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# *Traditional Foraged Spice, Sauce, and Egg-Painting Plants of Hatay, Türkiye: Bringing the Traditional into Commerce*

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***Abstract:*** *In this study, seasoning and coloring plants traditionally obtained from the wild, mainly through foraging and used in the cuisine of Hatay (Türkiye), which is listed as the City of Creative Gastronomy by UNESCO, were researched and 68 local plant species used as spices, sauces or egg coloring in various religious rituals were compiled. Some, such as* ***Laurus nobilis*** *and* ***Thymbra spicata****, have been gathered extensively from nature due to their significant cultural value.* ***Thymbra spicata*** *has started to be cultivated due to increasing demand with the influence of gastronomy tourism, and has even become one of the important agricultural products of Hatay/Antakya in recent years. This development has increased the economic value of the species while reducing the pressure on its natural populations. This is a successful example of alternative agricultural products traditionally obtained by foraging that may be adapted to agriculture and the local economy. Some plants presented here are used in Antakya's unique religious and cultural practices, such egg painting plants used by spring fests of various ethnoreligious populations. Thirteen original plant uses that are not mentioned in the literature and are only found in Hatay are presented, such as using* ***Melilotus*** *species as a bread spice,* ***Laser trilobum*** *as a spice in local dishes and* ***Pistacia*** *species as ingredients in za'atar mixtures and the flavoring of the local soup known as "kishk". The variety of wild plants used as sour sauce and the fact that they were used as an alternative to the tomato sauces that dominate the culinary culture today are interesting in terms of showing the change in culinary culture over time. Hatay was the province that suffered the most destruction in the earthquake of February 6, 2023. We hope that this article, written just before the earthquake, will provide socio-economic guidance in the rebuilding of the city. Some of the people from whom this information was compiled unfortunately lost their lives in the earthquake, and a significant number of them were forced to migrate from the destroyed city. This situation is a striking example of the need to compile ethnobotanical knowledge without losing it.*

***Keywords:*** *Wild edible plants, spice, sauce, natural food colorants, alternative agriculture products, Easter eggs, za'atar.*

## *Hatay'ın Geleneksel Toplayıcılık Yoluyla Elde Edilen Baharat, Sos ve Yumurta Boyama Bitkileri: Gelenekselin Ticarete Taşınması*

***Öz:*** *Bu çalışmada, UNESCO tarafından Yaratıcı Gastronomi Şehri olarak listelenen Hatay (Türkiye) mutfağında, geleneksel olarak, genelde yabandan, toplayıcılık yoluyla elde edilen çeşni ve renk verici bitkiler araştırılmış ve baharat, sos veya çeşitli inançsal ritüellerde yumurta boyası olarak kullanılan 68 yerli bitki türü derlenmiştir.* ***Laurus nobilis*** *ve* ***Thymbra spicata*** *gibi bazıları, yüksek kültürel değerlerinden dolayı, doğadan yoğun bir şekilde toplanagelmişlerdir.* ***Thymbra spicata****, gastronomi turizminin de etkisiyle artan talep nedeniyle tarım yoluyla da elde edilmeye başlanmış, hatta son yıllarda Hatay/Antakya'nın önemli tarım ürünlerinden biri haline gelmiştir. Bu gelişme, türün doğal populasyonları üzerindeki baskıyı azaltırken ekonomik değerini arttırmıştır. Bu, geleneksel olarak, toplayıcılık yoluyla elde edilen fakat tarıma ve yerel ekonomiye kazandırılabilecek alternatif tarım ürünlerine başarılı bir örnektir. Çeşitli etnik dinsel toplulukların bahar bayramlarında kullanılan yumurta boyama bitkileri gibi bazı bitkiler, Antakya'nın kendine özgü dini ve kültürel uygulamalarında*

*kullanılmaktadır. **Melilotus** türlerinin ekmek baharatı olarak, **Laser trilobum**'un yöresel yemeklerde baharat olarak ve **Pistacia** türlerinin zahter karışımlarında, ayrıca "kişk" adı verilen yerel çorbalarda çeşni verici olarak kullanılması ya da gibi literatürde yer almayan ve sadece Hatay'dan tespit edilen 13 orijinal bitki kullanımı da sunulmuştur. Ekşi sos olarak kullanılan yabani bitkilerin çeşitliliği ve bunların eskiden, günümüzde mutfak kültüründe hakim durumda bulunan domates soslarına alternatif olarak kullanıldığının belirtilmesi, mutfak kültürünün zaman içerisinde geçirdiği değişimi göstermesi bakımından ilginçtir. Hatay, 6 Şubat 2023 depreminde en çok yıkıma uğrayan il olmuştur. Depremin hemen öncesinde yazılan bu makalenin, şehrin yeniden inşasında sosyoekonomik açıdan yol gösterici olacağını umuyoruz. Bu bilgilerin derlendiği kişilerin bazıları ne yazık ki depremde yitirilmiştir, önemli bir kısmı da yıkılan şehirden zorunlu olarak göç etmiştir. Bu durum, etnobotanik bilgisinin yitirilmeden derlenmesi gerektiğine çarpıcı bir örnektir.*

***Anahtar kelimeler:*** *Yenebilir yabani bitkiler, baharatlar, soslar, doğal gıda boyaları, alternatif tarım ürünleri, Paskalya yumurtaları, za'atar.*

## INTRODUCTION

Despite thousands of years of agricultural history that began with the cultivation of wild plants, traditionally used wild edible plants continue to represent a wealth of unexplored biological resources that may be alternative agricultural products. These wild edible plants, which are self-growing members of the local flora, have long provided free, easily accessible, and healthy food for local peoples. Due to the increasing human population, global warming and related reductions in freshwater resources and arable land, it is necessary to better utilize plants that are already members of local habitats and can therefore be easily grown with minimal water resources. In this context, the necessity of determining the natural resources that local communities benefit from is becoming increasingly clear. Local communities benefit from plants that grow naturally in the surrounding habitats, with such information being passed down by their ancestors through history. These plants do not need extra interventions such as irrigation and fertilization if they are cultivated in the natural habitats to which they are well adapted. There is also no need to introduce such plants to the local community, as would be the case for exotic fruits that are being newly cultivated in a region, as these plants already have long been present in the living practices of local human communities. In short, every natural resource used by local communities with traditional knowledge is a potential source of economic and sociocultural wealth.

The Hatay province of Türkiye, where mainly Turkish and Arabic (North Levantine dialect) languages are spoken and where different sects of Christianity, Judaism and Islam are found, has hosted about 20 civilizations since its establishment in 300 BC. It was located on the Silk Road and was also an important center of the Greco-Roman world. It remains a cosmopolitan city that has become one of the main centers of the Eastern Orthodox Church (Demir, 2016; Iwas, 2008). Today, different ethnic groups live in tolerance and peace while influencing each other with their traditions. Just as Christians celebrate Easter by painting eggs, Arab Alawites practice a similar tradition for Eid al Sabatash.

Hatay was recognized as a UNESCO Creative City of Gastronomy in 2017 with its richly diverse cuisine that fuses traditions of the Middle East, Anatolia, and the Mediterranean (UNESCO, 2017). In this respect, gastronomy has a dominant place in the tourism of the province (DOGAKA, 2022). Plants such as *Thymbra spicata* L, which have a very important place in the cuisine of the region with many different uses as spices and herbs, appetizers (mezes), and salads, were obtained only by foraging until recently. However, increasing demand for *Thymbra spicata* has led to its widespread cultivation. This is a concrete, up-to-date example of the cultivation of edible plants obtained from the wild.

It is possible to find examples of wild plants used as vegetables or fruits in many cultures, but when we reviewed the relevant literature, we saw that spice and sauce plants obtained from nature by foraging are not very common and are mostly found in tropical areas. In this respect, the variety of wild spice and sauce plants in Hatay, a

Mediterranean province, is interesting. In the present study, we aimed to record this diversity before it could be forgotten and to document an example of bringing an edible plant previously obtained only by foraging into the local economy. We investigated how traditional knowledge about the use of spices/sauces has changed over the years and how vegetation has influenced them. We also aimed to discuss the social, economic, and ecological benefits of lists such as the UNESCO Creative Cities of Gastronomy, which highlights the identity of the city, based on the example of *Thymbra spicata*, which was introduced into agriculture and therefore into the economy. The commonalities in unusual plant usage traditions such as egg painting among different ethnic groups that have lived together in the city for centuries are among the data we aim to document with our study as a concrete indicator of cultural interaction. Although many more spices are used in the culinary traditions of the province than those mentioned here, tropical and imported plants such as *Myristica fragrans* Houtt., *Piper nigrum* L. and *Zingiber officinale* Roscoe or purely agricultural ones such as peppers and tomatoes are not addressed because they are outside the scope of this study.

## MATERIALS AND METHODS

### Study area and people

The province of Hatay, where this study was conducted, is located in the south of Türkiye, in the country's Eastern Mediterranean region. To the west of Hatay, between it and the Mediterranean, lie the Amanos Mountains, an important biodiversity hotspot. To the southeast is the Kuseyr Plateau. Between these two elevated areas, wide plains (Amuq, Antakya and Samandağ Plains) irrigated by the Asi River open to the Mediterranean. The province borders Syria in the east. Although there are plants from the Mediterranean phytogeographic region, Euro-Siberian enclaves are found in the valleys of the Amanos mountain range, as well as Irano-Turanian phytogeographic elements in the steppes around the Amuq Plain and on the Kuseyr Plateau. This study was carried out by examining samples from all of these geographical regions (Figure 1).

Within the scope of this study, 150 people were interviewed in 42 villages selected by considering differences in geographical-ecological and sociocultural aspects of all districts of Hatay province to ensure that they reflected the characteristics of all Hatay in general. A total of 85 people provided information about sauces, spices, and egg-painting traditions. 55% of the informants were women and 45% were men. Education, age and occupation distributions are given in Figure 2.

The interviews were held in the mother tongue of the interviewees in which they could express themselves most comfortably, in Arabic and/or Turkish, by the first author who could natively speak both. Villagers were contacted through local administrative authorities (i.e., neighborhood representatives or mayors). Following the principles of the International Society of Ethnobiology (ISE) Code of Ethics (Anonymous, 2006), the purpose of the study was explained to each participant before the interviews and their verbal consent to participate was obtained. For all photos, videos, sound recordings and other recordings, permission was also obtained for future publication. No recordings were made without permission. Care was taken throughout the study to respect all ethnic and religious traditions. Interviews were conducted using a face-to-face, semi-structured interview technique. People were asked to show the researcher the plants they mentioned in the field or in their homes as collected for use. The plants were identified by the authors, their current taxonomic statuses were confirmed from The Plant List (2022), and they were preserved as herbarium specimens and stored in the MKU herbarium.


Figure 1. Google Earth map of the study area: Hatay (data SIO, NOAA, U.S. Navy, NGA, GEBCO Landsat/Copernicus © 2022 Google).

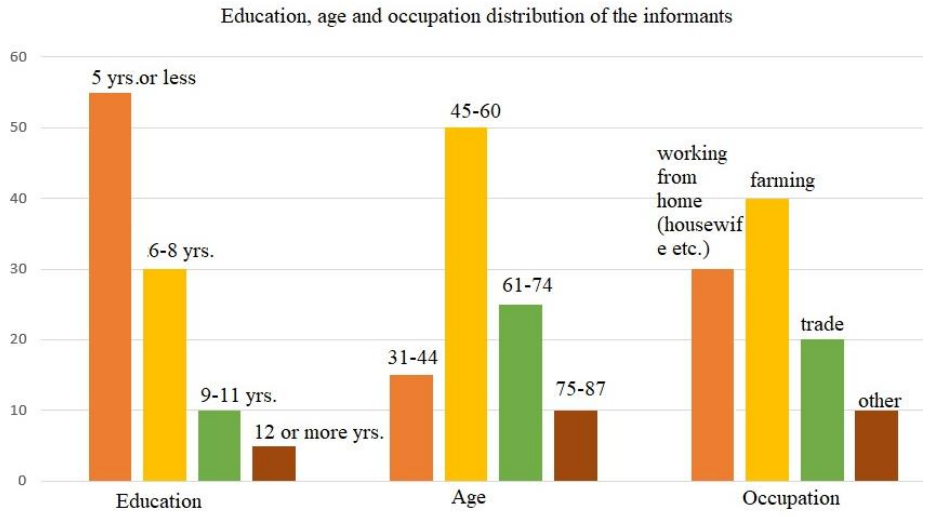


Figure 2. Education, age and occupation distribution of the informants.

**Data analysis**

After the plant uses were determined by field studies, the production statistics of the plants that have started to be cultivated and introduced into trade were obtained from the Turkish Statistical Institute (TUIK, 2022).

Use values (UVs) were calculated for all reported uses. The UV is the relative importance of a use as mentioned by participants and it was determined using the following calculation (Phillips *et al*., 1994):

$$UV = \frac{\sum U}{n}$$

where UV is the use value, U is the number of participants who reported uses for a plant species and n is the total number of individuals interviewed. Higher UVs suggest that plants are frequently used and popular, while lower UVs indicate that plants are not widely recognized. The UV of each plant was calculated for Hatay in general (UVg = general UV) as well as for the narrower region where its use was reported (Amanos Mountains, Amuq-Antakya-Samandağ Plains and Kuseyr Plateau = UVM, UVP and UVKP respectively). In the calculation of UVG, U is the number of participants in the whole province who reported uses for a plant species and n is the total number of participants interviewed in the whole province. In the calculation of regional UV values, U is the number of participants in the specific region who reported uses for a plant species and n is the total number of participants interviewed in that region.

Because habits of plant usage are directly related to the flora and because the used plants are not necessarily common, some plants that do not seem to be very important when we take the whole Hatay as a basis, are used more commonly in the narrower geographical region where they are found.

The average number of plant usage reports for each geographic region was also calculated because, during the fieldwork, it was realized that the number of plants and uses reported by participants were closely related to the area in which they lived and the plant diversity of that area.

The ratio of use reports compiled from each geographic region (A) to the number of participants from that geographic region (B) yielded the average number of plant usage reports (X) for each geographic region.

In addition, whether the compiled uses were previously reported from other regions was also investigated through a review of the literature.

## RESULTS

A total of 55 flavoring plants, including 41 spices, 4 sweeteners, and 10 sour sauce, and 14 dye plants, (pomegranate is considered both dye plants and flavoring plants) were identified yielding a total of 63 plants. Although 13 of the spice plants (such as *Foeniculum vulgare*/fennel) are members of the Flora of Turkey, they are obtained agriculturally and therefore commercially. However, it is still collected from nature in regions where populations occur frequently. The compiled spice and sauce plants are given in Table 1 and the egg-dyeing plants are given in Table 2.

The use of *Melilotus* (L.) Mill. species as a bread spice, *Pistacia* L. and *Vitis* L. species as spices in the soup known as "kishk," *Pistacia* species and *Laser trilobum* (L) Borkh. fruits as component of za'atar, *Celtis* L. species as sweeteners, *Chaerophyllum libanoticum* Boiss. & Kotschy as a pickle spice, and *Thymus kotschyanus* Boiss & Hohen as meat seasoning are original uses that we did not encounter in the literature.

The spice most widely used by far is *Thymbra spicata* (0.96 UV in general), followed by *Rhus coriaria* L, *Origanum syriacum* L, *Ocimum basilicum* L and *Punica granatum* L. (0.9 UV).

Za'atar (or "zahter") is the name given to both thymol-scented herbs such as *Thymbra spicata* and *Origanum syriacum* and to a popular spice mixture in Hatay. Za'atar, as a spice mix, is served with olive oil, especially for breakfast. The bread is first dipped in olive oil and then into the powdered za'atar mixture and eaten. Sometimes the mixture is spread on rolled dough and baked in tandoor ovens, and "katıklı ekmek" (a pizza-like traditional pastry) is thus made. Similar to Hatay, it is common in the Middle East, and especially in Lebanon, Israel, and Syria, to call both thymol-scented herbs and the spice mixtures containing them "za'atar." However, the types of herbs and the contents of the za'atar mix differ from country to country. The Lebanese za'atar mix typically consists of *Origanum syriacum*, *Thymbra spicata*, *Rhus coriaria* and *Sesamum indicum* L (Khalil *et al.*, 2022). In Hatay, in addition to the aforementioned plants, the ground fruits of *Pistacia* sp. are among the main ingredients of the mixture. In addition, spices such as *Coriandrum sativum* L, *Carum carvi* L and *Laser trilobum* (L.) Borkh. can also be included in the mixture. Besides spices, crushed roasted chickpeas and melon and watermelon seeds are also found in za'atar in Hatay (Figure 3).

Figure 3. Various traditional foods containing the main wild spices of Hatay. In the back, za'atar (*Thymbra spicata*) is laid out to dry for the winter. In the middle, za'atar salad is one of the characteristic appetizers or mezes of Hatay cuisine and pomegranate syrup ("nar ekşisi" or "hamed rimmen") is poured on it to give it a sour taste. To the left, "katıklı ekmek" is a traditional kind of pizza that contains za'atar (*Thymbra spicata*) and various other local spices. To the right, za'atar mix includes *Pistacia* spp. fruits as well as other wild spices like *Origanum syriacum*, *Thymbra spicata*, *Rhus coriaria*, *Coriandrum sativum*, *Carum carvi* and *Laser trilobum*.

In the production of "kishk," which is a local tarhana soup, we also encountered the use of unique spices. Tarhana is a type of soup common in Anatolia that differs in its contents depending on

the region. It is prepared and fermented in the summer, dried in the sun, and ground, and then cooked in winter by boiling the mixture with water. The most common types of tarhana contain yoghurt, flour, onions, tomatoes and peppers. "Kishk," the local tarhana prepared in Hatay and especially on the plains of Samandağ and Antakya and the Kuseyr Plateau, is plainer and is prepared from yogurt, bulgur, and ground or boiled wheat. Chili powder and/or cumin can be added optionally. These ingredients are kneaded and made into a dough, which is covered with *Pistacia* spp. or *Vitis* spp. leaves. These leaves both give an aroma to the dough and allow it to ferment. After waiting a few days for fermentation, the leaves covering the dough are removed, and the dough is shaped into disks and dried in the sun (Figure 4).

Figure 4. Production of traditional "kishk" soup. Top: Covering the dough with *Vitis* sp. shoots and leaves (*Pistacia* sp. can be used alternatively). Bottom: After waiting a few days for fermentation and the development of the aroma, the leaves are removed and the dough is dried. The cooked soup may be served with spices like cumin and chili.

**Table 1.** Spice and sauce plants compiled from Hatay in light of traditional knowledge, their local names, the parts used and usages.

| **Family**<br>***Species***<br>**Voucher number** | **No. of informants**<br>**G: General**<br>**M: Mountain**<br>**P: Plain**<br>**KP: Kuseyr Plateau** | **UV**<br>**G: General**<br>**M: Mountain**<br>**P: Plain**<br>**KP: Kuseyr Plateau** | **Vernacular names**<br>**T: Turkish**<br>**A: Arabic** | **Used parts** | **Usage** | **Uses other than spices or sauces in Hatay** (for medical uses, see Güzel *et al.* 2015 and Yipel *et al.* 2017; for uses as tea, see Güzel and Güzelşemme, 2018) |
|---|---|---|---|---|---|---|
| **Amaryllidaceae** | | | | | | |
| *1 Allium ampeloprasum* L.<br>Y.Güzel-2088 | 4P, 5KP | 0.11G<br>0.14P, 0.2KP | Yabani pırasa / T<br>Yabani sarımsak / T<br>Körmen / T<br>Kömürgen / T<br>Kerbec / T<br>Kırret / A | Leaves and bulbs | Alternative to *Allium cepa* | As vegetable and medicinal uses |
| *2. Allium scorodoprasum* L.<br>Y.Güzel-2072 | 5P, 6KP | 0.13G<br>0.17P, 0.24KP | Deli pırasa / T<br>Körmen / T<br>Kırret / A | Leaves and bulbs | Alternative to *Allium cepa* | As vegetable and medicinal uses |
| **Anacardiaceae** | | | | | | |
| *3. Pistacia terebinthus* L.<br>Y.Güzel-2073 | 1.<br>3P<br><br>2.<br>25M<br>15P<br>20KP | 1. 0.04G<br>0.1P<br><br>2.<br>0.7G<br>0.8M<br>0.5P<br>0.8KP | Young shoots: Murç / T<br>Terbin / A<br><br>Fruits:<br>Menengiç / T<br>Bıtın / A | 1. Leaves and young shoots<br>2. Fruits | 1. **It is used as a flavoring agent in the production of a kind of local tarhana called "kishk," which is prepared from wheat, bulgur, and yoghurt<br>2. **It is one of the main flavorings in za'atar mixtures | Twigs are used as vegetables in the traditional dish "sakız murcu": they are dipped in boiling water and the juice is squeezed out, so that the bitterness is removed; they are then cooked with olive oil and onions and later eggs are added.<br>Fruits are used as snacks<br>Coffee is made from the fruits<br>There are also medicinal uses |
| *4. Pistacia lentiscus* L.<br>Y.Güzel-2074 | 15M<br>18P<br>12KP | 0.5G<br>0.5M<br>0.6P<br>0.5KP | Sakızağacı / T<br>Mastik sakızı / T<br>Misk / A | Resin | It is one of the main spices of "Antakya kömbesi," a kind of traditional cookie | As chewing gum |
| *5 Rhus coriaria* L.<br>Y.Güzel-2075 | 27M<br>24P<br>22KP | 0.9G<br>0.9AM<br>0.8P<br>0.9KP | Sumak / T<br>Sımmek / A | Fruits | Widely used in local cuisine to give a sour taste, especially in stuffed vegetables ("dolma"), salads, and fish dishes<br>One of the main ingredients of za'atar mixtures | Medicinal uses |
| **Apiaceae** | | | | | | |
| *6. Coriandrum sativum* L.*<br>Y.Güzel-2076 | 6M<br>6P<br>8KP | 0.2G<br>0.2M<br>0.2P<br>0.3KP | Kişniş / T<br>Küzbara / A | Fruits (mericarps) | In traditional pastries like "katıklı ekmek" and in "Antakya küflü sürkü" | Medicinal uses |

| **Family**<br>***Species***<br>**Voucher number** | **No. of informants**<br>**G: General**<br>**M: Mountain**<br>**P: Plain**<br>**KP: Kuseyr Plateau** | **UV**<br>**G: General**<br>**M: Mountain**<br>**P: Plain**<br>**KP: Kuseyr Plateau** | **Vernacular names**<br>**T: Turkish**<br>**A: Arabic** | **Used parts** | **Usage** | **Uses other than spices or sauces in Hatay** (for medical uses, see Güzel *et al.* 2015 and Yipel *et al.* 2017; for uses as tea, see Güzel and Güzelşemme, 2018) |
|---|---|---|---|---|---|---|
| *7. Carum carvi* L.*<br>Y.Güzel-2077 | 20M<br>22P<br>19KP | 0.7G<br>0.6M<br>0.8P<br>0.7KP | Kimyon / T<br>Kemmün / A | Fruits<br>(mericarps) | Widely used in local cuisine<br>Also used in traditional dishes such as "Hatay oruğu" and ** "Antakya küflü sürkü" | Medicinal uses |
| *8. Foeniculum vulgare* Mill.*<br>Y.Güzel-2078 | 16M<br>21P<br>19KP | 0.7G<br>0.5M<br>0.7P<br>0.7KP | Rezene / T<br>Şumra / A<br>Şimura / A | Fruits (mericarps) | One of the main spices of the oily pastry named "Antakya külçesi" | Medicinal uses |
| *9. Laser trilobum* (L.) Borkh.<br>Y.Güzel-2079 | 14M | 0.2G<br>0.5M | Kefe kimyonu / T<br>Geyik sırası / T | Fruits (mericarps) | In place of cumin wherever cumin is used<br>** Used in za'atar mixtures, in "Hatay oruğu," and in "Antakya küflü sürkü" | Only as spice |
| *10. Chaerophyllum libanoticum* Boiss. & Kotschy<br>Y.Güzel-2080 | 8M | 0.1G<br>0.3M | Mentik / T | Leaves | ** Used as a flavoring in pickles | Also consumed raw and cooked as a vegetable |
| *11. Smyrnium olusatrum* L.<br>Y. Güzel-2137 | 8M | 0.1G<br>0.3M | Baldırgan/T | Leaves | ** Used as a flavoring in pickles | Also consumed raw and cooked as a vegetable |
| **Cannabaceae** | | | | | | |
| *12.Celtis australis subsp. australis* L.<br>Y.Güzel-2081 | 3P | 0.04G<br>0.1P | Çitlenbik / T<br>Mös / A | Fruits | ** Crushed and mixed with nuts as sweetener | As fruit<br>and<br>medicinal uses |
| *13.Celtis tournefotii* Lam<br>Y.Güzel-2082 | 2KP | 0.02G<br>0.1KP | Dardağan / T<br>Dağın / T<br>Mövz / A | Fruits | ** Crushed and mixed with nuts as sweetener | As fruit |
| **Capparaceae** | | | | | | |
| *14.Capparis spinosa* L.<br>Y.Güzel-2133 | 2M<br>2P<br>2KP | 0.07G<br>0.07M<br>0.07P<br>0.08KP | Kapari / T<br>Kebere / T<br>Kıbbar / A | Flower buds | In meat dishes | As a pickle |
| **Fabaceae** | | | | | | |
| *15. Melilotus indicus* (L.) All.<br>Y.Güzel-2083 | 5P<br>1KP | 0.1G<br>0.2P<br>0.04KP | Eşek yoncası / T<br>Puhur otu / T<br>Handkuk / A | Seeds | **Seeds, ground with wheat to give flavor to bread | In addition to being used as a spice due to its characteristic smell, the whole plant is dried and placed in closets or in the entrance of the houses as a fragrance and to keep moths away; it can also be used against the evil eye, as incense or by placing it under a child's pillow |
| *16.Melilotus officinalis* (L.) Desr.<br>Y.Güzel-2129 | 2P<br>1KP | 0.02G<br>0.07P<br>0.04KP | Eşek yoncası / T<br>Puhur otu / T<br>Handkuk / A | Seeds | **Seeds, ground with wheat to give flavor to bread | In addition to being used as a spice due to its characteristic smell, the whole plant is dried and placed in closets, between clothes, to keep moths away; it can also be used against the evil eye, as incense or by placing it under a child's pillow |

| **Family**<br>***Species***<br>**Voucher number** | **No. of informants**<br>**G: General**<br>**M: Mountain**<br>**P: Plain**<br>**KP: Kuseyr Plateau** | **UV**<br>**G: General**<br>**M: Mountain**<br>**P: Plain**<br>**KP: Kuseyr Plateau** | **Vernacular names**<br>**T: Turkish**<br>**A: Arabic** | **Used parts** | **Usage** | **Uses other than spices or sauces in Hatay** (for medical uses, see Güzel *et al.* 2015 and Yipel *et al.* 2017; for uses as tea, see Güzel and Güzelşemme, 2018) |
|---|---|---|---|---|---|---|
| *17.Cercis siliquastrum* L.<br>Y.Güzel-2084 | 4M<br>2P | 0.07G<br>0.13M<br>0.07P | Erguvan / T<br>Sencrik / A | Flowers | Flowers are added to meals and salads to give a sour taste | Medicinal uses |
| *18.Ceratonia siliqua* L.<br>Y.Güzel-2085 | 6M<br>4P<br>1KP | 0.13G<br>0.2M<br>0.14P<br>0.04KP | Keçiboynuzu / T<br>Harnup / A | Fruits | Molasses is used as a sweetener; especially in years when refined sugar was not common, it was reported that local sweets such as "künefe" were made with grape or carob molasses instead of sugar syrup in rural areas | Molasses is mixed with tahini and eaten for breakfast<br>Medicinal uses |
| *19.Trigonella foenum-graecum L.*<br>Y.Güzel-2138 | 2M<br>2P<br>2KP | 0.07G<br>0.06M<br>0.07P<br>0.08KP | Boyotu/T<br>Hılbe/A | Seeds | Dried and ground seeds are used in meat, fish, and chicken dishes | The whole plant is dried and placed in closets or in the entrance of the houses as a fragrance and to keep moths away |
| **Geraniaceae** | | | | | | |
| *20.Pelargonium graveolens* L'Hér.*<br>Y.Güzel-2086 | 6M<br>6P<br>2KP | 0.16G<br>0.2M<br>0.2P<br>0.1KP | Itır / T, A | Leaves | Leaves are kept in the dessert for a while to give flavor and aroma to milky desserts such as rice pudding and other puddings | Medicinal uses |
| **Lamiaceae** | | | | | | |
| *21.Mentha longifolia* subsp. *thyphoides*<br>Y.Güzel-2087 | 10M<br>8P<br>6KP | 0.3G<br>0.3M<br>0.3P<br>0.24KP | Dere nanesi / T | Leaves | An alternative to mint wherever mint is used | Medicinal uses |
| *22.Thymbra spicata* var. *spicata**<br>Y.Güzel-2071 | 30M<br>29P<br>23KP | 0.96G<br>0.97M<br>1P<br>0.92KP | Zahter / T<br>Za'atar / A | Leaves, twigs | One of the widely used spices of the local cuisine; the main spice of many local products, especially "katıklı ekmek," "Antakya küflü sürkü," and additives<br>Also found in za'atar mix | Medicinal uses<br>As traditional herbal tea<br>For evil eye: the plant is burned on embers and the individual is exposed to its smoke<br>Its salad is a popular appetizer of the local cuisine |
| *23.Thymus cilicicus* Boiss. & Balansa<br>Y.Güzel-2089 | 4M | 0.05G<br>0.13M | Kılçık kekiği / T<br>Dağ kekiği / T | Leaves, twigs | In meat dishes and "katıklı ekmek" | As tea<br>Medicinal uses |
| *24.Thymus sipyleus* Boiss<br>Y.Güzel-2090 | 3KP | 0.04G<br>0.12KP | Sipil kekiği / T<br>Limon otu / T | Leaves, twigs | In meat dishes and "katıklı ekmek" | Medicinal uses |
| *25.Thymus kotschyanus* Boiss. & Hohen.<br>Y.Güzel-2091 | 2M | 0.02G<br>0.06M | Kekik / T<br>Dağ kekiği / T | Leaves, twigs | **In meat dishes and "katıklı ekmek" | Medicinal uses |

| **Family**<br>***Species***<br>**Voucher number** | **No. of informants**<br>**G: General**<br>**M: Mountain**<br>**P: Plain**<br>**KP: Kuseyr Plateau** | **UV**<br>**G: General**<br>**M: Mountain**<br>**P: Plain**<br>**KP: Kuseyr Plateau** | **Vernacular names**<br>**T: Turkish**<br>**A: Arabic** | **Used parts** | **Usage** | **Uses other than spices or sauces in Hatay** (for medical uses, see Güzel *et al.* 2015 and Yipel *et al.* 2017; for uses as tea, see Güzel and Güzelşemme, 2018) |
|---|---|---|---|---|---|---|
| *26.Thymus leucotrichus* subsp. *leucotrichus* Halácsy<br>Y.Güzel-2092 | 4M | 0.05G<br>0.13M | Kekik / T<br>Dağ kekiği / T | Leaves, twigs | In meat dishes and "katıklı ekmek" | Medicinal uses |
| *27.Origanum syriacum* subsp. *bevanii* (Holmes) Greuter & Burdet<br>Y.Güzel-2093 | 25M<br>24P<br>27KP | 0.9G<br>0.8M<br>0.8P<br>0.9KP | Hababa / T<br>Halil İbrahim kekiği / T<br>Zahter Halil / A | Leaves, twigs, inflorescences | One of the widely used spices of the local cuisine; has a softer taste than *Thymbra spicata* and is used as an alternative to it<br>Also used in za'atar mixtures | As tea<br>As appetizer, salad, in omelets |
| *28.Salvia aramiensis* Rech.f.<br>Y.Güzel-2131 | 2M<br>2P<br>2KP | 0.07G<br>0.06M<br>0.07P<br>0.08KP | Pohur / T<br>Kıvaystilan / A | Leaves<br>Flowers | In meat dishes<br>If milk is boiled over a fire of its bush, the smoke gives a pleasant aroma to the milk | Medicinal uses<br>As traditional herbal tea<br>For the evil eye: the plant is burned on embers and the individual is exposed to its smoke |
| *29.Satureja thymbra* L.<br>Y.Güzel-2094 | 5M<br>5P<br>2KP | 0.14G<br>0.16M<br>0.17P<br>0.08KP | Halilibrahim zahteri / T<br>Zğeytra / A | Leaves, twigs | In meat dishes and "katıklı ekmek" | Medicinal uses |
| *30.Satureja cuneifolia* Ten.<br>Y.Güzel-2095 | 2M<br>1P | 0.04G<br>0.06M<br>0.04P | Kaya kekiği / T<br>Zğeytra / A | Leaves, twigs | In meat dishes and "katıklı ekmek" | Medicinal uses |
| *31.Clinopodium vulgare* subsp. *arundanum* (Boiss.) Nyman<br>Y.Güzel-2132 | 6M<br>2KP | 0.1G<br>0.2M<br>0.07KP | Kamış fesleğen / T<br>Şumaya / A | Leaves, twigs | Used as animal feed to flavor milk and dairy products | Medicinal uses |
| *32.Clinopodium serpyllifolium* subsp. *barbatum* (P.H.Davis) Bräuchler<br>Y.Güzel-2096 | 2M<br>3KP | 0.06G<br>0.06M<br>0.12KP | Naneli çay / T<br>Viks otu / T<br>Çay nanesi / T | Leaves, twigs | In meat dishes | As tea |
| *33.Ocimum basilicum* L.*<br>Y.Güzel-2097 | 27M<br>24P<br>28KP | 0.9G<br>0.9M<br>0.96P<br>0.97KP | Fesleğen / T<br>Reyhan / T<br>Habak / A | Leaves, twigs, flowers | Widely used as a spice in local cuisine<br>** Used in traditional dishes such as "Hatay oruğu" and "Antakya küflü sürkü" | Medicinal uses |
| **Lauraceae** | | | | | | |
| *34.Laurus nobilis* L<br>Y.Güzel-2098 | 20M<br>21P<br>20KP | 0.7G<br>0.6M<br>0.7P<br>0.8KP | Defne / T<br>Ğar / A | Leaves | In meat, fish, and chicken dishes<br>Bay leaves are placed between dried tomatoes and dried figs to give them aroma and to protect them from insects and mold | Leaves: Medicinal uses<br>Leaves and fruits: Traditional laurel soap: "gar sabunu" |

| **Family**<br>***Species***<br>**Voucher number** | **No. of informants**<br>**G: General**<br>**M: Mountain**<br>**P: Plain**<br>**KP: Kuseyr Plateau** | **UV**<br>**G: General**<br>**M: Mountain**<br>**P: Plain**<br>**KP: Kuseyr Plateau** | **Vernacular names**<br>**T: Turkish**<br>**A: Arabic** | **Used parts** | **Usage** | **Uses other than spices or sauces in Hatay** (for medical uses, see Güzel *et al.* 2015 and Yipel *et al.* 2017; for uses as tea, see Güzel and Güzelşemme, 2018) |
|---|---|---|---|---|---|---|
| **Lythraceae** | | | | | | |
| *35.Punica granatum* L.*<br>Y.Güzel-2099 | 28M<br>27P<br>25KP | 0.9G<br>0.9M<br>0.9P<br>1KP | Nar / T<br>Rimmen / A | A widely used sour sauce, "nar ekşis" or "hamed rimmen," is prepared by boiling fruit juices until they thicken and turn brown-black | "Nar ekşisi" or "hamed rimmen" is one of the most important sour sauces of the local cuisine, used in many traditional foods | Medicinal uses |
| **Orchidaceae** | | | | | | |
| *36.Anacamptis pyramidalis* (L.) Rich. Y.Güzel-2101 | 2M<br>2KP | 0.05G<br>0.06M<br>0.08KP | Sivrisalep / T<br>Zahleb / A | Tubers | Tubers are used to make salep<br>Salep or sahlab is the flour of the boiled and sundried tubers of these wild orchid species; it has a sweet, characteristic aroma and is mixed with milk as a beverage of the same name or used in milk-based desserts | |
| *37.Dactylorhiza osmanica* (Klinge) P.F.Hunt & Summerh.<br>Y.Güzel-2102 | 2M<br>1KP | 0.4G<br>0.06M<br>0.04KP | Osmanlı salebi / T<br>Zahleb / A | Tubers | Tubers are used to make salep | |
| *38.Ophrys umbilicata* subsp. *umbilicata* Desf.<br>Y.Güzel-2103 | 3KP | 0.04G<br>0.1KP | Göbekli salep / T<br>Zahleb / A | Tubers | Tubers are used to make salep | |
| *39.Orchis anatolica* Boiss.<br>Y.Güzel-2104 | 2M | 0.02G<br>0.06M | Dildamak / T<br>Zahleb / A | Tubers | Tubers are used to make salep | |
| *40.Orchis simia* Lam.<br>Y.Güzel-2105 | 3KP | 0.04G<br>0.12KP | Salep püskülü / T<br>Zahleb / A | Tubers | Tubers are used to make salep | |
| *41Neotinea tridentata* (Scop.) R.M.Bateman, Pridgeon & M.W.Chase<br>Y.Güzel-2106 | 3KP | 0.04G<br>0.12KP | Katranalacası / T<br>Zahleb / A | Tubers | Tubers are used to make salep | |
| *42.Serapias orientalis* subsp. *levantina* (H.Baumann & Künkele) Kreutz<br>Y.Güzel-2107 | 2M<br>2KP | 0.05G<br>0.06M<br>0.08KP | Sağırkulağı / T | Tubers | Tubers are used to make salep | |
| **Polygonaceae** | | | | | | |
| *43.Rheum ribes* L.<br>Y.Güzel-2108 | 4M | 0.05G<br>0.13M | Işgın / T | Flowers and stems | Dried flowers used as flavoring<br>Stems used in food to give a sour taste | Medicinal uses |

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|---|---|---|---|---|---|---|
| **Ranunculaceae** | | | | | | |
| *44.Nigella sativa* L*<br>Y.Güzel-2134 | 12M<br>10P<br>9KP | 0.45G<br>0.4M<br>0.3P<br>0.4KP | Çörekotu / T<br>Habbtissevdi / A | Seeds | In pastries, especially traditional ones like "Antakya külçesi" or "kaytaz böreği"<br>In traditional cheeses like "Antakya küflü sürkü" or "carra peyniri" | Medicinal uses |
| *45.Nigella damascena* L.<br>Y.Güzel-2135 | 2M<br>2P<br>2KP | 0.07G<br>0.07M<br>0.07P<br>0.08KP | Çörekotu / T<br>Habbtissevdi / A | Seeds | In pastries, especially traditional ones like "Antakya külçesi" or "kaytaz böreği"<br>In traditional cheeses like "Antakya küflü sürkü" or "carra peyniri" | Medicinal uses |
| **Rosaceae** | | | | | | |
| *46.Cerasus mahaleb* var. *mahaleb* (L.) Mill.<br>Y.Güzel-2109 | 7M<br>10P<br>13KP | 0.35G<br>0.2M<br>0.34P<br>0.5KP | Mahlep/ T, A | Seeds | One of the main spices of "Antakya kömbesi," a kind of traditional cookie, and of the oily pastry named "Antakya külçesi" | Medicinal uses |
| *47.Cornus mas* L.<br>Y.Güzel-2110 | 8M | 0.1G<br>0.3M | Kızılcık / T | Fruit juices are boiled until thickened to prepare the sour sauce named "kızılcık ekşisi" | Sour sauce prepared from boiled fruit juices are used in meat dishes and stuffed vegetables ("dolma") | As fruit |
| *48.Malus pumila* Mill.*<br>Y.Güzel-2112 | 3M<br>8P<br>2KP | 0.13G<br>0.1M<br>0.3P<br>0.08KP | Elma / T<br>Tuffah / A | Fruits | As reported by elderly participants (over 75 years old), in their parents' time, tomatoes were not a common vegetable and dishes that are made with tomatoes or tomato paste today were made by grating sour apples; a kind of rice porridge called "tuffahiye" is an example of this type of food and its name means "with apple" | As fruit |
| *49.Malus sylvestris* (L.) Mill.<br>Y.Güzel-2111 | 3M<br>6P<br>2KP | 0.13G<br>0.1M<br>0.2P<br>0.08KP | Yaban elması / T<br>Tuffah cebel / A | Fruits | Same as *M. pumila* | As fruit |
| *50.Prunus cerasifera* Ehrh. (Syn.: *Prunus divaricata* var. *divaricata*)<br>Y.Güzel-2136 | 6M | 0.07G<br>0.2M | Dağ eriği / T | Fruit juices are boiled until thickened to prepare the sour sauce named "erik ekşisi" | As sour sauce in various dishes | As fruit |
| *51.Prunus domestica* L.*<br>Y.Güzel-2113 | 8M | 0.09G<br>0.3M | Erik / T | Fruit juices are boiled until thickened to prepare the sour sauce named "erik ekşisi" | As sour sauce in various dishes | As fruit |

| **Family**<br>***Species***<br>**Voucher number** | **No. of informants**<br>**G: General**<br>**M: Mountain**<br>**P: Plain**<br>**KP: Kuseyr Plateau** | **UV**<br>**G: General**<br>**M: Mountain**<br>**P: Plain**<br>**KP: Kuseyr Plateau** | **Vernacular names**<br>**T: Turkish**<br>**A: Arabic** | **Used parts** | **Usage** | **Uses other than spices or sauces in Hatay** (for medical uses, see Güzel *et al.* 2015 and Yipel *et al.* 2017; for uses as tea, see Güzel and Güzelşemme, 2018) |
|---|---|---|---|---|---|---|
| *52.Rosa* × *damascena* Herrm.*<br>Y.Güzel-2114 | 4M<br>6P<br>2KP | 0.14G<br>0.13M<br>0.2P<br>0.08KP | Isparta gülü / T<br>Verd niyseni / A | Flowers | Used as flavoring by adding petals to various salads, such as "kısır"<br>Rose water obtained by distillation is added to desserts | Ornamental use |
| *53.Vitis sylvestris* C.C.Gmel.<br>Y.Güzel-2115 | 2M | 0.02G<br>0.06M | Deli asma / T | Same as *V. vinifera* | Same as *V. vinifera* | As fruit<br>Medicinal uses |
| *54.Vitis vinifera* L.*<br>Y.Güzel-2116 | 9M<br>11P<br>5KP | 0.3G<br>0.3M<br>0.4P<br>0.2KP | Asma / T<br>Diyle / A<br>İnbe / A | Juice of raw, green berries is boiled until thickened to prepare the sour sauce named "koruk ekşisi" | Sour sauce is used in various dishes<br>Molasses is used as a sweetener; especially in the years when refined sugar was not common, it was reported that local sweets such as "künefe" were made with grape or carob molasses instead of sugar syrup in rural areas<br>** It is used as a flavoring agent in the production of a kind of local tarhana called "kishk," which is prepared from wheat, bulgur, and yoghurt | As fruit<br>As molasses<br>Medicinal uses |
| **Rutaceae** | | | | | | |
| *55.Citrus aurantium* L.*<br>Y.Güzel-2117 | 7M<br>5P | 0.14G<br>0.2M<br>0.17P | Turunç / T<br>Trınc / A | Fruit juices are boiled until thickened to prepare the sour sauce named "turunç ekşisi" | Sour sauce is used in various dishes | Traditional orange jam is prepared from the peels |

* Plants that are members of the flora and are also cultivated
** First record of this use

Table 2. Plants used for egg painting.

| Family<br>*Species*<br>Voucher number | Vernacular names<br>T: Turkish<br>A: Arabic | Used part | Painting method | Color obtained | Ethnicity of the reporters<br>C:Christian<br>A:Alawite |
|---|---|---|---|---|---|
| **Amaranthaceae** | | | | | |
| *56.Amaranthus retroflexus* L.<br>Y.Güzel-2118 | Kızılbacak / T<br>Kıttayfe / A | Leaves | Boiled with the eggs | Pale green | 2A |
| *57.Spinacia oleracea* L.<br>Y.Güzel-2119 | Ispanak / T<br>Sbeneğ / A | Leaves | Boiled with the eggs | Pale green | 2A |
| **Amaryllidaceae** | | | | | |
| *58.Allium cepa* L.<br>Y.Güzel-2120 | Soğan / T<br>Basal / A | Peel | Boiled with the eggs | Brown onions: pale to dark brownish orange<br>Red onions: brownish red | 15C/10A |
| **Apiaceae** | | | | | |
| *59.Petroselinum crispum* (Mill.) A.W.Hill<br>Y.Güzel-2121 | Maydanoz / T<br>Bakdunes / A | Leaves | Boiled with the eggs | Eggs are wrapped in the plants with a thread or a thin cloth to create patterns | 5C/3A |
| *60.Daucus carrota* L.<br>Y.Güzel-2122 | Havuç / T<br>Cezar / A | Roots | Grated and boiled with the eggs | Purple with purple carrots<br>Yellow with orange carrots | 1C/2A |
| **Brassicaceae** | | | | | |
| **61.**Brassica *oleracea* L. (red cabbage cultivar)<br>Y.Güzel-2123 | Mor lahana / T<br>Milfuf ahmar / A | Leaves | Boiled with the eggs | Blue | 4A |
| *Fabaceae* | | | | | |
| **62.***Trifolium* L. sp.<br>Y.Güzel-2124 | Yonca / T<br>Cleybine / A | Leaves | Boiled with the eggs | Eggs are wrapped in the plants with a thread or a thin cloth to create patterns | 5C |
| **Juglandaceae** | | | | | |
| *63.Juglans regia* L.<br>Y.Güzel-2125 | Ceviz / T<br>Cövz / A | Inflorescences | Boiled with the eggs | Navy green | 4C/7A |
| **Lythraceae** | | | | | |
| *64.Punica granatum* L.<br>Y.Güzel-2126 | Nar / T<br>Rimmen / A | Flowers | Boiled with the eggs | Yellow | 2C/4A |
| **Oxalidaceae** | | | | | |
| *65.Oxalis pes-caprae* L<br>Y.Güzel-2127 | Ekşi yonca / T | Leaves | Boiled with the eggs | Eggs are wrapped in the plants with a thread or a thin cloth to create patterns | 2A |

Table 2. Continued.

| Family<br>*Species*<br>Voucher number | Vernacular names<br>T: Turkish<br>A: Arabic | Used part | Painting method | Color obtained | Ethnicity of the reporters<br>C:Christian<br>A:Alawite |
|---|---|---|---|---|---|
| **Papaveraceae** | | | | | |
| *66.Papaver rhoeas* L.<br>Y.Güzel-2128 | Gelincik / T<br>Gelin eli / T<br>Şkayyek / A | Flowers | Boiled with the eggs | Grayish blue | 3A |
| **Rubiaceae** | | | | | |
| *67.Coffea arabica* L. | Kahve / T<br>Kahva / A | Roasted and ground coffee seeds | Boiled with the eggs | Brown | 3C/1A |
| *68.Rubia tinctorium* L.<br>Y.Güzel-2130 | Yumurta boyası / T<br>Sıbbeğbovd / A<br>(both Turkish and Arabic names mean "egg dye") | Roots | Boiled with the eggs | Red | 3A |
| **Theaceae** | | | | | |
| *69.Camellia sinensis* (L.) KUNTZE | Çay / T<br>Çöye / A | Tea leaves | Boiled with the eggs | Brown | 1C/3A |

Sour sauces have a very important place in the local cuisine. The most common sour sauce used in stuffed vegetables ("dolma"), salads, soups, and meat dishes is a sour pomegranate sauce known as "nar ekşisi" in Turkish and "hamed rimmen" in Arabic (Figure 3). Sour sauces prepared from *Cornus mas* and from *Prunus*, *Citrus* and *Vitis* species are encountered as alternatives to pomegranate sauce, especially in the villages of the Amanos Mountains. *Malus* species, on the other hand, are used in applications other than sour sauces, but again are used to impart a sour taste to foods. Especially in villages close to the Syrian border, where Middle Eastern cuisine is dominant, sour-tasting "tuffahiye" dishes are prepared by grating or chopping sour apples into rice porridge with meat or chicken. Interviewees stated that sour sauces such as pomegranate, cranberry and plum sauces, as well as sour apples, were frequently used in the time of their grandparents, when tomatoes were less known in the region, but today they have been replaced by tomatoes and tomato paste in many dishes. It is culturally important for us to record such details of traditional culinary culture before they are forgotten.

Plants used for dyeing eggs, on the other hand, are examples of the cultural interaction of different ethnoreligious populations living together in peace for centuries in a multicultural, cosmopolitan city. In the first weeks of April, the Christians of the city dye eggs for Easter, while the Arab Alawites dye eggs for Eid al Sabatash with the same plants and using the same methods. Colored eggs are distributed to children to play with (Figure 5).


Figure 5. A: Eggs dyed with onion peel, parsley and clover leaves. B: Eggs dyed with pomegranate flowers. C: Eggs dyed with poppy above, red cabbage below.

## DISCUSSION

Pressure from increasing demand: It is still possible to introduce new herbal products from the wild into agriculture:

After being selected as a UNESCO Creative City of Gastronomy, gastronomy tourism gained importance in Hatay province (DOGAKA, 2022). This caused an increase in the demand for local cuisine products and accelerated the processes of obtaining certain traditional raw materials such as *Thymbra spicata* through agriculture instead of foraging. This alternative agricultural product has become a new source of income in rural areas. In addition, geographical indications (GIs) of various traditional foods such as "Hatay oruğu" ("kibbeh" in local Arabic), "Hatay kaytaz böreği" ("kaytuzet"), "Antakya carra peyniri" ("cibin carra") and "Antakya küflü sürkü" ("sürki mistiviy") (Figure 6) have been granted by the

Turkish Patent and Trademark Office. GI studies of many products are still being carried out by universities and various public institutions. The spices that give the characteristic flavors of these products have gained even more importance. *Thymbra spicata*, used in za'atar, is a successful example of a plant formerly foraged in the wild being brought into the local economy via cultivation (Figure 7). Almost all informants mentioned that *Thymbra spicata* was collected from the mountains up until ten years ago, but since then it has been cultivated in recent years and can be found in abundance in markets, greengrocers, peddlers' stalls, and even in shops selling touristic products (Figure 7). Indeed, it is possible to find *Thymbra spicata* being sold all over the city in the spring and early summer months. The cultivation of this plant, which is widely used in the local cuisine, has been supported by various public and non-governmental organizations and it has become one of the most important agricultural and commercial products of Hatay province today. According to TUIK (2022) statistics, while the agricultural area of *Thymbra spicata* in Hatay was 4 hectares in 2004, it reached 100 hectares in the late 2010s when gastronomic tourism activities increased, and 134.3 hectares were planted in 2021. In the last ten years, many women's cooperatives dealing with *Thymbra spicata* agriculture have been established, resulting in a positive change in terms of women's employment.

Hatay province is also one of the main exporters of *Laurus nobilis*, or bay laurel, in the world (TUIK, 2022). In addition to being used for flavoring, bay laurel leaves have been heavily collected from nature in recent years for the growing laurel soap industry. Wild harvesting cannot keep up with the demand and *Laurus nobilis* is thus a candidate to follow *Thymbra spicata* in being adapted to cultivation.

Figure 6. "Antakya küflü sürkü," also known as "sürki mistiviy" in local Arabic. Left: Cheeses being kept to mold and mature. Middle and right: Moderately ripened and fully ripened cheeses, respectively.


Figure 7. A: A *Thymbra spicata* field. B: *Thymbra spicata* sold by a peddler C: *Thymbra spicata* seedlings for sale in front of a store selling local products in the city center. D: Dried *Thymbra spicata* in a spice shop E: Preserved *Thymbra spicata* for sale in a market.

**Mixed culture = Mixed spice preferences. The effects of geography and vegetation are undeniable**

We have seen that the cultural identity of the city, which is a mixture of both the Mediterranean and the Middle East, is also reflected in spice preferences. We did not find any literature on the edible use of *Melilotus* species in other provinces in Türkiye or in other Mediterranean countries. We saw that it was used in Antakya with a name similar to the one in Jordan. *Melilotus indicus* (L) All is called "handaakok," in Jordan (handkuk in Hatay), and its leaves are used in cheese-making, as well as for a tea infusion as an appetizing medicinal plant (Aburjai *et al.,* 2007). In Pakistan, it is called "sinji" and is consumed as a vegetable (Ahmed *et al.,* 2014), but we did not find its use as a bread spice elsewhere in the literature.

Again, we saw that the Za'atar mixture, which is not found in other provinces in Türkiye but is popular in the Middle East, is used in Hatay, albeit with some differences in its content. In addition to typical Middle Eastern spices such as za'atar, pomegranate sauce, and sumac, typical Mediterranean spices such as basil (*Ocimum basilicum*), bay (*Laurus nobilis*), cumin (*Carum carvi*), coriander (*Coriandrum sativum*), oregano and sage (Bower *et al*., 2016; Motti, 2021) are also commonly used in the city. While *Origanum majorana* is used as oregano and *Salvia officinalis* is used as sage in the Western Mediterranean, the use of *Origanum syriacum* and *Salvia aramiensis* instead in Antakya is a good example of the effect of phytogeography on culinary culture.

The average number of plant usage reports for each geographic region were calculated as M, P and KP values, respectively. The M region (Amanos Mountains) is a region with high plant diversity. It is seen that traditional plant use knowledge is directly proportional to plant diversity. The average number of plant usage reports for the plains and the plateau (P and KP) were similar to each other (Figure 8).

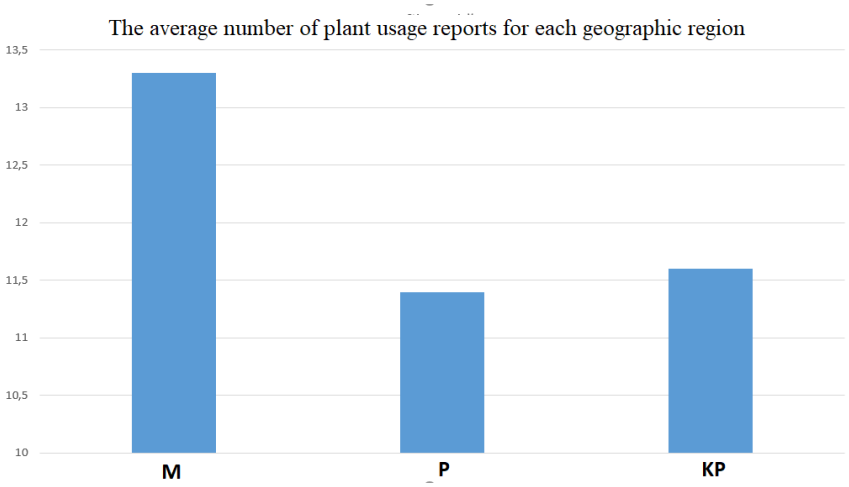

Figure 8. The average number of plant usage reports for each geographic region.

**Plant use traditions that living together made similar: Easter Egg and Eid al Sabatash Egg-Painting Traditions**

There is only one source in the literature examining the common egg-painting traditions of Arab Alawites and Arab Christians, and it examines the tradition from an anthropological point of view (Cengiz *et al*., 2016). Our study is the first to approach this tradition from an ethnobotanical point of view. Although there are similarities in egg dyeing and tapping rituals, anthropological research shows that the Easter and Eid al Sabatash traditions have different origins and became similar over time as a result of the groups' living together. In Easter traditions, the egg and egg tapping represent the resurrection of Jesus after his crucifixion, whereas in the Alawite tradition, as in other Islamic sects, prophets are believed to be immortal, so the egg does not symbolize the rebirth of Jesus, as it is not believed that he died. However, the anthropological approach speaks of a birth symbolism inspired by the awakening of nature in Eid al Sabatash, as in other spring festivals such as Nawruz. As a matter of fact, the explanations given by people we interviewed about the meaning of Eid al Sabatash were "spring festival" and "the feast of the birth of Imam Ali". The plants used in the dyeing, and hence the colors chosen, prove that the similar egg feast traditions of the two ethnoreligious groups actually came from different origins. The color red represents the blood of Jesus in the Christian faith and Easter eggs are often dyed shades of red. Plants that produce other colors are used much less by the Christian community. However, in the Alawite community, we encountered a much more diverse color/plant scale. This variety of colors/ plants shows that the meaning of the egg-painting ritual is to celebrate a fest, especially to make children happy, rather than its symbolic meanings at Easter, and indeed is a tradition acquired over time as a result of living with the Christian community.

**The present and future of traditional knowledge**

We saw that spice usage habits changed over time with the introduction of different commercial products and different cultural interactions. The fact that grape molasses or *Celtis* fruits were used as sweeteners before refined sugar became widespread, while nowadays these uses are almost completely forgotten, except by a few elderly people, is a concrete example of this change. Another example is the widespread use of sour sauces instead of tomato paste, for example the existence of tuffahiye dishes prepared from sour apple sauces before tomato was widely cultivated, and the fact that these dishes are almost completely forgotten today. Today, tomato paste is so

important in the local cuisine that most of the participants stated that there cannot be Antakya cuisine without tomato paste. Very few old people could say that tomato paste was not as common a hundred years ago, and other sour sauces were used.

When compared with the literature, we recorded very high wild spice diversity in Hatay. Fifty-five species is a high number for only a city when compared to 78 for the whole of Italy (Motti, 2021), 31 for Aceh, Indonesia (Navia *et al*., 2020) and 52 for Arunachal Pradesh, India (Bharali *et al.*, 2017) (both of which are located in the tropics, so the variety of spices is high) and 58 for Nkonkobe Municipality, an Eastern Cape Province of South Africa (another important and rich plant biodiversity center) (Asowata-Ayodele *et al*., 2016)

Although there is a rich variety of wild plants used for spices and other flavorings in the province of Hatay, the fact that many of those uses are reported by very few people shows that this traditional knowledge is prone to being forgotten. All uses with a UV of 0.5 or lower, representing uses that are not very well known, were reported by participants over 65 years of age. Younger participants' knowledge was limited to commonly used spices. This is another indication that traditional knowledge tends to be forgotten and is not adequately conveyed. Therefore, it is important that this information be put into writing and published without being completely forgotten.

## CONCLUSION

The changes in the supply routes of *Thymbra spicata*, which is the most prevalent ingredient in the culinary culture of the city and which has been obtained by foraging for years, show that the transition from foraging to agriculture can take place and that it is still possible to obtain an agricultural product that is cultivated from a wild plant. It also clearly shows that this process can take place in a very short time.

Of course, this transformation has taken place not only with the efforts of the people, but also with the efforts of various public institutions. The UNESCO Creative City of Gastronomy list, followed by the efforts of municipalities, universities, and chambers of commerce, enabled the traditional elements of the city to be introduced into tourism and thus into the economy. In this way, an economic revival was achieved in the city, where business opportunities were limited. We think that this type of sustainable economic development model in harmony with nature and culture can be successfully applied in economically distressed local communities around the world.

Hatay was the province that suffered the most destruction in the earthquake of February 6, 2023. We hope that this article, written just before the earthquake, will provide socioeconomic guidance in the rebuilding of the city. Some of the people from whom this information was compiled unfortunately lost their lives in the earthquake, and a significant number of them were forced to migrate from the destroyed city. This situation is a striking example as it shows the fragility of ethnobotanical knowledge in the face of ordinary or extraordinary situations that societies experience over time. Ethnobotanical knowledge is a valuable resource that has the potential to provide new medicines, new food plants, new industrial plants, and it must be compiled and protected before it is lost.

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