout its life, the grapevine (*Vitis vinifera* L.) is subjected to various biotic and abiotic stressors. It can withstand water stress to a certain extent without affecting fruit yield. On the other hand, high salinity hinders shoot growth and has a significant impact on berry qualities. The majority of vineyards in the globe are grown on rootstocks that are either North American Vitis species or interspecific hybrids. Apart from biotic resistance, rootstocks are increasingly used to combat abiotic stressors such as alkalinity, high soil pH, salinity, and drought. In maintaining scion growth and yield, grape rootstocks respond differently to soil salinity. Salinity stress has become a global issue as an increasing number of arable lands become saline every year. Salinity reduces growth in two phases. In phase I, osmotic stress of salinity reduces growth, where plants cannot uptake water from the soil, and consequently, loss of cell turgidity results in growth reduction. In the second phase, ions excess toxicity is responsible for growth reduction. Besides, salinity also induces hormonal imbalance, oxidative damage, and nutrient imbalance. Plants under salinity stress manifest enhanced ROS generation that in turn cause lipid peroxidation and thereby induce oxidative injury. Plants facing salinity also display a significant drop in photosynthesis and chlorophyll fluorescence attributes, particularly photosystem II efficiency. Salinity stress severely impedes plant water relation attributes, diminishing plant growth and yield production. Plants posses a number of mechanisms to combat salinity effects. Osmotic adjustment is among important salinity tolerance mechanisms where plants accumulate organic osmolytes in substantial amount such as glycine betaine, proline, trehalose and certain other organic compounds that improve cell turgor under osmotic stress. Additionally, oxidative defense system comprising enzymatic and non-enzymatic antioxidants also significantly protect plants from oxidative injuries due to enhanced cellular levels of ROS. Plant scientists also use various shotgun approaches to improve salinity tolerance in grape plants. These shotgun approached include the use of different organic and inorganic chemicals with the potential to mediate plant defense responses.

Keywords: Oxidative injury oxidative defense, antioxidant enzymes, photosynthesis, photosystems efficiency, nutrient acquisition, osmotic adjustment, shot-gun approaches, glutathione, methyl glyoxalase detoxification.

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EFFECT OF FLAVESCENCE DORÉE PHYTOPLASMA INFECTION ON PHYSIOLOGICAL PARAMETERS OF GRAPEVINE (*Vitis vinifera*) var. 'PINOT NOIR'

ABSTRACT

Phytoplasmas, bacteria of genus '*Candidatus* Phytoplasma', infect both plants and insects, which act as their vectors. They are pathogens of various agriculturally important plants, causing severe damage to crop. Phytoplasmas have been identified as causative agents of grapevine yellows (GY) diseases, which affect viticultural production worldwide. Two phytoplasmas have been linked to GY, one of which is the *flavescence dorée* phytoplasma (FDp, ribosomal group 16SrV), a quarantine pathogen in many countries. However, due to the inability to establish *in vitro* phytoplasma culture, phytoplasma research is still challenging. In this study, we collected symptomatic and asymptomatic leaves of grapevine (*Vitis vinifera* L.) var. 'Pinot noir' from a vineyard in central continental Croatia at three time points during the development of infection. Using a multiplex real time PCR assay, we confirmed the infection with FDp in symptomatic leaves. To assess the physiological response of grapevine to FDp infection, we used a plethora of spectrophotometric assays. Effect of FDp infection on photosynthetic pigments content in grapevine and level of proline and soluble sugars was analysed. Furthermore, the content of hydrogen peroxide, a type of reactive oxygen species (ROS), was assessed in sampled leaves, as well as the level of lipid peroxidation, an indicator of membrane damage. Results revealed an induction of ROS synthesis as well as the higher level of lipid peroxidation in leaves of infected plants, pointing to the occurrence of oxidative stress in infected plants. Induction of proline and sugar synthesis was also observed in infected plants, pointing to the activation of grapevine defence mechanisms against FDp infection. However, the biggest difference between infected and uninfected leaves was observed for photosynthetic pigments, which points to a strong inhibition of photosynthetic processes in grapevine infected with FDp. Results expand the knowledge of the effect of phytoplasma infection on grapevine leaves physiology, as well as grapevine protective mechanisms against phytoplasma infection.

Keywords: hydrogen peroxide, lipid peroxidation, photosynthetic pigments, proline, ROS, sugars.

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SOME ASPECTS REGARDING INPUTS USED IN ORGANIC VITICULTURE

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ABSTRACT

Organic viticulture is supposed to obey several principles: elimination of external interventions and viticultural practices that require chemical inputs, maintaining soil fertility by seeking organic products, pest control activities made by prophylaxis and use of accepted inputs and avoidance of all techniques that pose negative effects on the environment (Resolution OIV-ECO 460-2012).

Organic viticulture in the European Union is based on the Council Regulation (EC) No 834/2007 on organic production and labelling of organic products and repealing Regulation (EEC) No 2092/291.The accepted inputs used in organic viticulture are represented by animal manures and by-products (fish meal, blood, bone meal), farmyard compost, composted/fermented household waste or mixed vegetable matter, minerals from natural sources (gypsum, lime, clays, rock phosphate, crude potassium salts, potassium sulphate containing magnesium salt), biological preparations, plant by-products (wood chips, composted bark, wood ash, straw), seaweed and algal preparations. Also, to control downy and powdery mildews are used copper and sulphur based inputs.

Lately, wine-growers and consumers showed interest in organic and biodynamic wine production. As organic farming forbids use of chemical fertilizers and synthetic pesticides, the biodynamic practices suppose the use of different formulations from fermented plant materials and manures in order to promote soil and vine health.

According to different studies, wines resulted from organic viticulture appear to present superior attributes: are healthier and contain lower levels of pesticides. Organic wines have been found to contain higher concentrations of phenolic compounds which are associated with perception that organic wine consumption is healthier but also were found undesired biogenic amines associated with headaches, allergenic disorders [1]. Moreover, Mulero et al. (2010) [2] found that phenolic compounds and antioxidant activity were slightly higher in organic wine in comparison with wine conventionally produced.

Some studies that present the discrimination between wines from organic and conventional grapes by profiling the aromatic compounds report that wines from organic grapes present similar aromatic profile but with lower intensities [3].

Acknowledgements

This work is consistent with research directions and guidelines specified by Ministry of Agriculture and Rural Development in the project ADER 1.4.4. *"Identification, evaluation, testing, development and validation of analysis methods of nutrients and contaminants from inputs usable in organic agriculture."*

Keywords: input, organic, viticulture, wine.

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INVESTIGATION OF DRYING KINETICS OF ADIYAMAN BESNI GRAPE

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ABSTRACT

In this study, drying kinetics of grapes taken from Besni region of Adıyaman has been investigated in sun, shade, tray dryer, and newly improved PID system. Grape grains are separated from their stems and their surfaces were washed with water. They have been dried under suitable conditions in natural and artificial drying systems. Grape grains have been exposed to direct sunlight, dried in the shade at room temperature, under isothermal and non-isothermal conditions (PID system). According to the results obtained, the grapes lost approximately 82.5 % of their initial mass in the sun in 6 days. In the shade drying process, it lost 83.4 % of its initial mass in about 9 days. In convection drying (tray dryer), the drying behavior of grapes has been determined at different airflow rates (1, 2, and 3 m/s) and temperatures (25, 35, and 45 °C). It has been found that the drying time decreased as the airflow rate and temperature increased in the tray dryer. Isothermal and non-isothermal drying experiments have been carried out in the newly improved PID drying system. Isothermal drying of grape grains has been made at 67 °C. The non-isothermal drying process has been also carried out in a proportional integral derivative (PID) controlled system at a heating rate of 0.10 C/min. Although isothermal drying is faster than non-isothermal drying, it causes darkening and complex shrinkage of the grains.

Keywords: Drying kinetics, grape, isothermal drying, non-isothermal drying, modeling.

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INFLUENCE OF INVASIVE ALIEN SPECIES ON THE DISTRIBUTION OF EURASIAN WILD GRAPE ON THE DANUBE ISLAND OF AYDEMIR, BULGARIA

ABSTRACT

The subject of the study is *Vitis vinifera* subsp. *sylvestris* (C.C.Gmel.) Hegi, which occurs naturally in Bulgaria in mixed deciduous forests (mainly in the Longoz), in the plains and foothills up to 500 m a.s.l. In the period September-October, 2020 was studied the distribution of Eurasian wild grape on the Danube island of Aydemir, which is part of NATURA 2000 and its competition with some invasive alien plant species (IAS) found there. During the study 10 Permanent Sample Plots (PSP) were set up in different parts of the island covered by natural and semi-natural vegetation with a size for one PSP of 500 m^2. The density (number of individuals per m^2)of *V. vinifera* subsp. *sylvestris* and the IAS, as well as their occurrence (%) in PSP (number of PSPs in which the species occurs / total number of PSPs * 100). The results show that the participation of Eurasian wild grape in the plant communities of the island is generally low and varies between 4 and 11 adult individuals in the second (scrub) leyer of the PSP and between 30 and 50 undergrowth individuals in the third (grass) leyer. The Eurasian wild grape is found in 20% of PSP. The following IAS were also found in the studied communities: *Acer negundo* L., *Amorpha fruticosa* L., *Bidens frondosa* L., *Digitaria sanguinalis* (L.) Scop., *Erigeron annuus* (L.) Pers., *Panicum capillare* L., *Sicyos angulatus* L., *Tamarix ramosissima* Ledeb. and *Xanthium italicum* Moretti. Among them those with high ocurance (over 50%) and density in PSP are the species *A. fruticosa*, *E. annuus* and *S. angulatus*. At this stage, the star-cucumber (*S. angulatus*) can definitely be pointed as the strongest competitor, posing a danger to the populations of *V. vinifera* subsp. *sylvestris* and other native species. *S. angulatus* forms over 90% cover abundance in some of the PSPs and creates monodominant phytocoenoses that survive the period of flooding of the island and with their durability seriously endanger the species diversity of the island.

Keywords: Vitis sp., Competitors, Longoz forests, Invasive species, plant communities

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ADOPTION OF DRIP IRRIGATION SYSTEM IN GRAPE CULTIVATION ON INDIA

ABSTRACT

India has been seeing developing water scarcity throughout recent years and ground water also decreasing. Farmers can not deal with their crops production due to unavailability of water both ground and surface. Because of the malicious substance of water scarcity, Government of India figured out the technology “Drip irrigation system” with the vision of expanding the inclusion of water system and to further developing water use productivity. Drip irrigation system is a fundamental solution for the agriculture. Drip irrigation system is a simple technology, highly proficient solution for famers. It can impore the agricultural production by as much as 50 % utilizing just 10 % of the water that farmers prestntly use. Simultaneously, drip irrigation system also control the soil erosion, pest pervasion and dissipation from the plant surface. Drip irrigation System is a help in regions where how much water expected for irrigation is less. Grapes are India’s most significant natural fruit crop. The work of millions of farmers in India relies upon grapes farming. It involves 1.14 percent of the all out area of cultivation with 2.56 percent of the absolute production of fruits. Such particular grape farming is convoluted by water deficiencies today. Grape cultivators who are taking on the advancements of the Drip irrigation system are recuperating from a water scarcity. Financial status of grape cultivators assumes a important part in the reception of drip irrigation system advances and these variables decide their adoption of such advances.

Keywords: Drip irrigation system, Grapes and Productivity

DISCOVER ANATOLIA

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BIOACCESSIBILITY AND BIOAVAILABILITY OF PHENOLICS IN GRAPE AND GRAPE PRODUCTS

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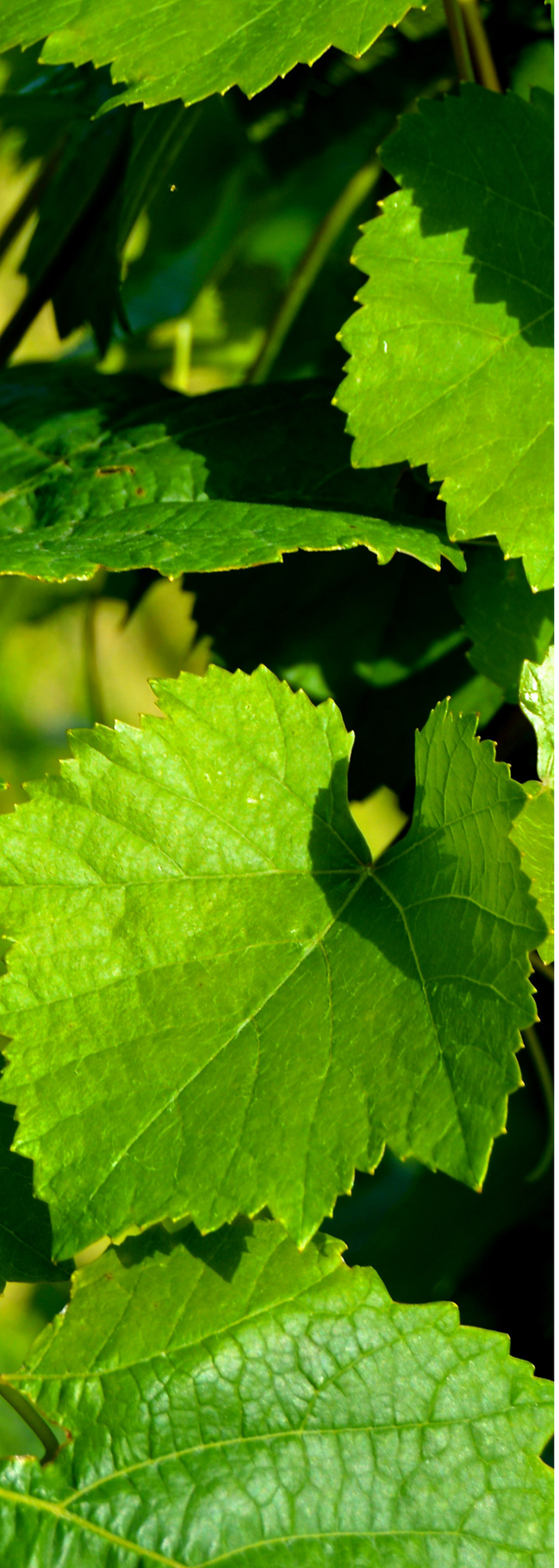
ABSTRACT

Grape and grape products are good sources of phenolic compounds. Several products can be manufactured from grape such as grape juice, raisin, grape wine, grape molasses and churchkhela. Anthocyanins, stilbenes and flavonols are most abundant phenolics in grape. Phenolic compounds are antioxidants and attributed many health effects such as reducing blood pressure and cardiovascular disease risk, cancer-protective effects, anti-atherosclerotic effects and anti-tumoral effects. The bioaccessibility and bioavailability of phenolic compounds are very important on exerting health effects. Bioaccessibility and bioavailability of phenolics depends on many factors such as initial concentration of phenolic compound, food matrix, and gastrointestinal conditions. Bioaccessibility values of gallic acid glucoside, kaempferol-3-glucoside, quercetin-3-glucuronide and isoquercetin were 73%, 19.5%, 4.3% and 1.2%, respectively, in white grape. Gallic acid, caftaric acid, catechin, epicatechin, coutaric acid, fertaric acid, epicatechin gallate, caffeic acid, ethyl gallate, astilbin, isorhamnetin-3-glucoside, quercetin and kaempferol disappeared after *in vitro* digestion of white grape. From the original phenolic content and anthocyanins of red grapes, 16% and 21%, respectively, were found after *in vitro* digestion. Bioaccessibility values of catechin, epicatechin, petunidin-3-acetylglucoside, peonidin-3-acetylglucoside, peonidin-3-glycoside, kaempferol-3-glycoside, quercetin-3-glucoronide, peonidin-3-coumaroylglucoronide, petunidin-3-glucoside, malvidin-3-glucoside, malvidin-3-acetylglucoside, isoquercetin, isorhamnetin3-glucoronide, malvidin-3-coumaroylglucoronide and syringetin-3-glucoside were 88%, 63%, 58%, 57%, 26%, 20%, 18%, 14%, 10%, 9%, 9%, 4%, 3%, 3% and 2%, respectively, in red grape. Bioaccessibility values of ethyl gallate, quercetin and coutaric acid were 79%, 55% and 51%, respectively, in white grape wine. In white grape wine, gallic acid, caftaric acid, catechin, epicatechin, fertaric acid, caffeic acid, astilbin, isorhamnetin-3-glucoside and kaempferol disappeared after *in vitro* digestion. For red wine, bioaccessibility values of total phenolic content and anthocyanins were 52% and 39%, respectively. Bioaccessibility of total phenolics was 98.54% in grape juices. Bioaccessibility values of caffeoyl-tartaric acid, epicatechin, protocatechuic-glucoside and proanthocyanidin were 15.64%, 2.88%, 2.50% and 1.33% in grape juice. This review aims to discuss bioaccessibility and bioavailability researches on grape and grape products.

Keywords: grape, bioaccessibility, bioavailability, phenolic, wine, grape juice



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HOW DOES FERMENTATION AFFECT THE AMOUNT OF POLYPHENOLIC COMPOUNDS IN GRAPES?

ABSTRACT

Grape is one of the most popular fruits globally and nationally due to its high nutritional content and significant polyphenolic components. Grapes contain vitamins, carbohydrates, proteins. Anthocyanin, flavan-3 ol, proanthocyanidin, flavanone, phenolic acid, and stilbenes, which are responsible for a wide range of biological activities such as anticancer, antidiabetic, antibacterial, antioxidant, and anti-inflammatory properties, are also found in grapes. Grape polyphenolic composition is affected by a variety of factors, including viticulture practices, environmental circumstances such as soil, climate, cultivation procedures, maturity degree, and pathogen attacks.

Grapes' phenolic compounds, which are extremely important for human health, are found in the skin, stem, leaf, and seed. Due to their antitumor, anti-inflammatory, and free radical scavenging properties, polyphenols have also come to the fore with their consumption benefits in products such as wine obtained by grape fermentation.

To increase the presence of healthy molecules in wine and other fermentation products, the development of innovative biotechnological approaches and the suitability of industrial applications are of great importance. Several studies reported the impact of the fermentation process for different polyphenolic compounds in grapes. In these studies, the fermentation method, fermentation conditions, appropriate culture selection, mixed culture application, and gene modification altered the profile and polyphenolic content of the product. Unique products with a high free radical scavenging capacity and strong antioxidant activity can be developed through the optimization approaches increasing phenolic compounds in product contents.

The study aims to analyze the current works that investigate the changes in the phenolic component content of grape products due to the different fermentation methods. Furthermore, the current and innovative approaches in developing new products with high antioxidant and anticancer effects will be evaluated.

Keywords: grape, polyphenolic compound, fermentation

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VOLATILE COMPONENT ANALYSIS OF ISABELLA GRAPE (*Vitis Labrusca L.*) SEED OIL FROM GİRESUN REGION

ABSTRACT

There are many studies as antioxidant, antimicrobial, anti-inflammatory in the grape type known as isabella grape and black grape (*Vitis Labrusca L.*). It is aimed to look at the volatile components with GC-MS of the seed oil of this grape type, which is known to be more useful among the people. This research is important because it is a species that grows abundantly in Giresun city.

Keywords: grape, volatile compound, GC-MS.

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PLANT BIOTECHNOLOGIES AND THEIR APPLICATION IN THE STORAGE OF *Vitis vinifera* L.

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ABSTRACT

The Institute of Plant Genetic Resources "K. Malkov" is part of the European Plant Genetic Resources Program (ECPGR). On the territory of the Institute is the National Seed Gene Bank, which stores 57,684 seed samples out of a total of 62,131 registered as a gene pool in the country . The scientific activity is focused on the collection, evaluation, storage and use of original samples originating from the country and abroad.

The Laboratory of Plant Biotechnology at the Institute was established in 1977. The available gene pool is enriched annually, its preservation is controlled and provided to our and international research centers. The viability of long-term crops depends on genotype and storage time. This is important in practical use in the creation of new and maintenance of old vine varieties. Based on the activities related to the observance of Vitis vinifera L. and the use of the cultivated species and known wild precursor, a collection for long-term nutrition using growth inhibitors was formed.

To establish the role of light intensity on the development of in vitro cultured microplants of the varieties Merlot, Pamid, Muscat Hamburg and Bolgar, lighting with intensity was applied: 1000 lx; 2000 lx and 3000 lx. The presence of light does not inhibit the process of rhizogenesis in vines in vitro. In addition, the light intensity applied from 1000 to 3000 lx does not affect the formation and growth of roots differently. Therefore, the application of light with an intensity of up to 1000 lx is sufficient to form a root system of vine microplants in the tested varieties. The fastest growth of the stems was found at a light intensity of 3000 lx. The shoots of in vitro plants of the tested varieties reach a length of 80 mm on average in 30 days. The lowest level of light intensity - 1000 lx slows down the growth processes in the stem part. Under this light regime, vine explants in vitro require an average of 30 days to reach the same length. Light with an intensity of 2000 lx is insufficient to quickly stimulate photosynthetic activity.

To study the influence of carbohydrate content on the in vitro reproductive process in vines, 5 varieties were used (Mavrud, Dimyat, Velika, Pleven, Rusalka) and 2 rootstocks (Rupestris de Lo and Fercal). The main nutrient medium is composed of Knop trace elements, Berthelot trace elements and Morel vitamins. To test the effect of different sucrose concentrations, variants were used, including lower and higher concentrations compared to the control medium, as well as a sucrose-free variant. The microplants of all vine varieties and rootstocks formed roots at the 5 tested sucrose levels in the nutrient media. The analysis of the role of the variety showed that the differences of each variety compared to the conditional control werestatistically proven. The formation of a larger number of roots in nutrient media with reduced and increased sucrose content, as well as in sucrose-free media show that this component is not indispensable for the formation of roots of vines in vitro.

Keywords: Vitis vinifera L, in vitro, sucrose, light intensity, long-term storage

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INVESTIGATION OF THE ANTI-SCALING ACTIVITIES OF THE AQUEOUS EXTRACT OF GRAPE (*VITIS VINIFERA L.*) LEAVES AS AN ECO-FRIENDLY INHIBITOR

ABSTRACT

The phenomenon of scaling is defined as the formation of inorganic deposits with low solubility, which in most cases are calcium carbonate, on the surfaces in contact with water, resulting in frequent technical, environemental problems and significant economic losses. The use of inhibitors is one of the best technics to prevent this unwanted phenomenon. However, the use of chemicals product that are not environmentally friendly can be harmful. The plant Vitis vinifera L. has various biological activities and a high curative and preventative potential. To valorize the leaves of this plant in the industry, the present work focused on the extraction of Vitis vinifera L. leaves extract and the investigating its inhibitory properties as an environmentally inhibitor. This study was carried by using the LCGE method at a temperature of 25 °C on a synthetic water at 40 ° F. The obtained findings revealed that scaling was completely inhibited after the addition of a small amount of 59 mg/L of the inhibitor to the synthetic solution. In addition, a significant modification of the morphology and phase structure of the scale formed in the presence of the inhibitor was observed. Therefore, we recommend the use of Vitis vinifera L. leaf extract as a new eco-friendly anti-scaling product.

Keywords: Scaling, Extract, Arbutus unedo L., Inhibitor, Calcium Carbonate.

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MODULATION OF THE GUT MICROBIOTA WITH POLYPHENOLS IN THE NUTRACEUTICALS DENIPLANT

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ABSTRACT

Background Polyphenols, compounds widely present in black grapes, have been shown to influence the composition of the gut microbiota. Recent studies indicate that dietary polyphenols are relevant in modulating the gut microbiota and that these microorganisms convert polyphenols into active and bioavailable metabolites. Polyphenols are also involved in the prevention of chronic diseases such as cardiovascular disease, diabetes, obesity and neurodegenerative diseases, among others. The mutual relationship between polyphenols in black grapes and the gut microbiota is not fully understood. There is a growing interest in the bioactivity of polyphenol-rich foods.

Objectives In recent years, the link between the gut microbiota and polyphenols in black grapes has become a hot topic. Due to their "prebiotic" effect, polyphenols can also change the composition of the gut microbiota. The use of polyphenols (resveratrol) in the nutraceuticals Deniplant may be of interest in modulating the gut microbiota.

Materials and methods Polyphenol-gut microbiota interactions should be considered in order to understand their biological functions. This presentation focuses on the modulation of the gut microbiota by polyphenols in the nutraceuticals Deniplant.

Results The bioavailability of polyphenols is low and the gut microbiota metabolizes them into simpler metabolites. Dietary phenolic compounds are often converted before absorption. This transformation modulates their biological activity. Recent studies have shown that polyphenols in black grapes or fermented grape pomace have an anti-inflammatory role. Because the etiology of many diseases is largely correlated with the gut microbiome, a balance between the host's immune system and the gut microbiota is crucial to maintaining health. Homeostasis of the gut microbiota can be altered by polyphenols. Polyphenols in black grapes modulate the composition of the gut microbial community mainly by inhibiting pathogenic bacteria and stimulating beneficial bacteria.

Conclusion Polyphenols in black grapes are known to be active ingredients in nutraceuticals obtained from fruits or plants. The final health effects of dietary polyphenols depend on the composition of the gut microbiota. The gut microbiota is a key factor in mediating the physiological functions of dietary polyphenols. Indeed, polyphenols can increase beneficial strains by reducing the number of pathogens.

Keywords: black grapes, polyphenols, resveratrol, gut microbiota, nutraceuticals Deniplant.

Conflict of interest statement

Declaration of competing interest The authors do not have any conflicts of interest to declare.

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VITICULTURE IN INDIA: CHALLENGES, GROWTH AND DEVELOPMENT

ABSTRACT

Production of wine in India is operating at about 17 million liters which, due to the immense population of India, amounts to around one teaspoon of wine per head per year. The existing population of India is 1.34 billion. It indicates that most Indians have never tasted a glass of wine, whether for religious reasons or never exposed to it. Another staggering fact is that millions of grapes are grown in India, but only 1% of them (yes 1%) are wine grapes. The other 99% are table grapes. A third fact is that a lot of wine is made with those table grapes, which is unthinkable in Europe as only vinifera grape varieties are allowed for wine. Officially, therefore, any wine made with table grapes, in however small a proportion, would not be permitted for sale on the European Community market. It accounts for two-thirds of the wine production in the country and is residence to the best-known Indian wineries. Mumbai is the state capital formerly known as Bombay, and it is the commercial capital of India. It offers easy access to the wine locations of Nashik and Pune. The extensive coastline on the Arabian Sea and the north-south range hills known as the Western Ghats (or the Sahyadri in this state) influence climatic conditions greatly and impact viticulture practices. The essence of the study is to understand the challenges, growth, and development of viticulture in India.

Key Words: Viticulture. Grape, Wine, Challenges, Growth, Development, India.

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THE PLACE OF GRAPE AND DERIVATIVES IN SİİRT'S LOCAL GASTRONOMY

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ABSTRACT

The geography is one of the essential factors in creating the gastronomic identity of a region. Despite the agricultural areas restricted by mountainous and rugged terrain, Siirt is a city where agricultural products such as pistachio, pomegranates, almonds, and grapes are grown. Due to physical and human geography, the grape has played a significant role in the formation of Siirt's local gastronomic identity. Due to this nature, Siirt has reached a complex accumulation of grape varieties, derivatives and other elements in the gastronomic identity by integrating and crossing these elements with other tourism activities at a depth.

There are many elements of Siirt's gastronomic identity related to grapes and their derivatives at every stage (local, horizontal, vertical, and cross-development stages). In this study, the role of grape varieties and derivatives in Siirt's gastronomic identity have been investigated. Local grape varieties with local use, such as district and village bazaars, are included in the local stage. Of the products grown in the region, Iskambo molasses, raisins, and molasses are the elements in the horizontal development stage. The use of iskambo and other molasses as a natural sweetener in local dishes and desserts is among the other elements in the horizontal development stage. In festivals where food and beverages are integrated with a different tourism activity (recreation), grapes' place is considered at a vertical development stage. There are also some elements of the gastronomic identity of the Siirt region belonging to the cross-development stage, which is also the highest development stage. Promotional brochures and newsletters, media news and documentaries made to brand grapes and varieties are the elements included in this stage. Cross-development elements are studied in order to ensure the sustainability of such products and to gain a sustainable structure open to innovations in courses and training for transferring products such as molasses and almond sausage to new generations.

In this study, the formation of local identity techniques is classified into four stages local development stage, horizontal development stage, vertical development stage and cross-development stage. The elements of grape and its derivatives in the local gastronomic identity of the Siirt region were evaluated according to these stages. In addition, geographical indication, patent and registration efforts for these products, primarily by local administrative units, are included within national legislation and standards. This study contributes to the registration of grapes and their derivatives, an essential element of the rich Siirt identity. Considering that scientific research will contribute to the promotion and development of local products, the study also has economic importance.

Keywords: Gastronomic identity, Siirt, grape, grape derivative, local food

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LOOKING TO POEMS ABOUT GRAPE AND WINE IN CLASSICAL TURKISH LITERATURE

ABSTRACT

Turkey is a rich country surrounded by seas on three sides and each region has a different climate. Different types of fruits are grown in many cities in Turkey. The fruits, which are also found in various countries of the world, are found in cities with similar climate characteristics in Turkey. In addition, some cities and districts in Turkey are associated with famous fruit names. Diyarbakir province is famous for watermelon, Malatya and apricot are famous, Alanya district is famous for bananas, Konya's Ereğli district is famous for its yellow cherries, Mersin province is famous for its citrus fruits, but the fruits that are famous with these cities can also be found in some provinces and districts of Turkey. is growing.

Grapes are among the fruits grown in many cities of Turkey. Grape cultivation is carried out especially in the provinces and districts of the Aegean Region, in the districts of Kırıkkale and in Kalecik district of Ankara. Grape fruit comes in various colors, these colors are green, yellow, burgundy and pink, and the tastes of grapes in these colors are different from each other. Grapes are usually grown in summer.

Poems have been written on many subjects in classical Turkish literature, and its features, colors and forms about many objects are included in the poems. Similar studies were carried out on an object in various periods of classical Turkish literature. Since Classical Turkish literature has a rich literature, poems have been written about edible and drinkable products, and even poems about flowers are among divan poems.

Poems about some fruits were written in classical Turkish literature, among these fruits, grape fruit is in the foreground. Grape has been the subject of many poems with its various appearance and taste features, and the grape fruit has an important feature because the grape fruit is associated with wine. Wine is the main theme of many poems in classical Turkish literature. Wine is an Arabic word and is known as a drink in most countries. Wine as a drink is known long before the periods when divan poems were created. Poems based on the relationship between wine and grapes were written in every period of classical Turkish literature. In addition to this, divan poems were written about engur, which is the Persian name of grapes, which is used with grapes and grapes.

Keywords: Turkish, Classical, Literature, Grape

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WINE TOURISM AS A VARIETY OF ALTERNATIVE TOURISM AND ITS CURRENT STATUS IN TURKEY

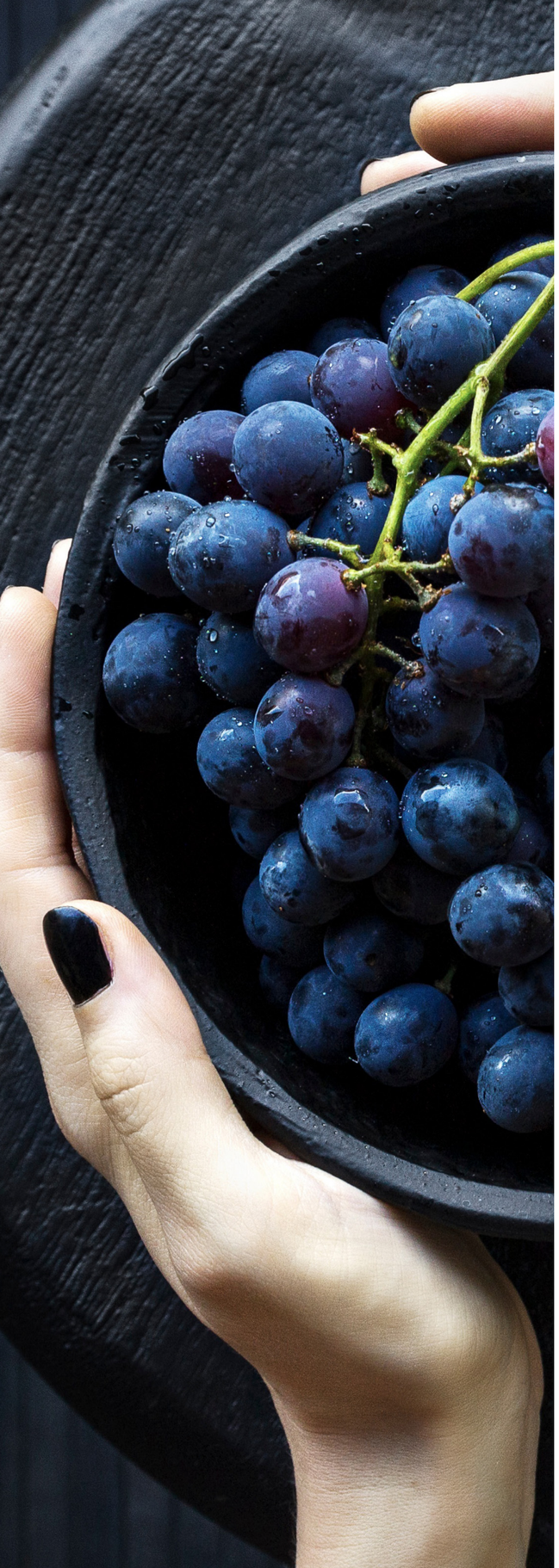
ABSTRACT

Wine is one of the oldest known beverages in history. Today, the type of tourism, which is known as wine tourism and is among the alternative tourism types, is a tourism activity that generally participates in people with high income levels. Experiencing wine is among the priorities of those who participate in wine tourism. Wine tourism activities in our country and in the world include vintage, festivals, tours to vineyards and wine production facilities. Therefore, wine tourism is important in terms of being beneficial for rural development.

Considering the tourism activities carried out in our country, it is thought that wine tourism will have an important place in terms of the audience it addresses and the income obtained. The aim of the study is to determine the place of wine tourism in our country, to analyze the current situation and to compare it with the wine tourism activities in the world, to reveal what can be

done at this point. In accordance with the purpose of the study, the document review method was preferred and secondary source scanning was made.

Keywords: Alternative Tourism, Special Interest Tourism, Wine Tourism, Turkey



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GRAPE GIRL'S (WINE) ADVENTURE

ABSTRACT

Wine is the most used beverage item in divan literature. For centuries, poets have addressed wine directly or indirectly in their poems, sometimes literally and sometimes metaphorically. Wine has been a tool frequently used by Sufi literature. The people of mysticism, who accepted love as the way to reach Allah, saw wine as a stage for spiritual enthusiasm. Some poets who are people of Sufism; They tried to explain that it was unbearable not to be able to leave him by pawning even his clothes for wine. They slept at the tavern door for wine and became slaves to that door.

The work named Grape Girl's (Wine) Adventure, which we will present in the paper, is a poem written in the form of composition-i bend. Hasip Dürrî, one of the divan poets from Antep, expressed the adventure of wine in a satirical style in this poem. He used symbolic elements in poetry. Although the ancients regarded grapes as a halal food, they considered the wine obtained from grapes to be famous as the daughter of grapes, as forbidden in accordance with the Islamic belief. In fact, they also developed jokes by saying, "Her mother is halal, her daughter is haram," by referring to Islamic fiqh. Üzüm Kızı (The Grape Girl) is the Turkish equivalent of the Arabic phrase Bintü'l-ineb. In the poem, the wine, which is referred to as the daughter of grapes, is handled as a dishonored woman and many jokes based on this have been created.

Many poems have been written in divan literature about this issue. Among these poems, Üzüm Kızı, written in a poetic style by the poet Hasip Dürri from Antep, has a special place. In this context, in our study, the poem Üzüm Kızı (The Grape Girl), which is about the adventure of wine, will be mentioned.

Keywords: Wine, Hasip Dürrî, Üzüm Kızı (The Grape Girl), Grape

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THE GRAPE MOTIF IN CLASSICAL ARABIC POETRY

ABSTRACT

Grape was an indispensable food source for ancient communities, a sought-after industrial material, and, in some beliefs, a sacred gift given to humanity. In fact, in ancient Greek mythology, it is observed that even a separate god was fictionalized for grape and wine. Grape, which was an important fruit for many civilizations living in and around the Middle East, which is considered to be its homeland, also has an important role in ancient Arab culture. The acquaintance of the Arabs with the cultivation of grape dates back to pre-Islamic times. For example, it is known that people in the Hadhramaut region were engaged in grape farming. Likewise, Taif has become a region famous for grape farming. The ancient Arabs used the grape motif in their poems within a specific theme, namely bacchic poetry. Since bacchic poetry was a very popular theme among the ancient Arabs, it is not surprising that the grape motif often appears in poems in which wine is glorified. In poems of this kind, poets do not only mention grapes but also talk about various stages or terminology of grape production. We even see poems using the wine/grape terminology in the diwans of mystic poets. One of the most famous examples on this subject is undoubtedly a verse belonging to Ibn Fāriḍ (d. 632/1235): *"Sharibnā ʻalā ẕikri al-ḥabībi mudāmatan, sakirnā bihā, min qabli en yuḫlaqa al-kermu. [We drank the wine in memory of the lover. We got drunk with it before the vineyard was created]"* In a distant land, Andalusia, the grape motif has had the opportunity to gain more distinctive originality in poetry. For example, we know that the Andalusians, who spent time in the magnificent gardens of the Iberian Peninsula, heard some poems comparing grapes with various fruits. This study aims to examine the grape motif in classical Arabic poetry in a scientific way. The main source of the study is the diwans of medieval Arab poets. In addition, current academic publications have also been used.

Keywords: Arabic Language and Literature, Classical Arabic Poetry, Grape, Khamriyyāt, Wine.

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GRAPE IN THE CULT OF DIONYSUS AND ANCIENT ANATOLIAN MYTHS

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ABSTRACT

Trance or reverie is defined as a connection to supernatural beings or a journey into perosonally deepest existence of a human from the day having "conscious of us" with the form of language and the first societies. The cult of Dionysus besides its agricultural originated festivals has contributed to the emergence of theater which was an important part of Ancient Greek culture and the basis of the western theater. Dionysus as the god of ecstasy and reverie has an extraordinary place when compared with other gods in ancient Greek religion. During the vintage to obtain abundant harvest, Dionysia at firstly celebrated in rural parts of the Attica region was added by Athenian tyrant Peisistratus in the Athenian festival calendar. Roman Dionysia, Bacchanalia celebrated to honor of the Roman equivalent of Dionysus, Bacchus because of its ecstatic and egalitarian essence triggered some social events in ancient Rome. Just as Bacchanalia had been banned by a senatorial decree in 186 B.C. for its address to people without class discrimination as regarded cause of slave rebellions. One who wants to comprehend the cult of Dionysius must rely on the concepts such as trance, metamorphosis, and chaos so that these concepts embodied in the process of wine-making: chaos for collecting and crushing grapes, metamorphosis for the fermentation process in pithoi, and trance for comnsumation of wine in a ritualistic manner representing divine blood.

It is generally accepted that the cult of Dionysus having Neareastern origins was part of ancient Greek religion since Minoan civilization by scholars. Anatolia was a bridge between Greece and Neareastern civilizations as being located in the northern part of the fertile crescent hosting the first settlement, Göbeklitepe, the world's first temple complex. Anatolian and other Neareastern societies celebrated the coming of spring through the metaphorical representation of death and resurrection of Sumerian Dammuzi, Eygptian Osiris, Hittite Telepinu, Cannanian Adonis with the contribution of the myths circling around Thracian Orpheus sacrifice became a central concept in the cult of Dionysus. Although it has to be admitted that occurrence of various stages in the cult until the classical period, archaic notions, related with agriculture in both practice and mythology having the impact of ancient Anatolian motives, was maintained. The place of grape in Hattian and Hittite mythologies and its effect and projection on the cult of Dionysus is examined in this presentation.

Keywords: Grape, Wine, Cult of Dionysus, Hittite Mythology, Anatolia

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GRAPE AND WINE: AN EVALUATION IN THE LIGHT OF ANCIENT RESEARCHES

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ABSTRACT

Grape is accepted as a product that mankind collects and consumes as a wild product in nature after the settled life. The carbon data obtained in archaeological excavations supports this idea. In the light of archaeological data, this product, which was first seen in the Southeast Anatolian Region in the Neolithic Age, was also recorded in Eastern, Central and Western Anatolia in the next periods. Outside of Anatolia, grape; It spread to the Caucasus in the north, Continental Greece in the west, the Levant and Egypt in the south, and India in the east. Researches on grape reveal that it was a product that became widespread in the late 3rd millennium BC and the beginning of the 2nd millennium BC. It is observed in iconographic data revealing what kind of processes the grape went through in Egypt in the 2nd millennium BC. Apart from this, thanks to the tablets found in Kültepe, it is understood that grape was a very important product in the 2nd millennium BC. In Anatolia and Mesopotamia, besides the depictions of grape symbolizing abundance and fertility, it is understood that wine made from grape is a beverage that is consumed with pleasure. In particular, iconographic data documenting this can be seen in reliefs belonging to kingdoms such as the Late Hittite, Neo-Assyrian and Urartu from the 1st millennium BC. However, these examples are observed in limited numbers. In its current form, it is also insufficient to present the iconographic documents of grape and wine. On the other hand, this situation is better depicted in the images on the vases produced in Attica in the middle of the 1st millennium BC. Thanks to Attic vases, it can be observed that wine is a beverage that is consumed with pleasure and also an offering product, with its journey from the production of the grape to its processing. These iconographic data are in Hellenistic, Roman and Late Antiquity; It can also be seen in motifs embroidered on many archaeological materials such as stone, metal, terracotta. Apart from iconographic data, information can be obtained from ancient sources, holy scriptures and epigraphic data on the production and consumption of grape. Information on the post-production of grape, winemaking and the trade of these wines can be learned through archaeologically recorded workshops and amphorae produced in many different regions.

Keywords: Grape, Wine, Iconography, Evaluation, Ancient researches.

DISCOVER ANATOLIA

International Anatolian Grape Conference

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AGRICULTURAL TOURISM IN BRANDING OF THE CITY: AN ASSESSMENT ON ÇANAKKALE-BOZCAADA GRAPERY

ABSTRACT

The main subject of this study is the role of Bozcaada grapery in the branding of the city. The concept of grapery, which is tried to be defined theoretically within the framework of agricultural tourism and branding of the city, will be discussed over Bozcaada, which has archaeological, cultural and mythological richness in Çanakkale Province. While emphasizing the importance of agricultural tourism in the branding of the city is made through grapery, festivals and other cultural activities are important in order to bring grapery to the agenda of international tourism. Grape, which is included in the urban image of grapery, offers a gastronomic space experience. The aim of the study is to evaluate the role of the grape, which constitutes the tourism supply potential, of sustainable tourism arising from cultural and spatial relations. Agritourism, which synthesizes the traditional and the modern in the rural environment, has a great importance for the preservation of the local texture. Agricultural tourism, which is important for rural development, is important in terms of introducing local products to tourists and building a bridge between rural and urban areas. For the planned management of the tourism potential of cities, the specific dimension of its spatial formulation is its focus on the micro-level of tourism policies. As a result of the interaction of the potential of the cities and the multi-actor nature of tourism, local governments, which are the means of implementation at the micro level of the cities, play an active role. As a matter of fact, the development of grapery, which is the most important source of income of Bozcaada, which is the subject of our study, and the role of local governments in the branding process of Çanakkale will be mentioned. In addition to this, the image of grapes, which constitutes the spatial imagination of Bozcaada, will be included through the visuals. Social and cultural activities in Bozcada will be discussed through grapery. In this context, it has been determined that agricultural tourism has been adopted, based on the description of grapery in the branding process of the city of Çanakkale and the production of the spatial identity of Bozcaada.

Keywords: Agricultural tourism, Bozcaada, Brand City, Grape.

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THE EFFECT OF PRODUCTS CONTAINING RESVERATROL IN GRAPE SHELL ON THE PREVENTION OF ORAL MUCOSITIS IN PEDIATRIC CANCER TREATMENT AND USE IN NURSING CARE

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ABSTRACT

The number of pediatric cancers is increasing day by day worldwide. This emerging picture has made it necessary to apply effective and successful treatment methods against cancer types in children. Various methods are used for cancer treatment. The most commonly used methods are chemotherapy and radiotherapy. Apart from these, some natural compounds are also used if the treating physician deems it appropriate. These natural compounds are classified into two main groups as cancer therapeutics and chemopreventive compounds. Products obtained from plants or animals or produced by microorganisms are used in the form of natural and synthetic compounds. Although various methods are used in cancer treatment, different complications may develop in patients. Oral mucositis is a common toxicity of intensive chemotherapy and radiotherapy in pediatric cancer and hematopoietic stem cell transplant patients. It is important because it is painful, makes eating and drinking difficult, limits the application of cancer treatment, reduces the quality of life, increases the cost of treatment and care, and causes bacteremia in patients. One of the chemopreventive products called phytochemical, which have been increasingly used for cancer treatment over the years, is resveratrol, found in grape skin. Resveratrol is a natural polyphenolic phytoalexin antioxidant compound. It is predicted that it can be used in the treatment of oral mucositis because it provides antioxidant and anti-inflammatory activity, interacts with cell membranes and mitochondria, regulates apoptosis by inducing the cell cycle and the expression of cancer cell-specific genes. Every nurse caring for a pediatric patient who develops oral mucositis should prioritize preventive measures for mucositis, determine its severity, and assess the risks. Nurses should know the physiopathology, risk factors, physical, psychosocial, and economic effects, grading systems, and oral care practices of mucositis in order to prevent the development of oral mucositis and to provide necessary care when it develops. In addition, by monitoring and educating individuals, they should prevent the development of oral mucositis and increase their quality of life.

Keywords: Cancer, Child, Nursing care, Oral mucositis.

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INVESTIGATION OF THE PRODUCTIVITY OF GRAPE SEED OIL AS AN AIRCRAFT FUEL

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ABSTRACT

Aviation is a sector that has been attracting people for centuries, dealing with the design or maintenance of the machines needed to fly or fly by means of aircraft produced by humans. The aviation industry has shown the fastest growth in recent years in terms of freight transportation, goods transportation and human transportation. The continuation of this growth and social benefit is ensured by carrying out the safety and security of the activities and parts of the aircraft within the framework of certain standards. For this reason, continuous improvement studies are carried out in the field of aviation. One of the improvement studies is the use of biofuels in aircraft. The CO_2 rate emitted by aviation sector vehicles constitutes approximately 2% of total global emissions. Unfortunately, this rate is expected to double in the next 20 years. In order to help reduce the harmful effects of vehicle emissions and carbon footprint, it is planned to gradually mix biofuels into aviation fuels in the coming years. Biojet fuel is a potential candidate to prevent and reduce the negative effects experienced. Any plant that contains oil in its seeds is a candidate for producing a biofuel and thus obtaining a biojet. Grape seed oil, which is one of the oilseed plants, is obtained by cold pressing. Although dependent on specific agricultural practices and geographic location as part of the life cycle assessment, it is expected that grape seed oil can achieve relatively low carbon density and overall sustainability in certain situations. Although the production cost of biojet fuels is higher in the short term compared to traditional jet fuel, it is clear that the optimum plant type, low cost, low emissions and optimum biofuel supplement rate will be achieved with studies and applications. In our study, it was aimed to produce grape seed oil-based biojet fuel to accelerate the development of biojet fuels. Transesterification method was used as the production method. Sodium hydroxide was preferred as catalyst and methanol was preferred as alcohol. Two biojet fuels, coded B2 and B5, were produced. B2 fuel was obtained by mixing 98% kerosene with 2% vegetable oil methyl ester, and B5 fuel was obtained by mixing 95% kerosene and 5% vegetable oil methyl ester. Some physical and chemical fuel properties such as viscosity, pH and density of the obtained biojet fuels were measured and compared with those of vegetable oil methyl ester and kerosene.

Keywords: Aircraft fuel, Biojet, Fuel properties, Grape seed oil

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GRAPE AND EYE HEALTH

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ABSTRACT

The study aims to evaluate the studies showing the effects of grapes on eye health. Articles published in English were found by using the search words "grape, resveratrol, eye" in Pubmed. Grape, especially the seed, consists of compounds such as fatty acids, tocols, phenol compounds, and phytosterols. The positive effects of phenol compounds, especially proanthocyanidin, on inflammation, cardiovascular diseases, hypertension, diabetes, cancer, peptic ulcer, and microbial infections have been reported. Resveratrol is a polyphenol produced in plants against various external factors (such as infection, inflammation, ultraviolet). It is quite dense in the seed and peel of the grape. It has antiproliferative, antiangiogenetic, antioxidative, anti-inflammatory, antiplatelet effects and positive effects on neurogenesis and endothelium have been reported. It has been shown that resveratrol activates antioxidative pathways by activating citrulline and prevents apoptosis. In addition, it has been stated that resveratrol inhibits cataract development with its antioxidant effect by preventing lipid peroxidation. It is also stated that resveratrol reduces the development of posterior capsular opacity after cataract surgery by inhibiting Transforming Growth Factor -beta (TGF-beta). It has been reported that resveratrol has positive effects on age-related macular degeneration by preventing phagocytosis in the retinal pigment epithelium, antioxidant effect, and antineovascular effect by reducing the Vascular Endothelial Growth Factor (VEGF). In the pathogenesis of diabetic retinopathy, resveratrol protects retinal vessels by inhibiting the activation of matrix metalloproteinases caused by the final glycation products of glucose, preventing the deterioration of the blood-retinal barrier, preventing the proapoptotic effect of reactive oxygen radicals at the genome level and with an anti-inflammatory effect. In addition, TGF-beta, Interleukin-1beta (IL-1beta), Interleukin-6 (IL-6) inhibition prevents the progression to proliferative vitreoretinopathy. In the pathogenesis of glaucoma, resveratrol has been reported to prevent damage to both optic disc and trabecular meshwork with its antioxidative effect (inhibition such as reactive oxygen radicals, IL-6, IL-1), and to prevent ganglion cell loss with its antiapoptotic effect (inhibition caspases). It has been reported that uveitis is prevented by inhibition of Intercellular Adhesion Molecule-1 (ICAM-1) and Monocyte Chemoattractant Protein-1 (MCP-1) proteins. It has been reported that oral resveratrol limits peripheral corneal neovascularization by inhibition of VEGF and Fibroblast Growth Factor-2 (FGF-2). As a result, grapes occupy a very important place in eye health as well as in the whole body, with the components they contain both in the seed and the peel.

Keywords: eye, grape, resveratrol

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INTRODUCING SOME GRAPE VARIETIES PRECEDED IN VITICULTURE OF ADIYAMAN PROVINCE

ABSTRACT

In order to develop our country's viticulture, studies regarding collection, conservation and development of vine genetic resources have a major importance in terms of future of our viticulture. The aim of this study was to introduce some grape varieties preceded in viticulture of Adıyaman province. Ampelographic characters of varieties were identified according to "Grape Descriptors" of IBPGR (International Board for Plant Genetic Resources). Adıyaman province which has highly suitable ecological conditions for viticulture has a rich vine gene potential. Boz, Serpene Kıran, Kabarcık, Dökülgen, Dımışkı, Mezrone (Şire) and Peyganber Üzümü (Besni) grape varieties have been commonly grown in Adıyaman province. Berry skin color was identified as 'green yellow' in all varieties. It was determined that the varieties had 118.61-291.78 cm² mean bunch size, 208.27-710.91 g mean bunch weight, 2.13-5.23 g mean berry weight, 10-26 % soluble solids content and 3.29-4.46 g/l titretable acidity. It was observed that time of berry ripening was "medium season" in Boz, Serpene Kıran, Dımışkı and Kabarcık varieties and was 'late season' in Peyganber Üzümü (Besni), Dökülgen and Mazrone (Şire) varieties. It was determined that flower type was 'hermaphrodite' in all varieties.

Keywords: Adıyaman, Ampelography, IBPGR, Native Grape Varieties

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VITICULTURE TOURISM IN TURKEY AND SAMPLE APPLICATIONS

ABSTRACT

The tourism industry contributes economically, socially and culturally to the economies of developing countries by creating new tourism areas or new tourist activities. Viticulture tourism, which is evaluated in the context of rural tourism in this aspect, has become increasingly popular in recent years, creating an opportunity for people who want to get away from the noise and crowds of the city to integrate with nature. Viticulture tourism, which contributes to the development of the rural region, will contribute to local tourism, as well as to the development of viticulture in the region, increase the economic level of the people, protect unused land and buildings in the region with increasing agricultural production. It will also support traditional productions. For this purpose, the study provides an example of viticulture tourism in Turkey and the practices applied in viticulture tourism. In the research, document analysis technique was used as one of the qualitative research approaches. According to the findings obtained; Viticulture tourism is one of the most important agro-tourism activities in the world. In countries where viticulture and wine culture are developed, interest in viticulture tourism has been growing quite a lot lately, and its popularity is gradually increasing all over the world. Viticulture tourism is one of the most important agro-tourism activities in the world. On the other hand, viticulture tourism is of great importance in the development of rural regions with the sale of local products and employment. In particular, the viticulture culture of Anatolia dates back to very ancient years, and our country is home to many grape varieties thanks to the climatic features it has. In this context, although our country is a rich destination in terms of vineyard tourism, it cannot fully use it in tourism. In the sense of promoting vineyard tourism, it is necessary to take the best practices as an example by identifying potential areas in our country. Viticulture tourism is a good alternative for the development of rural areas and providing employment to local people. In this way, the destructive effect of tourism is eliminated and nature is protected and production is supported instead of consumption is ensured.

Keywords: Turkey, viticulture tourism, sample applications

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RECYCLING OF GRAPE PROCESSING WASTE

ABSTRACT

One of the main objectives of many international and national studies such as the "Sustainable Development Goals" of the United Nations, "The European Green Deal" of the European Union and the "Zero Waste Project and Green Reconciliation Action Plan" in force in our country is to recycle waste in agricultural production and food sector. A significant amount of waste is generated as a result of the processing of grapes, which is the world's largest fruit crop. Failure to utilize these wastes causes both environmental and economic losses. Various wastes, especially grape skin, seed and pulp, are rich in sugar, fiber, pigments, organic acids (tartaric and citric acid), phenolic substances, linoleic acid, omega-6 fatty acids and resveratrol. Therefore, it is possible to produce high value-added products from these wastes. For example, it is possible to produce xylose and glucose with the hydrolysis of hemicellulosic sugars in grape skin and to produce lactic acid from these sugars with the help of microorganisms. Similarly, grape skin is successfully used in solid phase fermentation to produce enzymes such as exo-polygalacturonase, xylanase, β-glucosidase, pectinase and cellulase. In addition, by making use of the antimicrobial and antioxidant properties of the polyphenols in these wastes, it is used to reduce the amount of antibiotics used in the poultry industry, to produce broiler chicken meat with a longer shelf life, and to improve the color of the meat with the effect of the color substances in the wastes. It is stated that resveratrol, which is found in significant amounts in grape seeds, is effective in inhibiting or delaying cardiovascular diseases and cancer, and has the potential to prolong life by increasing stress resistance. As a result, the wastes generated as a result of grape processing have an important potential at the point of evaluation. With the evaluation of these wastes, it is possible to produce products that can be used in the nutrition of animals as well as products that will contribute to human health and nutrition in foods.

Keywords: Waste revalorisation, grape skin, grape seeds, resveratrol.

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THE IMPORTANCE OF INNOVATIVE INVESTMENT IN VITICULTURE IN AZERBAIJAN AND IN THE WORLD

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ABSTRACT

Grapes are grown in different climatic zones of the Earth, hot and dry, as well as in relatively cold areas. The most favorable climatic zones are the Mediterranean, the Caspian Sea, California and South Africa.

Changes in grape productivity over the years depend to some extent on environmental factors. The choice of grape cultivation methods in accordance with environmental conditions, the selection of high-yielding varieties, the improvement of methods to combat sparseness in the vineyard and the main factor influencing the service life of the grape plant and increase its productivity. In order to successfully address these issues, intensive factors based on the latest achievements of scientific and technological progress must be brought to the fore.

Of course, the climatic conditions are also important in this case. Viticulture has historically made an important contribution to the development of Azerbaijan's economy and has been one of the leading industries. Our country is one of the areas where world-class technical grape varieties are grown. "Bayanshira", "Madrasa", "Shirvanshahi", "Hindogni", "Hamshara", "Melayi", "Kharji", "Qara aldere", "Davagozu" and other high-quality local technical grape varieties are more popular. After gaining independence and the return of the great leader Heydar Aliyev to power at the insistence of the people, favorable conditions were created for the faster development of viticulture in Azerbaijan and appropriate measures were taken in this direction.

Ensuring the sustainable development of winemaking in the country, including strengthening state support in this area, effective use of potential opportunities, as well as the Law of the Republic of Azerbaijan "On Viticulture and Enology" in order to increase interest in wine production and export, as well as in accordance with the "Strategic Roadmap for the production and processing of agricultural products in the Republic of Azerbaijan" approved by the Decree of the President of the Republic of Azerbaijan No. 1138 dated December 6, 2016 "On approval of strategic roadmaps for the national economy and key sectors of the economy". "State Program on the development of winemaking in the Republic of Azerbaijan in 2018-2025" has been prepared.

One of the reasons for the rapid development of the economy of the republic can be considered the efficient placement of foreign investment and budget revenues in the country. As a result of the successful implementation of investment policy, sustainable economic growth has been achieved, and significant results have been achieved in improving the living standards of the population. At present, work is underway to improve the relevant regulatory framework for the development of viticulture and winemaking in Azerbaijan.

Keywords: viticulture, economy, investment, development.

DISCOVER ANATOLIA

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TRADITIONAL GRAPE GROWING AND CONSERVATİON IN ARTVIN REGION

ABSTRACT

The use of natural methods in preserving foods for a certain period is human and environmental health an important issue. Natural methods have been used in the past to preserve freshness of fruit. Considering the physical environmental conditions in Anatolia, fruit storage methods have been developed in various shapes and using natural materials. Coruh valley in Artvin province is one of the rare places where grapes are grown and preserved traditionally. This study aims to reveal the cultural ecology that grape growing in the villages of Yusufeli and Merkez district of Artvin Province and the local culture developing in grape growing. In this context, field studies were carried out in the Artvin region in 2019 and 2021, and in-depth interviews were conducted with some farmers engaged in grape growing. Face-to-face interviews were held with 12 people in the research area and the obtained data were analyzed descriptively. In this study, grape cultivation and preservation methods of grapes were emphasized. As a result of the study, it has been revealed that the native people use a wide variety of local ecological knowledge, sustainability principles and practices in their grape conservation. İn studies area are and local ecological knowledge is used in the process of collecting, storing and preserving of the grapes. The results of the study show that taking advantage of the physical environment is one of the basic elements of rural life culture during the periods when technology is not used in food preservation. In rural dwellings and in the natural environment, soil wells were used to preserve grapes. About the preservation of grapes while local knowledge and practices were used intensively until 1980s, a decreasing trend started from this date onwards with the effect of internal migration from Artvin to the metropolitan, used industrial commodities, the use of plastic and metal materials, higher standards of living and having access to infrastructure service. It is important to identify such methods and transfer them to future generations as local cultural elements.

Keywords: Cultural Geography, Traditional Knowledge, Artvin, Grape

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USE OF GRAPE IN ANATOLIAN TURKISH FOLK MEDICINE

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ABSTRACT

Illness is a social phenomenon as old as human history. Throughout their lives, people have struggled against diseases. They sought a cure for diseases from the nature they were in. The healing practices shaped within the framework of the cultures and the societies have led to the emergence of the field called folk medicine over time. The practices used in folk medicine are based on knowledge, observation and experience. Some of these practices have preserved their vitality by being transmitted orally for generations and have survived to the present day. Turks carried their centuries-old cultural heritage with themselves from Central Asia to Anatolia, and continued to use them by blending them with different cultures and influences. Anatolian lands, in which many civilizations were founded, have a deep-rooted cultural heritage. Folk medicine plays an important role in the treatment of diseases with its rich texture in ancient Anatolian geography. In Anatolian Turkish folk medicine, there are many religious-magical and *em*-based treatment methods. Plants have an important place among *em*-based treatments. Plants have been used and preferred frequently because they are thought to be both easily accessible and harmless to people against diseases. People did not see plants only as food, but they also used them to treat diseases and increase their well-being. For this purpose, different parts of plants such as roots, leaves, flowers and fruits have been included in treatment practices due to their biological effects. Fruits are also used in Anatolian Turkish folk medicine practices. Grape is a fruit that has been known since ancient times and has had an important place in people's lives. Grapes are widely grown in various regions of Anatolia. Grapes has a cultural value for the Anatolian people as well as being a nutrient. This study will try to explain its place and importance in Anatolian Turkish folk medicine by giving various examples of the use of grape fruit in therapeutic practices. In folk medicine, grapes and products obtained from grapes can be used alone as the main element or together with other substances. Grapes and products obtained from grapes are applied in treatments with different methods such as eating, drinking, smearing and wrapping. It is used for various purposes such as providing energy to strengthen the body, increasing milk production during breastfeeding, eliminating anemia.

Keywords: Grape, Folk Medicine, Anatolia

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TECHNOLOGY OF OBTAINING ECOLOGICAL DYES FROM DARK TECHNICAL GRAPES *VITIS NIGRA*

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ABSTRACT

Pigment from dark grapes is one of the by-products of low-waste, non-waste agro-industrial enterprises. These pigments are used in the food industry, cosmetics, pharmaceuticals, etc. use is of particular importance. Thus, the use of synthetic dyes in the food industry poses a serious threat to the human body due to the toxic, carcinogenic substances they contain. Therefore, the replacement of synthetic dyes with vegetable dyes is one of the most pressing issues today. It should be noted that vegetable dyes not only give food an external aesthetic appearance, but also increase the quality of nutrients due to the content of bam vitamins, organic acids, micro and macronutrients. In addition to coloring food, plant dyes have a positive effect on digestion and food absorption.

In addition to the various ingredients obtained by biotechnological processes, grape seeds are first separated from the berries to obtain dark-colored grape varieties used in the food industry. Then it is extracted, the obtained extract is filtered, the solvent is expelled and the moisture content of the dry matter residue is brought to 30%. In the next stage, the expulsion is continued under vacuum, the pigment is obtained in powder form

There are other products among the wastes of technically dark (lat. Vitis nigra) grape varieties, which can be separated by recycling process and processed to the final product according to the following scheme:

The technology of separation of color substances (pigments) is of special importance during the complex processing of waste from dark technical grapes. This is done by the technology of obtaining pigments that meet the requirements of the standards.

The colors of the pigments are defined by the International Nomenclature (naming) (RGB-color) pink (R248G0B104), red-carmine (R248G0B152).

To do this, the waste (grape skin) was first crushed (2-3 mm in size) and extracted in a mixture of 37% ethanol solution and acetone. In the first stage of extraction, dark grape skins with a moisture content of up to 8% were stored in an ethanol-acetone mixture at 25-28 ° C for 24 hours and then transferred to another container. Then a mixture of 37% ethyl alcohol and acetone was added to the vegetable raw material and the vegetable raw material kept in the solvent mixture for 8 hours was added to the extract obtained in the first stage. The combined extract mixture was thickened by low pressure and solvents at 50 ° C, and the powder pigment was obtained by gradually deepening the vacuum in the mixture.

In the next stage, the optical density of the pigment solution (in water, alcohol and oil), resistance to changes in pH and other external influences were studied.

Key words: extract, vitis nigra, recycling

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ANTIMICROBIAL PROPERTIES of RESVERATROL

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ABSTRACT

Resveratrol (3,5,4'trihydroxystilbene) is belonging to the stilbene family, a naturally occurring polyphenolic antioxidant. It has gained attention in recent years for its potential health benefits. Resveratrol is present in grape skin, blueberries, Japanese knotweed (*Polygonum cuspidatum*), cranberries (Vaccinium spp.), wine, and peanuts (*Arachis hypogea*). resveratrol is known to be high absorbed and metabolized while The bioavailability of has been reported to be very low. It is known that daily consumption of up to 5 grams in healthy people is safe. Resveratrol has beneficial properties for health such as anti-obesity, anti-carcinogenesis and anti-aging, anti-diabetic, cardioprotective, immunomodulator, and antioxidant. In addition to these properties, the antibacterial and antifungal properties of resveratrol have been emphasized in recent years. Foodborne diseases caused by the consumption of foods contaminated with pathogenic bacteria are a global health problem. Continuous use of antibiotics and antimicrobial agents is one of the reasons for the development of antibiotic-resistant bacterial strains, which is an important health problem. Because of this researchers has concentrate upon to natural antimicrobial resources. Resveratrol is a naturally occurring phytoalexin. Phytoalexins are secondary metabolites produced by plants, low molecular weight. They are produced in conditions such as biotic stress caused by viruses, fungi, bacteria, and abiotic stress caused by chemical treatment. Studies have shown that resveratrol exhibits antibacterial activity against important food-borne bacteria, such as *Listeria monocytogenes, Staphylococcus aureus*, *Campylobacter jejuni*, and *Vibrio cholerae*. This antibacterial effect is thought to be with membrane damage, reduction of cellular metabolic activity, DNA cleavage, and inhibition of cell division. Biofilm formation is one of the survival strategies of bacteria. Biofilms can pose serious health risks due to their natural resistance to host defenses, antimicrobial agents, and external stresses. Resveratrol can also indicate antibacterial activity by reducing biofilm formation. Resveratrol has antibacterial activity as well as antifungal and antivirulence properties. Resveratrol; It has proven effective in inhibiting many foodborne pathogens in different types of food matrices, supporting its use preservative or as an alternative food additive to produce safe, high-quality foods. Considering all these features, it is thought that resveratrol can be used as a supplement to antibiotic therapy or as an independent alternative therapy against foodborne pathogens. Studies involving appropriate animal models are largely necessary to determine the clinical potential of resveratrol.

Keywords: Resveratrol, Antibacterial properties, Antifungal properties, Antivirulence properties

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DETERMINATION OF APPROPRIATE PESTICIDES DOSE WITH ARTIFICIAL NEURAL NETWORK FOR VINEYARD DISEASES

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ABSTRACT

Grapes and vineyards are exposed to many diseases. In addition to various methods to combat diseases, pesticides are used. Although there is no exact measure for the appropriate spraying method and spraying dose for grapes and vineyards, some negative results occur as a result of some wrong spraying applications. Unconscious spraying to combat diseases causes both financial losses for farmers and a number of diseases that will negatively affect human health. Today, the effect of pesticides on human health has been determined by many studies. In addition, it has been observed that some agricultural diseases have become resistant to pesticides due to the wrong spraying methodThere are many factors that determine the dose and method of spraying. For example; there is a higher and faster risk of disease development in a vineyard that grows in warmer regions and has more wetlands around it than a vineyard that does not have this feature. Geographical location, climate, soil structure, grape fruit type, ecosystem threat area, etc. factors are among some of the factors that determine the dose and method of spraying.

In this study, a spraying model has been proposed to determine the appropriate spraying method by using artificial neural network for vineyards in different regions where there is no specific spraying dose and method. Artificial neural networks, which are an area of artificial intelligence, are preferred in solving problems that do not have a specific model and formulaThe spraying model developed with an artificial neural network has been proposed as a suitable solution to reduce the costs in the spraying times of vineyards in different regions. With this method, which will be used by agricultural organizations, it is possible to determine different and appropriate spraying doses for the vineyards established in different regions of the model. The operation of the model is provided by the information entered in the model such as geographical location, sunshine duration, soil information, environmental ecosystem threat coefficient, and disease resistance coefficient of the grape variety. The feedback artificial neural network is trained with the drug type and spraying dose information obtained from vineyards in different regions, and then the trained artificial neural network is provided to determine the appropriate and sufficient drug dose in the future. With the knowledge of the many external factors in the region where the vineyard is located, the region-specific vineyard spraying dose and method are determined for the vineyards grown in different regions.

With this artificial intelligence supported model, it is aimed to prevent financial losses caused by excessive spraying and applications, to obtain grape fruits that are more suitable for human health and to prevent diseases from gaining resistance to drugs. In this way, it is aimed to support the cultivation of vineyards and to increase the added value.

Keywords: Grape, Vineyard cultivation, Agricultural diseases, Pesticides, Artificial neural network

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INVESTIGATION OF POMOLOGICAL PROPERTIES AND BERRY COLOUR, TOTAL PHENOL AND ANTIOXIDANT ACTIVITY LEVEL OF HÖNÜSÜ (MAHRABAŞI) GRAPE VARIETY

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ABSTRACT

This study was carried out in the Bertiz Basin, Pazarcık Basin and Kürtül-Şahinkayası Basins, which have high economic grape production potential in Kahramanmaraş province. In the study, cluster samples were taken from Hönüsü (Mahrabaşı) vineyards where similar nutritional and cultural processes were applied and from different vineyards in these vineyards and some quality parameters were examined.

Hönüsü grape variety; It is a table grape variety with red-purple colour, large and loose clusters, long elliptical and very large berry, maturing late, produced in Kahramanmaraş, Gaziantep and Kilis provinces of the Mediterranean Region, with functional female flower structure.

In this study, cluster and berry characteristics of Hönüsü (Mahrabaşı) grape variety, which was sampled from some vineyards in Kahramanmaraş province, and TSS (total soluble solids), titration acidity and pH level of must were determined.

The cluster weight was 164.38 g-518.42 g, the cluster length varied between 14.63 cm-28.97 cm, and the cluster width ranged between 10.07 cm and 16.23 cm. In the Hönüsü grape variety; The berry weight was recorded between 2.82 g and 6.87 g, the berry length was between 13.06 mm and 25.09 mm, and the berry width was between 7.28 mm and 20.38 mm. In grape samples, TSS (total soluble solids) level was obtained between 14.45-24.05, titration acidity level 0.169-0.573, pH level 3.40-3.93 between. The berry skin colour parameters L*, a*, b*, Chroma and Hue angle values and total phenol and antioxidant activity levels were determined in Hönüsü grape samples. In grape samples, L* value was recorded between 26.67 and 32.86, a* value between 4.06 and 7.68, b* value between 1.05 and 2.13. Chroma values of Hönüsü vary between 4.21 and 7.87. The Hue angle in the CIE (The Commission Internationale de l'Eclairage) colour coordinates was determined between 7.92 and 18.69. The CIRG (Colour Index of Red Grapes) index was obtained between 4.27 and 5.57. According to the CIE colour coordinates, it was recorded that the colour of the berry skin was between purplish-red and red. The total phenol level of Hönüsü grape variety was determined between 198.2 mg GAE and 368.2 mg GAE, and the antioxidant activity level was between 60% and 91%.

Keywords: Hönüsü (Mahrabaşı), CIRG (Colour Index of Red Grapes) index, Total phenol, Antioxidant activity.

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INFLUENCE *NaCl* AND Na_2SO_4 SALTS ON THE GROWTH PARAMETERS AMOUNT OF PIGMENTS AND THE ACTIVITY OF THE ENZYME CATALASE IN SUGAR BEET LEAVES

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ABSTRACT

Tarifa, Taltos and Cooper varieties of sugar beet imported from Denmark were taken as the object of research. After germination in ordinary water, the seedlings were filled with 0.2 and 0.5% NaCl and $Na_2 SO_4$ concentrations and transferred to containers covered with a black coating. Based on the results of 30, 45 and 60 days of experiments of the studied varieties, the following can be noted.

The amount of chlorophyll a was the lowest in comparison with other varieties. The ratio of xl a / b in the leaves of this variety was reduced in comparison with control samples during imitation of 0.2 and 0.5% $Na_2 SO_4$ and NaCl salts, 0.2 and increased in the presence of 0.5% NaCl.

This trend was observed in the analysis of carotenoids and anthocyanis, except for small deviation. In the presence of 0.5% NaCl the amount of carotenoids increased by about 2 times compared to the control. It can be evaluated as a response to salt concentrations and a sign of adaptation and a sustainable variety.

Enzymes analysis that shows high activity times Taltos and Cooper variants experience varieties of both shows that vulnerable to the impact of stress. In contrast, in the Tarifa variety, 0.2 and 0.5% $Na_2 SO_4$ do not cause such strong stress at the end of the growing season, and the high concentration of NaCl in the high concentration of CAT allows it to be more salt-resistant. On the other hand, the variability of the enzyme under stress indicates the plant's resistance to abiotic stressors.

Growth parameters in the varieties were higher than in all stress variants in the control variants. This trend is reflected in the length of the leaf and root, the area of the leaf and the weight of the plant. In the study of resistance reactions in plants to these effects, it was found that the Tarifa variety is more salt tolerant than the Taltos and Cooper varieties. Na_2SO4 was more effective at 0.2% and 0.5% concentrations compared to those concentrations of NaCl. If we analyze the L_l / L_r ratio, we can see that this ratio is close to each other in all variants, except for the control variants, and is between 1.2-1.6.

Key words: Tariff-Taltos-Cooper beet varieties-salt stress-catalase-pigment-adaptation

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THE EFFECTS OF RESVERATROL IN GRAPE ON HEALTH

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ABSTRACT

Grape is a perennial plant and its fruit and leaves are consumed as food. Its homeland is thought to be the Middle East. There is evidence that the cultivation of this plant began 7-8 thousand years ago.

When we look at the content of ripe grapes, 100 grams of grapes contain 69 kilocalories of energy, 81% of them are water, 18% are carbohydrates, 1% is protein, and contain very little fat, vitamin K and vitamin E. Resveratrol (RSV) was first produced in the early 1930s by the medicinal plant *Veratrum grandifolium* Loes. fil., many studies have shown that it will be useful in clinical use due to the flavonoids and polyphenolic compounds found in grapes.

RSV is a natural non-flavonoid polyphenol belonging to the stilbenoid group, especially found in the skin of black grapes. Besides grapes, it is also found in various plants such as strawberries, blueberries, pomegranates, bilberries, mulberries, pistachios, and peanuts.

It is thought that RSV, which is found in dietary components, may have many effects such as antioxidant, anti-inflammatory, anticarcinogenic, neuroprotective, cardioprotective, lipid regulating, antidiabetic, and life-prolonging. The potential benefits of RSV have been widely studied in some animal experiments, with positive results. Clinical trials in humans, on the other hand, are less numerous and the results are not yet conclusive.

Considering the scientific studies done so far, it has been determined that RSV has tumor-suppressive properties in many stages of cancer. It is a powerful antioxidant that can prevent cell damage caused by free radicals. Radiotherapy or chemotherapy causes inflammation in neighboring cells of cancer cells, while RSV accelerates apoptosis by stimulating leukocytes to eliminate these lysed cells.

RSV improves lipid profile by reducing hepatic 3-hydroxy-3-methyl-glutaryl-CoA reductase in mRNA expression and potentially leading to reverse cholesterol transport. It has been shown that it can lower blood pressure by increasing endothelial nitric oxide (NO) production, reducing oxidative damage and calcium influx. While RSV does not cause any changes in blood pressure acutely, when used for a long time, it improves endothelial function, especially in hypertensive women with higher LDL cholesterol levels. Because polyphenols reduce atherogenesis by preventing low-density lipoprotein oxidation, fat accumulation, and platelet aggregation. Down-regulation of inflammatory pathways and regular signaling, decrease in IL-6, TNF alpha, interferon-gamma, Herp, IL-8, and leptin levels, down-regulation of leukocyte adhesion molecules, changes in mRNAs involved in inflammatory modulation, anti-inflammatory effect through an increase in IL-10 plasma levels shows.

Recent studies have shown that RSV has a curative effect on Alzheimer's disease and prevents neurological damage in case of cerebral ischemia. It has a protective effect against chronic obstructive pulmonary disease. Some recent studies on RSV have determined that it prolongs lifespan in some yeasts, threadworms, fruit flies, fish, and obese mice.

Keywords: grapes, resveratrol, flavonoids. health

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RESVERATROL AND CANCER: A REVIEW

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ABSTRACT

Due to their antimicrobial, antioxidant and anti-inflammatory activities, grapes (Vitis vinifera L.) are used not only for nutritional purposes but also for special therapeutics. Resveratrol, a phytoalexin antioxidant found in red grapes, is an important and promising phytochemical. Resveratrol (3,5,4′-trihydroxystilbene), a naturally occurring polyphenolic compound, is a polyphenol found in significant amounts in grapes, strawberries, peanuts and red wine. Resveratrol concentrations in red and white wines are 14 and 0.1 mg/L, respectively. Additionally, resveratrol concentrations in grape juice and whole grapes have been reported to range from 0.05 to 0.5 mg/L and up to 3.54 mg/L. The anti-cancer effect of resveratrol first reported in 1997 with the discovery of the Pezzutto group, especially on skin and breast cancer in mice. Until today, resveratrol continues to be a topic of current research due to its promising role in inflammation, tumorigenesis and cardioprotective effects.

Despite technological and pharmaceutical advances over the last decade, cancer remains a global burden. In general, cancer treatment consists of surgery, radiotherapy, anti-cancer drugs (chemotherapy), and other special techniques. Herbs have been used for years as complementary alternative therapy or dietary agents to affect cellular signaling. In this context, resveratrol has also been used as an alternative complementary therapy to treat different cancers. Many reports have shown that resveratrol offers a wide variety of preventive and therapeutic options against different types of cancer. Furthermore, resveratrol has been widely considered potentially useful for anti-cancer therapy when combined with other chemotherapeutic drugs. With the effectiveness of resveratrol in different types of cancer, including breast, bladder, cervix, liver, colon, uterus, blood, esophagus, stomach, kidney, eye, thyroid, prostate, brain, lung, and skin, has been done researches. Aluyen et al. explained the effects of resveratrol on different cancer cells by three mechanisms: cell apoptosis, antiproliferative and anti-inflammatory. Similarly, Varoni et al. focused on the effects of resveratrol on signaling pathways related to cancer-related growth factors and receptor tyrosine kinases, signal transduction by growth factor β, apoptosis, and inflammation.

As a result, resveratrol is thought to be a useful complementary medicine in the treatment of different types of cancer due to its natural source, safety and low cost compared to cancer drugs. However, more randomized, controlled studies are needed on this natural polyphenol.

Keywords: resveratrol, cancer, anticancer

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SENSORY EVALUATION OF KOMBUCHA WITH GRAPE MOLASSES

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ABSTRACT

Kombucha is a fermented functional beverage that started as a homemade beverage in Far East countries especially China and Japan and has become a commercial product in the world. it is a beverage produced by the fermentation of mainly black tea and sugar source by a symbiotic culture of bacteria and yeasts (SCOBY). Using sugar as a substrate is a traditional method but also other carbon sources can be used such as fruit molasses. It is characterized by slight sweetness and sourness with carbonation. According to the literature, kombucha has been consumed since 220 B.C..Kombucha was utilized as an effective folk medicine for some cultures and it was prized as "Remedy of Immortality" for detoxifying and energizing purposes. As kombucha consumers and accordingly the growth in the market increase, scientific research on kombucha also increases. The variety of kombucha products is increasing rapidly as well as the number of countries that produce and consume kombucha. The subjects of recent kombucha research are the composition of kombucha, the health benefits and health risks associated with consumption, the microbial composition of the cultures, the utilization of symbiotic cultures of bacteria and yeasts (SCOBYs), traditional and commercial processing methods, substrates used in fermentation, etc. Although the sensory properties of kombucha are a critical aspect of the beverage, there are not many publications investigating consumer sensory preference for this traditional grape molasses beverage. The objective of this study is to investigate using traditional grape molasses (in Turkish, pekmez) for kombucha as a substrate and to assess the sensory acceptability. In this study, sensory analysis was performed by semi-trained panelists at 0, 7, and 14 days of fermentation of kombucha using grape molasses. Sensory characteristics that include taste, odor, aroma, sourness, and total acceptability were tested by using a 5-point hedonic scale for liking. The most liked sample was the one on the 7th day of fermentation. In addition, 80% of the panelists answered "I consume" for the final kombucha. Then, various fruits and aromatic plants were added to enhance the flavor of kombucha, and as a result, the most liked mixtures were mint leaf-cucumber mixture and tangerine juice-myrtle fruit leaf and bay leaf mixture. We hope that this study will contribute to the researchers and the industry working on this beverage.

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Keywords: Kombucha, sensory analysis, grape molasses, tea, beverage, pekmez

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THE ROLE OF RESVERATROL IN NUTRITION: OBESITY

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ABSTRACT

Resveratrol (3,5,40-trihydroxy-trans-stilb-ne) is a natural polyphenol produced by several plants in response to pathogens or injuries such as bacteria or fungi. Resveratrol, which was first identified in the root of white hellebore and was biologically active, was found in excess in the root of the Polygonum cuspidatum plant, which was later used as an anti-inflammatory and anti-platelet agent in traditional Japanese and Chinese Medicine. Resveratrol is also found in the vine plant and has a protective effect against biotic infections such as *Botrytis cinerea*. Resveratrol, which is also found in foods such as grapes, blueberries, raspberries, peanuts (*Arachis hypogea*), cranberries (*Vaccinium spp.*), and mulberry peel, is the food with the highest amount of resveratrol. Therefore, red wine is the most concentrated dietary source of resveratrol. In the past years, after the strong anticancer effect of resveratrol in tumor initiation and progression stages, intensive research has begun on its bioactivities and beneficial effects on health. As a result of epidemiological studies, it was concluded that resveratrol is effective in the prevention of cancer and cardiovascular diseases. Resveratrol has received a lot of attention for its potential health benefits and is known as the "French paradox" in which consumption of red wine, the most concentrated nutrient for resveratrol, is associated with a low death rate from cardiovascular disease in the French population despite high saturated fat intake. Experimental studies have shown that resveratrol, which is known to have positive effects on cardiovascular diseases, also has positive effects on diseases such as obesity, diabetes, liver diseases, which are strongly associated with cardiovascular diseases, as well as Alzheimer's disease and Parkinson's disease. Obesity, which has become a global health problem worldwide in recent years, is the disease in which various alternatives are most widely adopted in terms of preventive, preventive, and therapeutic approaches. Metabolic stress greatly increases the risk of insulin resistance, impaired glucose tolerance, impaired fasting glucose, high blood triglycerides, altered cholesterol levels, type 2 diabetes, and cardiovascular disease. The resulting metabolic syndrome and chronic inflammation cause obesity. The known beneficial effects of resveratrol in terms of glucose and lipid homeostasis and reduced body fat are important in terms of adopting preventive and alternative approaches in the prevention and treatment of obesity.

Keywords: Metabolic Syndrome, Obesity, Resveratrol, Health