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Research Article

Functional Foods Used for Medical Purposes in Türkiye

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Abstract

The aim of this study is to introduce some foods produced by traditional methods and used for therapeutic purposes in Türkiye with various aspects. The study is the result of observations made in various provinces of the country and at different times. The foods with therapeutic purposes are the most important group of functional foods Anatolian people have been able to produce medicinal foods for different health problems in time. Practices and inventions in the products had often started with a sad story, but they succeeded in end. Today, however, this important culture is on verge of disappearing with influence of modern medicine. In this article; among the functional foods produced in Türkiye and considered important for treatment, the important ones are explained. It is thought that information given will contribute to the world of science and people suffering from food shortages. Its purpose is to introduce functional foods, which are on the verge of disappearance and produced in Anatolia, in various aspects. Functional foods within scope of the article are classified below

These are eaten foods like propolis, karakovan honey, rice with sprouts, arab vaccine, pine yoghurt, herbal cheese, fig mixed incirkarma in Turkish), halva's (çakal halva, andız halva, çovan halva etc.), pastries and molasses (grape molasses, plum molasses, carob molasses, mulberry molasses and fruit pulp) etc.), spices. Pine gum, iledin gum, mestiken gum, kenger gum etc. are chewed in the mouth.

Probiotics, salep, boza, vinegar, turnip juice, kefir, ayran, centaury oil, black cumin oil, almond oil, salted water, tarhana soup, rose juice, thyme juice, lavander juice, myrtle juice etc. aromatic plant juices (hidrosols), essential oils and mixtures etc. are drinked or driven to skin to against various diseases.

Although purposes of use of these products are different. They are generally foods that increase body resistance, facilitate digestion, prevent poisoning, heal wounds, relieve colds, and are beneficial for oral and dental health.

Fruits rice under ground parts of the medicinal and aromatic plants in vitamins, herbal cheese, green cheese, propolis, chestnut honey, delibal, molasses (carob molasses, rosehip molasses, grape molasses, andız molasses), arap aşı, tarhana and fruit pulps, baldırıkara syrup, vinegars and pickles (turnip juice, rose vinegar etc.), head and trotter meal, boiled bone broth, aromatic herbal teas, slimming teas, gum etc. identified important functional foods. These foods can be eaten plain or mixed. Some are mixed; some of them are made into thin layers and used as moxibustion i.e applied to skin. In this article, the raw materials, production and use of about 50 functional foods are explained. All of the products are local and generally original. Also, among the functional foods produced in Türkiye and considered important for health, the important ones are explained. The therapeutic use of these foods is generally in the form of eating, drinking, and chewing in the mouth but some can also be applied to the skin or wrapped.

Keywords: Functional Foods; Molasses; Medicinal Gums; Immunotherapy; Folk Medicine; Aromatherapy; Essential Oils

Introduction

Aromatherapy and essential oils have an important place in functional foods treatment applications [1]. Almost all of the emergence of folk remedies has a bitter story: The discovery of the antidote, the production of herbal cheese, the discovery of mesir paste, the heart-soothing ephedrin syrup etc. [2]. The place of origin of each of them is Anatolia and its emergence began with a bitter story. Successful ones have been transferred from generation to generation and become a culture [3].

Herbal treatment in Türkiye is a reflection of the flora and cultural richness. However, this potential is not known enough and cannot be evaluated. Natural treatment is not only about herbs. In addition to medicinal and aromatical plants, natural remedies are sought from animals, waters and mines [4]. With such methods and practices, only the need for modern medicine and hospitals can be reduced. With a better understanding of each product and application, a contribution will be made to the pharmaceutical industry, and therefore to modern medicine [5-7].

Modern medicine in Türkiye is a sericeous sector and has been institutionalized [2]. Other treatment methods could not be institutionalized. Therefore, its reliability is weak. If herbal treatment methods can be applied and developed by modern physicians, the services provided in health institutions will be more meaningful. If the functional foods described in this article can be standardized, they are recommended to patients by dietitians and their effects are reported through observation, it is certain that it will make significant contributions to the health sector. Otherwise, a serious treatment cannot be carried out with herbalists and some respected people who are seen as experienced. However, some contributions can be made in the form of first aid or immunotherapy (Modern medicine in Türkiye is a sericeous sector and has been institutionalized [2]. Other treatment methods could not be institutionalized or suppressed. Therefore, its reliability is weak. If herbal treatment methods can be applied and developed by modern physicians, the services provided in health institutions will be more meaningful. If the functional foods described in this article can be standardized, they are recommended to patients by dietitians and their effects are reported through observation, it is certain that it will make significant contributions to the health sector. Otherwise, a serious treatment cannot be carried out with herbalists and some respected people who are seen as experienced. However, some contributions can be made in the form of first aid or immunotherapy [2,7]. Folk medicine or preventive medicine is not an alternative to modern medicine.

The term 'alternative medicine' is also incorrect. It cannot be an alternative to medicine, it can be an alternative to its method [2]. Functional foods prepared for therapeutic purposes can be an alternative to the method. Based on some of the mistakes and flaws of modern medicine, embarking on a path without control and experience is not a way out in medicine. However, it is thought that some active substances, which are generally taken through food (especially medicinal teas), called 'preventive medicine', may have fewer side effects and more positive effects. In these products, the substance is both dilute and can be easily absorbed since it has plenty of water; compensates for water loss and heat in the body. The generally negative view of modern medicine towards other treatment methods limits the use of traditional medicine [2].

Local people in some parts of Türkiye have succeeded in making medicine in form of food for poisoning and many health problems [8]. The types of plants used, purpose and methods of use vary according to the culture of local people, environment they live in, their geographical situation and the flora of relevant region [4,6,7,9-11].

There are many foods produced for health purposes in Türkiye. The raw materials, production and usage techniques of these foods vary from region to region. This culture is disappearing. The younger generation knows or practices very little of these foods. For this reason, around 30 functional foods that are considered important are described in this article.

Material and Method

Informations described in this article have been carried out throughout Türkiye over a period of approximately 40 years [12-14]. They are a result of our observations. For this purpose, various vilayets in country was visited, elderly and experienced people were interviewed, questions were asked and their answers were received. Regions that are mainly examined are Eastern Anatolia and Lakes Region. Products produced were seen, how they were prepared, photographs were taken, and whether the products served their purpose and their success levels were determined. All plants included in the article were identified by the author and placed in the GUL Herbarium (in Isparta) as valuable specimens. All photos are taken by us and are original. Some findings have been previously published . Unpublished findings are included in this article [1-3,12-15]. Since it is not possible to describe all findings in this article, the important ones are briefly explained.

Findings and Discussion

Molasses, halvah and fruit pulp obtained from the fruits Andız (*Juniperus drupa*) molasses and its halva

Andız (*Juniperus drupa)* molasses and its halva: The cones are collected, washed, dried, broken, soaked in water for 3-5 days, filtered, the liquid part is boiled and concentrated. To it is called 'Andız molasses'. It is drinked a tablespoon every day or eat one meal a day with bread. 'Andız halva production: Andız molasses is with

water mixed with wheat flour or starch after it is diluted. Then if it is cooked, "Andız halvah" is produced. A certain amount of this halva is eaten after meals once a day. It is a food that gives strength and increases the resistance of the body. It is produced and consumed by Taurus villagers and nomads in the Mediterranean region.

Carob (*Ceratonia siliqua*) molasses

Carob (Ceratonia siliqua) molasses: Carob fruits are collected, washed, dried, crushed and kept in water for a few days. It is filtered, liquid part is obtained by boiling and condensing. It is drinked a tablespoon in a day or eat a withe little bit of bread. It is a food with many benefits. It has started to be sold in pharmacies in recent years. Benefits are broadly written on the jars.

Figure 1: Molasses and halva made from andız (*Juniperus drupa*) cones are important functional foods produced by the nomads and villagers of the Taurus Mountains.

Poppy (*Papaver somniferum*) paste

Sap of plant, also called 'afyon', is processed in the alkaloid factory in Bolvadin district of Afyonkarahisar province. The obtained productions is sold to pharmaceutical companies, especially in the USA. However, seeds released as processing residues are crushed and converted into a functional food. Its oil is used for edible purposes. It is a functional food that heals wounds and increases cell division. It is consumed by spreading on bread. Minute young plants of crowded areas are collected from planting areas and sold in neighborhood markets. They are eaten as salad or with bread for the same purpose.

Figure 2: Carob fruit and molasses are sold and consumed in pharmacies as a functional food for many ailments.

Capsules which are fruits of the plants, contain many seed. Poppy oil makes up 40-45% of the seeds. This oil is obtained by cold pressing the seeds. It is a wound healing oil that increases cell division. It is used by being eaten with bread or applied to wounds. They are drugs such as morphine, codeine, narcotine, and papaverine that have pain relief and sleep-inducing uses in medicine [16].

Figure 3: In the Lake District, poppy seeds are crushed and converted into a functional food consumed with bread.

Fig molasses and İncirkarma

These are foods that are on the verge of disappearing, produced by the villagers of Taurus. Figs are boiled and juice is passed into water, then filtered and the pulp is discarded, and it is boiled and condensed. This product is called 'fig molasses'. Fresh figs (Ficus carica) are split and dried in the sun. They are pressed to cubes made of soil together with grape molasses. After waiting for a month, it is taken out of the cube a little and eaten. This is called 'incirkarma in Turkish'. It is a fortifying and disease-preventing food. It is especially preferred for those who suffer from lack of sexual power, heart and digestive system disorders. It is also an important antidote against poisoning [14].

To increase sexual hormones: Ripe fig fruits are kept in olive oil for 1-2 months. Then a little is eaten. It is eaten from oil seeds (almond, walnut, hazelnut, sesame, menengiç, fruit seeds with non-toxic seeds etc.). Seeds are generally more effective than vegetables and fruits.

If fig fruits are eaten with tahin, molasses or dipped in olive oil, many diseases will be removed. It is consumed in region as a blood pressure reducer, intestinal softener (eliminating constipation), preventing poisoning and increasing sexual power. If poisoning is suspected, a few fig fruit is eated every day. At the same time, this application softens the bowels and protects the health of the bowels and ensures their operational works.

Mulberry molasses and pulp

For molasses, akdut (*Morus alba*) fruits are collected, cleaned, kneaded, and boiled in a cauldron with some water. It is filtered through a cheesecloth. Then the sherbet (liquid part) that comes out

is boiled in the cauldron, and when its foam starts to rise, it is put on the plate. When it starts to hold like a wire, it is removed from the stove. Meanwhile, sherbet is boiling continues. If the fire is strong and boiled quickly, the quality of molasses will weaken. Mulberry fruits with small fruits close to the wild one are more suitable for the purpose.

For mulberry molasses or 'akdut' must and flour or starch are boiled together. When it reaches the consistency of paste, it is spread on clean cloths as a thin layer and dried. It is folded when it is semi-moist, and is offered for consumption after it is completely dried. It can be eaten as much as desired. It is recommended for diabetics to eat less.

Dried mulberry is made into mud or the fresh one is crushed and made into porridge and wrapped around the patient's organ. In hand numbness, this mud is squeezed for a long time and eaten from its pulp or molasses.

Akdut (white mulberry) is important as molasses and dried fruit (snack). Mulberry products are common in Sütçüler (Isparta) district. Snack mulberry: White mulberry types close to the wild form, small fruit, less sweet are suitable for snack mulberry. Very sweet mulberries with large and juicy fruits do not serve this purpose very well. Under these mulberry trees, textiles such as exhibition/table cloth are tied to the tree or laid under it. The collected fruits are dried, packaged and sold as snacks.

Plum (*Prunus divaricata*) molasses and fruit pulp

The ones with sour fruits, especially the small-fruited plums in the wild form are preferred. Ripe fruits are harvested, washed and boiled. After a while, it is filtered, the seeds and pulp are discarded, and it is boiled until a paste-like consistency. Then it is spread in a thin layer on a clean cloth. It is rounded by curling close to drying. This molasses can be made by mixing it with grape juice or beet juice, or it can be made plain. Sour flavored and plain ones are preferred.

A food called 'Çakal halva' is produced in Isparta. It is made from sesame, molasses, poppy seeds, hazelnuts/peanuts, etc. It is mostly consumed as a snack. Its commercial value is very high.

At the same time, tahini halva production is very common in the country. What gives halva crispness/taste is the concentrated juice of endemic Beyşehir çöven (*Gypsophila arrosti* var. *nebulosa*) roots added to it. This plant is endemic to the region.

In Türkiye, especially in the Lakes Region, Eastern and Southeastern Anatolia regions, and in Gümüşhane, vegetable-derived pulp and sausage are produced. They are generally produced from grape and mulberry molasses. The hazelnuts, walnuts and almonds are strung on a string and dipped in this molasses, 5 min. kept until it is removed and dried. Ones that are produced in thin layers and generally consist of only molasses are called kome, fruit pulp, and the seeds that are stringed on a string are called sucuk. Sour fruits are more beneficial than sweet ones for health, but people do not prefer sour fruits. Sour fruits are collected, cleaned and boiled to make sausage and kome/pestil. It is loved and consumed as a snack during the winter period.

Figure 4: Sour plum (*Prunus divaricata*) pulp and coyote halva are functional foods produced by preference in the Lakes Region.

Kebere (*Capparis ovata*, *C. spinosa*) products

Homemade foods of *Capparis* species, which are common in the Lakes Region, have become industrial products over time. Kebere foods, which are mostly consumed for medical purposes in Burdur, are important functional foods for many diseases, especially MS disease.

Nutrient and secondary metabolite values in them were found to be significant in chemical analyzes. Exporting abroad is usually in form of brine. Canned pickles are eaten in salads, appetizers, on pizza, in the preparation of vegetarian foods and as a side dish alongside meats.

Their green fruits are crushed and mixed with green walnut shells, then dried and pulverized. In using time, a piece of it is stirred with water and, then applied 3 times a day until being gotrid of hemorrhoids. A small amount is eaten on a full stomach. It is an application of Taurus nomads [17]. The collected mature flowers are dried and ground. 1 teaspoon of ground flower powder is added to boiled water, infused for 10 minutes and consumed as tea [17-19]. While the fruits have aphrodisiac properties, they contain various substances that relieve pain and the peels are anti-inflammatory [19].

It is used in gout, urinary tract diseases and as a bleeding stopper. It has been used as a tonic in traditional medicine in some countries [20]. Making products from these plants should be standardized and clinical trials should be conducted on its medical importance.

Figure 5: Kebere (*Capparis spp*.) products are very diverse. The most common of them is bud pickles.

Rosehip (*Rosa spp*.) products

Rose species that grow naturally in Türkiye and whose fruits are economically valuable are called 'rosehip'. The need for rosehips is generally met in the form of collection from nature [21]. Recently, the cultivation of rosehip plants has begun in the Lakes Region. There are also industrial facilities that produce rosehip products (Tokat, Gümüşhane, etc.). The most common rosehip products are; molasses, marmalade, syrup and teas. Rosehip products are rich in vitamin C. They are important antioxidant foods. It is a group of foods that people love to consume in every period [21-25]. In recent years, research on rosehip products has increased and new functional foods have been developed [26]. Rose water and rose oil are medicinal products known since the Ottoman period. Oily rose water is an ingredient in many foods. It is also used for therapeutic purposes by drinking, rubbing or smelling alone [27]. Making products from these plants should be standardized and clinical trials should be conducted on its medical importance. Rose and rosehip (*Rosa* spp.) products are known and used all over the world. Its center is Türkiye. However, the infrastructure for these products is insufficient. Although rose products were used for healing purposes in the Ottoman period, we do not know the exact recipe of these products today. Rose syrup, rose yeast, roselab are the main ones of these foods.

Figure 6: Rosehip products include tea, marmalade and molasses. Recently, oil of its seeds has also been produced by cold press machine.

Functional meals (Okra, hibiscus and madımak)

The nomads consider Çalba (*Salvia* spp.) a healing treasure with antiseptic properties against infection and various diseases; In the case, it gets cold in the field or in the tent and gas is formed, they mixed *Malva sylvestris, M. neglecta* with wheat flour and sought a remedy for this situation by using the cautery method. They were seen to eat their food. In addition, in colds, Koyunotu/Oğlanotu (*Teucrium polium*) is boiled and left for 5-10 minutes and then taken in 2 sips. Do not drink too much because it is bitter. According to the Lokman Hekim; in order to be healthy, okra, madmak or mallow meals should be eaten at least once a year. Madmak (*Polygonum cognatum* etc.). Ebegümeci/mallow (*Malva neglecta, M. sylvestris*) are disease-reducing plants. Porridge of Ebegümeci is used to cure boils. The above-ground parts of these plants, especially the seeds, are pounded and wrapped around the joints. This application is for treatment against rheumatic disease.

Figure 7: Madmak (*Polygonum cognatum*) and Ebegümeci/mallow (Malva neglecta) are disease-reducing plants.

Çöven(gypsum) water and its products

There are around 20 wild gypsum species in Türkiye. The roots of these plants are removed, cleaned and dried in autumn. The roots are crushed, powdered and boiled. The water is filtered and con-

centrated. This is called ' gypsum extract' or ' gypsum water'. This water has many uses and economical importance. It has anti-fungal, cleaning, digestive system activating and flavoring properties. Halvah made of sesame, flour, sugar and gypsum juice is very delicious. 'Köpük halvah' in Edirne, 'kerebiç halvah' in Mersin and 'tahini halvah' are widely produced and consumed throughout the country. Çöven (gypsum)is the basis of halva production. They are a little poisonous plants. [29-32].

Figure 8: Halva produced from the roots of Çöven (*Gypsophila spp.*) is an important food against digestive system disorders.

Tarhana soups

An important part of tarhana consists of strained yogurt and wheat. Yoghurt, wheat flour, dried mint/thyme and red pepper, green fresh pepper, onion are chopped and mixed. It is placed in a bowl, covered with a clean cloth and left for 7-10 days to ferment. The waiting time can be increased. The one that is left to ferment for a long time is called 'Sour Tarhana'. If the waiting period does not exceed one week, it is called 'Dessert Tarhana'. This fermented material is poured onto a clean cloth. It is allowed to dry outdoors in a shaded, airy place.

'Tarhana soup' is very different from other soups. The reason for the rich food content; comes from the raw materials included in its structure. While rice soup, flour soup, mushroom soup, tomato soup, lentil soup are based on a specific food source, 'Tarhana soup' is made from a wide variety of ingredients. Although it is a soup in terms of usage, it resembles a meal in terms of its content. Tarhana production has been improved over time and its composition has been changed. It carries rich minerals such as animal protein, Ca, K, P, which are necessary for a healthy life [13].

Bahar

Add some cinnamon powder, ginger powder, etc. to the filtered Karakovan (original) honey, spices are added, mixed and stored in a glass. It is called 'Bahar'. For babies with stomachache and insomnia, pacifier is dipped to this food and given to the baby [2].

Against forgetfulness

Filtered Karakovan (original) honey is mixed with frankincense/daily (*Liquidambar orientalis*) oil or balm. A tablespoon of this mixture is eaten every day [2].

Figure 9: Tarhana is a functional product of Turkish cuisine

Lemon with garlic

Freshly prepared garlic puree is added to the freshly squeezed lemon juice in half amount of lemon. Drink one cup a day, either fresh or by keeping the beer waiting. Filtered Karakovan honey can also be added to it. It is an important food against blood pressure, against influenza and against lung problems. Against pneumonia, strained karakovan honey is applied to the back of the patient. It is covered with a wrapping paper. It is cleared after a day.

Functional chewing gum products

Main ingredients of chewing gum; It is known as the dough that fors sugar, glucose, softener and gum. Plants from which mastic is obtained in Turkey; Gum tree (*Pistacia lentiscus* var. *chia*), Pine tree (*Pinus* spp.), Göknar/Iledin (*Abies* spp.) tree, Kenger (*Gundelia tournefortii*), Manger (*Scorzonera* and *Tragopogon* spp.), Sakızotu (*Chondrilla juncea*) [1-3,12].

Gum tree is a large tree or shrub with hard wood, which is widespread in Mediterranean countries. It grows naturally in the Aegean region. Chios is known by this tree.Because it grows abundantly in the Chios. It is called 'mastic or mastika' in Thrace and Greece. Taurus nomads call it "mestiken gum". It is a balm taken by wounding tree trunks. It is produced by Karaburun, Çeşme, Urla (İzmir). It is not only chewed, but also added to sweet products such as 'salep, ice cream, rice pudding, cauldron'. It's an expensive gum [12].

Pine or Iledin resin is melted in a metal container and poured onto aluminum plates or into molds. After being frozen, a certain amount is taken in the mouth and chewed. The name of this product is 'Pine Gum'. 'Iledin gum' is produced in the same way.

The gum of Kenger (*Gundelia tournefortii*) and Sakız otu (*Chondrilla juncea*) consists of drawing the roots of the related plants in the spring and collecting the plant sap by cleaning it [3,12].

In order to keep the teeth healthy, it is recommended to chew the medical gums described here and be sugar-free. Although chewing requires a little patience, as you get used to it, it will cure your tooth decay and protect your dental health. It will strengthen the jaw muscles and will benefit against heartburn and digestive disorders. It will eliminate the unpleasant odor of the mouth, which will facilitate swallowing.

Figure 10a: Some plants that produce chewing gum for medicinal purposes: Damla sakızı (*Pistacia lentiscus* var. chia) leaf powder, Sakız otu (*Chondrilla juncea*), Teke sakalı (*Scorzonera tomentosa*).

Figure 10b: Kenger (*Gundelia tournefortii*) and kenger gum.

Figure 10c: A type of herbal gum for medicinal purposes; Pine (*Pinus nigra*) resin and its gum.

Functional milk products

Herbal Cheese and Green/Moldy Cheese

'Herbal cheese' with the addition of aromatic and medicinal herbaceous plants; 'green/moldy cheese' is obtained by molding the cheese under special conditions during maturation. These cheeses are produced and consumed for antibiotic purposes against various infectious diseases. 'Herbal cheese' east; 'moldy cheese', on the other hand, is widely produced by local people in western provinces. There is a dairy product called cacık and it is widely produced in eastern provinces [3,15].

Figure 11: Yeşil peynir/Küflü peynir (cheese) is widely produced against infectious diseases.

Cacık

Aromatic herbs are finely chopped and mixed into yoghurt.

Kurut

It is obtained by compressing the jelly that settles to the bottom by boiling the buttermilk, turning it into walnut-sized products and drying it. Common in eastern provinces [2,3,15].

Pine yogurt and milk jelly

Instead of yeast, the leaves of 'yılan yastığı' (*Arum italicum., et al*.) are added to warm milk to form milk jelly. Pine yogurt is produced by using fresh pine cones instead of yeast [2].

Sahlep and boza

Sahlep ie. tubers of *Orchis anatolica* etc. are obtained by boiling the tubers with milk. It is a functional food that is good for gynecological diseases and helps to lose weight by giving a feeling of satiety [2].

After straining water of mashed bulgur(broken wheat) rice mixture, it is passed through a fine-mesh strainer. Bulgur porridge is left for a while to cool. For the yeast mixture that will make the 'boza sour'; Warm milk, fresh yeast and granulated sugar are mixed in a separate bowl and added to the cooled porridge mixture and mixed. It is left for 1 day to ferment in an environment out of the sun. 'Boza' is obtained by adding granulated sugar and then water little by little, adjusting its consistency [2].

Figure 12a: 'The sahlep' is obtained by boiling tubers of Orchis anatolica etc. with milk.

Figure 12b: 'The boza' is a beverage widely consumed in western provinces

Walnut juice

15 walnut fruits (when they reach the size of a plum) are collected. It is sliced and put into 5 liters of water. It is kept under the sun for 3 months. It is drinked 1 teaspoon per day. A tablespoon of this product for the weight loss of people who are overweight; People with vascular occlusion are also recommended to drink this walnut juice on an empty stomach for 1-2 weeks. This product is also recommended for people with weak bones. This product is applied to the joints with rheumatic areas every few hours. It is not a well-known product.

The pulp of mature and dried walnut fruits is mashed. Then it is placed in a container and water is added until it reaches the level to cover it. It is kept for a day. Drink a glass of water the next day. It is highly recommended to consume this product for those who have problems with brain functions.

Barley vaccine

Milk, pine (*Pinus* spp.) resin and vetch (*Lens ervillia*) flour are boiled together. For the treatment of rheumatism, it is wrapped around the joints while it is warm.

Fonctional animal products

The tallow of small animals such as sheep and goats, especially sheep's tail fat, is leaked by heating method and left to freeze in a container. The most important tallow fat is those around the kidneys and large bowel. This leaked animal fat is applied externally to the veins of the patients who have varicose veins (enlargement of the veins) problem. Thus, the larged vessels in patiens are expected to shrink within a few months. In addition, these leaked oils are eaten by adding small amounts to foods such as bulgur pilaf or spreading on phyllo bread while it is hot. The purpose of this food is to increase the body's resistance against bone deficien.

Kidney, spleen or other meat products are cooked in embers and fed to those who suffer from stomach discomfort and anemia. General logic; Those with kidney failure are fed with kidney, those with spleen failure, spleen on embers, and those with liver failure, liver on embers. It is a traditional practice to feed those who suffer from bone deficiency with the bones of small fish and chickens, and with boiled water from the cartilage or bones of small cattle. Tall oil, soap and wood ash are added in equal amounts and mixed and wrapped on the boil. In this way, the boil is pierced and the inflammation is drained out. The wound is healed in a short time.

Fish and its oil

It is recommended to drink fish oil for goiter and weak people. In addition, fish oil is applied to the area with goiter disease. In bone fractures and cracks or in foot sprains, fish oil is applied to the relevant area or trout skin is wrapped. If the wrongly fused bones are broken, then the raw trout ıs whole wrapped to the patıent's relevant organ.

Aromatherapy

In aroma therapy; aromatic plant juices (hydrosols) or essential oils are drunk, applied to the skin, sniffed or put in bath water. Drinks or foods are prepared from seeds of some aromatic plants and taken orally. The spices are added to the foods to give color and smell, flavor.

Functional coffees and teas

Teas and coffees are generally pleasurable and relaxing, attention-grabbing beverages. Coffee (*Coffea arabica*) weakens the person by increasing fat burning**.** Increases fat breakdown instead of carbohydrates. Eating cherry fruit and drinking cherry stem tea also have a debilitating effect. The same effect can be seen in boiling water of cabbage (*Brassica oleracea*) and tea of cherry (*Prunus avium*) stem.

In making these coffees, partly Turkish coffee seeds can also be added. It can be produced as a mixture or plain. The pulp remaining at bottom of the cup after drinking coffee is called 'coffee telve'. This telve is applied to the face and beautified.

Menengiç and Dibek coffees

'Menengic'(*Pistacia terebinthus*) fruits have been sold in abundance in public markets in recent years. Menengiç threes also grow naturally in the Taurus mountains. Dibek coffee is a local Menengiç coffee made in Mardin and is famous throughout the country.

Eating the fruit of the tree (*Pistacia terebinthus*) known as the gum tree or Menengiç protects the teeth. Its fruits are known to be rich in oil.

Figure 13: Eating menengiç (*Pistacia terebinthus*) fruits and coffee are invigorating.

Kenger coffee

It is a coffee made by roasting seeds of some species belonging to Asteraceae family. Kenger (*Gundelia tournefortii*) comes at beginning of these plants. However, the coffee is also made from se-

eds of karahindiba (*Cichorium intybus*), şevketibostan (*Scolymus hispanicus*), meryemana dikeni (*Silybium marianum*), devedikeni (*Onopordum bracteatum, O. anatolicum* and *O. candidum*).

Figure 14: Plants from which coffee is made: Karahindiba (*Cichorium intybus*), şevketibostan (*Scolymus hispanicus*), meryemana dikeni, (*Silybium marianum*), deve dikeni (*Onopordum bracteatum, O. candidum*).

Rose Coffee

Oil rose water (hydrosol), obtained by steam distillation of oil rose (*Rosa damascena*) flowers, is added to classic Turkish coffee to change its aroma. It is called 'rose coffee'. It is a product developed in Isparta recently [20-28].

Spices

Türkiye is very rich in spice plants. The region where it is most common is Southeastern Anatolia. Spices play a very important role in the richness of Turkish cuisine and the deliciousness of its foods. During the Ottoman period, the 'silk road' was established from Europe to China. These caravans transported or sold silk and spices. The issue is still very important today [1-3].

Against fatigue

Figure 15: Spice plants are indispensable for food in Türkiye. It is mostly produced and consumed in Southeast Anatolia.

Galangal, ginger, çam fıstığı/kühnar/pine nut (*Pinus pinea* seeds), nettle (*Urtica dioica*), original karakovan honey and a teaspoon of çörekotu (*Nigella sativa*) oil are mixed and eaten every day.

The mixture made from galangal and ginger is fed to child. Roasted camel meat etc. It can be fed to children against bedwetting and pee incontinence.

Against itching, yellow discharge, tumors, menstrual irregularities, gynecological diseases and uterine cancers

Drink 5 tablespoons of sesame (*Sesamum indicum*) oil after bathing. Sesame oil, sahlep (*Orchis, Ophyris* and *Dactylorhiza* spp.), asma/tevek (*Vitis vinifera*) leaf and grapefruit (*Citrus paradisi*) are very important in reducing gynecological diseases. Those who use synthetic drugs should not eat grapefruit, lemon, blood orange and pomegranate.

Against anemia, loss of appetite

Cumin (*Cuminum cyminum*) and black cumin (*Nigella sativa)* oil or just one can be drunk daily in small amounts.

Swelling in the feet is a sign for many diseases. 1 teaspoon of black cumin oil should be drunk every day for the purposing.

Oğulotu (*Melissa officinalis*) tea is antidiarrheal

Eating dry coffee also helps to cut diarrhea. Seeds of cumin (*Cuminum cyminum*) and fennel (*Foeniculum vulgare*). Drinking boiled water is very useful for babies against colds and gas formation in the intestine. The resulting water is given to the baby to drink a few drops to relax. The same process can be done with the boiled water of öksürükotu/the coltsfoot (*Tussilago farfara*).

A cup of vinegar, a teaspoon of cinnamon powder, 2-5 cloves can be mixed and drunk 2-3 times a day against colds. This mixture can also be brewed and drunk as a tea.

Figure 16: Extracts of many medicinal aromatic plants are used in Türkiye. Sale of licorice (*Glycyrrhiza glabra*) sherbet; Wild collection of Sage (*Sideritis*) species and fennel (*Foeniculum vulgare*).

Çalba/şalba (*Salvia tomentosa*) herb boiled with barley (Hordeum vulgare) flour. As a result of mixing,it si applied to the back in the treatment of colds. It is kept wrapped for a day. Boiled çalba (*Salvia officinalis* etc.) juice is applied to the wounds and used as a wound healer. It is used against sore throat by gargling in the mouth. In addition, quince fruit is eaten, the leaves and flowers of the tea are drunk. Barberry/Woman salt (*Berberis vulgaris., et al*.) roots (rhizomes) are removed, cleaned and boiled in late autumn or winter. After cooling, it is gargled against toothache and mouth sores. The rhizomes of Berberis spp. are extracted from the ground in the ground, dried and powdered. Diabetics are recommended to take one teaspoon of this powder after meals. The essential oil of thyme, mint and şalba/çalba group plants is dripped onto cotton and put on the aching tooth. The same process can be done by sprinkling salt on the cotton.

Figure 17: Mint species: wild mint/peppermint (*Mentha longifolia*) and cultivated mint (*Mentha x piperita*).

Figure 18: Mulberry (*Melissa officinalis*) is genotypically diverse in Türkiye.

For eye diseases

For itching, burning and redness; tea is prepared from aromatic herbs such as black tea, salba, sage, rose, rosemary, and mint. While hot, the eyes are kept on steam of these teas.

Kantaron oil

Kantaron also called 'Binbirdelik or Koyunkıran' is deposited in high quality olive oil. Up to 50 g of fresh flowers are added to 1 liter of olive oil. It is expected for 1 month in the sun or 3 months in the shade. It is then filtered and used. *H. perforatum, H. scabrum* and *H. perfoliatum* are the most commonly used species. Kantaron (*Hypericum* spp.) oil is applied to the patient's part, especially in inguinal hernias, in external and internal organ injuries and in places with hernia. Drink a teaspoon in the morning against internal organ injuries. Black cumin oil is also used for the same purpose and method. However, black cumin oil is obtained by cold pressing the seeds of *Nigella sativa* and *N. damacena* plants. Both oils are widely produced and consumed products.

For inguinal hernia; St. John's Wort oil or black cumin seed oil is applied to the relevant area and rubbed. These oils are also applied externally to the skin in wound healing.

Figure 19: Kantaron (*Hypericum* spp.) plants, drying and oil.

Vinegar and pickles

Vinegar is a fermented beverage that dissolves bad cholesterol accumulated in the veins. There are many varieties in the country. There are around 40 vinegars produced from various fruits in Türkiye. Drinking vinegar and pickles is appetizing, vasodilating and diaphoretic. If vinegar or vinegar is not available, pickle juice can be applied to burns with olive oil. It is applied to the skin and reduces high fever. A house with pickles and vinegar is not worth the evil eye.

Turnip juice is a type of pickle produced mostly in Adana, hatay etc. There are two types, spicy and non-spicy. It is an antiviral functional food. Painful is more effective.

Probiotics

It is the industrialized version of some folk remedies in food form. It has effects that strengthen the immune system against diseases by increasing the resistance of the body.

Honey garlic juice

One unit of garlic clove (small onions) is pounded and added to fresh lemon juice squeezed in 2 times its volume. It is kept for 2 days. Then honey syrup is added on it and covered with cheesecloth, it is kept in a cool and shaded place for about a month. It is then placed in the refrigerator. One cup is drunk daily on an empty stomach. This application is done to reduce high blood pressure, to relieve lung disease, to strengthen the heart and to gain resistance against infectious diseases.

Figure 20: Probiotic production, which is an important ingredient of folk remedies, is increasing.

Şalgam suyu (turnip juice)

Turnip, black carrot is made with the addition of water and salt. This mixture is left for a certain period of time to ferment, eventually turning into turnip juice. It is red in color, fuzzy in appearance and sour. There are spicy and non-spicy varieties. They are sold in Adana, Hatay and Mersin, especially in four seasons. The bitterness of turnip juice is provided by using the juice of pickled hot pepper. According to taste, 1/3-1/6 turnip pickle juice can be added.

It is usually drunk with kebab varieties. It should be consumed sparingly by those with blood pressure problems and pregnant women. Adana Turnip Juice was registered by the Turkish Patent and Trademark Office and received a geographical indication.

Figure 21: Turnip juice is a functional pickle that is consumed a lot, especially in winter, against influenza infection. The spicy variety is light orange in color.

Discussion and Conclusion

About 50 foods used for medicinal purposes are reported in this article. The majority of these foods are of vegetable origin. It is used plain or mixed, raw or cooked, to eat, drink, chew, or apply to the skin. Mostly, the old medicine practices in East Anbadolu and Lakes region are explained. Other regions and provinces are also scanned and published by various researchers [32-41]. Most folk medicine is used for infectious diseases.

In folk medicine, a cure has been sought and found for every disease. Some faulty applications were also made. Every successful application started with a sad story. For example, antidote: The king of Pontus was killed as a result of being defeated by the Romans and his son was left alone for 7 years in the Black Sea mountains because he did not want to be king, snake etc. It was found by mixing herbs against poisoning and applying it on its own. [3]. Today, mesir paste, which is traditionally produced in the Manisa region, is based on such a story. Ayşe Hafza Sultan, the mother of the Ottoman emperor Suleyman the Magnificent, fell ill with an incurable disease and the sultan ordered the physicians to develop a special medicine. A medicine is prepared from 41 kinds of spices. Today, this application is made with 17 spices. Tarhana soup was learned by Gülbahar Hatun, the mother of Ottoman Sultan Yavuz Sultan Selim, from a poor family and made in the palace, and spread throughout the Ottoman geography [13]. Herbal cheese was first made in Eastern Anatolia region by a physician as a medicine against infectious diseases, and then it was liked and popularized by the local people [15]. The famous physician, Dioscoridis lived in Anatolia and wrote his work named 'Materia Medica' in Anatolia. Today, this work is available in English. Physicians such as Farabi, İbni Sina, Şerafettin Sabuncu etc. lived in Anatolia and developed many treatment methods. Many civilizations lived in Anatolia, all of them left separate information. Again, the floristic richness of this geography is very high. This richness is reflected in the culinary culture and treatment methods. Some of the foods are not for nutritional purposes, but for therapeutic purposes. For this reason, Türkiye has become a historical treatment center. Folk medicine practices are very common [1-3].

Folk remedies and folk medicine practices have begun to lose their importance due to accelerated rural-urban migration of Türkiye people after the 1970s. After this date, use of synthetic drugs in modern medicine has increased, and diseases with their side effects have also increased. An interesting part of the job; People and communities who did not use synthetic drugs remained healthier than those who did. People are increasingly turning to plants and natural methods in the treatment of diseases. They use more plants and foods that have a supportive role for health. We call foods used for therapeutic purposes 'functional foods'. The main purpose of consuming these foods is not nutrition, but to seek solutions to health problems.

The basis of aromatherapy is spice plants. When aromatic plants are mentioned; fragrant plants with essential oils come to mind. Nutritional values are not very important in these plants. Generally appetizing in humans; Plants with fragrant and extracts that can be used in medicine come to mind. Most of the aromatic plants have germicidal (antiseptic) properties after a certain dose. Essential oils (plant essences) are herbal substances that do not return in plant metabolism, emit sharp odors and easily fly away. Essential oils are formed by the combination of many substances. So much so that there are more than 100 different substances in some essential oils, and this fact has been scientifically proven many times over.

Because of their different compositions and chemical structures, aromatic plants have unique odors. Because of these properties, essences obtained by different methods, especially fragrant ones, are used in the cosmetics and perfume industry. The taxa in Eastern Anatolia are used as food, food additives and animal feed, and some are used for medical purposes in the treatment of human and animal diseases [2,3]. *Prangos* and *Ferula* species are known as aphrodisiacs in Eastern Anatolia; It is fed to animals to multiply herds of pets. *Pastinaca sativa* var. *urens,* on the other hand, does not smell very pleasant in the plant, but the essential oil obtained by distillation is very fragrant and may become a sought-after fragrance in cosmetics over time and can be used in aroma therapy.

Türkiye has an important culture in folk medicine practices [1,33-37]. There are also information not mentioned here in folk medicine. In Senirkent (Isparta), important folk remedies are produced as food. Folk medicine practices, which lead to the discovery of many drugs and inspire medicine, are unfortunately prevented from doing research due to our legal regulations. For this reason, folk physicians avoid giving information to people they do not trust and giving treatment when a patient comes.

Folk remedies are both a daily practice and a practice of the people in the countryside. For example, when someone's head is cut open, fresh chicken eggs are cooked in butter and wrapped in warm heat. This practice was very strange in modern medicine. However, over time it became clear that; Egg oil is a wound healer and prevents infection as it is warmly wrapped around the wound and is a protein-rich material. Inspired by this practice, an important wound healing drug can be produced over time. It is possible for functional foods to be eaten by the patient, but this is not the only method of administration. For example, wheat flour and grape molasses are mixed and wrapped around the injured organ. This food, called sweet dough, is applied by wrapping the wound, not by eating it. Vinegar or pickles are also functional foods, but are applied to the arms and legs as an antipyretic. So is rose water.

It is hoped that the information given to those who are interested in food, medicine, treatment and those living in rural areas will give an idea. Most of the information provided in this article is expected to be interesting. After that, chemical and clinical researches are carried out on the medical importance of these foods, and this culture is brought to modern medicine to contribute more to our health.

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