

CHAPTER 13

Food, nutrition, and health in Slovenia

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13.1 Introduction

Slovenia is a relatively small country in central Europe with a diverse nature. Its natural conditions and social factors affect the diversity of its produce, the population's nutritional habits, health and risk factors, as well as the variety of foods that are traditionally prepared and consumed (Skubic, Erjavec, Ule, & Klopčič, 2018). Despite its small size, Slovenia offers many traditional foods that differ greatly from one another, claiming to offer 170 typical dishes.

Slovenian food and homemade products can be bought at a market place and in specialized stores. Most known foods are the country's top quality cheeses and dairy products, cured meat products, excellent wines, and honey. As Slovenia has one of the richest food traditions in Europe, a wide selection of traditional foods that are regularly consumed, either as part of the everyday menu or as part of special events and festivities, has been maintained (Blatnik & Bojnec, 2015).

The tastes of Slovenia are the tastes of local nature: garden's vegetables, grains from local fields, wild food from green nature, fruits from the orchards, and forests of one of the most wooded countries in Europe, traditionally prepared meat dishes and dairy goods from pastures, and honey produced by the world-renowned Slovenian honeybees (Smitek & Jezernik, 1995). The commonality of all these produce is that they are made from locally grown ingredients. However, according to nationwide studies, less than half of the Slovenian population has kept healthy or relatively healthy eating habits (Gale, 2015). There is an emerging aim to increase the Slovenian consumer confidence in the quality of locally produced food. Although the Slovenian market offers foods with a proper nutrition composition (i.e., less salt, saturated fat, refined sugars, and more minerals and fibers), the majority of the population still hasn't included these healthier foodstuffs in their diets (<https://www.slovenia.info/en/things-to-do/food-and-wine/locally-typical>). There are only a few stores with healthy food that is affordable only by a certain part of the population. Recent studies show that the poorly educated population tends to have lower income and worse socioeconomic status, which results in lower living standards and consequently more chronic diseases

(Pravst, Kušar, Pohar, & Klopčič, 2013). Childhood and adolescent obesity is rising in Slovenia (Gale, 2015). It is a cause of growing concern due to the fact that Slovenian children are among those gaining weight the fastest in comparison to the statistics on the same age group given by the countries in the region (Starč & Strel, 2011).

13.2 Historical overview

Historical events had a major impact on traditional Slovenian food and cuisine. Slovenia was a province of the Austro-Hungarian Monarchy until 1919. It was then part of the Kingdom of Serbs, Croats, and Slovenians, which became Yugoslavia in 1929. In 1991, Slovenia became independent, bordering Italy, Austria, Hungary, and Croatia, which influenced the country's food and diet. Slovenian food mainly consists of cereals, dairy products, meat (especially pork), sea and freshwater fish, vegetables, olives, beans, and grapes (Oddy, Atkins, & Amilien, 2009). Excellent seafood, including shellfish and the Adriatic bluefish, can also be found. At the beginning of the 20th century, Slovenia was mostly an agrarian country with most of the population living in the countryside and tilling the land. In this time there were only a few large cities. Generally, Slovenian farmers worked the land for their own needs. Mostly, they provided typical crops for the geographical region in which they lived (Bogataj, 2007). According to an ethnological classification, there are four types of food culture in Slovenia typical for the 20th century (Godina-Golija & Lunaček, 2006). One is the eastern (the so-called Pannonian) type, which is based on crops like wheat and buckwheat. There are different types of bread, pies, and pasta made from wheat and buckwheat flour. Usually, dishes are flavored with sour cream. Typical for this eastern area are pumpkin crops. Pumpkin oil is excellent and is widely used in cooking (Oddy et al., 2009). In the north of the country is the Alpine region with hills, mountains, and forests. The climate in this area does not provide appropriate conditions for agriculture, so animal husbandry and Alpine dairy-farming are very common in this region. The food culture is based on dairy products (e.g., milk, sour milk, cheese, curds) and millet. The meat is mostly cured and made into sausages and other meat products. In middle Slovenia, mostly vegetables (e.g., potatoes and turnips), millet, and buckwheat were planted. Buckwheat and millet porridge were mostly boiled in water or milk. In this region, the population first started to include the potato in daily meals. Potatoes became very popular and were prepared in several ways (Godina-Golija & Lunaček, 2006). In the western region, Slovenia connects with the Adriatic Sea, and due to favorable Mediterranean climatic conditions, the country's barren soil is suitable for growing olive trees. In Mediterranean environment, certain kinds of vegetables and fruits are thriving (Godina-Golija & Lunaček, 2006). In several meals, polenta is added as bread substitute to meals like minestrone soup, vegetable and meat sauces, vegetable soups, and fish. The entire Slovenian region is also well known for

producing top quality wine, and the Primorje region is the most developed. Generally, due to the mostly warm and dry effects of the Adriatic Sea, wines produced in this geographical position are dry, with higher alcoholic content and a lower acid factor (Oddy et al., 2009).

In those times (i.e., beginning of the 20th century), the most commonly used foods were bread and dairy products, then vegetables, meat, and fruits (Oddy et al., 2009). The standard of living, which was much lower in comparison with the developed European countries, did not allow any extensive purchase of food. Slovenes grew fruits and vegetables in their own gardens and orchards. Most of the population was rural and women were usually not employed (Bogataj, 2007). The period between the First and the Second World War was characterized by irregular food supplies. However, after the Second World War, the food supply became more regular. Basic staples were wheat, oats, rye, potatoes, millet, buckwheat, and some beans whose prices were determined by the National Government (Blatnik & Bojnec, 2015). The introduction of supermarkets started to provide a wide variety of goods in all Slovene towns. The first supermarket shops selling food and other household goods on a self-service opened in the 1960s. Changes in the food culture were made gradually in conjunction with the rising mobility of the rural population. More obvious changes started in the 1960s due to the rising living standard in Yugoslavia, which caused an increase in population in urban regions. In Slovenia, the food supply was largely dependent on food production of nearby farms. Urban Ljubljana, Maribor, and Celje had thriving rural communities whose farmers provided a steady supply of products to towns. In the middle of the 20th century, most of the Slovene population obtained their food primarily from nearby agrarian areas. In towns were located the so-called colonial-goods shops. Farmers from remote regions could sell their produce during market days, typically during weekends.

Nowadays, efforts are oriented toward improving the local agricultural sector. By increasing the productivity of local farms, the country aims to become more agriculturally self-sufficient, which benefits producers, as well as consumers, and shortens food supply chains on certain food products.

13.3 Geography and the natural agricultural landscape

Slovenia is a small country in central Europe with very diverse nature. Important ingredients of the Slovenian gastronomy are reflected in the country's natural environment and food production methods. Until recently unknown gastronomically, Slovenia today provides to locals and foreign tourists a palette of unique foods that cannot be noticed elsewhere. The exclusiveness of the Slovenian gastronomic image is firstly determined by the country's location on the world map at the meeting point of the European Alps, Mediterranean and Pannonian Plain. Due to the influence of these

three places and despite its small size, Slovenia developed a colorful gastronomic diversity. The richness of this variety is a touch of the Mediterranean, Alps or the Pannonian Plain, as well as the influence of neighboring countries (i.e., Italy, Austria, Hungary, and Croatia).

This diversity is best presented through the traditional regions of the country named: Gorenjska (Upper Carniola), Dolenjska (Lower Carniola), Notranjska (Inner Carniola), Primorska (Littoral Region), Štajerska (Styria), Koroška (Carinthia), and Prekmurje (Over-Mura Region). Each region is characterized by typical traditional food. The geographically so-called “culinary diagonal” of Slovenia can be drawn from the Mediterranean to the north eastern Slovenia. In the middle of this diagonal is central Slovenia, with Ljubljana and its surrounding region, where the highest quality of modern gastronomic delights is offered in many restaurants.

Despite its small size, Slovenia has three climate zones: a continental climate in the north east, an Alpine climate in the high mountain regions, and a sub-Mediterranean climate in the coastal region. Conditions in the Mediterranean climate zone offer the highest monthly rainfall up to 381 mm in spring and autumn. Highest temperatures are often above 27°C in June and July. In the winter, temperatures rarely drop below 10°C. Despite mild winter, the warmth is sometimes interrupted by the strong bora, a cold northerly wind. Central and northern monthly summer rainfall in the cool belt is more than 80 mm and high temperatures average around 20°C. The east and north east have midsummer highs around 21°C with temperatures below freezing point from November to February ([Travel Slovenia, 2020](#)).

13.4 Culture and traditions

There is no chance of getting bored at a table in Slovenia. The most fascinating fact is that within a couple of miles one can find a completely new, different dish in conjunction with a completely different kind of bread, or a festive dish, along with different wines, natural juices, a glass of natural spring or mineral water, or a glass of fruit, herbal, or honey brandy. Typical for Slovenia is to wish “dober tek!” (bon appétit!), “bog žegnaj!” (God bless!), or “na zdravje!” (cheers!) ([Slovenian Tourist Board, 2017](#)).

Like other nations, Slovenians have several special traditions. For example, in the spring, they bless their motorcycles, burn bonfires on the 30th of April, celebrate name days, prepare Šranga (a wooden obstacle), block the road and stop the groom from getting to his bride, and in the autumn they prepare a celebration dedicated to cows returning from the mountains.

Many themed gastronomy events occurring in Slovenia throughout the year relate to demonstrating culinary traditions with emphasis on the uniqueness of local wines and dishes ([Slovenian Tourist Board, 2017](#)). Slovenia, being a wine country, each year celebrates and chooses a “Wine Queen.” The biggest national exhibition of bread,

dried meat products, pumpkin and olive oil, and cheeses from Slovenian farms is named Delicacies of Slovenian Farms. It is an annual event that is held in Ptuj. Several harvest festivals also occur in the summer months. Many other events are connected to wine roads. Tourists can attend Open Door day of Brda cellars, the Festival of Teran and Prosciutto, or Days of Dolenjska cviček. In the heart of the old city center of Maribor, the oldest vine in the world still grows ([Food and wine, I feel Slovenia, 2020](#)). The age of some of the autochthonic “Žametovka” or “Modra Kavčina” vine is over 400 years, which won the Slovenian vine a place in the Guinness Book of Records as the oldest noble vine in the world still bearing grapes. The Old Vine is a symbol of the rich wine culture of Maribor, Styria, and all of Slovenia ([Zavod za turizem Maribor, 2019](#)). The Old Vine used to be a part of the city wall and was planted toward the end of the Middle Ages, when Maribor was facing an Ottoman invasion. It survived the furious fights during the invasion and was not harmed by the fires, which occurred frequently. During the World War II, Allied forces destroyed the Old Vine House, but the plant survived unscathed ([Zavod za turizem Maribor, 2019](#)). In Slovenia, another tradition related to wine is the St. Martin’s Day on November 11. It is an old tradition. The popular festival includes wine blessing ceremonies in almost every winery and, on Sundays, lunch is typically served with roast goose or duck with *mlinci* (pasta variety) and red cabbage.

Another traditional event designed to present the cuisine and traditional handicrafts takes place in September in Prekmurje village and is called Bodonci, where visitors can enjoy pumpkin goodies at “Pumpkin festival,” which is one of the events carried out during the festival.

In Piran on the coast and on the Sečovlje salt pans, where one of the most interesting foodstuffs—“fleur de sel”—is still produced, occurs the Salt Makers’ festival. The “fleur de sel” of Piran exceeds even the prized variety of the French Fleur de Sel ([Soline, 2013](#)). Fleur de Sel is used by gastronomes in creative cuisine as an indispensable condiment whose flavor pleasantly complements any dish.

Višnjevnik in Goriška Brda is known as the birthplace of Rebula ([Jefford, 2017](#)), a quality white wine. The village is surrounded with numerous olive trees from which excellent olive oil is produced. Each year, in the first days of May, the village community of Višnjevnik and the Society of Rebula Lovers organize the Traditional Rebula and Olive Oil Festival. In 2012, they crowned the first Queen of Rebula. Numerous olive oil samples, fried prosciutto with polenta, excellent wine, and delicious bakery masterpieces are served at this festival.

Additionally, the nation’s love for potatoes is shown at the International Festival of the Roasted Potatoes. Maria Theresa introduced mandatory potato planting in Slovenian crown lands during her reign in the 18th century. Since 2001, the Society for the Recognition of Roasted Potatoes as a Distinct Dish has been organizing the annual World Roast Potato Festival. Visitors can taste this potato dish prepared in

many ways (over 100). The festival usually occurs in September every year in different locations. In Šenčur live the largest number of potato farmers, and there is also located the potato monument. The World Roast Potato Festival is only one of the unusual festivals. Each region offers its own festivals celebrating various dishes. In the countryside, these festivals include the largest potato competitions and games, such as potato throwing. In Bovec, a Potato Night (Čomparska Noč) is organized every year in August. “Čompe” is a dish prepared from large amounts of cooked potatoes that are filled with local sheep “skuta” cheese.

13.5 Typical foods and food products

The Republic of Slovenia owns typical food and products with geographical indication [e.g., protected geographical indication (PGI), protected designation of origin (PDO)] and traditional speciality guaranteed (TSG) status. Slovenia, with its 24 gastronomic regions and 365 (as one can taste one on every day in a year) dishes and drinks typical for a certain region or town, became the 2021 European Region of Gastronomy (Bogataj, 2007).

13.5.1 Products with protected geographical indication status

Products with PGI (EAmbrosia—The EU geographical indications register, 2020) are presented in Table 13.1.

13.5.1.1 Karst Prosciutto

Karst Prosciutto is a naturally dried ham. The preparation requires sprinkling the ham with salt from Sečovelje Salt Pans. Afterwards, the piles of ham are placed on wooden hangers to dry in the cold winter air. After 3 months of cryotherapy, the ham is placed between two wooden boards to drain any remaining water and mature. After the maturing procedure, the ham is exposed again to fresh air—it is hung until the Bora wind does the “magic.” Naturally dried ham needs at least 12 months until it becomes Karst Prosciutto (Bartolj, 2016).

13.5.1.2 Prleška tünka (pork and minced bacon with lard)

Prleška tünka is a culinary specialty, which comes from “Prlekija” region. It is a meat product, conserved in minced lard. Traditionally, it was held in wooden dishes, which the countryside people call “tünka” (Prleška tünka, 2019). In history this delicacy was “manufactured” by farmers in the countryside as a means to conserve and preserve meat. Warm months did not permit for the meat to be stored for longer periods. Usually pig slaughter was done in the winter. Typically, all the parts of the pig were used. This triggered the evolution of the so-called traditional products and dishes, such

Table 13.1 Slovenian products with PGI status.

Product type	PGI no.	Product	Product category
Food	PGI-SI-0764	Kranjska klobasa (Kreiner sausage)	Class 1.2. Meat products (cooked, salted, smoked, etc.)
Food	PGI-SI-1025	Prekmurska šunka (dry ham from Prekmurje region)	Class 1.2. Meat products (cooked, salted, smoked, etc.)
Food	PGI-SI-0833	Kraška panceta (Karst pancetta)	Class 1.2. Meat products (cooked, salted, smoked, etc.)
Food	PGI-SI-0824	Kraški zašink (dry meat of pork neck)	Class 1.2. Meat products (cooked, salted, smoked, etc.)
Food	PGI-SI-0417	Kraški pršut (Karst prosciutto)	Class 1.2. Meat products (cooked, salted, smoked, etc.)
Food	PGI-SI-0416	Zgornjesavinjski želodec (typical dry meat sausage)	Class 1.2. Meat products (cooked, salted, smoked, etc.)
Food	PGI-SI-0415	Šebreljski želodec (typical dry meat sausage)	Class 1.2. Meat products (cooked, salted, smoked, etc.)
Food	PGI-SI-0533	Prleška tünka (pork and minced bacon with lard)	Class 1.2. Meat products (cooked, salted, smoked, etc.)
Food	PGI-SI-0801	Slovenski med (Slovenian honey)	Class 1.4. Other products of animal origin (eggs, honey, various dairy products except butter, etc.)
Food	PGI-SI-02112	Jajca izpod Kamniških planin (Eggs from Kamnik Mountains)	Class 1.4. Other products of animal origin (eggs, honey, various dairy products except butter, etc.)
Food	PGI-SI-0418	Štajersko prekmursko bučno olje (Pumpkin seed oil from the Štajerska-Prekmurje Region)	Class 1.5. Oils and fats (butter, margarine, oil, etc.)
Food	PGI-SI-0811	Ptujski luk (onion from Ptuj region)	Class 1.6. Fruit, vegetables and cereals fresh or processed
Food	PGI-SI-01191	Štajerski hmelj (Hop from Štajerska region)	Class 1.8. Other products of Annex I of the Treaty (spices etc.)
Wine	PGI-SI-A1061	Posavje (region Posavje)	Wine
Wine	PGI-SI-A1094	Primorska (region Primorska)	Wine
Wine	PGI-SI-A0995	Podravje (region Podravje)	Wine

as tlačenka (pressed meat), sour soup, baked blood, stuffed stomach, dry sausages, dried hams, and also tünka ([Prleška tünka, 2019](#)).

The production of tünka has specific preparation phases. First is the selection of the basic raw material (e.g., pork leg, back, loins or neck, hard pork bacon). Then the meat is salted, smoked, and thermally processed. This is followed by preparation of the minced lard during which the meat matures for at least 30 days. The maturation of meat in minced lard gives the special flavor and the specific “tünka” taste ([Dominko, 2000](#)).

13.5.1.3 Kranjska klobasa (Krainger sausage)

Krainger sausage is a world known food product. It is produced in the historical region of Kranjska, known as the Duchy of Carniola, a crown land of the Austrian Empire. Krainger sausage consists of a perfect meat-to-bacon ratio ([TasteAtlas, 2017](#)). At least 80% coarsely ground good-quality pork cuts (leg, shoulder, neck) and 20% bacon (back fat), seasoned with salt from the Sečovlje saltern, black pepper, and garlic are used. The meat mixture is funneled into natural casings to form 12–16 cm long sausages, which are twisted into links. The sausage is then tied and held together by a wooden skewer. The links are then pasteurized and hot-smoked until they reach a moderate reddish-brown color ([Jankovich, Osman, & Milković, 2018](#); [Polak, Lušnic Polak, Tomovi, Žlender, & Demšar, 2017](#); [TasteAtlas, 2017](#)). To achieve what is known as the signature flavor of Kranjska klobasa, it is recommended not to boil it, as this would mean overcooking it, but to simply warm it up in hot water.

13.5.1.4 Ptuljski lük (onion from Ptuj region)

Ptuljski lük it is an onion, which is registered in the Slovenian variety list as the “Ptujška rdeča” species. Ptuljski lük is the first protected Slovenian vegetable with a certificate protected by a geographical indication. According to ancient legends, this onion was brought to the Slovenian area by the Turks and was once a major source of income. It is found in the form of traditional wreaths and smaller packages ([Slovenska avtohtona sorta - Ptuljski lük, 2014](#)).

13.5.2 Products with traditional speciality guaranteed status

Products with TSG status are presented in [Table 13.2 \(EAmbrosia—The EU geographical indications register, 2020\)](#).

13.5.2.1 Potica

Potica (povitica) ([Fig. 13.1](#)) is a traditional holiday cake in Slovenia. Potica was primarily mentioned by Primož Trubar (a Lutheran priest), who published the first books in the Slovenian language in the 16th century ([Ilich, 2014](#)) This cake was baked only on special occasions, like Christmas and Easter. Potica is a rolled dough cake with

Table 13.2 Slovenian products with TSG status.

Product type	TSG No.	Product	Product category
Food	TSG-SI-0029	Belokranjska pogača (cake from Bela krajina region)	Class 2.24. Bread, pastry, cakes, confectionery, biscuits and other baker's wares
Food	TSG-SI-0025	Prekmurska gibanica (Over Mura mooving cake)	Class 2.24. Bread, pastry, cakes, confectionery, biscuits and other baker's wares
Food	TSG-SI-2396	Slovenska Potica (Slovenian povitica)	Class 2.25. Beverages made from plant extracts
Food	TSG-SI-0026	Idrijski žlikrofi (Dough dumplings with potato filling)	Class 2.26. Pasta

**Figure 13.1** Potica (walnut roll) takes first place among traditional festive pastries in Slovenia.

different fillings. Most common is the nut roll, but fillings are not only limited to nuts, but can also include cottage cheese, raisins, poppy seeds, and tarragon. Modern fillings can contain also chocolate (Ilich, 2014).

13.5.2.2 Prekmurska gibanica

Prekmurska gibanica, dessert from Prekmurje is stuffed with poppy seeds, curd cheese, walnuts, and apples. It is trademarked as a dish with an indication of traditional reputation and therefore can only be sold under this name. The original protected recipe is respected in full. This is the only Slovenian dessert that is protected with TSG label from the European Union (Josipovic, 2014; Prekmurska Gibanica, 2018).

13.5.3 Products with protected designation of origin status

Foodstuffs with PDO are presented in [Table 13.3 \(EAmbrosia—The EU geographical indications register, 2020\)](#).

Table 13.3 Slovenian products with PDO status.

Product type	TSG No.	Product	Product category
Food	PDO-HR + SI-1041	Istarski pršut/Istrski pršut (Perscutto from Istra region)	Class 1.2. Meat products (cooked, salted, smoked, etc.)
Food	PDO-SI-0424	Mohant (cheese Mohant)	Class 1.3. Cheeses
Food	PDO-SI-0423	Bovški sir (cheese from Bovec)	Class 1.3. Cheeses
Food	PDO-SI-0422	Tolminc (cheese Tolminc)	Class 1.3. Cheeses
Food	PDO-SI-0421	Nanoški sir (cheese from Nanos)	Class 1.3. Cheeses
Food	PDO-SI-0425	Kočevski gozdni med (Honey from Kočevje)	Class 1.4. Other products of animal origin (eggs, honey, various dairy products except butter, etc.)
Food	PDO-SI-0532	Kraški med (Honey from Karst region)	Class 1.4. Other products of animal origin (eggs, honey, various dairy products except butter, etc.)
Food	PDO-HR + SI-01358	Istra (virgin oil)	Class 1.5. Oils and fats (butter, margarin, oil, etc.)
Food	PDO-SI-0420	Ekstra deviško oljčno olje Slovenske Istre	Class 1.5. Oils and fats (butter, margarine, oil, etc.)
Food	PDO-SI-1098	Piranska sol (Piran salt)	Class 2.6. Salt
Wine	PDO-SI-A0639	Štajerska Slovenija(wine from Štajerska region)	Wine
Wine	PDO-SI-A1579	Metliška črnina (wine from Metlika)	Wine
Wine	PDO-SI-A0609	Slovenska Istra (wines from Slovenian Istra region)	Wine
Wine	PDO-SI-A1520	Bizeljčan (wine from Bizeljsko)	Wine
Wine	PDO-SI-A0769	Prekmurje (wines from Prekmurje region)	Wine
Wine	PDO-SI-A0772	Bizeljsko Sremič (wines from Bizeljsko region)	Wine
Wine	PDO-SI-A0448	Vipavska dolina (wines from Vipavska dolina region)	Wine

(Continued)

Table 13.3 (Continued)

Product type	TSG No.	Product	Product category
Wine	PDO-SI-A0616	Kras (white wines from Kras region)	Wine
Wine	PDO-SI-A0878	Bela krajina	Wine
Wine	PDO-SI-A1576	Belokranjec (white wine from Bela krajina)	Wine
Wine	PDO-SI-A0871	Dolenjska (red and white wines from Dolenjska region)	Wine
Wine	PDO-SI-A0270	Goriška Brda (whitewines from Goriška brda region)	Wine
Wine	PDO-SI-A1561	Cviček (red wine from Dolenjska region)	Wine
Wine	PDO-SI-A1581	Teran (red wine from Kras region)	Wine

13.5.3.1 *Nanoški sir (Nanos cheese)*

Nanoški sir is known as the “Slovenian cheese that tastes like the wind.” It is a type of hard cheese made from cow milk. The milk used for the production of Nanoški sir has to be obtained exclusively from Brown Swiss cows, which are pastured within the designated area of Nanos, Vipava valley and the Karst plateau. It takes about two months for the Nanos cheese to mature and to become pleasantly salty to slightly spicy. With aging, its aroma and piquant flavor become even stronger. Typical for Nanos cheese is its peach colored rind. Nanos cheese is produced in wheels weighing from 8 to 11 kg ([Nanoški Sir, Local Cheese From Municipality of Vipava, 2017](#)). A major influence on the maturing process and cheese quality has the flora of the region, which makes a significant difference in milk quality, and the climate conditions together the strong Bora winds ([Boltar, Majhenič, Jarni, Jug, & Kralj, 2015](#); [Nanoški Sir, Local Cheese From Municipality of Vipava, 2017](#)).

13.5.4 Typical foods and their nutritional value

13.5.4.1 *Seeds and cereals*

Seeds and cereals have been an important part of the diet in Slovenia for centuries, and thus the basis of agriculture for at least ten thousand years ([NUTRIS - Locally grown buckwheat grain for production of high-quality food products \(L4–9305\), 2020](#)). The type of cereals has been well adapted to the growing conditions in a particular region. Slovenia’s most important bread cereal is wheat, but a typical bread is made from buckwheat. Although buckwheat is not botanically related to cereals, it has a similar chemical

composition of grains and is classified as a cereal for human consumption. In Slovenia, the husked grain is used for mash, minced meal, breadcrumbs, and flour; all of them are ingredients of many national dishes. Buckwheat flour mixed with plain wheat flour has been used for special types of bread and pastries. In the last years, buckwheat is gaining an increased interest in Slovenia (Kreft & Germ, 2008) since the clinical researches demonstrate its beneficial effects worldwide. It has been found that the starch in the form of amylose in buckwheat is degrading slowly, which has a beneficial effect on the metabolism in the group of patients with diabetes. A large variety of buckwheat foods have been produced traditionally for centuries. Dishes made from buckwheat seed are generally classified into two groups, flour dishes and groats dishes. Buckwheat leaf flour contains about 2700 mg/kg (d.w.b.) rutin and is thus a suitable material for enriching functional foods, giving it the potential for preventive nutrition (Kreft, Fabjan, & Yasumoto, 2006). On the territory of Slovenia buckwheat for the first time was mentioned in 1426 (Ajda—Koristna za ljudi in čebele, 2020). Buckwheat dishes, porridge, bread and sausages, filled with buckwheat grains, offered energy rich meals to the poor (Tradicionalne slovenske jedi—Zbirka, 2020).

Ajdovnjak is a traditional black bread made only from common buckwheat (*Fagopyrum esculentum*) flour. In the last years, buckwheat was more often present on fields and plates. Buckwheat sowing in recent years has also been encouraged by Slovenian beekeepers, because of the importance of bees in the pollination of agricultural plants and on nectar producing plants. Studies have shown that buckwheat is a dependable and high-yielding honey plant—for the best cultivars, honey production averages 70–100 kg/ha and reaches 150–300 kg/ha (Cawoy, Kinet, & Jacquemart, 2008).

Beyond simple groats and starters, more ambitious local cooks have built up an entire buckwheat culinary repertoire. Buckwheat porridge (*in Slovenian: ajdovi žganci z ocvirki*), usually flavored with the addition of pork crackling or scratchings (*in Slovenian: ocvirki*), is one of these specialties. Another specialty is buckwheat “fritters” or dumplings (*in Slovenian: ajdovi krapci*), which can be stuffed with different savory or sweet fillings. Dumplings are best served with sour cream and horseradish, separately or mixed together (Bogataj, 2007).

Maize has also been one of the important cultivated plants in the region, used not only for human nutrition, but also as animal feed. Local varieties created in the past include “*bohinja*,” “*koroska*” and “*dolenjska hitrica*,” “*štajerski dvanajsterec*,” “*ječmenka*,” “*beltinska*,” and “*metliška trdinka*.” They are all stored in the Biotechnical Faculty in Ljubljana Gene Bank (Terčelj, 2005). These are all of an excellent grain quality for *polenta* preparation, a dish of boiled cornmeal which has been made from other grains historically. Polenta can be eaten as a hot porridge, or it can be allowed to cool and solidify into a loaf that can then be fried, baked, or grilled. The variety of cereal used is usually yellow corn, but often buckwheat, white corn, or mixtures thereof may be used for preparation of mush (*in Slovenian: žganci*). For centuries, mush has been an

essential dish for Slovene peasants. Buckwheat mush is older than its corn variant and in many parts of Slovenia is considered to be tastier, as well. It was usually eaten with milk, sour milk, cabbage, cracklings or, in Stajerska and Prekmurje, with cream. Mush is still known as the most traditional Slovene dish (Bogataj, 2007). Even the writer Trdina wrote: “mush is a royal dish” (Bogataj, 2007).

Pumpkin (*Cucurbita pepo* L.) **seeds** are predominantly grown as an oil crop (Bavec, Mlakar, Rozman, & Bavec, 2007). The seed oil (*in Slovenian: bučno olje*) is produced with a traditional procedure from roasted and pressed pumpkin seeds of the finest quality and is used for salad dressings. In addition, it has found application in pharmacology and alternative medicine (Wagner, 2000), especially when produced organically. The oil content of pumpkin seeds varies between 40%–50% depending on genotype. The oil is dark green, and it is rich in unsaturated fatty acids (ranging between 78.34% and 95.33%) and vitamin E, especially alpha and gamma-tocopherol (ranging between 181 and 875 mg/kg) (Procida, Stancher, Cateni, & Zacchigna, 2012). Pumpkin seed oil in Slovenia is produced especially in the provinces of Prekmurje and Štajerska (Slovenian Styria) where the unrefined Štajersko Prekmursko pumpkin seed oil (Fig. 13.2) of high quality (and no additives), bearing a PGI status since 2012, is manufactured since the 18th century (EC, 2020). Slovenia, as an exporter of this one-of-a-kind delicacy, now makes a name for itself.

The production of pumpkin seeds is increasing also due to their high content of protein, fibers, minerals, (poly)unsaturated fatty acids, and phytosterols (Bavec, 2000), as well as their antidiabetic, antifungal, antibacterial, antiinflammation, and antioxidant effects (Manda Devi, Prasad, & Sagarika, 2018).



Figure 13.2 The seed oil (“Štajersko prekmursko bučno olje”) produced with a traditional procedure from roasted and pressed pumpkin seeds.

The natural conditions in the Vipava valley are ideal for the growing of native **Vipava cherries, apricots, and peaches**, which ripen earlier than anywhere else in Slovenia. Nevertheless, the apple tree is one of the most widely cultivated fruit trees in Slovenia (Sušnik, Matajč, & Kodrič, 2006). The Dolenjska wax apple (*in Slovenian: Dolenjska voščenska*) is believed to originate from the area of Dolenjska, where it has developed as a random seedling or mutant. The variety grows widely on the right bank of the river Sava next to the river Mirna. The Dolenjska wax apple is also known as “*Sevniška voščenska*” or “*Dolenjka*” and it is one of the most palatable varieties of domestic apples (Adamič, 1981).

Six varieties of grape (i.e., *Ranina, Klarnica, Ranfol, Vitovska grganja, Zelena, and Žametovka*) are officially recognized as native to Slovenia, which are not to be mixed with others, such as the self-growing varieties (e.g., *Jurka, Šmarnica*) or with domesticated varieties (e.g., *Cviček, Janževc, Metliška črnina*) (Bogatj, 2007). Slovenia officially recognizes six indigenous grape varieties: *ranina, klarnica, ranfol, Vitovska grganja, zelena, and Žametovka*. Žametovka is one of the oldest domesticated noble wine varieties in Slovenia. The oldest vine of žametovka grown is in Lent, Maribor (*Indigenous grape varieties—Hiša Stare trte*, 2020).

13.6 Sustainability and environment

Different regions have developed various preservation options for the available crops. In the majority, the preservation methods have been adapted to the environmental conditions (Tominc, 2017). The Brda area is among the most special corners of Slovenia, between the Julian Alps and the Adriatic region. Although Brda’s northern fringes are rich in chestnut trees, the south-facing slopes, less impacted by powerful Bora winds, are covered in vineyards. However, in springtime, wine gives way to a particular local specialty—cherry trees (Bartolj, 2018).

13.6.1 Preservation options

Slovenia practices seasonal preservation. Once nature rests, people typically store fruits as fruit slices or as homemade marmalade and jam in different ways. Fruits, pressed grapes, and medicinal herbs are often boiled in a cauldron during the first winter days. Aromatic and especially healing spirits are produced. Dry canning has always been the easiest and most practical method of preservation. Traditionally, the fruits were dried in the sun, on “picon” (reed or hazel woven board). In addition to cherries, apples, apricots and figs, dried persimmons are gaining popularity as high valuable Slovenian products. Beekeepers are offering different types of honey and bee products; their bees collect in spring first from the robinia (colloquial “acacia,” and in Brda’s dialect “rakac”), then from the fruit tree blossoms and the flowering meadows, and also from

the linden trees and chestnuts. Some of their products have received awards worldwide many times for their quality produce and products.

The Slovenian cuisine is also known for several types of dried meats, which have been traditionally prepared in different regions. Meat processing is the main activity on several Slovenian farms. Meat is matured or aged using a classic method in the home-built spaces dedicated for this purpose. Also, the process of salting and desalting is done using a common method of dry and wet desalting. The Bora winds make proper conditions to produce the original Karst dry-cured ham. For ham to be classified as *pršut*, the entire preservation process—preparation, including salting, must take place on the Karst Plateau, as its climatic conditions are necessary for an authentic product. Milk was widely preserved as cheese, butter, cottage cheese, cream, and fermented products (Bogataj, 2007).

13.7 Present nutritional conditions

13.7.1 Statistics and deficiencies

The problems caused by unhealthy eating habits have brought along an enlarged incidence of different types of cancer. The Slovenian population is aging and is facing ongoing challenges in caring for its elderly. Consequently, the demand for different types of high-quality fruits and crops containing antioxidant bioactive compounds is increasing (Pivk Kupirovič et al., 2019). According to the recent studies worldwide, higher ingestion of fruits has consequently been associated with a low incidence of chronic-degenerative diseases, probably due to the presence of bioactive compounds, considered to enhance or boost the immune system (Brglez Mojzer, Knez Hrnčič, Škerget, Knez, & Bren, 2016). The energy value of an average Slovenian meal is energy rich. Slovenes consume too much salt and fats, especially saturated fats, and too few vegetables (Gale, 2015; WHO, 2016).

13.7.2 Recent activities: Reduction of transport, higher consumer confidence and food safety

There is an emerging aim to increase the Slovenian consumer confidence in locally produced food along with a reduction in transport. Recently, several activities have been carried out to highlight the importance of fresh food, produced locally. Under the slogan “Fresh food from your vicinity” (in Slovenian: *Sveža hrana iz vaše bližine*) (Pihlar, 2013), the organizers wanted to increase awareness that, due to short or none routes, local food stays fresh and thus it has better quality and it is tastier. One of the guidelines of the earlier mentioned campaign is to implement the principle of short supply chain, which provides several benefits: (1) to achieve a greater degree of self-supply with quality and locally produced food; (2) to ensure healthy food for the vulnerable population, such as children, the youth, the sick,

and the elderly; (3) to encourage sustainable use of land for growing food; and (4) to preserve jobs in rural areas. Such behavior consequently protects the environment, too.

13.8 Open questions

As the vast majority of Europe's nations, Slovenia has faced the spread of unhealthy diets and physical inactivity among its population (WHO, 2016). Above all, obesity has become the most important health concern in school-age children. Nevertheless, the country has been coping with the issue in an exemplary way, using creative methods to encourage healthy diets, raising rates of physical activity, and preventing obesity in childhood (WHO, 2016). Recent questions and pertaining challenges are therefore oriented toward ensuring early detection of risk factors for diseases and conditions associated with unhealthy nutrition and an unhealthy lifestyle for vulnerable adults. Promotion of the production of reformulated products with lower content in salt, sugars and fats, or smaller portions, especially of products used daily, for all population groups, taking into account the social gradient and deprived groups is necessary.

13.9 Future outlook

Current efforts are oriented toward highlighting the impact of sustainable local food production and rural (gastronomic) tourism development in terms of economic, social, and environmental benefits. Different forms of rural tourism have emerged due to the indigenous potentials that rural areas in their geographic, cultural and natural diversity can offer (Petrović et al., 2018). Local producers should be encouraged to maximize their yields (including the diversity of products), especially of fruits and vegetables, increase their visibility on the local market, integrate incentive mechanisms, and organize into short chains, with the help of professional agricultural institutions (Repnik & Divjak, 2015). This approach will require coalitions and linkages between different stakeholders, such as the state, institutions, and local communities.

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