



Erasmus+

Changing lives. Opening minds.
Erasmus+

This project is funded by the European Union



REPORT CONTAINING RESEARCH AND ANALYSIS OF THE CATERING INDUSTRY USING PLANT FOOD WITHIN THE ERASMUS + PROJECT

„Flexiplant” JOINT DATA from LITHUANIA, LATVIA and POLAND

Elements of the report:

1. Plant foods – introduction, basic definitions on an example Poland, Lithuania and Latvia.
2. Plant foods in vocational school curricula on an example school from Poland, Lithuania and Latvia.
3. Plant foods in menu of catering and hotel industry on an example companies from Poland, Lithuania and Latvia.
4. Latest trends in healthy food system and people expectations. Dietetic Plant Trends 2021.
5. Conclusions

Report annexes:

1. Work documentation.
2. Photo documentation.
3. Training program in Białystok "Flexible approach to nutrition using a plant diet - flexitarianism"



This project is funded by the European Union

Elements of Diagnosis

1. Why plant food? - Health reason, social impact, financial and environmental impact.

HEALTH REASON

The main trends that will shape the global food industry in the coming years are to rely on the plant food production which will become an increasingly important item in the consumer's diet.

One of the important trends will be the search for substitutes, for example wheat flour in favor of gluten-free flour. Producers are looking for alternative sources of protein and fiber. Among the tested raw materials are almonds, coconuts, as well as cauliflower, banana or tibia flour, also known as ground almond. The industry is also looking for plant products other than soybeans that are meat substitutes, such as: golden mungo beans, hemp seeds, avocado pumpkin, watermelon seeds or golden chlorella - a variety of algae.

Vegans and vegetarians can therefore rely on an ever wider range of surprising meatless products. Most traditional dishes can be prepared taking into account a plant-based diet, sometimes it is very simple, it consists in replacing one ingredient in a dish, but sometimes it requires more commitment and skill.

In the last decade of 21st century the world medical researches focused on the relationship of bacteria in our good and other vital organs. There has emerged the topic microbiome which comprises the bacteria and other microorganisms in different places of human body. The biggest impact was dedicated and investigated in lots of researches the gut microbiome. In our intestines there reside about 100 trillion bacteria, both good and bad, and they are crucial for our health. Within those trillions of gut bacteria are about 1,000 different species, represented by some 5,000 distinct bacterial strains. Everyone's gut microbiota is unique, but there are certain combinations and collections of bacteria that are found in healthy individuals.

The main factors that affect your personal microbial mix are age, diet, environment, genes, and medications (particularly exposure to antibiotics, which can deplete gut bacteria). Your gut microbiome plays many roles. It metabolizes nutrients from food and certain medications, serves as a protective barrier against intestinal infections, and produces vitamin K, which helps make blood-clotting proteins.

But the gut microbiota may do much more. Most research has involved only preliminary animal studies; however, initial findings suggest gut bacteria may be the key to preventing or treating some diseases.



This project is funded by the European Union

Since the gut microbiota is so complex, it is difficult to pinpoint certain bacteria as the most beneficial. "It would be great if we could identify 10 or so bacteria and say these are the ones you need most, but it doesn't work that way, and there is no magic bullet," says Dr. Hohmann. "There may be a community dynamic at play as well as good mixtures of communities." Bacteria are living organisms that need to eat. "A healthy, varied, balanced, high-fiber diet with complex carbohydrates is good for the bacteria living in your gut and encourages a diverse ecosystem," says Dr. Hohmann.

Other helpful dietary choices include naturally fermented foods containing probiotics (live bacteria), such as sauerkraut, pickles, miso, certain types of yogurt, and kefir (a yogurt-based drink).

The phenomenon of intestinal microbiota or biome confirms the benefit and need to eat more plant-based food. Plant foods containing fiber are the best fuel for your gut bacteria. That is why a plant-based diet that includes a variety of whole grains, legumes, vegetables, and fruit is beneficial for our good health—and, as a result, for our overall health and wellness—since it increases the diversity of our gut microbiota. In other words, the more diverse the gut microbiota, the more resilient it will be.

Plant-based doesn't mean vegan and vegan doesn't mean healthy. A primarily whole-food, plant-based diet brings you much more health benefits than just avoiding animal products, explained Hana Kahleova, Director of Clinical Research at the Physicians Committee for Responsible Medicine (Washington, USA), at the Gut Microbiota for Health World Summit 2020, held in Madrid (Spain).

When added to a plant-based diet, fermented foods such as some fermented dairy products can actually be an ally for your gut health. Yogurt and kefir, for example, are a source of probiotics, which are live bacteria that confer a health benefit.

Kahleova believes that prebiotics—especially fibers, which can be found in plant foods—provide the natural food for the good live bacteria in your gut. Combined with probiotics, prebiotics provide long-term sustainable nourishment to your gut microbiota.

There are a lot of plant diets. The most restrictive is a vegan diet. Currently, vegetarianism is more advanced, which excludes the consumption of meat, but animal products such as milk, eggs, honey and dairy products are allowed.

Plant-based diets are not reserved for vegetarians and vegans only. More and more people are flexible about their conventional habits. They decided for decline animal foods in some or even all of their meals. A healthy growth diet is the creation of plant production. Plant adherents have a 34% risk reduction for type 2 diabetes and a 22% risk of stroke, as well as a reduction in their risk of obesity, high blood pressure, and others. The positive effect is related to checking the measure with lower content of saturated fats, salt, sugar and cholesterol while higher supply of fiber and antioxidants. Plant-based products ensure a higher feeling of fullness after eating a meal.



This project is funded by the European Union

SOCIAL IMPACT

There are not only health reasons for transition to plant-based food or flexiplant food. We have social consciousness to avoid eating meat because we consider the cruel way of slaughtering animals or thinking about dairy products the cruel behavior with female animals taking away their privilege to feed their offspring. The issues of animal welfare lead human beings to choose plant –based food.

Not less important is belonging to certain religious community which bans eating animal based food or socio-geographic circumstances when plant food is abundant and good climate conditions to grow fruits, vegetables, lentils and grain all year round.

According to the research, published 2020, by Soffie Errendal and W. Craig the proportion of people who follow plant-based diets varies among the various regions of the world. While 19% of people residing in the Asia Pacific region self-declare as vegetarians, just 5% and 6% of Europeans and North Americans, respectively. (www.mdpi.com/journal/sustainability)

People who actually follow plant-based dietary patterns may have adopted them for one or more reasons. Reasons for continuing plant-based diets could be different from the ones that encouraged their adoption. Personal concerns about the health effects of current dietary patterns, animal welfare, and environmental sustainability have been pointed out as motivations for people to follow plant-based diets.

FINANCIAL IMPACT

Increasing plant –based food is cost-effective, reduces economic costs, such as hospital admissions and doctors' bills, as well as increasing the number of healthy years people live, and enabling them to continue working. The health reason is tightly connected to financial benefit. Vegetables and legumes are cheaper than meat and dairy products. Nuts and fruits not but their impact on health is bigger. An educated buyer will try to choose organic meat, eggs and dairy products but the price is very high.

In some countries like UK and Belgium were made researches on financial benefit of plant –based food. People have been questioned about the economical benefit after choosing flexitarianism: more vegetables, grain and fruits, less meat and fish. They spent over year less money eating more plant food and rarely buying meat and dairy products. The most important appeared that they felt better and had less health problems so they didn't visit doctors, didn't buy medicine – all that saved their income. Nuts and fruits are not cheap but combining them with different vegetables, legumes and grain, porridge gives satiety and is nourishing.

ENVIRONMENTAL IMPACT

Ultimately, adopting a plant-based diet could help to reduce greenhouse gas emissions, save water and land usage, and help tackle deforestation. Plant-based diets are not only arguably better for the environment but they are also efficient and good for animal welfare. However, when reducing meat consumption, it is important to be mindful of how foods are being grown and transported to ensure they are sustainable.



This project is funded by the European Union

2. DEFINITION OF PLANT FOOD

A plant-based food is any food that focuses around foods derived from plant sources. This can include fruit, vegetables, grains, pulses, legumes, nuts and meat substitutes such as soy products.

POLITICAL AND LAW REGULATIONS IN LITHUANIA

The regulation of nutrition and food safety of the Lithuanian population and the coordination of supervision are performed by the Ministry of Health. This Ministry, implementing the provisions of international strategies and other documents and implementing the provisions of the Law on the Health System of the Republic of Lithuania, the Law on Public Health Care, the Law on Public Health Monitoring, the Law on Food, the Law on Drinking Water and other legal acts, implements prevention of chronic non-communicable diseases, physical activity, nutrition and lifestyle-related morbidity and food safety policies.

Paragraph 2 of Article 9 of the Law on Food of the Republic of Lithuania (No. VIII-1608 of 4 April 2000) stipulates that the Ministry of Health establishes requirements for the organization of meals for target groups, recommended daily nutrient and energy norms, coordinates nutrition norms prepared by other institutions, monitors the population's nutrition, related morbidity and population nutrition literacy, prepares healthy nutrition recommendations, develops healthy nutrition skills, prepares and approves programs to improve the population's nutrition.

The Ministry has provided recommendations for the implementation of the Description of the Procedure for the Promotion of Healthy Eating and Healthy Physical Activity, which states that municipal public health offices must carry out more effective training for the population that changes their lifestyle and health.

The Global Strategy on Diet, Physical Activity and Health, the European Action Plan on Nutrition and Nutrition 2015-2020 are taken into account in shaping public health habits. (European Food and Nutrition Action Plan 2015-2020).

The most important measures to improve the nutrition of the Lithuanian population, prepared by SAM (Sveikatos Apsaugos Ministerija) or participated in the preparation, are set out in the following documents:

1. Recommendations for a healthy and sustainable diet. Published by the Center for Health Education and Disease Prevention, 2020.
2. Description of the procedure for feeding children, 2021. February 5 No. V-244.
3. Methodological information material on the choice of health-friendly foods for school-age children, 2020.
4. Recommendations for compiling vegetarian menus, 2020.



This project is funded by the European Union

Periodic monitoring of the actual diet of the population is carried out. In order to identify the health-related dietary characteristics of the population, the Ministry of Health, the Center for Health Education and Disease Prevention and the municipal public health offices carry out dietary and physical activity habits for adults (aged 19-64) and the elderly (over 65). knowledge research - dietary habits of the adult population of Lithuania and tendencies of their changes, 2020.

Another document is the order of Minister of Health 2020. January 13 no. V-46 “On the Plan of Measures for the Implementation of the Guidelines for Maintaining and Strengthening Health Policy for 2020-2022. over 80 different health promotion measures in Lithuania over a 3-year period.

Sources of information

<https://sam.lrv.lt/lt/veiklos-srityys/visuomenes-sveikatos-prieziura/visuomenes-sveikatos-prieziura-savivaldybese/metodikos/mitybos-ir-fa-skatinimo-apraso-rekomendacijos>
https://www.who.int/dietphysicalactivity/strategy/eb11344/strategy_english_web.pdf
https://www.euro.who.int/_data/assets/pdf_file/0008/253727/64wd14e_FoodNutAP_140426.pdf
https://sam.lrv.lt/uploads/sam/documents/files/Veiklos_srityys/visuomenes-sveikatos-prieziura/mityba-ir-fizinis-aktyvumas/Sveikos_ir_tvartos_mitybos_rekomedacijos3.pdf
<https://e-tar.lt/portal/lt/legalAct/fd70631067d811eb9dc7b575f08e8bea>
http://www.smlpc.lt/media/image/Naujienuoms/2017%20metai/Mityba%20ir%20fizinis%20aktyvumas/Mokiniu_maisto_PASIRINK_metod_me.pdf
http://www.smlpc.lt/media/image/Naujienuoms/2017%20metai/Mityba%20ir%20fizinis%20aktyvumas/Mokiniu_maisto_PASIRINK_metod_me.pdf
https://sam.lrv.lt/uploads/sam/documents/files/Veiklos_srityys/visuomenes-sveikatos-prieziura/mityba-ir-fizinis-aktyvumas/_Rekomendacijos%20veg%20maitinimo.pdf
[https://hi.lt/uploads/pdf/zurnalo_vs%20info/2020_3/Vs%202020%203\(90\)%20ORIG%20Mitybos%20prociai.pdf](https://hi.lt/uploads/pdf/zurnalo_vs%20info/2020_3/Vs%202020%203(90)%20ORIG%20Mitybos%20prociai.pdf)
[https://hi.lt/uploads/pdf/zurnalo_vs%20info/2020_3/Vs%202020%203\(90\)%20ORIG%20Mitybos%20prociai.pdf](https://hi.lt/uploads/pdf/zurnalo_vs%20info/2020_3/Vs%202020%203(90)%20ORIG%20Mitybos%20prociai.pdf)
<https://www.e-tar.lt/portal/lt/legalAct/4999e600377711ea829bc2bea81c1194>

LATVIA

Nutrition and food control in Latvia is regulated and coordinated by the Ministry of Health. The Ministry works out and coordinates the National Nutrition Policy development, as well as supervises the implementation of the policy at the State and regional level, concurrently cooperating with the Ministry of Agriculture and other State administration institutions.

One of the most significant laws and regulations is the “Law on the Supervision of the Handling of Food” (<https://likumi.lv/ta/en/en/id/47184>), which aims to ensure qualitative and non-harmful food business for human health, life and the environment, thereby preventing risks, promoting trade and protecting *consumers' interests*. It also defines national competence matters regarding all types of food business and any food establishment and physical person involved, that are not covered by EU regulations.



This project is funded by the European Union

Food manufacturing and public catering fields are regulated by a number of the Cabinet regulations. Such as:

- Cabinet Regulation No.671 “Mandatory Harmlessness and Quality Requirements for Drinking Water, and the Procedures for Monitoring and Control Thereof”(14.11.2017.)
- Cabinet Regulation No.744 “Procedures for Assessment of Novel Foods and Requirements for Classification, Labelling and Quality of Novel Foods” (12.12.2017.)
- Cabinet Regulation No.115 “Labelling requirements for pre packed food” (“*Prasībasfasētaspārtikasmarķējumam*”) (03.03.2015) etc.

The document binding on educational establishments is the **Cabinet Regulation No. 172 (13.06.2012) “Regulations Regarding Nutritional Norms for Educatees of Educational Institutions, Clients of Social Care and Social Rehabilitation Institutions and Patients of Medical Treatment Institutions”**. Its aim is to ensure the use of a healthy and balanced diet, which is defined as a freshly prepared dish from natural food products on the day of its serving. The regulation defines natural food products (such as meat, fish, eggs, cereals, fruits, vegetables, potatoes), as food products which are not genetically modified, do not contain genetically modified organisms and do not consist of them. Food includes supplementary processed foods such as bread, yogurt, cheese, meat products.

Information materials with recommendations for healthy nutrition are available on the website of the Centre for Disease Prevention and Control www.spkc.gov.lv

Opinions, comments, and other useful information of the credible experts on healthy diet are published in the Ministry of Health web portal www.esparveselibu.lv. The Ministry of Health with the financial support of the European Social Fund has implemented a number of activities in the field of a healthy diet, as well as healthy nutrition training for cooks of educational establishments, food technologists; health education training for teachers, including health issues training. For more information on the activities carried out with the financial support of the European Social Fund visit the website:www.esparveselibu.lv. In order to inform and educate the society about healthy nutrition issues, the Ministry of Health has developed guidance and recommendations on healthy nutrition for different population groups, local governments and educational institutions.

Health maintenance is also one of the fields to be learned in the new education standards <https://www.skola2030.lv/lv/skolotajiem/izglitiba-pakapes/pamatizglitiba>

POLAND

European Union regulations on the fruit and vegetable market:

1. Regulation of the European Parliament and the Council of EU No 1308/2013 of 17 December 2013 establishing a common organization of the markets in agricultural products and repealing Council Regulations (EEC) No 922/72, (EEC) No 234/79, (EC) No 1037/2001 and (EC) No 1234/2007.



This project is funded by the European Union

2. Commission Implementing Regulation (EU) No 543/2011 of 7 June 2011 laying down detailed rules for the application of Council Regulation (EC) No 1234/2007 as regards the fruit and vegetables and processed fruit and vegetables sectors.

3. Regulation (EC) No 178/2002 of the European Parliament and the Council of EU of 28 January 2002

National regulations in force on the fruit and vegetables market:

1. The Act of December 19, 2003 on the organization of the fruit and vegetable markets and the hops market.

2. The Act of December 21, 2000 on the commercial quality of agri-food products.

3. The Act of August 25, 2006 on food safety and nutrition, Journal of Laws 2006 No.171 item 1225.

4. The Act of January 8, 2010 amending the Act on Food and Nutrition Safety and Certain Other Acts (Journal of Laws of 2010, No. 21, item 105). The amended act introduces a provision on mutual recognition of food stuffs that are not covered by Community provisions on health conditions and food labeling, provided that they do not pose a threat to human health and life, and:

- they come from EU member states and have been manufactured in accordance with their internal regulations

- come from countries that are members of the European Free Trade Association (EFTA) and from Turkey.

STATISTICAL DATA OF PLANT FOOD USE

IN LITHUANIA

General statistics: In Lithuania, one person consumes as much as 88 kg of meat per year, more than 300 kg of dairy products, and vegetables - only twenty kilograms more than meat.

Assessing the peculiarities of the consumption of vegetables and fruits by adults in Lithuania, it can be said that they are still not consumed enough. It was found that only a half (57.1%) of the study participants eat vegetables and fruits (fresh, cooked, stewed, fried, fermented, etc.), except potatoes, every quarter, the respondents answered that they consume vegetables and fruits 3-5 times a week. every sixth - only 1-2 times a week. Statistically significant increase in the number of female (63.8%) non-males (49.4%) indicated that they still eat vegetables and fruits daily, rarely (1-2 times a week) or do not consume these products at all. It was found that with the increasing age of the respondents, 51.6 per cent of people who consume more vegetables and fruits eat every day age 19-34 and 61.9 percent age 50-64 correspondents. Also, daily consumption of vegetables and fruits is statistically significantly higher ($p < 0.0001$) more than the number of correspondents who received higher education, as well as more than one of the respondents, businessmen and housewives who had more or less



This project is funded by the European Union

respondents), except for potatoes, consumed daily, indicated that these products should be eaten 1 or 2 times a day, and only 6.9 percent. In the study, the participants answered that they consume vegetables and fruits 5 times a day (Fig. There were no statistically significant differences according to the respondents' answers to the question of how many times a day they consume vegetables and fruits, depending on age, education and place of residence. 5 times a day women eat more vegetables than men (8.2% and 5.8%, respectively) ($\chi^2 = 14.68$, $df = 4$, $p < 0.01$) and the number of retired non-female owners ($\chi^2 = 58.66$, $df = 28$, $p < 0.001$) than those with other occupations. 57.1% of everyday products were consumed. In 2007 almost daily (6-7 times a week) only 43.4% ate fresh vegetables, and in 2014 - only 30.6 percent. respondents (of which only 3.1% consume fresh vegetables several times a day) and another 7.2% respondents' daily consumption of cooked or stewed vegetables, except potatoes. 2019 the higher number of respondents who have identified a higher proportion of vegetables and fruit may be related to the following questions in the previous survey: this study was asked only about. Although in 2019, compared to 2014, there was an increase in the daily consumption of cereal products and a decrease in the number of adults consuming several times a day, the consumption of cereal products remained a similar trend over the last few years.

Lots of info in the article:

[https://www.hi.lt/uploads/pdf/zurnalovs%20info/2020_3/VS%202020%203\(90\)%20ORIG%20Mitybos%20iprociai.pdf](https://www.hi.lt/uploads/pdf/zurnalovs%20info/2020_3/VS%202020%203(90)%20ORIG%20Mitybos%20iprociai.pdf)

LATVIA

Data on the consumption of food products in Latvian households are collected by the Central Statistical Bureau (CSP) while carrying Household Budget Survey. The most current study was carried out in 2019. In Latvia in 2019, it was consumed in average 30 kg of fresh meat (mainly pork) and almost the same amount of different meat products per one household member per year, approximately 89 l of milk and milk products, around 10 kg of fish and fish products, but fresh and preserved fruits, vegetables-192 kg, as well as 10 l of fruit and vegetable juice. The most dominant vegetables in human consumption were potatoes (almost 48 kg), then came cucumbers and tomatoes (10 and 12 kg). Similarly, in 2015 in average per capita consumption was almost the same. Fresh and preserved fruit and vegetables consumption was the same as in 2019 – 188 kg, but the consumption of potatoes was larger - 64,5 kg. <https://nra.lv/veseliba/251487-aptauja-latvijas-iedzivotaju-ikdienas-uzturs-nav-sabalansets.htm>

According to data from the Central Statistical Bureau of European Population Health Survey (EIVA), at least once a day fruit was used by 35.3% of Latvian residents aged 15 and over, while vegetables and salads (excluding potatoes) – by 39.4% of Latvian residents. Over five years, these indicators have decreased by 4.5 and 3.2 percentage points, respectively. <https://lvportals.lv/dienaskartiba/325983-vairak-neka-tresdala-latvijas-iedzivotaju-katru-dienu-uztura-lieto-auglus-un-darzenus-2021>

The eating habits of fruit and vegetables vary greatly between men and women. In 2019, as in 2014, the tendency of larger consumption of fruit and vegetables by women remained –



This project is funded by the European Union

41.3% of women consume fruit at least once a day, while vegetables and lettuce (excluding potatoes) – 43.6% of women. Women aged 55 - 64 (47.4%) were the most likely to consume fruit daily. Men consumed more vegetables than fruit – 27.8% of men ate fruit each day, while vegetables – 34.2% of men.

7.6% of the population consume fruit less than once a week or do not eat at all, but vegetables by 4.7% of the population. Only 7.2% of the population from the age of 15 eats enough fruit and vegetables. The survey “Snapshot” carried out by Maxima Latvia (in which participated 700 Latvians aged 18-74. Data was acquired and analysed in June 2018) showed that 57% of population consume vegetables only once a day or even more rarely, although a balanced diet must contain 500 g of these products every day.

Also, more than a third or 35% believe that their family's daily diet does not contain enough fruit-half (51%) of the respondents eat fruit less than once a day.

More than 60% of Latvia's population say that various causes prevent more frequent consumption of vegetables and fruit in their diet. 25% of respondents do not have enough information about the daily recommended amount of fruit and vegetables for the balanced diet, and 16% of respondents do not know how to cook them.

20% pointed out that there is no time for cooking vegetables, and 17% do not consider the consumption of these obligatory daily products as a daily habit.
<https://www.csb.gov.lv/lv/statistika/statistikas-temas/socialie-procesi/mba/meklet-tema/107-cik-daudz-menesi-aped-viens-latvijas-iedzivotajs-2017>

In order to promote the consumption of fresh fruit and vegetables among pupils, in European schools is carried out a program called “Fruit in Schools” (FIT), within which pupils in 28 European countries (including Latvia, Lithuania and Poland) receive fresh vegetables and fruit free of charge. The European Commission's “Fruit in School” programme is a way in which Member States can provide free fruit and vegetables to pupils by using their own and the European Union's budget by promoting healthy eating habits among pupils. In implementing the programme's objective to increase consumption of fruit and vegetables, it is possible to have a significant impact on the quality of pupils' daily diet and to reduce the costs of healthcare related to obesity and cardiovascular diseases in the future.

The programme was launched in Latvia in the 2010-2011 school year.

Statistics for 2019-2020 school year In Latvia:

https://ec.europa.eu/info/sites/default/files/food-farming-fisheries/key_policies/documents/lv-school-scheme-monitoring-report_2019_2020_en.pdf

POLAND

Poles want to eat healthier and more and more often reach for plant-based alternatives not only for meat, but also milk, butter, eggs and other animal products. And although their names will soon become a big problem, it certainly will not stop development of the vegan products market, which is as dynamic in Poland as it is in the world.



This project is funded by the European Union

Changing their habits, Poles more often reach for plant products, including ready-made substitutes for typical animal products. This is shown by the results of a survey of Poles' eating habits during the epidemic, conducted in June 2020 for Upfield by Market Research World. Vegetable products that do not contain meat, milk or eggs are used not only by vegans, but also by vegetarians and people with food intolerances and allergies or other medical indications.

According to the Ariadna Panel, in 2019, vegetarians accounted for 6.6% adult residents of Poland, and vegans - 1.8%, while 3.8 % declared that by reducing meat consumption they eat more fish.

In turn, the data of the Mintel company, which also applies to last year, in the 18-34 age group, every tenth person excludes meat from the diet. This trend comes to us from the West and is especially intense in Germany. Interest in veganism is record-breaking in 2021 with the United Kingdom in the leading position.

According to Mintel's Research, every third Polish consumer eliminates red meat from everyday meals and 19% eliminates dairy products. Experts emphasize that this percentage will increase, they expect that in the next 10 years, $\frac{3}{4}$ of restaurant and store customers will be millennials and generation Z, i.e. people who are currently highly aware of the method and quality of nutrition that translate into their lifestyle .

Also the COVID-19 pandemic made 20% of Poles perceive a plant-based diet as more attractive and appreciate the role of vegetables and fruits in building the body's natural immunity. According to the results of a study published in the scientific journal BMJ Nutrition, Prevention & Health, eating plant-based foods reduces the severity and duration of COVID-19 symptoms.

By 2035, plant-based alternatives to animal products are expected to account for up to 11% of the global protein market, with a positive scenario of up to 22%. Consumers are becoming more and more aware of their food choices and consumption behavior, treating plants as a staple ingredient in their diet, keeping in mind their health and the welfare of the planet. Unfortunately, in many Polish environments it is still necessary to build awareness of the value of plant products.

PLANT FOODS AND LOCAL PRODUCTS

LOCAL TRADITIONS, HISTORY IN FIELD OF GASTRONOMY WITH LOCAL PRODUCTS TRADITIONS

LITHUANIA

Vegetarian food is the basis of a healthy diet.

We have heard many times about the benefits and recommendations of a "proper" diet: less red meat, less fat, sugar, salt. Vegetable-based and cooked dishes are increasingly coming into our diet. More and more often we start thinking about the amount of calories in meals, food additives, allergens. Vegetarian dishes are made more and more ingeniously in Lithuania,



This project is funded by the European Union

enriched with various types of cold-pressed oil (linseed, hemp or pumpkin seeds). Efforts are made to choose food products from the local market and to treat them as little as possible (protecting vitamins and other nutrients).

To date, there is no universally accepted definition of local foods. In the scientific literature, local foods are often associated with a specific geographical area. According to this approach, foods grown and / or produced, processed and consumed in a relatively small geographical area are considered local. The categories of distance (miles, kilometers) and political or administrative boundaries (county, region, country) are used to define the geographical area. Local foods are also associated with ways of selling in the market. According to this approach, local foods are those that farmers sell directly to consumers.

Read more: <https://www.manoukis.lt/mano-ukis-zurnalas/2016/03/vietiniai-maisto-produktai-vartoju-vertinajumi-ir-pozitiviai/>

Generally about the history of Lithuanian cuisine.

Our cuisine is quite unique, unlike any Latvian, we have a lot of unique dishes that we can be proud of. We could even say that in Europe, the abundance of our national dishes is inferior to that of the French and the Italians. Lithuanian cuisine has accumulated better

preserved the culinary experience of all the white nations, and since we were also a real empire in the Middle Ages, it was enriched with a lot of foreign influence, which the people proceeded in their own way, creating new dishes. Among the foreign influences, the Italian cuisine is most worth mentioning - from this ancient times many Lithuanian chefs were brought by Lithuanian nobles, although the peoples who were brought here - the Tatars, Jews, Karaites, so in the 18th century. Our chefs were already famous in the world and had a great influence on the surrounding countries, especially Russia, Switzerland, Poland.

After the collapse of the Republic of the Two Nations, Lithuanian cuisine spread throughout the Russian Empire, was largely "expropriated", so many supposedly Russian or Ukrainian dishes are Lithuanian. The situation was similar with many "Polish" dishes, each of which, by the way, began to become popular in Poland in the 19th century.

http://www.pipedija.com/index.php/Lietuvi%a1ki_valgiai

Food traditions and history in Lithuania:

Initially, humans had created a number of festivals that were grouped into two groups:

- one of them consisted of holidays, the time of which is combined with astronomical rhythms and are called calendar;
- the second - related to the beginning and end of field work - agricultural.

The customs of agricultural festivals arose due to the religious importance of the laws of nature surrounding people, the periodic change of seasons (in spring the spring - the return of the sun; in the spring - the tilling the soil, sowing; in the summer - the harvest; in the autumn



This project is funded by the European Union

- the farewell and working seasons. At the end of one work, another began: the first plowing of the furrow, animals grazing in the fields, the sowing of the first grain, mowing, the cutting of rye, the harvesting, etc. t. On such occasions, farmers prepared solemn celebrations during which they performed various ceremonies. During these festivals, diverse, rich, and complex art was created that evolved from people's philosophical understanding.

Believed in various beings:

- gods,
- totemais,
- demons,
- hosts of flora and fauna.

Sacrifices were offered to these creatures, which were to guarantee a good harvest and protect the house and animals. Various masks and costumes were also created, which had to be very terrible to scare away various evil spirits, witches, ghosts, because, according to the primitive man, it protected the house, the harvest, the animals, and themselves from evil.

The dates of the seasonal changes and rites were inaccurate, so the ancient people created the conditions for the emergence of a calendar that acquired more prominent features with the development of agriculture and animal husbandry. First, a lunar calendar was created, the year of which consisted of 12 or 13 months, but it did not coincide with earthworks and calendar holidays. People determined the time of the working seasons by observing the movement of celestial bodies, the death and rebirth of vegetation, the arrival and departure of birds.

19th c. - XX a. the main calendar of the farmer's calendar of calendar holidays is as follows:

- Christmas
- Mardi Gras
- Jurgical
- Easter
- Pentecost
- Ionic
- Herbal

Read more:

https://en.wikipedia.org/wiki/Lithuanian_tradicities_and_preparations



This project is funded by the European Union

LATVIA

In accordance with climatic, geographical and historical conditions, **the national cuisine** has developed over the centuries into a set of traditions of food ingredients, their preparation and eating habits, which is characteristic of the majority of the country's population.

Brief history and formation of Latvian national cuisine

Latvia is characterized by cuisine, which is determined by the climate of North Eastern Europe. Historically, it has developed in the farming environment, using local plant and animal products for food and people's knowledge and skills in extracting, growing and cooking raw materials.

The first inhabitants of the territory of Latvia were engaged in hunting and fishing, consuming game meat, freshwater and saltwater fish, berries, nuts, seeds, mushrooms. Livestock farming was introduced at the beginning of the 2nd century BC. The first livestock were cows, horses, pigs, sheep and goats. From the middle of the 2nd century BC were grown common barley, later dicotyledonous wheat, millet, field beans, peas, oats, common rye. Later people began to grow lentils, hemp, turnips and chicory. Common buckwheat has been grown since the 15th century. Initially, cereals were consumed by cooking whole grains or porridge, and only since the 10th century, when hand mills and bread ovens were introduced, was additionally baked fermented barley and rye bread.

The use of milk in the diet began in the 1st century BC. The most valuable dairy product was butter, which became one of the main commodities of duties, markets and loot throughout northern Europe. Sour milk cheese made from cottage cheese also appeared. Milk, butter and cheese became an essential meal part of honour and ritual in Latvian traditions. For a long time, cream was only an intermediate product of butter production, its consumption began around the 18th century.

In 18th and 19th centuries farmers began to grow potatoes. Until the middle of the 19th century farms were natural, people bought only salt. Traditionally, dishes were cooked, salted or sour. Meat was eaten on holidays, the diet was poor on a daily basis. Until then, various innovations entered slowly and indirectly through manors whose cuisine reflected the cultural and historical influences of several European nations. In the second half of the 19th century farmers introduced stoves, began to bake food. Thanks to cookbooks and recipes published in periodicals and cooking instructions, the gentleman's kitchen appeared on the peasant's feast table and was adapted to the peasants' traditions and possibilities. Farmers began to make salads, adding cream instead of oil. Since the end of the 19th century the diet began to consume sugar, appeared sweet dishes: berry and fruit jelly, mousse, buberts, cookies, flatbreads, cakes.

https://lv.wikipedia.org/wiki/Latvie%C5%A1u_virtuve

Vegetable products in the national cuisine

Until the beginning of the 20th century, the Latvian diet was based on home-baked whole meal rye bread and various cooked dishes - cereals, legumes, root and vegetable



This project is funded by the European Union

hinges with added milk, meat or fat. Mushrooms and berries were picked in the forests to supplement the diet.

Rye bread has always been one of the main dishes in Latvian homes, so it is one of the symbols of Latvianness even today. Traditional Latvian rye bread is made from flour of local, historically grown grain varieties, fermented naturally, made by hand and baked in a wood-fired bread oven on a stone. Rye grain contains many substances necessary for the human body. Grain husk contains fibers and minerals, germ - proteins, vitamins B and E, vegetable oils. The middle part of the grain is an energy source, it contains starch, proteins, carbohydrates.

Pearl barley has long been an integral part of the Latvian menu and is undeniably one of our national prides. Delicious and always available groats are associated with such classic dishes as pearl barley porridge or cake, etc. However, this does not mean that pearl barley cannot be integrated into modern, restaurant-quality dishes. In addition, due to the special treatment, so-called pearl pearls, which have excellent taste properties.

Peas and beans. In the past, green field peas and pig or card beans with all their pods were cooked in salt water in the autumn. People peeled green beans and ate them with sweet milk. Today, the most popular are green peas, which are served with fried bacon and onion sauce. Latvia's large green peas are protected products of geographical origin. Peas and beans began to be used in the 17th century, when potatoes were imported to Latvia. However, nowadays there is a growing interest and housewives have many recipes that can be used to prepare pate-like legume products, they can make scones, meatballs and other dishes. We still eat too little of them. If you exchange potatoes and rice for legumes a few times a month, you will feel a fundamental improvement in health. Especially for those people who have a sedentary lifestyle. <https://www.ltu.lv/lv/raksts/2018-12-20/ltu-zinatnieku-stasti-pelekie-zirni-cildinati-svetkos-aizmirsti-ikdiena>

In the past, hemp was widely used to make hemp butter and hemp milk, as well as used as an additive to soak boiled potatoes. Linseed oil was also used and is used now as an additive.

In vegetable and root dishes kale, cabbage, beets, onions, and later potatoes are often used in traditional cuisine. They were stewed, smoked, boiled in broth and soups, with the addition of cereals or chewing rye bread. Sweet dishes were also made from plant products. For example, oat jelly, lingonberry jam, which was sweetened with carrots or red beets, and flour dumplings too. Nowadays, of course, both the range of plant products grown in Latvia and the offer of imported products are expanding. Campaigns have been organized to popularize national cuisine and local products in Latvia: "Choose a Latvian product", "Green spoon", stickers for products "Grown in Latvia", regular farmers' markets, culinary festivals, such as Gastronomy Festival, Riga Restaurant Week, annual exhibition Riga Food. Professional competitions and TV shows present the skills and ingenuity of cooks. Before annual festivals advertisements in supermarkets and food producers emphasize Latvian traditional food and drinks. The preparation of traditional dishes is popularized by the annual campaign "Meet your master", the project "Delicious Latvia" and city, fishermen and harvest festivals, as well as



This project is funded by the European Union

museum exhibitions organized by the Latvian National Cultural Centre.
<https://enciklopedija.lv/skirklis/4980-nacion%C4%81%C4%81-virtuve-Latvij%C4%81>

POLAND

Podlaskie Voivodeship borders on three countries - Russia, Lithuania and Belarus. Such geographic location means that each of these countries leaves a visible imprint on the culinary culture of the region. Thanks to them, the cuisine of Podlaskie Voivodeship is unique - full of a variety of products that are produced on the basis of traditional recipes that do not contain any additives, preservatives, high chemistry of the technological process. These products can therefore be called organic products. It is also an area where there is still very little environmental pollution, and smog is hardly heard of.

Polish cuisine has been the same for centuries: simple, based on local seasonal products, nutritious and most importantly tasty. It is known for using especially such plant products as: potatoes, cabbage, beets, carrots, parsnips, turnips, apples, pears, plums, cranberries, blueberries, birch sap, mushrooms, herbs, e.g. caraway, rosemary, mint, lovage, juniper.

A number of initiatives are carried out throughout the country to select the best products derived from the traditions and cultivated customs of various regions of Poland. One of such competitions is "Our Culinary Heritage - Tastes of the Regions. In addition to provincial competitions, selected dishes and products are submitted to the national competition "Pearls" held during the Polagra Food Fair in Poznań.

Regional and traditional products are of high quality, and thus a reputation that needs to be protected. This is achieved by the certification of products, which in Poland is handled by the Ministry of Agriculture and Rural Development (MRiW), and within the European Union - by the European Commission. The Ministry of Agriculture and Rural Development also maintains an official register of products distinguished by their quality and manufacturing tradition, as well as those contributing to the cultural heritage of the regions concerned (a traditional regional product may be one that proves at least a 25-year tradition of the product). Currently, the register includes over 1,100 traditional products, the most of which is in the Podkarpackie Province (149). For customers, it is a signal that the product is of high quality.

So far, over 50 traditional products have been registered on the website of the Ministry of Agriculture and Rural Development from the Podlaskie Voivodeship. They also include plant products, such as sauerkraut from the Suwałki region, sauerkraut from barrel, Kruszewska sauerkraut, Kruszewski Herbowy cucumber, "Nadbużańskie" pickled cucumbers, Nadbużańska acorn coffee, flour from Podlasie.

Under the slogan "Podlasie cuisine" there are unique dishes from the entire Podlaskie Voivodeship, which for hundreds of years has been the area where various cultures and religions meet. The centuries-old presence of Jews, Tatars and the coexistence of the Belarusian, Ukrainian and Lithuanian minorities had a huge impact on how people cook here. Here are some of the specialties of Podlasie cuisine: potato sausage and cake, a pie with cabbage and mushrooms, dumplings with lentils, dumplings with nettle, bread straight from the oven,



This project is funded by the European Union

tasty, unpolluted dishes can be tasted in agritourism farms, where a pinch of Podlasie hospitality is an important ingredient.

Podlasie is a natural region, still green, in which people appreciate contact with nature and they still use recipes passed on from their grandfather. The animals raised here and the plants grown here are healthier and have a better taste. This state of affairs means that regional restaurants very often reach for local products and use them to create their own menu cards. Local, ecological products almost become advertising slogans aimed at attracting potential customers. In addition to restaurateurs, plant products from ecological crops, but also not only, are also used by the residents themselves, who look for them in shops or at various fairs.

NUTRITION USING A PLANT DIET - TECHNIQUES, RECIPES, MEALS

LITHUANIA

The basis of the Plant Based Diet is products of plant origin - roots, sprouts, fruits, vegetables, beans, cereals, nuts, seeds. This is a complete abandonment of animal products. This means not consuming any meat, fish, milk, butter, eggs, cheese, gelatin and products of their origin. Proponents of plant nutrition not only give up food ingredients of animal origin, but 90% -100% of their food intake is real (unprocessed, unrefined) and unprocessed plant food. Researchers agree that such a diet reduces the risk of obesity, diabetes, oncologic and heart disease, strengthens immunity, has a positive effect on general well-being.

Plant-based foods fit perfectly in a healthy balanced diet, they tend to have a low saturated fat content, while they contain unsaturated fat. Replacing saturated fat with unsaturated fat in the diet has been shown to lower blood cholesterol. High blood cholesterol is a risk factor in coronary heart disease.

Thanks to their 100% plant origin, plant-based drinks and dairy alternatives are naturally lactose-free.

Plant-based foods are relevant in a healthy balanced diet. For consumers who are looking for a nutritious alternative to animal proteins, plant-protein foods are a great option.

The human body needs 20 amino acids. Eleven of them the body can produce itself. However, 9 amino acids cannot be produced by the body itself. These 9 amino acids are called essential which a person must get with food. Plant protein sources are often deficient in one or more amino acids.

Therefore, vegetable proteins can be divided into complete (containing all 9 essential amino acids) and incomplete. Complete plant proteins include, hemp seeds and hemp protein, chia seeds, soy and soy products. Sources of incomplete vegetable protein: nuts, seeds, grains, peas, beans, chickpeas, lentils, vegetables containing protein (such as broccoli). When combining foods with each other, it is necessary to take into account the presence of all amino acids in the daily diet.

When creating a plant nutrition plan, it is necessary to take into account which products are rich in plant proteins. Some plant products, such as soy beans and quinoa, are complete



This project is funded by the European Union

proteins, which means that they contain all nine essential amino acids that humans need. Others are missing some of these amino acids, so eating a varied diet is important. The following healthful, plant-based foods have a high-protein content per serving: **tofu, tempeh, and edamame, soy products, lentils, chickpeas, peanuts, almonds, spirulina, Quinoa, chia seeds, hemp seeds, beans, potatoes.** Quinoa is a grain with a high-protein content, and is a complete protein. Cooked quinoa contains 8 g of protein per cup. This grain is also rich in other nutrients, including magnesium, iron, fiber, and manganese. It is also highly versatile. Quinoa can fill in for pasta in soups and stews. It can be sprinkled on a salad or eaten as the main course. Spirulina is blue or green algae that contain around 8 g of protein per 2 tablespoons. It is also rich in nutrients, such as iron, B vitamins — although not vitamin B-12 — and manganese. It can be added to water, smoothies, or fruit juice. A person can also sprinkle it over salad or snacks to increase their protein content.

Dandelion can be mentioned among the nutritious plants known in Lithuania. Its preparation: after digging and washing the stem, cut into pieces and dry. The dried pieces can be chewed by a teaspoon, two a day, ground and used as a spice, poured and used as a tea to strengthen the body.

Garšva is also called chickenfoot because it resembles chicken legs. The most nutritious place for this herb is the leaves, which are suitable for spices. Taste can also be used as a substitute for meat, because it contains amino acids, proteins in the same way as meat. Delicious leaves contain vitamins A and C, malic acids, iron, potassium, magnesium, copper mineral salts; roots - essential oils, saponins, starch, resins. It is useful for patients with joint diseases.

Another nutritious plant growing in Lithuania is nettle. Nettle is a plant that is very rich in calcium and contains carbonate, so it is safe for the kidneys at high doses. In terms of protein content, nettle is not inferior to legumes. Nettle fiber contains lignin and cellulose polysaccharides with vitamins C, K, E, B groups. They help remove toxins. B carotene improves vision. Nettles contain amino acids, trace elements that, together with vitamins, strengthen and heal the human body.

A healthy plant-based diet is high in vegetables. Including a variety of colorful vegetables rich in a variety of vitamins and minerals: broccoli, cabbage, beets, cauliflower, asparagus, carrots, tomatoes, peppers, zucchini. Berries, citrus fruits, bananas, apples, grapes, melons, avocados are also used. Legumes are a great source of fiber and vegetable protein. You can include a variety of options in your diet: chickpeas, lentils, peas, beans. Nuts are a good source of plant proteins and vitamins, selenium and vitamin E. The following nuts are used: cashews, almonds, pecans, macadamia nuts, pistachios. It is vital to consume polyunsaturated and monounsaturated fats as well as omega-3 fatty acids. Vegetable sources: avocados, walnuts, chia seeds, hemp seeds, flaxseed, olive oil, rapeseed oil.

Dishes with sprouts

During germination, the chemical composition of the seeds changes: the valuable substances in the passive state - vitamins, macro- and microelements, enzymes, amino acids - become biologically active and are concentrated in the seedlings during the growth process.



This project is funded by the European Union

When you eat seedlings, all these useful substances are absorbed by the body. They strengthen immunity, fight free radicals, have a positive effect on intestinal function, alkalize the body, provide strength, freshness, energy.

One of the most valuable is sunflower seedlings: they are rich in vitamins of groups A, C, K, B, and protein as much as 30%, i.e. twice as much as the best quality spinach.

The optimal amount of seedlings to be eaten per day is 50-70 g. You need to get used to this healthy food: first it is recommended to eat one to two tablespoons a day, then gradually increase this amount. A maximum of 100-150 g of germinated grains or seeds can be eaten.

Bulgur groats with sprouts

130 g of bulgur groats, 1 handful of sprouted sunflowers, ½ cup sprouted chickpeas, 1 tablespoon finely chopped peanuts, 120 g peeled cucumbers, 100 g tomatoes, 80 g soy curd, soy sauce, 1 tablespoon lemon juice, 4 tablespoons olive oil.

Boil the bulgur groats. Mix them with chopped tomatoes, cucumbers, nuts, 5-7 minutes. Soaked in water and crushed with soy curd and sprouts. Season the dish with oil, lemon juice and soy sauce.



Snack recipe

Pumpkin spread

1 glass of cashew nuts (washed and soaked for 2-3 hours), 2 glasses of chopped pumpkin, half a glass of water, 3 tablespoons lemon juice, half a teaspoon of chopped garlic, half a teaspoon of Himalayan salt, half a teaspoon of ground teaspoon, half a teaspoon of tea teaspoon turmeric.

Cooking process:

Using a food mixer, crush the cashew nuts with water. Grind them to a soft mass. Gradually add the pumpkin. Again, crush well. Stir in garlic, lemon juice, salt, turmeric and pepper. Grind everything. Spread the resulting mass on the pumpkin pieces and decorate.



This project is funded by the European Union



Soup recipe

3 tomatoes, 1 small cucumber, half a red pepper, 1 hot pepper, 2 sprigs of basil and parsley, half a clove of garlic, Himalayan salt, 2 tablespoons olive oil.

Cooking process:

Add chopped tomatoes, cucumbers, red paprika, garlic, parsley and basil leaves, hot peppers, salt to the food mixer. Grind everything well. Gradually add the olive oil little by little. Pour the soup into a plate and garnish with greens and tomato cubes.



Hot Meal Recipes

Bulgur and Cashew Stuffed Eggplant

1 tbsp. olive oil, 3 clove garlic, 1/2 c. golden raisins, 1/2 tsp. curry powder, 1/4 tsp. Salt, 1 c. quick-cooking bulgur, 2 c. water, 2 medium eggplants, 2 tbsp. olive oil, 1/2 c. cashews, Chopped mint.

1. In small saucepot, heat 1 tablespoon olive oil on medium. Add crushed garlic, golden raisins, curry powder, and salt. Cook 2 minutes, stirring. Add bulgur and water. Heat to simmering. Cover; simmer 15 minutes, or until bulgur is tender.
2. Meanwhile, cut eggplants in half lengthwise. Scoop out seeds. Arrange eggplant on foil-lined baking sheet, cut sides up. Brush with remaining 2 tablespoons olive oil and sprinkle with 1/2 teaspoon salt. Broil on high (6 inches from heat source) 7 minutes, or until tender.
3. Remove eggplant from oven; cover with foil. With fork, fluff bulgur; stir in cashews. Stuff eggplant with bulgur mixture; garnish with chopped mint.



This project is funded by the European Union



Strawberry tart

Base: 2 glasses. almonds; 1 glass. soft dates (if hard - soaked in water for about 2 hours); 2 v.š. cocoa powder (optional); a pinch of salt.

For cream: 2 glasses. cashew nuts (soaked in water overnight or for at least about 4 hours); 400 g of strawberries; 2 v.š. chia seeds; 7 š. coconut oil (liquid); 4 š. lemon juice; 5-7 soft dates; 1 a.š. vanilla extract; a pinch of salt.

Cooking process:

1. Rinse the almonds for the base well, dry and fry lightly in a pan until the aroma spreads and bakes gently. Cool. Put in a food shredder or combine and shred into small crumbs. Put sliced soft dates in the nuts (if the dates were hard and soaked in water, drain), cocoa powder (if used), a pinch of salt and continue to grind until the dates are mixed with the nuts. The mass for the base will be ready when it sticks together between two fingers. If the mass does not stick, insert another date.

2. Lay the bottom of the cake-shaped base ready for the base. Squeeze well.

3. Place the ingredients for the cream in a food grinder or food processor and grind everything to a smooth mass. Taste and, if necessary, adjust the taste with lemon juice, a slice of date (if sweetness is lacking) or a pinch of salt.

4. Pour the prepared cream on the base, smooth and cover with food wrap in the freezer overnight.

5. Move the cake to the fridge the next morning to slowly thaw. Before eating, garnish with chopped berries and mint leaves.





This project is funded by the European Union

Beverage recipes

Strawberry cocktail with bananas and oats

180 g of rattle, 1 glass of vegetable milk, 1 pc. bananas, 45 g of oatmeal

Cooking process:

Wash strawberries and bananas. We remove the leaves from the strawberries and peel the bananas.

We add strawberries and bananas to the cocktail shaker, add oats, pour milk and whisk.



Sources of information

[https://www.thelancet.com/journals/lancet/article/PIIS0140-6736\(18\)31788-4/fulltext](https://www.thelancet.com/journals/lancet/article/PIIS0140-6736(18)31788-4/fulltext)
<https://bravesaver.com/2020/10/08/cook-plant-based-diet-save-money/>

LATVIA

Modern society cares about healthy eating more and more. A varied and healthy diet provides the body with all the necessary nutrients. Different foods naturally contain different amounts of basic nutrients (proteins, carbohydrates, fat), as well as vitamins and minerals. This is why it is important to include foods from different groups in the diet and to combine them when preparing meals. For example, berries, paprika, and oranges contain vitamin C, but no iron or vitamin B12. Cheese provides calcium and vitamin B12, but has no vitamin C. When excluding any food group from the diet, such as meat or fish, one needs to make sure that the other foods provide all the necessary nutrients. There are five main food groups:

- grains;
- fruits and vegetables;
- milk and dairy products;
- meat, fish, and other products containing protein – eggs, legumes, nuts and seeds;
- fats and oils.



This project is funded by the European Union

The main food groups in everyday diet can be presented in different ways, including as the food pyramid or the food plate. Nowadays, the main food groups are more often presented as a food plate diagram:

- half of the plate is filled with vegetables and fruits (more or 3 parts vegetables and 2 parts fruit);
- one quarter is filled with grains (including buckwheat, rice, pasta, bread) or potatoes;
- one quarter is devoted to foods containing protein – meat, fish, milk or dairy products, eggs, legumes;
- the centre of the plate is the smallest part – for fats and oils use in meal preparation, for example, vegetable oil in salads.

Whereas sweets and unhealthy snacks are usually placed outside the food plate, thus showing that foods that are high in sugar, salt, or fat should be included in the diet only occasionally. Moreover, do not forget to consume enough water.

Every nutrition specialist recommends including more plant-based foods. The World Health Organisation recommends having fruits and vegetables every day, which reduces the risk of excess weight and obesity, as well as the risk of type 2 diabetes, cardiovascular disease, and some cancers, such as bowel and stomach cancer.

The recommendations of the Latvian Ministry of Health concerning healthy diet include having at least 500 g or 5 portions of vegetables, fruits, and berries every day, 300 g of which should be vegetables and 200 g should be fruits or berries. It is also recommended to consume at least half of the recommended amount of vegetables and fruits fresh. Vegetables, fruits, and berries constitute one of the most important parts of everyday diet. Consuming a variety of vegetables, fruits, and berries helps strengthen the immune system and promote the digestive function. Vegetables, fruits, and berries provide vitamins, minerals, fibre, and other nutrients important for health, such as: provitamin A – beta carotene (carrots, pumpkins, spinach); vitamin C (greens, berries, especially black currant, plants in the cabbage family, citrus fruits, paprika, potatoes); folic acid and vitamin B6 (peas, beans, peanuts, citrus fruits, greens, broccoli); potassium (dry fruits, lentils, bananas).

The recommended daily amount of grains and potatoes is 550 g or 4 – 6 portions a day. One portion is, for example: • 1 – 2 slices of bread (2 slices of lighter bread, such as bran, or 1 slice of rye bread); • half a glass or a full glass of cooked pasta, groats or buckwheat, or other grain porridges; one medium-sized boiled potato. Grain foods provide the body with the necessary energy, proteins, fibre or roughage, minerals (mainly, potassium, calcium, and magnesium) and vitamins (folic acid, vitamin B6). People need to consume 25 to 35 g of fibre every day. Grains are considered to be the best source of dietary fibre.

Plant-based fats and oils contain more unsaturated fatty acids, which reduce blood cholesterol levels, and some of these acids provide the body with omega-3 and omega-6 fatty acids. To provide the body with the necessary fatty acids, it is recommended to include in the



This project is funded by the European Union

diet a moderate amount of good quality rapeseed oil, olive oil, nuts and seeds, and their oils, as well as avocado.

Legumes, fish, meat, eggs, nuts, and seeds are a source of protein, vitamins, and minerals and need to be included in a person's everyday diet. Eating habits or diets where a person completely excludes meat and fish is even very healthy; however, a consultation is required first to find out how to continue receiving all the necessary nutrients if animal-based foods are excluded from the diet. The amounts of iron, vitamin B12 and D, calcium, zinc, and omega-3 fatty acids required for the body can decrease.

Indispensable amino acids are found not only in animal-based foods but also in different plant-based foods (for example, legumes, grains, nuts, seeds); however, most often these will not be found in a plant-based food all at once or the amount will be small, which is why it is necessary to combine foods and to observe the principles of a balanced diet. However, there are also plant-based foods which contain a significant amount of all eight indispensable amino acids, for example, quinoa, nuts, hemp seeds, soy, peas, and beans. The required amount of protein and all indispensable amino acids can be obtained by combining plant-based foods, and doing so advisedly should not cause any problems. Moreover, no one is saying that all indispensable amino acids have to be consumed in a single day or a single meal.

Recipes

Quinoa salads with sweet potatoes and beets



Ingredients: (6 portions)

350 gr quinoa, 600 ml water, 1 avocado, dried tomatoes in oil, garlic clove, chili powder, 1 large sweet potato, herb mixture, olive oil, thyme.

Cooking:

Boil the quinoa for about 20-25 minutes until all the water has boiled. Put the prepared quinoa in a bowl and allow to cool. Then add the chopped avocado, garlic, chopped dried tomatoes, a little chili powder. If you want, you can add soy sauce to the quinoa.



This project is funded by the European Union

Peel the sweet potatoes, cut into rounds, sprinkle with a mixture of Provençal spices and fry in oil, in which you have poured a little chopped thyme. Bake on each side for about five minutes. Peel and grate beet. Add the sprouted radish seeds and a little mixture of nuts and seeds. Add pepper and salt, add a little walnut oil. Sprinkle over chopped green onions.

Pumpkin and coconut milk cream soup



Ingredients: (4 portions)

Small pumpkin (1.8-2 kg), 2 carrots, 1 onion, 3 glasses of roots broth/bouillon (can be made from a cube), 2 tablespoons lemon juice, 1 glass of orange juice, salt, pepper, 165 ml of coconut milk, 2 tablespoons of sweet chili sauce, 1 potato, frying oil, a little parsley

Cooking:

Cut the upper third of the pumpkin, remove the seeded part, cut out the flesh, leaving a skin about 1 cm thick.

500-600 g of pumpkin flesh cut into pieces, also onions and carrots cut, fry in oil.

Then pour the broth and orange juice, boil until the vegetables are soft.

The potatoes are cut into small straws, fry in golden oil, fry golden, dry on a paper towel, add a little salt.

Soup is blended, stir in lemon juice, coconut milk, chili sauce, add salt and pepper to taste.

Cauliflower steaks with greens and olive sauce





This project is funded by the European Union

Ingredients: (4 portions)

Big cauliflower, olive oil, 50 g pitted green olives, 1 tablespoon of lemon juice, 1 tablespoon of capers, 1 tablespoon of chopped parsley, 1 tablespoon of chopped oregano, salt, sugar, pepper

Cooking:

Cut cauliflower is across into 1.5 cm thick slices, fry in a pan in heated oil in portions till golden. Put baking paper on the pan, put on the paper, sprinkle with salt and pepper.

Bake in the oven at 180 degrees for a soft 12-15 minutes.

Meanwhile, mix Extra virgin olive oil with lemon juice, chopped olives, capers, parsley and oregano, add salt, sugar and pepper to taste.

Cauliflower steaks are placed on plates, poured with herbs and olive sauce.

Pavlova cakes



Ingredients: (4 portions)

Meringue: liquid from 1 can of Turkish peas (chilled), 1 glass powdered sugar, 1.5 tbsp. cornstarch, a pinch of salt, 1 tsp. apple cider vinegar, 1 tsp. vanilla extract.

For coconut whipped cream: can of coconut milk, 1 glass sugar, 1 tsp. vanilla extract

For decoration: 100 g of shelled pistachios, 2.5 glasses of fresh fruit and berries,

Cooking:

Leave the coconut milk in the refrigerator overnight. The next day, carefully remove the can from the refrigerator, open and take out the fat, the hardest part. Place it in a deep bowl, whisk until the mass becomes creamy. Then add sugar and vanilla extract. Leave to cool in the refrigerator. Preheat the oven to 110° C.

Prepare two baking trays on which to lay baking paper. Add cornstarch and salt to the sugar, mix well. Pour Turkish pea liquid into a large bowl, start foaming at low speed, gradually increasing the speed, whipped liquid in light foam (about 15 minutes).



This project is funded by the European Union

While reducing speed, continue to froth and add a tablespoon of powdered sugar. Whisk the mass until the foam is firm and shiny and the sugar has melted. Then add the vanilla extract and apple cider vinegar, beat for about 10-15 seconds. Fill the dough into a pastry bag and, squeezing on baking paper, a socket about 6 cm in diameter with slightly raised edges.

There should be gaps between the cakes, as they will expand when baked. Place the meringue in the oven and immediately reduce the temperature to 100 ° C. Bake for about 2 hours. Turn off the oven, leaving the cakes to cool completely for 4 hours. Decorate shortly before serving to keep the cakes crispy. They are richly covered with a layer of whipped cream, sprinkled

Rye bread truffles



Ingredients:

150 g of rye bread pulp, 150 g of dried berries and fruits (plums, apricots, cranberries, raisins), 100 g of dried cranberries, 50 g of brown sugar, 1 tablespoon of brown syrup (beet or sugar syrup), 1 tablespoon of Riga black balsam (rum , brandy), 100 g of chocolate.

Cooking:

Crushed bread dough with dried fruits and berries, sugar and syrup is blended into a loaf mass, 100 g of dried cranberries are coarsely chopped and mixed with the balm into the mass. Chest the size of chestnut balls with your palms, put in the refrigerator to dry and freeze.

Roll with your palms into chestnut-sized balls, put in the refrigerator to dry and freeze.

This can be done the night before. Melt the chocolate in a water bath and dip the bread balls one by one. This is easier to do by plugging each one into a chopstick. Place the chocolate-coated balls on parchment paper or foil.

POLAND

The basic techniques used to prepare dishes based on plant products are: grinding, cooking, frying, stewing, baking. According to specialists, in the coming years the importance of vegetables in the menu will increase, hence there will be more interest in the use of poorly processed products and such culinary techniques as:

- steaming or low-temperature cooking (sous-vide),



This project is funded by the European Union

- short-term wok frying
- or freezing at very low temperatures.

Examples of vegetarian dishes:

- kashotto with vegetables
- potato soup, lentil soup
- carrot cutlets
- pasta with tofu and vegetables
- risotto with mushrooms

Sample daily menu

Breakfast

Oatmeal with banana and raspberries

- Banana - 120 g (one piece)
- Raspberries, frozen - 100 g
- Oatmeal - 60 g (six tablespoons)
- Oat bran - 3 g (about half a spoon)
- Cinnamon - 5 g (one teaspoon)

Boil the oatmeal in water. Add the cinnamon and bran and mix well. Add fruit.

Dinner

BROCOLI CREAM SOUP

(8-10 servings):

- 1 broccoli
- 2 medium carrots,
- 1 medium leek,
- 5-6 small potatoes,
- 2 medium onions,
- 2 cloves of garlic,
- 1 cup of cream 30%,
- 1 tablespoon of clarified butter,
- optionally dried vegetables,
- water,
- salt and pepper,
- roasted pumpkin seeds are serving.



This project is funded by the European Union

Wash all vegetables. Heat the butter in a pot, add the chopped onion and pressed garlic, salt and pepper. Finely chop the leek, add to the onion and stir. Scrape the carrots, grate them and put them in the pot. Cover the whole with a lid to start choking. Peel the potatoes (if they are young, you do not need to), dice them and add to the rest of the vegetables. Stew for about 10 minutes, then pour boiling water from the kettle (about a liter of water, then you can add more to control the thickness of the soup). Divide the broccoli into florets, put them in a pot and continue to stew, at this point you can add dried vegetables (dried vegetables usually contain carrots, celery and leeks). Simmer over medium heat until the potatoes are tender. Then remove from heat, set aside for a few minutes to cool slightly, then blend everything to a smooth mass. Put it back on low heat, harden the cream (add a tablespoon of warm soup to a glass with cream) and then pour it into the cream. Season to taste with salt and pepper, or add more water or cream :) Serve with pumpkin seeds or sunflower seeds roasted in a dry frying pan.



SPAGHETTI WITH ZUCCHINI

- spaghetti noodles 200 grams
- carrots 2 pieces
- zucchini 1 piece
- parmesan cheese 100 grams
- Fix Spaghetti 4 cheeses with broccoli Knorr 1 pack
- olive oil 2 spoons
- sour cream 12% 100 milliliters
- fresh basil, leaves
- a clove of garlic 1 piece

1. Cook the pasta al dente, according to the instructions on the package.

2. Peel the carrot. Cut the carrots and zucchini into Julienne, which is very thin, long strips. Finely chop the garlic and grate the cheese.



This project is funded by the European Union

3. Fry the garlic in hot oil, when it is slightly brown add the carrots and zucchini. Fry the vegetables for two or three minutes until they are tender. Add the sauce mixed with 100ml of water and cream, and cook together for 3 minutes. Add basil leaves and hot pasta to the sauce, mix thoroughly.

4. Serve the pasta sprinkled with Parmesan cheese.



Supper

A light salad with corn, pepper and chia seeds

- Corn, canned - 50 g (over three tablespoons)
- Olive oil - 10 g (one spoon)
- Red pepper - 50 g (about 1/3 pieces)
- Tomato - 50 g (about half a piece)
- Lettuce - 100 g (20 leaves)
- Natural Tofu (with the addition of calcium) - 50 g
- Chia seeds - 10 g (two teaspoons)
- Ground black pepper - 2 g (two pinches)
- Sea salt - 1 g (pinch)
- Barley groats, pearl barley, cooked - 60 g (four spoons)

Prepare a salad with the given ingredients.

SNACK

Dried apricots - 32 g (four pieces)



This project is funded by the European Union

PLANT FOOD IN VOCATIONAL SCHOOL CURRICULA ON AN EXAMPLE SCHOOL FROM

LITHUANIA

There is a subject (module) "Healthy eating" in vocational school curriculum. Teaching about vegetarian food is not a challenge. Students are eager to innovate, try new recipes. Students in the cooking profession know that the kitchen needs to change as more and more people pay attention to their diet and ecology.

LATVIA

The educational programme "Catering services" with qualification a cook consists of the following modules which are both theoretically mastered and practically products from vegetable raw materials are prepared in the process of learning: Primary processing of food products and raw materials. Storage of products and articles, Cooking technology, Creating a menu, Latvian national and modern cuisine, Preparation of bar snacks and performs. Bread making and baking basics.

The educational programme "Food production technology" with qualification a food production technician is also mastered according to modular principle. In this programme plant food raw materials are used in the learning of the following modules:

- Pre – processing of raw materials for food production,
- Manufacture of food products,
- Packaging of finished products,
- Manufacture of bread and flour products,
- Manufacture of fruit and vegetable products,
- Manufacture of beverages.

Students undergo practice in manufacturing companies, including processing and production of fruit and vegetables.

In addition are organized professional master classes in which a special attention is paid to modern tendencies in cooking and food production, vegetarian and healthy diet.

POLAND

School curricula in Poland cover issues related to healthy nutrition and food of plant origin.

Already in kindergartens, pro-health education programs promoting the consumption of vegetables and fruit are carried out. By teaching children good eating habits, we care about their future and develop their taste buds. We show them how authentic, healthy products should taste and look like. By taking care of what we put in the basket, we care for our health and that of our loved ones.



This project is funded by the European Union

Also in primary and secondary schools, as part of ecological and pro-health education, various competitions on healthy eating, culinary workshops and campaigns promoting a healthy lifestyle are organized, programs such as "Vegetables and fruit at school", "A week with carrots", "Health - a simple choice". The aim of all these activities is to promote correct eating habits among children and adolescents. It also calls for being an informed and inquisitive consumer.

Is school teaching plant foods challenges? Examples, professions?

In the *School Complex No. 4 in Bielsk Podlaski*, issues related to plant products, organic food and methods of its production are mainly taken up in the curricula of classes with the profile of Nutrition Technician and Catering Services, Hotelier Technician and Farmer Technician.

For example:

- there are the subject of healthy nutrition, the use of plant-based, ecological and regional products in gastronomy during the classes on the principles of nutrition,
- in the gastronomic laboratory, dishes are prepared using organic vegetables and fruits, regional products, etc.
- on plant production lectures, students learn the principles of operation and production methods used in organic farming,
- young people participate in competitions promoting healthy nutrition, e.g. "Cook with class", "Olympiad on nutrition and food",
- students and teachers participates in healthy food, organic and traditional food fairs,
- students and teachers participates in trips to plants producing healthy food of plant origin, eg. Ziółowy Zakątek in Korcyń.

In The *Gastronomic School Complex in Białystok* the school vocational programs include issues related to plant food. The teaching material is divided into program sections such as:

- fruits, vegetables, potatoes, mushroom, oils - fats, spices, it covers preservation methods, production, food health safety, GHP requirements and rules for food packaging.

The issues related to environmental protection are, among others, aimed at protection against the harmful effects of genetically modified organisms (GMOs) on the environment and the appropriate management of waste generated in catering establishments. Topics related to plant food are carried out during classes in vocational subjects, e.g. equipment and safety rules in gastronomy, economic activity, gastronomic technology, planning of nutrition and gastronomic production, principles of nutrition, gastronomic technology laboratory, practical classes.



This project is funded by the European Union

In *Vocational School Complex in Hajnówka* a huge role in promoting flexitarianism is assigned to vocational education. The curriculum for the profession of nutrition technician and catering services includes the following subjects: biology, principles of nutrition, basics of nutrition and gastronomy, nutrition planning, preparation of dishes. Their scope allows young people to gain knowledge about the importance of plant products in the diet, and above all, to strengthen the pro-ecological awareness, so important in the modern world. Young people are eager to experiment with culinary lessons, creating interesting dishes in accordance with the principles of a planetary diet. Students use legumes, whole grain cereal products, fruits, vegetables, and limit the consumption of meat, meat products, sugar, being aware of actions for the benefit of future generations.

In the *Secondary School Complex in Mońki*, there are classes in the profession of a cook in the technical school. Plant food is presented in the school program, but to a limited extent. It is emphasized that it is worth using plant substitutes instead of animal products. It should be emphasized that schools should educate children from the youngest grades to improve their diet. The school is a place where health education and prevention can be effectively conducted. It is worrying that despite the regulation of the Minister of Health on mass nutrition in educational institutions, none of the institutions inspected by *the Supreme Audit Office* provides lunches that meet 100% of the relevant nutritional standards for children and adolescents. All menus had too much carbohydrate and fat content, and too little fruit and vegetables. The person, who sets the menu in the boarding school claims that a dish prepared only from vegetables does not taste like a meat dish for young people. However in recent years, plant-based diets have become more and more popular. For some it is a controversial, fearful way of eating, for others it is everyday life and lifestyle.

PLANT FOOD IN MENU OF CATERING AND HOTEL INDUSTRY ON AN EXAMPLE COMPANIES FROM

LITHUANIA

Lithuanian catering companies and hotels consume vegetarian food. When preparing the menu, a menu for vegetarians, vegans and sometimes people with celiac disease is very often prepared.

Depending on people's needs, catering companies are becoming more and more "flexible", so the number of bad experiences is decreasing.

LATVIA

Vegetarians and vegans can be glad because the situation with catering facilities outside the house has been greatly improved.

If we go to restaurants or cafes, in which the menu includes a wide range of dishes, there is often a trend that you can ask waiters and cooks to prepare by individual order vegetarian and vegan dishes which are not included in a standard menu.



This project is funded by the European Union

But the good news is that lately have been opened new specialized restaurants and cafes which offer food and drinks for vegetarians, vegans for people who have gluten free, lactose free and other allergen restrictive diets.

Vegetarian and vegan cafes delight their clients with a wide range of dishes. The food is delicious, beautifully served and the most important thing – healthy. If a few years ago "eating green" was just a fashion trend, lately for many it is a health necessity, because there are many people who can not eat meat, eggs, milk and gluten-containing products.

In Riga and in other Latvian cities and towns there are vegetarian restaurants and cafes, for example, 'Bhajan' un 'Raw Garden' in Riga, 'Ideju bode' in Liepaja. Also in other companies, where traditional and even fast food dishes are prepared and offered, there is definitely an offer for vegetarians. Examples include the popular cafe "Ausmeņa kebabs" in Rezekne, where you can buy vegetarian falafel. <https://www.fenikssfun.com/bildes/kebabi-6667>

Advertising in various media and portals is a proof of the growing public interest in vegetarian dishes. For example, Latvia Travel publishes vegetarians' favourite places to eat. <https://www.latvia.travel/lv/top/6-iecienitas-vietas-vegetariesiem>

POLAND

The growing interest of consumers in vegetarian cuisine and a healthy lifestyle, forces restaurateurs and hoteliers to take into account their nutritional preferences in the menu. An example can be the menu of the restaurant "Lewar" in Bielsk Podlaski offering alternatively a vegetarian dish. For example, these are:

- penne in tomato and cheese sauce,
- dumplings with groats + mushroom sauce,
- potato pancakes with sweet potatoes, baked with rennet cheese and tomato,
- pancakes with spinach + béchamel sauce,

Meatless dishes served at the "Unibus" Hotel in Bielsk Podlaski:

1. Pasta shells with spinach filling.
2. Pancakes stuffed with spinach and feta cheese.
3. Seasonal vegetables (tomatoes, cucumbers, peppers) or pickles (pickled peppers, pickled cucumbers, pickled mushrooms).
4. Boletus cream soup with rosemary (boletus mushrooms, potatoes, pearl barley).
5. Chanterelle soup with potatoes (chanterelle mushrooms, vegetables, pearl barley).
6. Greek salad (tomato, cucumber, pepper, red onion, feta cheese, black olives, vinaigrette sauce).
7. Traditional vegetable salad (potatoes, carrots, egg, celery, parsley, mayonnaise).



This project is funded by the European Union



Vegetarian dishes are also introduced by the restaurant "Bartlowizna" in Goniądz on Biebrza. The owner confirms that he uses many substitutes, e.g. bacon from banana skins or salmon from carrots. Owner observations show that restrictive vegans do not necessarily expect a strong resemblance to meat. So he tries to prepare a beetroot cutlet or oyster mushroom stew for them. These dishes are not on the menu every day. If hotel guests prefer a plant-based diet want it, the chef is preparing such meals for them. The menu for vegetarians includes tomato cream and spinach dumplings and fruit mousse for dessert. There are always substitutes for cream and cheese in the fridge. For dessert, guests can offer warm bananas from a pan with juice squeezed from orange.

The chef claims that most of the guests come for the venison that Bartlowizna is famous for. The boss is thinking about introducing vegetable and healthy substitutes for meat, vegetables, groats, tofu and pods to the permanent offer. He is convinced that not only vegans will benefit from such an offer, but also allergy sufferers or people who want to eat healthier every day.

LATEST TRENDS IN HEALTHY FOOD SYSTEM AND PEOPLE EXPECTATIONS. DIETETIC PLANT TRENDS 2021

LITHUANIA

Gertrūda Babravičienė, a member of the Lithuanian Society of Dietitians, notes that a flexible diet is a flexible vegetarianism. It is intended for those who sympathize with vegetarians, but do not want to give up meat altogether. Most of it includes beans, grains, seeds, eggs, nuts, regular meat is replaced by soy meat, and the meat is eaten only occasionally.

Svetlana Fetisova (nutrition expert), the third graduate of Kaunas College's dietetics study program, emphasizes the recommendations of a flexible diet: you should mainly eat vegetables, legumes, fruits and whole grains. The overall goal is to increase the consumption of plant foods to reduce meat consumption. It is necessary to limit sugar. It is recommended to eat natural food, avoid refined and processed foods. Most of the protein should be obtained from plant sources, not meat.



This project is funded by the European Union

In Lithuania, crop production has deep traditions. Lithuanians have long grown oats, buckwheat, barley, cereals, legumes (peas, beans), rape, potatoes, cabbage, carrots and other vegetables. Fosterers of Lithuanian culinary heritage organize various educational programs. In Lithuania, in Varėna district, Pamerkiai, Laima and Kostas Mačioniai homestead is implementing the educational program “Buckwheat road from sowing to lunch table”. Visitors to the homestead can watch buckwheat growing, buckwheat blossom tea, buckwheat pie with cranberry jam. Potatoes have been grown in Lithuania for a long time, which came to Lithuania during the reign of the King of Poland and the Grand Duke of Lithuania August III (1696–1763). In one of the five regions of Lithuania, the popular national dish is potato herds. An educational program "Dzūkiškos herds" is organized in Bučiūnai village. Guests of the homestead can get acquainted with the preparation and baking of potato Dzūkija herds on a cabbage leaf in a bread oven.

Teachers of Kaunas Food Industry and Trade Training Center working with students majoring in cooking and confectionery should prepare more recipes for plant diet dishes and products so that they can prepare them together with their students during practical work. Graduates working in catering companies could include as many dishes from vegetables, roots, fruits, beans, cereals, nuts, seeds, using sprouts as possible in the menu of restaurants, cafes and other catering companies. Sharing recipes for dishes and confectionery on Facebook from teachers in the three countries would encourage students to make and photograph their own products and ideas for presenting them.

LATVIA

As in the whole Europe, people in Latvia are increasingly thinking about a healthy lifestyle, and therefore also a healthy diet. Nutrition is no longer seen only as an energy donor and hunger suppressant. In the future, many more foods and beverages will definitely be focused on functional benefits - for example, highlighting the good properties and composition of the product (vitamins, antioxidants, etc.). Food manufacturers are definitely introducing more products with different vitamins (C, D) and minerals (zinc, selenium). Similarly, attention is paid to various plants that have a beneficial effect on health.

On May 21, 2020, the Ministry of Health of the Republic of Latvia issued Order No. 113 Healthy Eating Recommendations for Adults. It contains many recommendations, but several of them relate to plant-based foods. For example:

Eat vegetables, fruits and berries several times a day, especially local and seasonal ones. The recommended amount - at least 5 servings a day and at least half fresh.

Eat cereals (especially whole grains) as well as potatoes several times a day. The recommended amount is 4 to 6 servings per day.”

https://www.zm.gov.lv/public/ck/files/VM_Uztura_ieteik_pieaug.pdf



This project is funded by the European Union

Manufacturers are more inclined to create products that reduce stress and improve sleep. For example, cannabis products are developed and manufactured because of their sedative properties. Equally important is the environmental and climate impact of the product.

Due to the lockdown experienced during the pandemic, people began to appreciate local products and local entrepreneurs much more, choosing those who were nearby more often. This applies to both the purchase of food and the delivery of ready meals. It supports the local economy, of course, the products are also fresher, and it has less impact on the environment (for example, the products do not have to be transported in long pieces, etc.). <https://www.kristinepodvinska.lv/blogs/uzturs/tendences2021>

Vegan products are becoming increasingly popular. New products are appearing on store shelves, which are supposedly traditional, but made from different raw materials. For example, cheese made mainly from coconut oil, various soy products and dairy products of plant origin. Admittedly, even the biggest sceptics admit that plant-based products, which are vegan, actually taste very good and would love to introduce them into your diet from time to time to diversify your menu. These products are no longer just vegan choices, so it is worth thinking about the variety of menus. Trying to turn a confident omnivore into a vegan could be very difficult, so the middle ground would be the best approach. Flexitarians' diet will be very popular. What does this mean in reality? Less variety of animal products - more focus on plant products. Confident carnivores can start by having a meat-free meal once a week, and it is already slow to choose vegetarian meals on a regular basis. <https://www.gemoss.lv/aktualitates-kafejnिकास-restoranos-un-baros-2021-gada/>

POLAND

For several years, there has been a noticeable growing interest in a vegan diet and vegetable substitutes for meat dishes. The demand for products positively influencing physical resistance and mental comfort has resulted in the emergence of nutritional trends based on plant-based dishes with a high content of health-promoting nutrients.

Among the trend towards plant products, the "*Diet for health and immunity*" deserves special attention. We are most pleased with this trend. Year by year, the number of people who decide to go on drastic fasts is decreasing. The yo-yo effect and the vogue for draconian miracle diets have plagued Western societies for many, long years. While in previous years the methods of quick weight loss were the most popular, nowadays more interest is aroused in how to eat healthy. And tasty, by the way. The effect of vitamin D on immunity has been best documented, but as a society we still pay more attention to vitamin C. The popularity of probiotic therapy is also growing strongly.

Every year we eat less and less meat products. Its consumption last year was 61 kg per person per year and has decreased by 2.24% since 2018. This trend has been steady recently.

Limiting meat consumption is in line with the recommendations of *the Food and Nutrition Institute*, according to which the maximum dose of this product in a healthy diet is



This project is funded by the European Union

only 500 g per week. Meanwhile, after calculating the statistical data, it turns out that the average Pole eats a portion exceeding 1.1 kg per week!

In 2019, milk consumption also decreased (by 2.4%), but the consumption of cheese and cottage cheese increased (by 2.3%). Due to the content of lactose and allergenic proteins, which are not well tolerated by a growing percentage of the population, this drink is increasingly being replaced by plant milks. You can successfully whiten your coffee with them or use them to prepare breakfast cereals.

Benefits of a more plant-based diet:

- A menu containing more plant products and less animal products helps in the prevention of civilization diseases.
- According to recent studies, replacing meat and dairy products with plant-based alternatives reduces the risk of developing cardiovascular disease by a third.
- Reducing the consumption of animal products also protects against cancer. Compared to meat eaters, vegans suffer from cancer 19% less and vegetarians 11% less. They also weigh an average of 15% less, and women are even 10-12 kilograms lighter.
- Reducing the consumption of animal products also benefits the environment. It has been calculated that if the world stopped eating meat, 8 million fewer people would die by 2050, greenhouse gas emissions would be reduced by two-thirds, and savings from healthcare and climate change would amount to 1.5 trillion, or a million dollars.

CONCLUSIONS

Plant foods can provide us all the nourishment we need in order to live and thrive. Our primate ancestors started out eating little else, and many cultures still do. But meat and other animal foods became important to our species at its birth, when their concentrated energy and protein probably helped accelerate our evolution. Meat continued to have a deep biological appeal for us, and in societies that could afford to feed livestock on staple grains and roots, it became the most prized of foods. In the industrialized world, meat's prestige and availability pushed grains, vegetables, and fruits to the side of the plate and the end of the meal. And for decades nutritional science affirmed their accessory status. Fruits and vegetables in particular were considered to be a source of a few nutrients that we need only in small amounts, and of mechanically useful roughage. In recent years, though, we have begun to realize just how many valuable substances plant foods have always held for us. And we are still learning.

The research ELEMENTS of DIAGNOSES made by 3 Erasmus+ project **Flexiplant** partners has analyzed plant food considering different aspects like reasons to eat more plant food, reflections of plant food in the history of three nations, laws and regulations regarding food in 3 countries, statistics about eating habits of population, curricula in catering VET schools.

Lithuania, Latvia and Poland are 3 countries having access to the Baltic Sea. These countries are considered belonging to the Northern countries where vegetation lasts only for 4-



This project is funded by the European Union

5 months creating better conditions to consume more products of animal origin, though, the research revealed that in the history starting from middle ages Polish, Latvian and Lithuanian habitants ate mostly grain, roots and fruits because meat was scarce among ordinary people. With ages introducing new plants (potatoes) Lithuanian, Latvian and Polish people depended on grain and vegetables cooking different porridges, baking bread and preparing different stuffed pies. The description of traditional and newly discovered dishes in all 3 participating countries indicates clearly the importance and abundance of plant food in the menus of Lithuanians, Latvians and Poles. Also the dishes have different names but the ingredients are almost the same: rye, buckwheat, cabbage, saurkraut, beetroot, barley, pearl, potatoes, cranberries, etc. The dishes and their ingredients started changing in recent times with the trend of new plant foods becoming more similar with southern countries' meals using new plant products (chia seeds, quinoa grain, pumpkin seeds, hemp seeds, avocado, etc) but it happened in all three countries. Their vegetarian recipes do not differ from each other.

The research provides recent statistics about eating habits which indicate that in the last 50 years people adapted to the Western diet consuming more products of animal origin and meat/diary consumption increased 30-40% when people ate mostly protein rich food excluding vegetables and fruits or eating them once a day or 3-4 times a week. The recent laws and regulations passed by Departments of Health in all three countries are concerned about worsening health of population including children and linked to encourage people to eat plant foods.