

Review Article / Derleme Makale

Regional Distribution of Geographically Indicated Dried Legumes and Dried Legume Dishes in Türkiye

Türkiye’de Coğrafi İşaretli Kuru Baklagiller ve Kuru Baklagil Yemeklerinin Bölgesel Dağılımı

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Abstract

This study aims to identify dry legume products with geographical indications from the seven regions of Türkiye and to analyze the regional distribution of geographically indicated dishes prepared with these legumes. Legumes are known for their environmental sustainability and health benefits and hold a significant place in Turkish culinary culture. Türkiye, with its rich agricultural diversity and deep-rooted gastronomy, hosts numerous local products. Geographical indication (GI) plays a critical role in protecting and promoting these products.

The basic data source for this study is the online database of the Turkish Patent and Trademark Office (TÜRKPATENT), the official authority responsible for the registration of geographical indications and traditional product names in Türkiye. Secondary data were also compiled from domestic and international organizations. Additionally, a literature study was conducted using academic studies obtained from databases such as Google Scholar, Web of Science, and Science Direct, with keywords like “Geographical Indication,” “Dry Legumes,” and “Legume Dishes.” The study analyzed the regional distribution of geographically indicated products and dishes.

The research findings reveal that Türkiye has a total of 24



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geographically indicated dry legume products. When examining regional distribution, the Black Sea Region stands out with eight types of dry beans, making it the region with the highest number of geographically indicated legumes. Conversely, the Southeastern Anatolia Region has only one product, the lowest number. There are a total of 72 geographically indicated dishes containing dry legumes, with chickpeas being the most frequently used legume in these dishes. The Southeastern Anatolia Region leads in this category, with 28 geographically indicated dishes.

Geographical indication serves as an essential tool for preserving local products and passing them on to future generations. Considering Türkiye's rich culinary culture and geographical diversity, the promotion of geographically indicated products and dishes holds significant potential for gastronomy tourism. In this context, it is imperative to standardize the production and consumption processes of geographically indicated products and ensure sustainability. Geographical indication can be considered as a strategy that supports both environmental and cultural sustainability.

Özet

Bu çalışma, Türkiye'nin yedi coğrafi bölgesinde coğrafi işaret tesciline sahip kuru baklagil ürünlerini belirlemeyi ve bu baklagillerle hazırlanan coğrafi işaretli yemeklerin bölgesel dağılımını analiz etmeyi amaçlamaktadır. Çevresel sürdürülebilirlikleri ve sağlık açısından faydaları ile bilinen baklagiller, Türk mutfak kültüründe önemli bir yere sahiptir. Zengin tarımsal çeşitliliği ve köklü gastronomik geçmişiyle Türkiye, çok sayıda yerel ürüne ev sahipliği yapmaktadır. Coğrafi işaret (Cİ), bu ürünlerin korunması ve tanıtımı açısından kritik bir rol üstlenmektedir.

Bu çalışmanın temel veri kaynağını, Türkiye'de coğrafi işaretlerin ve geleneksel ürün adlarının tescilinden sorumlu resmi otorite olan Türk Patent ve Marka Kurumu'nun (TÜRKPATENT) çevrim içi veri tabanı oluşturmaktadır. İkincil veriler ise yurt içi ve yurt dışı kuruluşlardan derlenmiştir. Ayrıca, "Coğrafi İşaret," "Kuru Baklagiller" ve "Baklagil Yemekleri" gibi anahtar kelimeler kullanılarak Google Scholar, Web of Science ve Science Direct gibi veri tabanlarından elde edilen akademik çalışmalarla literatür taraması gerçekleştirilmiştir. Çalışmada, coğrafi işaretli ürünlerin ve yemeklerin bölgesel dağılımı incelenmiştir.

Araştırma bulgularına göre, Türkiye genelinde toplam 24 adet coğrafi işaretli kuru baklagil ürünü

bulunmaktadır. Bölgesel dağılım incelendiğinde, sekiz farklı kuru fasulye türü ile Karadeniz Bölgesi en fazla coğrafi işaretli baklagil ürününe sahip bölge olarak öne çıkmaktadır. Buna karşılık, yalnızca bir ürüne sahip olan Güneydoğu Anadolu Bölgesi en az sayıya sahip bölgedir. Kuru baklagil içeren coğrafi işaretli yemek sayısı toplamda 72 olup, nohut bu yemeklerde en sık kullanılan baklagil türüdür. Bu kategoride Güneydoğu Anadolu Bölgesi, 28 coğrafi işaretli yemek ile ilk sırada yer almaktadır.

Coğrafi işaret, yerel ürünlerin korunması ve gelecek nesillere aktarılması açısından önemli bir araçtır. Türkiye'nin zengin mutfak kültürü ve coğrafi çeşitliliği dikkate alındığında, coğrafi işaretli ürünlerin ve yemeklerin tanıtımı, gastronomi turizmi açısından büyük bir potansiyel taşımaktadır. Bu bağlamda, coğrafi işaretli ürünlerin üretim ve tüketim süreçlerinin standartlaştırılması ve sürdürülebilirliğinin sağlanması büyük önem arz etmektedir. Coğrafi işaret hem çevresel hem de kültürel sürdürülebilirliği destekleyen bir strateji olarak değerlendirilebilir.

INTRODUCTION

The terms "legume" and "pulse" are frequently used interchangeably, yet they hold distinct meanings. "Legume" refers to plants belonging to the Leguminaceae or Fabaceae family, characterized by their fruit enclosed in a pod. In contrast, "pulse," derived from the Latin word *puls*, specifically denotes dried seeds (1, 2). Legumes are considered the most environmentally sustainable plant species, playing a crucial role in animal nutrition and the prevention of various diseases, including diabetes, heart disease, and cancer (1). In Türkiye, edible legumes rank second only to cereals in human nutrition, with beans, lentils, and chickpeas being the most significant varieties consumed in dry form (3). These legumes are predominantly prepared in stews or similar dishes in Turkish cuisine (4).

Türkiye's rich history and traditional production methods contribute to its abundance of local products (5). Traditional foods hold substantial value for gastronomy tourism, as tourists increasingly seek destinations that preserve

local flavors. To protect these local products and ensure their longevity, legal regulations have been implemented. One such regulation is the geographical indication (5, 6). A geographical indication (GI) denotes a product's place of origin. These indicators, recognized by their place names, signify products with distinctive qualities that are passed down through generations. Local products are identified by their GI emblems (7, 8, 9).

Geographically indicated products have begun to play a significant role in the development of gastronomy tourism (10, 11). From past to present, there has been a noticeable increase in interest and usage of local products, which has also highlighted the growing importance of geographically indicated products. The close interconnection among ecotourism, agrotourism, and gastronomy tourism is conceptually linked to geographical indications as well (11).

In local development initiatives, particularly in the context of gastronomy tourism, geographically indicated products derived from agriculture can be regarded as supportive and complementary elements. Thus, geographical indications emerge as a frequently used tool for fostering local economic development within the framework of gastronomy tourism (12).

This study aims to identify legume products in Türkiye that have received geographical indications and the geographically marked dishes incorporating these products. Given the environmental benefits of legumes and their positive health impacts, this research is significant for gastronomy tourism. It highlights geographically marked legumes and dishes, promoting their prioritization in consumer preferences.

Conceptual Framework

Legumes

Legumes, the seeds of plants in the Leguminaceae family, derive their name from the Latin term "Legumen," which refers to the harvested seeds of podded faba beans (13, 14). Pulses, a subgroup within the legume family, specifically denote dried seeds (1). Mature legume grains are rich

in proteins that contain essential amino acids, cellulose, starch, and minerals. Legumes serve as an excellent alternative to animal proteins, often referred to as "the meat of the poor" due to their affordability compared to meat (15, 16). The crude protein content of edible legumes generally exceeds 20%, with an average range of 18-31.6%, varying by variety (17, 18). The nutritional impact of legumes depends not only on the protein quantity but also on the protein quality, influenced by amino acid composition, amino acid imbalance, and amino acid bioavailability (19, 14).

Legumes enhance the physical, chemical, and biological properties of the soil due to the nodosity bacteria in their roots, which increase organic matter and positively affect the yield of subsequent crops (20). These soil benefits are crucial for environmental sustainability and sustainable agriculture (21).

In Türkiye, it is estimated that 1.5 million tons of pure nitrogen-based fertilizers are consumed annually, equivalent to 600,000 tons of pure nitrogen compounds, potentially leading to significant environmental pollution (22). Green fertilization often employs legume and wheatgrass species, such as fodder peas, rape, turnip, grass, rye, and oats (23). The use of mineral nitrogen (especially nitrate) fertilizers in agriculture plays a major role in water and air pollution. It is proposed that incorporating legume plants and using effective bacteria in inoculation could add atmospheric nitrogen to the soil, thereby reducing environmental pollution and conserving energy (23, 24).

The Importance of Legumes in Turkish Culinary Culture

Turkish cuisine is a significant element of Turkish culture. The richness of Turkish culinary heritage is shaped by historical events, geographical conditions, ecological factors, cultural and economic structures, traditions and customs, as well as interactions with other cultures throughout history (25, 26).

Although Turkish cuisine exhibits regional variations, it generally includes a wide array of soups, cereals, meat and vegetable stews, olive

oil dishes, pastries, fried foods, desserts, and traditional beverages (25, 26).

An analysis of Turkish culinary culture from past to present reveals that prominent foods include wheat, bulgur, aşure, keşkek, tarhana, and molasses. Given Anatolia's favorable climate for wheat cultivation, it is noted that dishes incorporating wheat, flour, and bulgur—often combined with various legumes, yogurt, meat, and vegetables—form the foundation of Anatolian Turkish culinary culture (27).

Chickpeas, lentils, and dried beans are the most consumed legume products in Türkiye. In Turkish cuisine, stews made from dried legumes such as chickpeas, dried beans, and lentils are particularly prevalent. Vegetables such as potatoes, carrots, and onions, added during the cooking of legumes, enhance their nutritional value. These legumes play a crucial role in meeting the daily nutritional needs of individuals who do not consume meat dishes. Serving these stews with rice or bulgur pilaf and ayran (a traditional yogurt-based beverage) provides a balanced meal (4, 28, 29).

Local Products and Geographical Indication

In recent years, numerous studies have indicated that tourists with higher levels of education and cultural awareness are increasingly planning their travels around the local characteristics of their destinations, rather than adhering to the traditional holiday concept of the sea-sand-sun trio (30, 31). It has been noted that local food and beverages, along with the presence of renowned restaurants and chefs, play a significant role in shaping these tourists' travel itineraries (32). Local food and products have thus become critical factors in travelers' destination preferences (33). The desire of tourists to taste local dishes and learn about their production methods underscores the importance of local cuisine for both the local populace and gastronomy tourism (34).

Today, countries are making substantial investments in gastronomy tourism, which must be sustainable to provide economic benefits to local communities (35). Local products are pivotal for the sustainability of gastronomy

tourism, and maintaining consistent quality, authenticity, and standards of these products is crucial for the sector's development (36, 37).

Türkiye is rich in local products due to its diverse culinary culture, traditional production methods, and variety of agricultural products. These local products, which are closely linked to their regions of origin, are an integral part of the local culture. To protect these products and prevent their imitation, many countries have implemented legal regulations. One such regulation is the geographical indication (5, 38, 9).

Geographical indication has emerged as a primary form of trademark because it conveys information about the origins of products, including their characteristics and the connection between these characteristics and the geographical area (39). The Turkish Patent and Trademark Office (40) defines a geographical indication as "a sign that indicates a product identified with the region, area, or country of origin in terms of distinctive quality, reputation, or other characteristics. When all characteristics of a product originate from the physical and human elements of a specific geographical region, these indications are called 'designations of origin.' The cultivation, processing, and all production stages of such products must occur within the boundaries of a specific geographical area, ensuring strong ties between the product and its region of origin. Geographical indications identified with a specific geographical area due to a particular feature or other qualities, and where at least one of the production, processing, or other stages must be carried out within this area, are termed "geographical indications" (41).

METHODOLOGY

This study aims to identify geographically indicated legume products from Türkiye's seven regions and to analyze the regional distribution of geographically indicated dishes prepared with these products.

The primary data for this study was derived from the online platform of the Turkish Patent and Trademark Office (TÜRKPATENT) (<https://ci.turkpatent.gov.tr/>), the official authority

responsible for the registration of geographical indications and traditional product names in Türkiye, as well as secondary data collected from domestic and international organizations. Additionally, relevant literature was utilized.

The literature study was conducted using databases such as Google Scholar, Web of Science, and Science Direct. Keywords such as *Geographical Indication*, *Dry Legumes*, and *Legume Dishes* were used to locate both Turkish and English academic studies. The searches focused on academic works examining geographical indications, geographically indicated legumes, and dishes made with legumes.

Dried Legumes with Geographical Indication

An analysis of geographically marked dry legumes in Türkiye reveals a total of 24 products. When categorized by region, the Southeastern Anatolia region has one product, namely the “Mardin Kızıltepe red lentil.” The Black Sea region has the highest number of geographically indicated products, with eight varieties, all of which are “Dry beans.” Table 1 shows the legumes in Türkiye that have received geographical (42).

Dry beans are cultivated primarily as an affordable protein source, particularly in developing countries, where they contribute to meeting dietary needs, provide economic

benefits to rural populations, and are a significant commodity in global trade (43). They are the most widely produced type of edible legumes globally (44).

Despite being introduced to Türkiye after the 17th century, the common bean (*Phaseolus vulgaris* L.) has adapted particularly well to the Black Sea Region. This edible legume crop has demonstrated extensive variation in this region (45).

Dry beans hold a vital place among Türkiye’s agricultural lands and products. Although the cultivation area for dry beans fluctuates over the years, their widespread use, agricultural benefits, and established status as a traditional crop among Black Sea Region farmers make them indispensable (46). In the Black Sea Region, beans are a key component of traditional mixed-cropping systems practiced on small plots. This crop has diversified to such an extent that the region has become a micro-gene center for beans (47, 48).

Figure 1. Regional Distribution of Geographically Indicated Dry Legume Products in Türkiye (42)

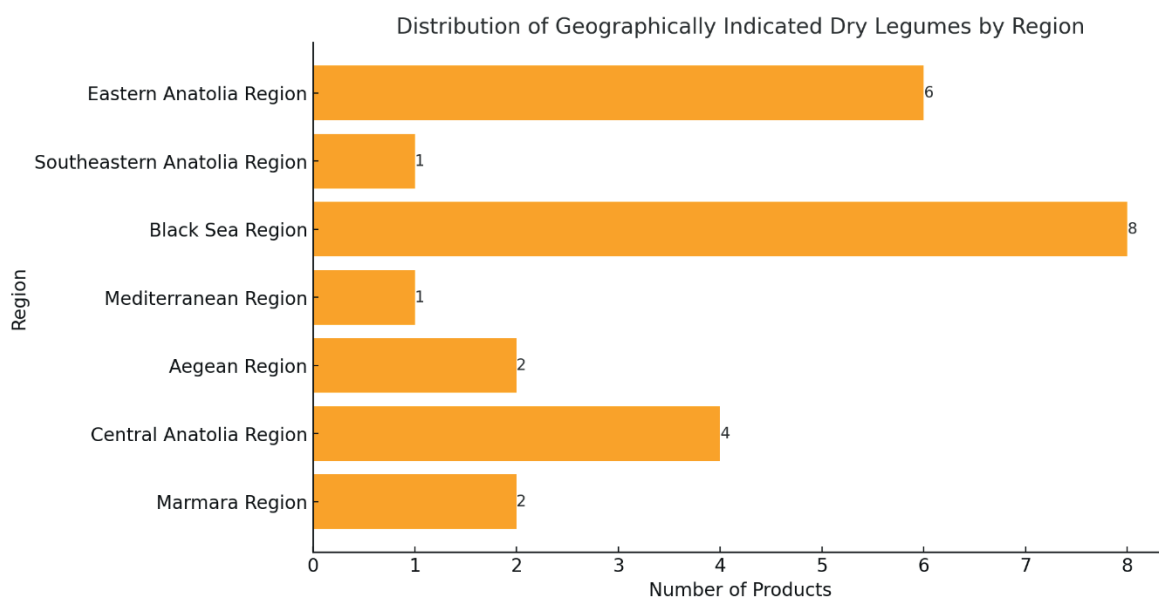


Table 1. Geographical indications for dried legume products in Türkiye (42)

Province/Region	Name of Geographical	Indication Type of Geographical	Indication Date of Registration
Balıkesir/Marmara Region	Manyas Kazak Bean	Protected Designation of Origin	5.07.2023
Bursa/Marmara Region	İnegöl Cerrah Dry Bean	Protected Designation of Origin	7.06.2023
Ankara/Central Anatolia Region	Akyurt Teberik Bean	Protected Designation of Origin	22.12.2023
Konya/Central Anatolia Region	Akçabelen (Çetmi) Sugar Bean	Protected Geographical Indication	29.08.2019
Nevşehir/Central Anatolia Region	Derinkuyu Dry Bean	Protected Geographical Indication	22.11.2021
Sivas/Central Anatolia Region	Suşehri Dry Bean	Protected Designation of Origin	10.06.2022
İzmir/Aegean Region	Çavuşdağı Dry Bean	Protected Designation of Origin	2.08.2021
Denizli/Aegean Region	Çameli Bean	Protected Geographical Indication	27.07.2018
Adana/Mediterranean Region	Tufanbeyli Dry Bean	Protected Designation of Origin	30.01.2023
Bolu/Black Sea Region	Bolu Çivril Bean	Protected Geographical Indication	19.08.2020
Bolu/Black Sea Region	Göynük Bombay Bean	Protected Geographical Indication	2.01.2018
Ordu/Black Sea Region	Akkuş Sugar Bean	Protected Geographical Indication	23.03.2012
Ordu/Black Sea Region	Gürgentepe Shepherd Bean	Protected Designation of Origin	11.11.2022
Giresun/Black Sea Region	Çamoluk Sugar Dry Bean	Protected Geographical Indication	2.05.2018
Bayburt/Black Sea Region	Aydıntepe Sugar Bean	Protected Geographical Indication	9.06.2021
Gümüşhane/Black Sea Region	Gümüşhane Sugar Bean	Protected Geographical Indication	3.12.2019
Gümüşhane/Black Sea Region	Kelkit Sugar Bean	Protected Geographical Indication	2.01.2020
Mardin/Southeastern Anatolia Region	Kızıltepe Red Lentil	Protected Geographical Indication	29.09.2022
Ardahan/Eastern Anatolia Region	Posof Bean	Protected Geographical Indication	23.11.2020
Erzurum/Eastern Anatolia Region	İspir Dry Bean	Protected Geographical Indication	31.01.2011
Erzurum/Eastern Anatolia Region	Narman Sugar Bean	Protected Geographical Indication	20.07.2020
Erzurum/Eastern Anatolia Region	Hınıs Bean	Protected Geographical Indication	27.12.2016
Bingöl/Eastern Anatolia Region	Bingöl Yedisu Horoz Dry Bean	Protected Geographical Indication	12.02.2021
Van/Eastern Anatolia Region	Gevaş Bean	Protected Designation of Origin	13.07.2023

Geographically Signed Dishes Using Dried Legumes

In Türkiye, there are 72 dishes containing dried legumes that have received geographical indications. Analyzing regional differences, the dish with the fewest geographical indications is “Bilecik Bozüyük Lentil Manti” from the Marmara Region. Conversely, the Southeastern Anatolia Region is the most prominent, with twenty-eight geographically marked dishes featuring dry legumes.

When evaluating the types of legumes incorporated into these dishes, it is found that “kidney beans,” “fava beans,” and “green beans” are the least frequently used, each appearing in different dishes at least once. In contrast, “chickpea” is the most commonly used legume, featured in 50 different dishes. Table 2 shows the geographically marked dishes containing legumes (42).

The Southeastern Anatolia Region, which boasts twenty-eight geographically indicated dishes containing dry legumes, is characterized by local products derived from grains, legumes, olives, pistachios, vegetables, and fruits cultivated on its fertile lands (49). The cuisines of all provinces in this region exhibit similarities. The foundation of these dishes consists of meat, wheat products, legumes, and vegetables. In Southeastern Anatolian cuisine, after meat, the most commonly used legumes are chickpeas and lentils (50).

When examining the use of dry legumes and oilseeds in soups within the regional cuisine, chickpeas and lentils are found to have the highest usage rates, while in main courses, chickpeas are the most frequently used product (51).

Figure 2. Regional Distribution of Dishes Made with Geographically Indicated Dry Legumes in Türkiye (42)

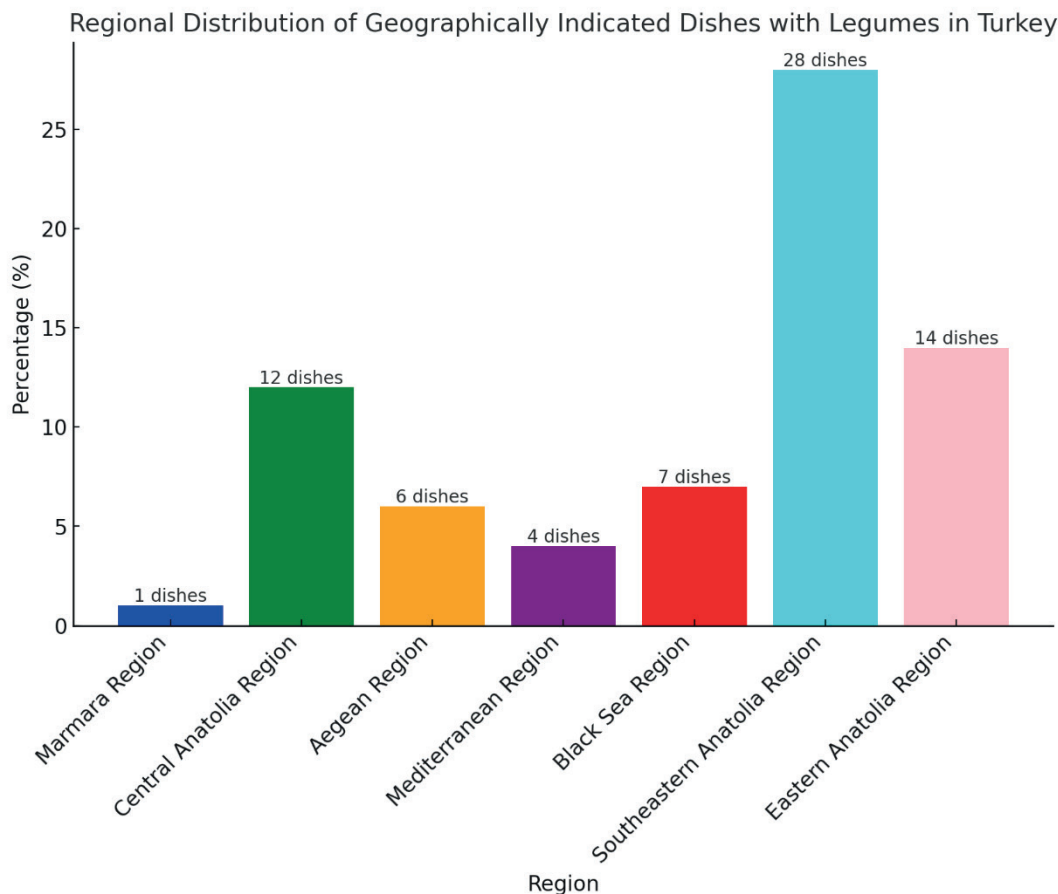


Table 2. Geographical indications for legume-containing dishes (42)

Province/Region	Geographical Indication Name	Product/Product Group	Type of Geographical Indication	Registration Date	Contained Dried Legume(s)
Bilecik/Marmara Region	Bozüyük Lentil Mantı	Mantı / Meals and soups	Protected Designation of Origin	27.07.2020	Kayı-91 variety green lentils grown in Bilecik
Konya/Central Anatolia Region	Konya Tandoor Soup	Soup / Meals and soups	Protected Designation of Origin	18.05.2022	Contains chickpeas, lentils, and kidney beans
Konya/Central Anatolia Region	Konya Ovmaç Soup	Soup / Meals and soups	Protected Designation of Origin	4.10.2021	Contains green lentils
Konya/Central Anatolia Region	Konya Topalağı	Meal / Meals and soups	Protected Designation of Origin	25.08.2022	Contains chickpeas
Konya/Central Anatolia Region	Konya Kırırlı Mantı	Mantı / Meals and soups	Protected Designation of Origin	1.10.2021	Contains green lentils
Konya/Central Anatolia Region	Konya Sour Squash	Meal / Meals and soups	Protected Designation of Origin	20.01.2022	Contains chickpeas
Ankara/Central Anatolia Region	Akyurt Cold Soup	Soup / Meals and soups	Protected Designation of Origin	2.03.2022	Contains chickpeas and kidney beans
Ankara/Central Anatolia Region	Akyurt Tutmaç Soup	Soup / Meals and soups	Protected Designation of Origin	2.03.2022	Contains green lentils
Çankırı/Central Anatolia Region	Çankırı Tutmaç Soup	Soup / Meals and soups	Protected Designation of Origin	1.06.2021	Contains green lentils
Kayseri/Central Anatolia Region	Kayseri Kurşun Aşı Soup	Soup / Meals and soups	Protected Designation of Origin	22.11.2021	Contains green lentils and chickpeas
Kırşehir/Central Anatolia Region	Kırşehir Çirleme Meal	Meal / Meals and soups	Protected Designation of Origin	15.11.2021	Contains chickpeas
Sivas/Central Anatolia Region	Divriği Rice / Alathı Rice Pilaf	Pilaf / Meals and soups	Protected Designation of Origin	9.10.2020	Contains boiled chickpeas
Karaman/Central Anatolia Region	Karaman Şebit Pilaf	Pilaf / Meals and soups	Protected Designation of Origin	7.09.2023	Contains chickpeas
Mersin/Mediterranean	Tarsus Hummus	Hummus / Meals and soups	Protected Geographical Indication	1.11.2017	Cooked chickpeas
Isparta/Mediterranean	Isparta Kabune Pilaf	Pilaf / Meals	Protected Geographical Indication	30.05.2018	Contains chickpeas grown in Isparta

Antalya/ Mediterranean	Alanya Güllüklü (Hüllüklü) Soup	Soup / Meals and soups	Protected Geographical Indication	26.09.2019	Contains chickpeas
Kahramanmaraş/ Mediterranean	Maraş Sour Soup	Soup / Meals and soups	Protected Geographical Indication	15.06.2023	The soup contains lentils and chickpeas
Çorum/Black Sea	Alaca Yarma Meal	Meal / Meals and soups	Protected Geographical Indication	22.11.2023	Contains chickpeas and kidney beans
Amasya/Black Sea	Amasya Stuffed Dolma	Meal / Meals and soups	Protected Geographical Indication	17.08.2021	Contains dried fava beans
Amasya/Black Sea	Amasya Toyga Soup	Soup / Meals and soups	Protected Geographical Indication	1.12.2021	Contains chickpeas
Rize/Black Sea	Çayeli Bean Stew	Meal / Meals and soups	Protected Geographical Indication	2.01.2018	The dish contains a type of large-seed white bean described as “sugar”
Bayburt/Black Sea	Bayburt Black Beetroot Dish	Meal / Meals and soups	Protected Geographical Indication	18.02.2021	Contains green lentils
Düzce/Black Sea	Yufkalı Konuralp Pilaf	Pilaf / Meals	Protected Geographical Indication	7.05.2021	Contains chickpeas
Ordu/Black Sea	Ordu Beetroot Soup / Ordu Cabbage Soup	Soup / Meals and soups	Protected Geographical Indication	16.08.2023	Contains cooked cranberry beans
Diyarbakır/ Southeastern Anatolia	Diyarbakır Habenisk Soup	Soup / Meals and soups	Protected Geographical Indication	11.05.2022	Contains green lentils and chickpeas
Diyarbakır/ Southeastern Anatolia	Diyarbakır Hedik Dish	Meal / Meals and soups	Protected Geographical Indication	11.05.2022	Contains chickpeas
Diyarbakır/ Southeastern Anatolia	Diyarbakır Gendüme Meal	Meal / Meals and soups	Protected Geographical Indication	11.05.2022	Contains mung beans
Diyarbakır/ Southeastern Anatolia	Diyarbakır Lebeni Soup	Meal / Meals and soups	Protected Geographical Indication	11.10.2021	Contains chickpeas
Diyarbakır/ Southeastern Anatolia	Diyarbakır Nardan Meal	Meal / Meals and soups	Protected Geographical Indication	10.03.2022	Contains chickpeas
Gaziantep/ Southeastern Anatolia	Gaziantep Malhıtalı Meatball	Lentil meatball / Meals and soups	Protected Geographical Indication	9.02.2021	Contains red lentils, named “malhıta” in Gaziantep

Gaziantep/ Southeastern Anatolia	Gaziantep Chickpea Wrap / Antep Chickpea Wrap	Chickpea Wrap / Meals and soups	Protected Geographical Indication	17.12.2020	The wrap contains chickpeas with large, light yellow grains, known as "koçbaşı"
Gaziantep/ Southeastern Anatolia	Antep Rolled Meatball	Meal / Meals and soups	Protected Geographical Indication	13.01.2017	Contains chickpeas
Gaziantep/ Southeastern Anatolia	Gaziantep Şiveydiz Meal	Şiveydiz / Meals and soups	Protected Geographical Indication	15.03.2018	Contains chickpeas
Gaziantep/ Southeastern Anatolia	Gaziantep Sour Potato / Antep Sour Potato	Meal / Meals and soups	Protected Geographical Indication	15.05.2021	Contains chickpeas
Gaziantep/ Southeastern Anatolia	Gaziantep Yogurt Potato / Antep Yogurt Potato	Meal / Meals and soups	Protected Geographical Indication	15.05.2021	Contains chickpeas
Gaziantep/ Southeastern Anatolia	Gaziantep Yogurt Green Beans / Antep Yogurt Green Beans	Meal / Meals and soups	Protected Geographical Indication	10.02.2022	Contains chickpeas
Gaziantep/ Southeastern Anatolia	Gaziantep Flatbread Soup / Antep Flatbread Soup	Soup / Meals and soups	Protected Geographical Indication	2.07.2021	Contains chickpeas
Gaziantep/ Southeastern Anatolia	Gaziantep Beef with Chickpeas / Antep Beef with Chickpeas	Meal / Meals and soups	Protected Geographical Indication	15.05.2021	Contains chickpeas
Gaziantep/ Southeastern Anatolia	Gaziantep Mash Soup / Antep Mash Soup	Soup / Meals and soups	Protected Geographical Indication	7.03.2022	Contains mung beans
Gaziantep/ Southeastern Anatolia	Gaziantep Mash Salad / Antep Mash Salad	Meal / Meals and soups	Protected Geographical Indication	2.09.2021	Contains mung beans
Gaziantep/ Southeastern Anatolia	Gaziantep Cauldron Soup / Antep Cauldron Soup	Soup / Meals and soups	Protected Geographical Indication	24.01.2022	Contains chickpeas
Kilis/Southeastern Anatolia	Kilis Şihilmahşe	Stuffed vegetable / Meals and soups	Protected Geographical Indication	26.09.2022	Onions stuffed with cooked chickpeas
Şanlıurfa/ Southeastern Anatolia	Urfa (Şanlıurfa) Squash Dish	Meal / Meals and soups	Protected Geographical Indication	21.02.2018	Contains chickpeas
Şanlıurfa/ Southeastern Anatolia	Urfa (Şanlıurfa) Borani with Chard / Borani with Chard	Meal / Meals and soups	Protected Geographical Indication	29.12.2017	Contains chickpeas and mung beans

Şanlıurfa/ Southeastern Anatolia	Şanlıurfa Stuffed Mung Bean Wrap / Şanlıurfa Stuffed Mung Bean Wrap	Meal / Meals and soups	Protected Geographical Indication	9.06.2023	Contains mung beans
Şanlıurfa/ Southeastern Anatolia	Urfa (Şanlıurfa) Lebeni Soup	Soup / Meals and soups	Protected Geographical Indication	29.12.2017	Contains chickpeas
Malatya/Eastern Anatolia Region	Malatya Analı Kızlı Meatball / Malatya Tiritli Meatball	Dish / Dishes and Soups	Geographical Indication Mark	24.09.2021	Boiled chickpeas are included in Malatya Analı Kızlı Meatball / Malatya Tiritli Meatball.
Malatya/Eastern Anatolia Region	Malatya Cold Soup with Ayrar	Dishes and Soups	Geographical Indication Mark	29.05.2023	Boiled chickpeas are included in Malatya Cold Soup with Ayrar.
Malatya/Eastern Anatolia Region	Malatya Hırçıklı Meatball	Dish / Dishes and Soups	Geographical Indication Mark	31.08.2023	Black lentils are included in Malatya Hırçıklı Meatball
Iğdır/Eastern Anatolia Region	Iğdır Bozbaş Meal	Dish / Dishes and Soups	Geographical Indication Mark	2.07.2021	Chickpeas are included in Iğdır Bozbaş Meal.
Iğdır/Eastern Anatolia Region	Iğdır Omaç Soup	Dishes and Soups	Geographical Indication Mark	26.08.2021	Black- eyed peas (specifically the karnikara variety) are included in Iğdır Omaç Soup.
Iğdır/Eastern Anatolia Region	Iğdır Stone Meatball	Dish / Dishes and Soups	Geographical Indication Mark	14.12.2017	Split chickpeas are included in Iğdır Stone Meatball.
Van/Eastern Anatolia Region	Van Sengeser	Dish / Dishes and Soups	Geographical Indication Mark	26.11.2021	Boiled green lentils are included in Van Sengeser.
Van/Eastern Anatolia Region	Van Keledoş	Local Dish	Geographical Indication Mark	8.11.2017	Boiled chickpeas and green lentils are included in Van Keledoş.
Hakkari/Eastern Anatolia Region	Gayle Zengil	Dish / Dishes and Soups	Geographical Indication Mark	15.11.2023	Chickpeas are included in Gayle Zengil.

Hakkari/Eastern Anatolia Region	Hakkari Girara Huluga	Dish / Dishes and Soups	Geographical Indication Mark	11.01.2023	Chickpeas are included in Hakkari Girara Huluga.
Hakkari/Eastern Anatolia Region	Hakkari Kepaye	Dish / Dishes and Soups	Geographical Indication Mark	11.01.2023	Boiled chickpeas are included in Hakkari Kepaye.
Hakkari/Eastern Anatolia Region	Hakkari Kırıs	Dish / Dishes and Soups	Geographical Indication Mark	19.12.2017	Chickpeas are included in Hakkari Kırıs.
Erzurum/Eastern Anatolia Region	Erzurum Kara Fatma Soup	Dish / Dishes and Soups	Geographical Indication Mark	8.12.2022	Chickpeas and green lentils are included in Erzurum Kara Fatma Soup.
Tunceli/Eastern Anatolia Region	Tunceli Şorbik Soup	Dish / Dishes and Soups	Geographical Indication Mark	18.12.2017	Chickpeas are included in Tunceli Şorbik Soup.

CONCLUSION, DISCUSSION, AND RECOMMENDATIONS

The findings of the study reveal the regional distribution diversity of geographically indicated dry legumes in Türkiye. While the Black Sea Region has the highest number of geographically indicated dry legumes, the Southeastern Anatolia Region leads in the number of dishes containing these legumes. Our research identified 24 geographically indicated dry legumes and 72 geographically indicated dishes containing dry legumes across Türkiye's seven regions and 81 provinces.

Türkiye's geographical location and rich culinary heritage provide significant potential for geographically indicated products and dishes. Each region and city holds unique cultural elements, underscoring the importance of preserving and promoting these values. For example, Bolat et al. (2017) highlighted that challenges in legume production, such as high production costs, unstable agricultural policies, and lack of organization, can be mitigated through improved producer organization and targeted support mechanisms (43). However, during the literature study, no studies were found

specifically focusing on geographically indicated legume products and the dishes prepared with them. Nevertheless, Yağmur and Kardeş (2023) examined national trends and the associations of the concept of geographical indications in their study, "An Examination of Studies Conducted in the National Literature on the Concept of Geographical Indication." (52). Çağlı (2012) analyzed the regional distribution of registered geographically indicated products, highlighting the prominence of Southeastern Anatolia in this regard (53). Additionally, Verza et al. (2024) analyzed market dynamics for lentils in Italy, emphasizing the growing consumer demand for sustainable and regionally distinctive products (54).

Geographically indicated products in Türkiye have substantial potential to contribute to rural development. To realize this potential, local producers should be encouraged to engage in promotional and marketing activities that highlight the geographical connections of their products. Furthermore, regional education programs should be implemented to raise awareness among producers about maintaining these connections sustainably. Future research could focus on the economic impact of these

products, their contribution to regional development, and their role in sustainable agriculture. Additionally, topics such as consumer interest in geographically indicated products and their role in local markets and exports could be explored.

In conclusion, Türkiye holds vast potential for preserving local culture and supporting rural development. Developing comprehensive policies inspired by international examples would be a critical step in promoting and utilizing this potential in broader markets.

Conflict of interest

All authors declared that they have no conflict of interest.

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