



**ÇANAKKALE ONSEKİZ MART UNIVERSITY
AGRICULTURE OF FACULTY**

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**INTERNATIONAL BALKAN
AGRICULTURE CONGRESS**

BOOK OF PROCEEDINGS AND ABSTRACTS

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Contents

Prospective Serbian Varieties of Wild Flax (<i>Camelina Sativa</i> (L.) Crantz) in The Prilep Region.....	12
The Effects of ecoAgra on Acclimatization of Tissue Cultured Banana Seedlings.....	18
Social Farming: Social Farming Projects in Türkiye and Their Outcomes	26
Assessing the Influence of Tirana's Agro-Ecological Conditions on the Nutritional Profile of Black Cumin (<i>Nigella sativa</i>).....	31
Dörtlü Bakteri Formülasyonlarının Yenice Kırmızı Biberi Gelişme, Verim ve Kalitesi Üzerine Etkisi.....	38
The Determination of Vegetative Development of Side Shoots and Some Characteristics of Second Crop Clusters Formed on the Side Shoots in Some Table Grapes	50
Corn Production And Fertilization Methods in Northwestern Anatolia.....	56
Genetic Divergence for Yield and Yield-Related Traits of Winter Barley Breeding Lines.....	59
Probiotic Bacteria Changes and Its Dynamics During Ripening Period of Fermented Sausages	67
Effect of Polylactic Acid (PLA) Coated Urea Fertilizer on Growth Characteristics of Silage Corn Plant	73
Impact of Different Starter Cultures on Quality Parameters of Kashkaval During Ripening	79
A Study of the Biological Characteristics of Grape Erineum Mite (<i>Colomerus Vitis</i>) in the Region of Southwestern Bulgaria	86
Evaluation of ICARDA Winter Barley Breeding Lines Under Southeastern Bulgarian Conditions	96
A Pepper Genotype Candidate for Geographical Indication Registration in the Selvi Region of Çanakkale: 'Selvi' Pepper	103
From Vineyards to Global Markets: The Evolution and Trends, Opportunities and Threats of Grape and Wine Industries in Portugal and Türkiye	109
Strategic Analysis of Olive and Olive Oil Markets Dynamics: Comparison of Evolution and Trends in Portugal and Türkiye and their Position in Global Context.....	126
Relationship between Agriculture and Tourism in Sustainable Development: Çanakkale Case	140
Electronic System For Automated Control of Greenhouse Irrigation	152
Abstracts	157
Investigation of Insecticidal Activity of Different Microbial Fertilisers on Diamondback Moth, <i>Plutella xylostella</i> L. (Lepidoptera: Plutellidae) Under Laboratory Conditions.....	163
Efficient Double Haploid Production by Anther Culture in Different Chickpea (<i>Cicer arietinum</i> L.) Genotypes	177
Effects of Different Maturity Periods on Berry Quality and Biochemical Properties in Müşküle Grape Variety (<i>V. vinifera</i> L.).....	178
Superfruit Aronia [<i>Aronia melanocarpa</i> (Michaux) Elliot]: Intersectoral Utilization Potential	179
Comparison of Chemical Properties of Olive Oils Obtained from Central District and Eceabat District	180
Evaluation of Elasmobranch Bycatch in the Waters Surrounding Gökçeada Island, Northern Aegean Sea.....	181
Determination of Fresh Food Preferences of <i>Tenebrio molitor</i> Larvae.....	182
A Case Study on the Zootechnical Evaluation of Traditional Dairy Sheep Farms in Çanakkale Based on the Animal-Oriented Approach	184
Innovative Approaches to Promote Nursery Seedlings Production.....	185
Comparative Analysis of Trend Forecasting Models for Standardized Precipitation Index (SPI) Data for Çanakkale.....	186
Weed Detection in Rice Paddy from Multispectral Images Using Deep Learning.....	187
Determination of the Detection Threshold of Adulteration of Extra Virgin Olive Oils with Sunflower Oil at Different Ratios by Physical Analysis and Chemical Measurements	188
The Effect of Glycine Betaine on Crude Oil and Fatty Acid Components of Sweet Corn (<i>Zea mays</i> L. <i>saccharata</i>) under Boron Toxicity	189
The Effect of Glycine Betaine on Crude Oil and Fatty Acid Components of Sweet Corn (<i>Zea mays</i> L. <i>saccharata</i>) Under Cadmium Stress.....	193
Performance of GGE Biplot Analysis in Assessing Genotype-by-Environment Interaction.....	194
The Future of Farming: Leveraging AI, Machine Learning, and Smart Systems for Optimal Agricultural Practices	196
Agricultural Land Use Trends in Istanbul: An Assessment Using CORINE Land Cover.....	197
Detection and Characterization of Tomato Brown Rugose Fruit Virus (ToBRFV) in Tomato and Pepper Growing Areas in Adana and Mersin Provinces	198
Detection and Molecular Diversity of Grapevine Leaf Roll Associated Virus 2 and 4 in Palestine	199
Variation in Parturition Trophic Behavior in Sheep Fed Diets of Three Puma Corn Silages in Mexico.....	200
POSTER.....	201
Effectiveness of Ozone and Chitosan Coating Applications on Storage Stability of Fresh Aronia	202
Preharvest 1-Methylcyclopropene Effects on Fruit Quality and Harvest Maturity of 'Cripps Pink' Apples	203
Determination of Quality Parameters of Olive Oils Produced from Gemlik Olive Variety in 2023 Harvest Year in Bursa Ecology	204
The Effects of Bacterial Applications Alternative to 1-MCP on the Storage of the Bursa Black Fig Variety	205
Potential of CRISPR/Cas9 Technology in Fruit Breeding	206
A Study of Volatile Aroma Compounds and Protein Value in Wild Collected Lactarius Deliciosus Mushroom in Çanakkale	207
Determination of Pomological Characteristics of Sirri Local Peach (<i>Prunus persica</i> L.) Type of Çanakkale Lapseki Ecology	208

Effects of Low Temperature Storage of <i>Ephestia kuehniella</i> Zeller (Lepidoptera: Pyralidae) Eggs in Different Periods on Larval Emergence.....	209
Effects of Low Temperature Storage of <i>Trichoramma pinto</i> (Voegelé) (Hymenoptera: Trichogrammatidae) Adults on Longevity and Parasitism Performance.....	210
Morphological Identification of Fusarium Species in Seed Corn in Çanakkale.....	211
Safety Problems in Feed Mixers.....	212
The Effect of Different Release Ratios of Predatory Mite <i>Phytoseiulus persimilis</i> Athias-Henriot (Acari: Phytoseiidae) for the Control of Tetranychus Urticae Koch (Acari: Tetranychidae) on Eggplant.....	213
Investigation of Mediterranean Fruit Fly's, <i>Ceratitidis capitata</i> Wiedemann (Diptera: Tephritidae) Developmental Stages on Different Hosts Under Laboratory Conditions.....	214
Plant Parasitic Nematode Fauna in Vineyard (<i>Vitis Vinifera</i> L.) Areas of Çanakkale Province.....	215
Innovations in Greenhouse Mechanization and Emerging Agricultural Technologies.....	216
Determination of Fusarium (<i>Fusarium oxysporum</i> f. sp. <i>melonis</i>) and Powdery Mildew (<i>Podosphaera xanthii</i>) Resistance of Some Melon Cultivars and Genotypes via Molecular Markers.....	217
Determination of Distribution Area and Damage Rate of <i>Halyomorpha halys</i> (Stål) (Hemiptera: Pentatomidae) in Hazelnut Areas of Çatalpınar (Ordu) District.....	218
Determination of Population Development of Tomato Leafminer (<i>Tuta absoluta</i> (Meyrick) (Lepidoptera: Gelechiidae) in Tomato Fields of Balıkesir Province.....	219
Investigation of The Biology of Flebane Species (<i>Erigeron spp.</i>) in Orchards.....	220
Development of a Pursuit Form for Herbicide-Resistant Weeds in Imi-Resistant Sunflower in the Marmara Region and Detection of Resistance in Weeds.....	221
Some Deep Learning Applications Using Convolutional Neural Networks in Agriculture.....	222
The Role of Transport in Agriculture.....	223
Carbon Stocks in Deciduous and Evergreen Oak Ecosystems in Greece.....	224
Challenges of Sustainable and Innovative Conservation Agriculture: an Assessment Based on Expert and Farmer Experiences.....	225
Materials and Ratios Used in the Manufacturing of Small Capacity Olive Oil Production Machines.....	226
Changes in Colour Parameters of Persimmon Varieties in Drying with Infrared Energy.....	227
Sustainable Soil Management in Maize Production.....	228
The Future of Animal Husbandry: Mechanization and Technological Innovations.....	229
Determination of Pesticide Analyzes in Avocado Fruits with the QuEChERS Method.....	230
Investigation of Pesticide Awareness Levels of Farmers in Çanakkale Province.....	231
The Use of Near Infrared Spectroscopy (NIRS) in Pesticide Residue Analysis.....	232
Effects of Conventional, Strip Tillage, and Ridge Planting Applications on Plant Emergence and Growth in Popcorn Cultivation.....	233
Importance of Automatic Steering Systems in Agricultural Production.....	234
Forecasting and Early Warning Systems in Viticulture.....	235
Carbon Footprint and Management in Turkish Agriculture.....	236
Effect of Elicitors on Biomass Growth Rate in Callus Culture of <i>Verbascum Scamandri</i>	237
Protocol of Agricultural Practices for Olive Cultivation in Island Regions.....	238
In-Season Estimation of Winter Wheat Phenology Using Variations of the Heat Unit Model.....	239
Industrial Hemp Cultivation in Greece.....	240
Forage Yield and Quality of Barley-Annual Medic Intercrops.....	241
Availability of Macro- and Micro Elements in Wastes Obtained from Soft Processing of Oriental Tobacco.....	242
Comparison Antioxidant Content of Red and Blue Maize Genotypes Using Different Extraction Methods.....	243
Comparison Pollen Characteristics and Seed Set of Stock-6 Inducer Line Under Greenhouse and Field Conditions.....	244
Production Potential of Perennial Energy Crops in Different Agro-Ecological Conditions of the Republic of Croatia.....	245
Cytogenetic Verification of Haploid Samples Classified by Visual (Eye) Discrimination.....	246
Trace Element Content of Oriental Tobacco- Evaluation Over Different Nutrition Rates.....	247
Fe Contents of Agricultural Soils Formed on Serpentine in Çanakkale/Türkiye.....	248
Effect of Some Fertilizer Types on the Viability of Micropropagated <i>Spathiphyllum</i> in the Acclimatization Stage.....	249
Effect of Pyrolysis By-Products on Ammonia Volatilization From Surface Application of Urea.....	250
Relationship Between Trace Element Contents and Soil Properties in Agricultural Soils of Kumkale Plain (Çanakkale, Türkiye).....	251
Study on the Life History Traits of the Blackmouth Catshark (<i>Galeus melastomus Rafinesque, 1810</i>) around the Gökçeada Coasts.....	252
Milk Components of Turkish Saanen Goats According to Different Lactation Stages and Farm Quality.....	254
The Economic Impact of Climate Change on Horticultural Production and Modern Biotechnological Approaches within the Context of Adaptation Studies.....	255
A Glance A St John's Worts Existing in Çanakkale Province T.....	256



International Balkan Agriculture Congress

Variability of Trace Element Uptake of Oriental Tobacco Plants Grown on Different Soil Properties.....	257
Biljana Jordanoska Shishkoska ^{1*} Valentina Pelivanoska ¹ Bojana Dimovska Gonovska ¹	257

Strategic Analysis of Olive and Olive Oil Markets Dynamics: Comparison of Evolution and Trends in Portugal and Türkiye and their Position in Global Context

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Abstract

The olive and olive oil industry plays a pivotal role in global agriculture and food markets, undergoing significant transformations due to shifts in production, consumption, and trade dynamics. This study provides a comparative analysis of the olive and olive oil markets in Portugal and Türkiye, countries with distinct production and consumption patterns, addressing a gap in the literature. Using data from the Food and Agriculture Organization (FAO), the International Olive Council (IOC), and national statistics, the research employs descriptive statistics and trend analysis to examine production, trade flows, consumption habits, and the impact of geographical indications (PGI, PDO).

The findings reveal substantial shifts in global olive and olive oil markets influenced by climate change, consumer preferences, and international trade policies. While Portugal focuses on high-quality olive oil production and exports, Türkiye is a major producer of table olives and olive oil, driven primarily by domestic consumption with growing export ambitions. The study highlights opportunities for regional market differentiation and strategic adaptation to global trends, alongside threats such as climate vulnerability and market volatility.

These insights are crucial for policymakers, producers, and consumers, offering strategic recommendations to capitalize on opportunities and mitigate risks. The research emphasizes the importance of future studies on climate change, consumer behavior, and technological advancements to support sustainable development and market competitiveness.

Keywords: Comparative Market Analysis, World Olive and Olive Oil Market, Portuguese and Turkish Olive and Olive Oil Industry, PDO and PGI regions

Introduction

The olive and olive oil industry stands as a cornerstone of global agriculture, particularly within the Mediterranean region, where it intertwines with cultural heritage, dietary habits, and economic development. Over recent decades, this industry has faced significant transformations driven by shifts in production practices, evolving consumer preferences, and global trade policies (FranceAgriMer, 2023; Tok, Çobanoğlu, & Tunalıoğlu, 2023). Among the key players in this sector, Portugal and Türkiye present

compelling case studies due to their distinct production and consumption dynamics, as well as their unique roles within the global market.

Portugal has established itself as a leader in the production of high-quality olive oil, underpinned by strong export-oriented strategies and certifications such as Protected Geographical Indication (PGI) and Protected Designation of Origin (PDO) (AGRO.GES, 2022). In contrast, Türkiye boasts a dual specialization in table olives and olive oil, characterized by a domestic consumption-driven market alongside burgeoning export ambitions (Kadakoğlu & Karli, 2023; Yurt, Kota, & Jarmai, 2019). These contrasting profiles offer a robust framework for comparative analysis, shedding light on the opportunities and threats faced by each country.

This study seeks to address critical gaps in the literature by analyzing the evolution, production, consumption, and trade dynamics of the olive and olive oil markets in Portugal and Türkiye. Using data from the Food and Agriculture Organization (FAO), International Olive Council (IOC), and national statistics, this research employs descriptive statistics and trend analysis to examine key performance indicators such as production quantities, trade flows, and *per capita* consumption (IOC, 2016; Balkan & Meral, 2017). Additionally, the study explores the role of geographic indications in enhancing market competitiveness and promoting sustainability (Tok et al., 2023).

The findings aim to provide actionable insights for stakeholders, including policymakers, producers, and consumers, enabling them to capitalize on emerging opportunities while mitigating risks such as climate change and market volatility. By situating Portugal and Türkiye within the global context, this research contributes to a deeper understanding of the dynamics shaping the olive and olive oil industry and offers strategic recommendations for fostering sustainable growth.

Literature Review

Global Olive and Olive Oil Market Trends

The global olive and olive oil market is a key component of agricultural trade, shaped by historical and emerging trends in production, consumption, and trade. The Mediterranean region accounts for over 90% of the world's olive oil production, with Spain, Italy, and Greece dominating global output. Recent

studies emphasize that globalization, consumer health trends, and climate impacts have significantly reshaped market dynamics. For instance, the rising popularity of the Mediterranean diet has spurred global demand for olive oil, particularly in non-traditional markets such as the United States and Asia (FranceAgriMer, 2023).

Climate change and its effects on olive cultivation are among the most pressing challenges for industry. The increasing frequency of extreme weather events has disrupted production cycles, particularly in rainfed olive-growing areas. Studies highlight that irrigation and modern production techniques are mitigating some of these impacts, particularly in the European Union (European Commission, 2023). Moreover, advancements in technology, such as precision agriculture and automated harvesting, are contributing to efficiency gains and improved quality standards (Kadakoğlu & Karli, 2023).

The influence of international trade policies and economic factors cannot be overlooked. Trade agreements, tariffs, and subsidies directly affect the competitiveness of olive oil exporters. For example, Türkiye's olive oil exports have faced challenges due to inconsistent trade policies and competition from EU producers (Çukur, Demirbaş, & Gölge, 2017). Meanwhile, certifications such as Protected Geographical Indication (PGI) and Protected Designation of Origin (PDO) have become critical for enhancing product differentiation and securing market niches.

The Olive and Olive Oil Markets in Portugal and Türkiye

Portugal and Türkiye represent distinct but complementary profiles within the global olive and olive oil markets. Portugal's olive oil sector is characterized by high-quality production and a strong export orientation. Its Alentejo region accounts for most of the national production, leveraging modern irrigation systems and state-of-the-art processing facilities (AGRO.GES, 2022). Portuguese olive oil has gained international recognition for its quality, bolstered by PDO certifications and strategic marketing campaigns.

Conversely, Türkiye is a dual powerhouse in table olives and olive oil. With the world's fifth-largest olive-growing area, Türkiye has seen a steady increase in production, supported by government subsidies and investments in modern processing technologies (Yurt et al., 2019). However, the Turkish market is predominantly domestic, with only a fraction of its production being exported. Studies

emphasize the need for Türkiye to improve its branding and marketing strategies to enhance its global competitiveness (Sönmüş & Aslan, 2021).

Despite extensive research on these individual markets, comparative analyses remain scarce. There is limited literature that directly compares the production methods, consumption habits, and trade policies of Portugal and Türkiye. This gap underscores the importance of this study in providing a comprehensive, data-driven comparison.

Role of PGI and PDO Regions in Market Differentiation

PGI and PDO certifications play a pivotal role in differentiating high-quality olive oil in the global market. These designations protect regional specialties and enhance consumer trust by ensuring product authenticity and traceability. In Portugal, PDO-certified olive oils such as those from Trás-os-Montes and Alentejo have gained international acclaim, significantly boosting exports (AGRO.GES, 2022).

Türkiye has also leveraged geographical indications for its table olive varieties, such as “Akhisar Domat” and “Gemlik”, which are well-regarded for their unique characteristics. However, the use of PDO and PGI certifications in Turkish olive oil remains underdeveloped compared to European producers (Tok et al., 2023). Increasing the adoption of these certifications could improve Türkiye's market positioning and competitiveness.

Key Gaps in Comparative Analyses of Portugal and Türkiye

Existing literature on the olive and olive oil markets predominantly focuses on individual countries or global trends, leaving a critical gap in comparative studies. For example, research has extensively analyzed the competitiveness of Turkish olive oil (Türkecul et al., 2010) and the sustainability of Portuguese olive groves (AGRO.GES, 2022), but few studies have attempted to compare these markets within a unified framework.

This gap is particularly significant given the complementary roles that Portugal and Türkiye could play in the global market. By combining Portugal's emphasis on high-quality, branded exports with Türkiye's volume-driven production strategy, stakeholders could identify synergies and address shared challenges, such as climate change and market volatility. This study addresses these gaps by providing a

detailed quantitative analysis of production trends, trade flows, and market dynamics, offering actionable insights for policymakers and industry leaders.

Methodology

Data Sources

This study relies on data from reputable and comprehensive sources, including the Food and Agriculture Organization (FAO), the International Olive Council (IOC), and national statistics from Portugal and Türkiye. These sources provide extensive datasets on production volumes, trade flows, consumption patterns, and the economic importance of olives and olive oil.

The FAO offers global agricultural datasets, including time-series on olive cultivation and trade, which are crucial for trend analysis (FranceAgriMer, 2023). The IOC provides detailed insights into olive oil quality, market trends, and geographical indicators, as seen in the IOC's 2019 report (IOC, 2019). Country-specific data are gathered from statistical offices such as the Instituto Nacional de Estatística (INE) in Portugal and the Turkish Statistical Institute (TurkStat), which deliver granular data on regional production and consumption dynamics.

Analytical Techniques

To examine the data, the study employs descriptive statistics and trend analysis: descriptive statistics summarizes data using measures such as averages, percentages, and distributions, enabling direct comparison between Portugal and Türkiye on metrics such as production efficiency and trade balances. These summaries provide a clear understanding of market behaviors across key variables; and trend analysis, to identify patterns and shifts in market behavior over time, employing historical data to project future trends. For example, production and trade trends from 2010 to 2022 are analyzed to discern the effects of technological advancements and climatic changes (Balkan & Meral, 2017).

Variables

The analysis emphasizes key variables essential for understanding the dynamics of the olive and olive oil markets and the competitive positioning of Portugal and Türkiye within a global context. These

variables include annual production volumes of olives and olive oil, which provide insights into production capacities, as well as trade metrics such as the volume and economic value of imports and exports, shedding light on trade balances and market positioning. Additionally, domestic consumption patterns in both countries are examined through *per capita* consumption data, offering a detailed understanding of internal demand structures. The significance of Protected Geographical Indications (PGI) and Protected Designations of Origin (PDO) is also analyzed, highlighting their role in enhancing market value and product differentiation, as emphasized by Tok et al. (2023). These factors contribute to identifying trends, opportunities, and challenges that shape the market landscape and inform strategic decision-making.

Comparative Framework for Analyzing Market Structures

The comparison of market structures between Portugal and Türkiye is conducted across four key dimensions. First, production efficiency is evaluated by examining agricultural practices, yield rates, and technological advancements, providing insights into the productivity and sustainability of each country's olive and olive oil industries. Second, the analysis considers market size and trade balances, focusing on trade flows and the balance between imports and exports to assess overall market strength and the emphasis on domestic consumption versus export orientation. Third, the study investigates the internal *versus* external market focus, exploring the relative importance of domestic demand compared to export-driven strategies to better understand each country's market positioning. Lastly, global positioning is analyzed by situating findings within broader international market trends, utilizing frameworks such as SWOT analysis to identify the strengths, weaknesses, opportunities, and threats faced by both countries in the global context.

Criteria for Selecting Portugal and Türkiye as Case Studies

Portugal and Türkiye were chosen due to their prominent roles in the olive and olive oil sectors and their contrasting market characteristics. Portugal's emphasis on high-quality production and export orientation contrasts with Türkiye's volume-driven production and domestic consumption focus. These differences provide a robust framework for comparative analysis, particularly in addressing shared challenges such as climate change and trade barriers (Kadakoğlu & Karli, 2023).

Scope and Limitations

This study examines the olive and olive oil markets in Portugal and Türkiye from 2010 to 2022, with a particular focus on production, trade, and consumption dynamics. However, certain limitations must be acknowledged. Data constraints arise from variability in the granularity and availability of information across sources, particularly for smaller production regions. Additionally, the methodological approach is limited by the absence of econometric modeling, which confines the analysis to descriptive and trend-based insights, reducing its predictive accuracy. Despite these limitations, the study offers valuable comparative insights, equipping stakeholders with the necessary information to inform market strategies and guide policy development.

Results and Discussion

Evolution of the Global Olive and Olive Oil Markets

The global olive and olive oil markets have undergone significant transformations over the last few decades. Spain remains the dominant global producer, contributing over 50% of the world's olive oil, followed by Italy, Greece, and Türkiye. The global demand for premium olive oil has surged, driven by health trends emphasizing the benefits of the Mediterranean diet (FranceAgriMer, 2023). This has catalyzed market growth in emerging regions such as North America and Asia.

Trade policies and tariffs have played a crucial role in shaping market dynamics. For instance, the EU's subsidies for olive oil production have given European producers a competitive edge over non-EU countries like Türkiye (Çukur, Demirbaş, & Gölge, 2017). Furthermore, technological innovations such as precision agriculture and advanced irrigation systems have enhanced production efficiency and quality (Kadakoğlu & Karli, 2023).

Comparative Analysis of Portugal and Türkiye Within the Global Market

Portugal and Türkiye occupy unique positions in the global olive and olive oil markets. Portugal focuses on high-quality, PDO-certified olive oils, positioning itself as a premium exporter. Conversely, Türkiye is a significant producer of both table olives and olive oil, with a market driven largely by domestic consumption but growing export ambitions (Tok et al., 2023).

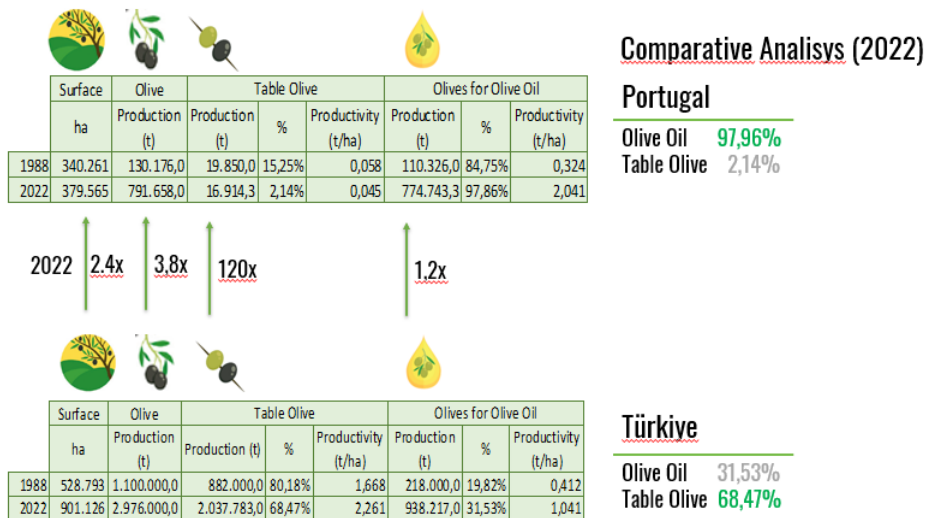


Figure 1. Comparative Analysis - Portugal and Türkiye

Portugal's Production Trends in Olives and Olive Oil

Portugal has steadily increased its olive oil production, with the Alentejo region accounting for nearly 75% of national output. This growth is attributed to advancements in irrigation and processing technology, as well as government incentives promoting modern agricultural practices (AGRO.GES, 2022). PDO certifications, such as those for Trás-os-Montes olive oil, play a critical role in maintaining high production standards.

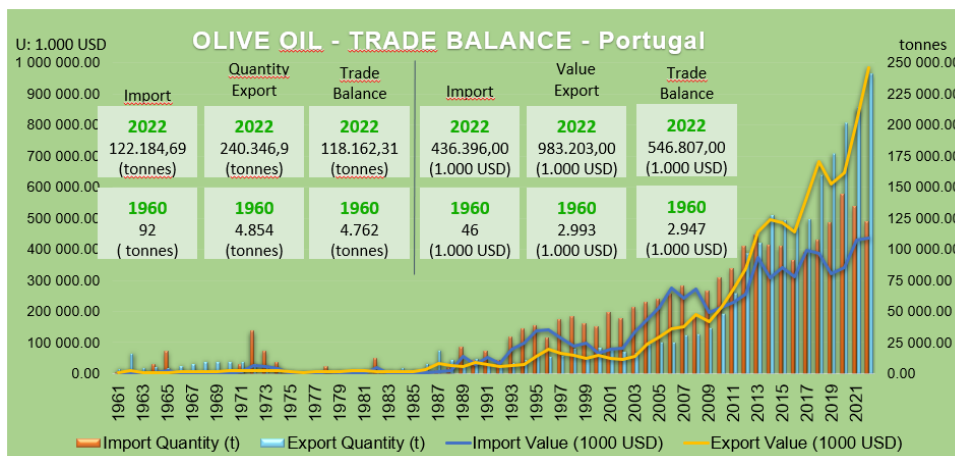


Figure 2. Trade balance of Olive Oil in Portugal from 1961 to 2021

Portugal's olive oil exports are concentrated in Europe and North America, with Spain and Italy as its primary trade partners. Exports represent a significant portion of their market strategy, with high-quality products commanding premium prices (FranceAgriMer, 2023). Domestic olive oil consumption

in Portugal has remained stable, with increasing demand for organic and artisanal products. Internationally, Portuguese olive oil is highly regarded for its quality, driven by strategic branding and marketing efforts (AGRO.GES, 2022).

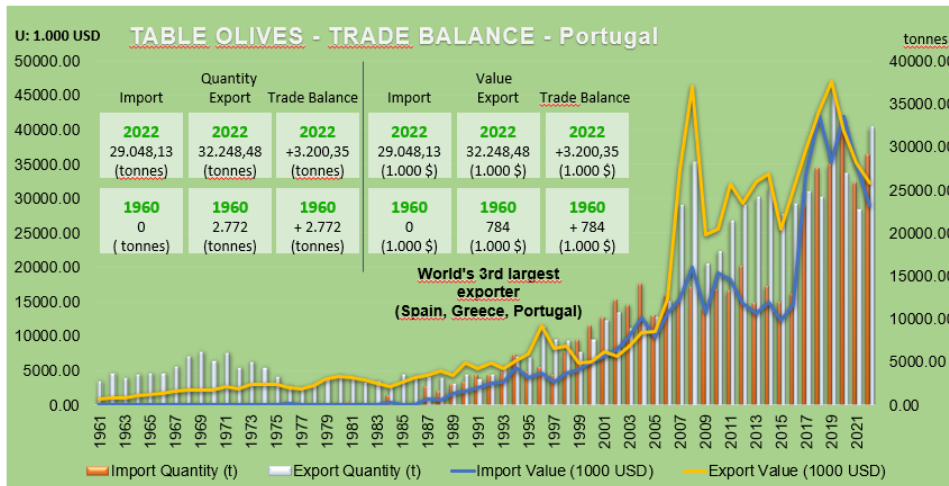


Figure 3. Trade balance of Table Olives in Portugal from 1961 to 2021

Türkiye's Production Trends in Olives and Olive Oil

Türkiye is the fifth-largest olive oil producer globally, with production concentrated in regions such as Aegean and Marmara. The country is also a leading producer of table olives, with varieties such as Gemlik and Akhisar Domat gaining recognition for their quality (Tok et al., 2023). Government policies, including subsidies and technical support, have significantly boosted production levels (Kadakoğlu & Karli, 2023).

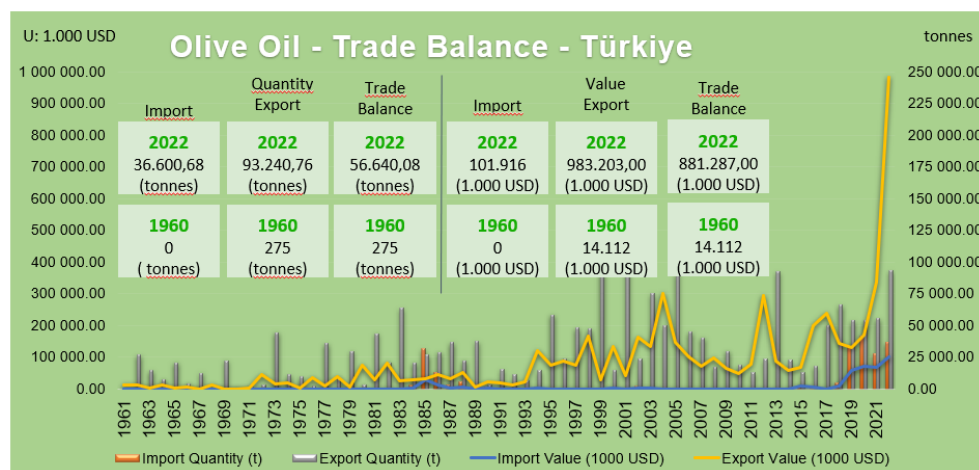


Figure 4. Trade balance of Olive Oil in Türkiye from 1961 to 2021

Türkiye’s primary export markets for olive oil include Europe, the Middle East, and Asia. However, challenges such as quality control and market access barriers hinder its ability to compete with EU producers. Despite these obstacles, Türkiye’s export volume has grown steadily over the past decade (Çukur et al., 2017). Olive oil and table olives are staples in Turkish cuisine, with domestic consumption surpassing exports. However, *per capita* olive oil consumption is growing as consumers shift towards healthier dietary habits (Yurt et al., 2019).

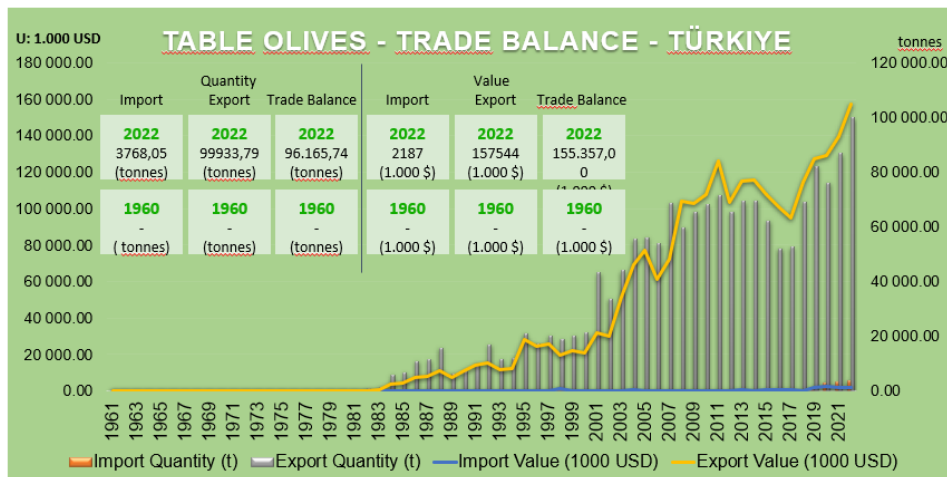


Figure 5. Trade balance of Table Olives in Türkiye from 1961 to 2021

Comparative Analysis: Key Differences in Production Methods, Consumption Habits, and Trade Dynamics

The olive oil industries in Portugal and Türkiye exhibit notable differences in production methods and market structures. Portugal prioritizes mechanization and quality, leveraging its Protected Designation of Origin (PDO) regions to secure a premium position in the global market. This approach ensures consistency in quality and supports the country’s focus on high-value exports. In contrast, Türkiye’s production is characterized by its high volume, largely driven by traditional agricultural practices and bolstered by government support. This production model highlights Türkiye's emphasis on quantity over premium positioning, reflecting a different strategic focus (Balkan & Meral, 2017).

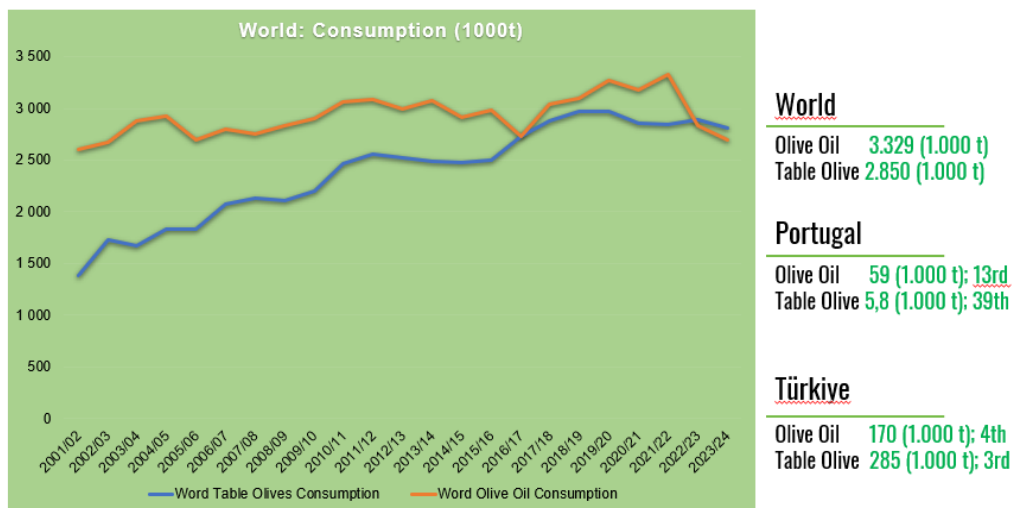


Figure 6. World consumption of Olive Oil and Table Olives from 2001 to 2024

Domestic consumption trends further underscore these differences. In Portugal, there is a strong preference for artisanal and organic olive oil products, aligning with consumer shifts toward sustainability and health-conscious choices. By contrast, Türkiye’s domestic market is dominated by table olives and traditional olive oil products, reflecting a deep integration of these items into its culinary traditions. Türkiye also reports higher per capita consumption, indicative of the staple role olive oil plays in Turkish diets (AGRO.GES, 2022).

When examining trade dynamics and global positioning, the strategies of the two countries diverge. Portugal has established itself as an export-oriented producer, leveraging its reputation for high-quality olive oil to access premium international markets. In comparison, Türkiye’s export ambitions are still developing. While Türkiye has the potential to grow its presence in global markets, it remains an emerging competitor. Both countries face significant competition from dominant producers such as Spain and Italy, but they could enhance their positions through strategic branding and the expanded use of quality certifications. These efforts would help differentiate their products and increase competitiveness in high-value markets (Tok et al., 2023).

Conclusion

This study highlights the distinct dynamics of Portugal and Türkiye's olive and olive oil markets, emphasizing both their unique strengths and shared challenges. Portugal’s market is characterized by its focus on high-quality olive oil production, leveraging Protected Geographical Indication (PGI) and

Protected Designation of Origin (PDO) certifications to secure a competitive edge in premium export markets. Conversely, Türkiye is a dual powerhouse in olive oil and table olive production, driven largely by domestic consumption but increasingly focused on expanding its global footprint (AGRO.GES, 2022; Tok et al., 2023).

Key differences include production methods, market structures, and trade orientations. Portugal's reliance on mechanization and high standards contrasts with Türkiye's more traditional methods and volume-oriented approach. Both countries, however, face common challenges such as climate change, market volatility, and competition from dominant players like Spain and Italy.

Strategic Recommendations and Implications for Policymakers and Market Stakeholders

Policymakers in both Portugal and Türkiye should prioritize supporting sustainable growth by investing in adaptive agricultural practices to mitigate the impacts of climate change. This entails promoting water-efficient irrigation systems and incentivizing sustainable farming methods, as emphasized by recent studies (FranceAgriMer, 2023). For Portugal, enhancing Protected Designation of Origin (PDO) certifications remains crucial to maintaining its premium market position. On the other hand, Türkiye should expand its application of quality certifications to improve market perception and access high-value markets. Furthermore, trade policies require attention from policymakers in both nations. Negotiating favorable trade agreements, particularly those that address tariffs and non-tariff barriers, is essential to facilitate exports. Türkiye, in particular, must address quality control issues to align with European Union standards (Çukur, Demirbaş, & Gölge, 2017).

Producers in both countries should focus on improving efficiency and quality in olive oil production. Portuguese producers can achieve this by leveraging advanced mechanization and adopting sustainable practices, thereby enhancing both efficiency and product quality. Turkish producers, meanwhile, should embrace innovative technologies to increase production efficiency while preserving traditional methods that contribute to the authenticity of their products. In addition, strategies to counteract the impacts of climate change are critical. These strategies include diversifying crop varieties and investing in climate-resilient technologies to ensure long-term sustainability.

Exporters and traders should focus on diversifying markets to capitalize on growing demand for premium olive oil in emerging markets across Asia and North America. Türkiye, in particular, should leverage its production scale to target mid-tier markets alongside premium segments, thus maximizing its export potential (Kadakoğlu & Karli, 2023). Branding and marketing efforts are equally essential. Portugal's success in premium branding provides a model for Türkiye, which should focus on leveraging geographical indications to enhance product differentiation and improve competitiveness in the global market.

Strategic recommendations for stakeholders

In the olive oil sector, recommendations should be tailored to address the unique strengths and challenges of each country. Portuguese stakeholders are encouraged to enhance branding efforts for olive oils with Protected Designation of Origin (PDO) certifications. By targeting health-conscious consumers in high-income markets, they can capitalize on the premium positioning of their products. Turkish stakeholders, on the other hand, should focus on developing integrated marketing strategies that emphasize ongoing quality improvements and the cultural authenticity of their olive oil. This approach will enable Türkiye to establish a stronger presence in competitive export markets (Tok et al., 2023).

Future research

Future research should focus on several critical areas to further advance the understanding of the olive and olive oil markets. First, studies should examine the long-term effects of climate change on olive yield and quality in Mediterranean regions. Scenario analyses would be particularly valuable in identifying adaptive strategies for producers in both Portugal and Türkiye, ensuring resilience against environmental challenges. Second, research should investigate the role of precision agriculture and digital technologies in enhancing production efficiency and sustainability. Understanding how these innovations can be effectively implemented in the olive oil sectors of both countries could significantly improve their competitiveness. Lastly, future studies should explore evolving consumer preferences, particularly how the increasing emphasis on sustainability and health influences purchasing behaviors. Special attention should be given to the growing demand for organic and premium olive oil.

This study has provided a comprehensive understanding of the olive and olive oil markets in Portugal and Türkiye, offering actionable insights to support stakeholders in navigating the complexities of the evolving global market.

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