

RURAL SUSTAINABILITY THROUGH TRADITIONS: PALINKA FROM SĂLAJ

Gheorghe DONCA¹, Manuel Alexandru GÎTEA¹, Maria CHIȘ^{#1}, Daiana BOCU¹,
Sergiu-Marian POPUȚE¹

¹University of Oradea, Faculty of Environmental Protection, 26 Gen. Magheru St., 410048, Oradea, Romania

RESEARCH ARTICLE-

Abstract

Romania is a country with a rich cultural heritage, and traditions play a significant role in day to day life of many Romanians. The most wide-spread custom in Romania is the manufacture of fruit distillates. Sălaj county is a staple among the palinka-producing counties, in regard of quality and notoriety. In this area, producers understand the importance of implementing sustainable practices in rural community in order to obtain a product that stay true to its origin and is loved by everyone.

The liquor industry that has developed offers jobs in the rural area of Sălaj, encouraging young people not to migrate to the big cities but to build a sustainable life in the village. Besides the protected areas, the historical vestiges of Sălaj, tourists can also visit the farms to learn about Romanian customs, traditional agriculture and traditional products. Overall, rural sustainability is important for promoting a healthy and vibrant rural community that is economically, socially, culturally, and environmentally sustainable. By adopting sustainable practices in rural areas, we can ensure that these communities thrive and continue to be an important part of our society.

Keywords: palinka, tradition, rural sustainability, ecological agriculture, agrotourism.

#Corresponding author: mc846018@gmail.com

INTRODUCTION

Sălaj County has been known since ancient times as the Land of Sylvania. It is situated in the north-west of Romania, in the historical regions of Crișana and Transylvania. Its county seat is Zalău.

From a geographical point of view, Sălaj county is an area of hills and depressions located along the course of the valleys generated by the hydrographic network.

Also, the land of Sălaj is a veritable depository of ancient objects with inestimable archaeological value because of its inhabitance since ancient, prehistorical times.

Traces attesting that Sălaj county was inhabited in the Paleolithic were discovered in the Buciumi village, and the Neolithic is confirmed by the excavations carried out in Zalău, Zăuan, Dragu, Osciu. The Geto-Dacians led a flourishing life on the fertile lands of Sălaj, leaving undeniable traces in Moigrad, Șimleu Silvaniei, Zalău, Marca.

A second Dacian hoard of 35 Roman silver coins was discovered on one of the terraces that made research objects from April 2022. And this one from the next hoard discovered, ends with a coin issued by the emperor Tiberius (14-37 BC). It is the 24th treasure discovered in Sălaj in the last hundred years.

On the territory of the county there are a

number of 21 protected areas of which 15 nature reserves totaling an area of 516.73 ha, declared protected areas by Law No. 5 of March 6, 2000, published in the Official Gazette of Romania, No. 152 of April 12, 2000 (regarding the approval of the National Territorial Development Plan - Section III - protected areas) and by Government Decision No. 2151 of November 30, 2004, published in the Official Gazette of Romania No. 38 of January 12, 2005 (regarding the establishment of the protected area regime for new areas), a special avifaunistic protective area and five places with a special importance for the community.

The agricultural area, according to the mode of use, at the end of 2014 was 238,950 ha, of which: 120,559 ha arable land, 74,340 ha pastures, 36,659 ha natural meadows, 4863 ha orchards, 2529 ha vineyards.

The most widespread fruit species in Romania are the plum tree, apple tree and cherry tree, the first two occupying in 2018 over 85% of the fruit area. In 1990 the fruit species were more diversified, the cherry tree, pear tree and apricot tree had in the share of the structure of the fruit area about 50% more than in 2018.

In 2014, over 70% of the orchards were aged, older than 25 years, with low productive potential, declining or abandoned. Only 7% of the total area consists of young plantations. Total fruit production in 2021 was estimated to 77866 tons.

Fruit production in Romania fluctuates quite a lot, this fluctuation being caused mainly by climatic conditions and secondarily by the evolution of the fruit area.

In 2018, at an orchard area of 140515 ha, by 38.1% lower than in 1990, was obtained a production with 24.83% higher, and in 2017 at an orchard area of 141182 ha, by 37.8% lower than in 1990, a 27% lower production was obtained.

From the total fruit production of 1.81 million tons in 2018, over 82% was provided by plum trees and apple trees.

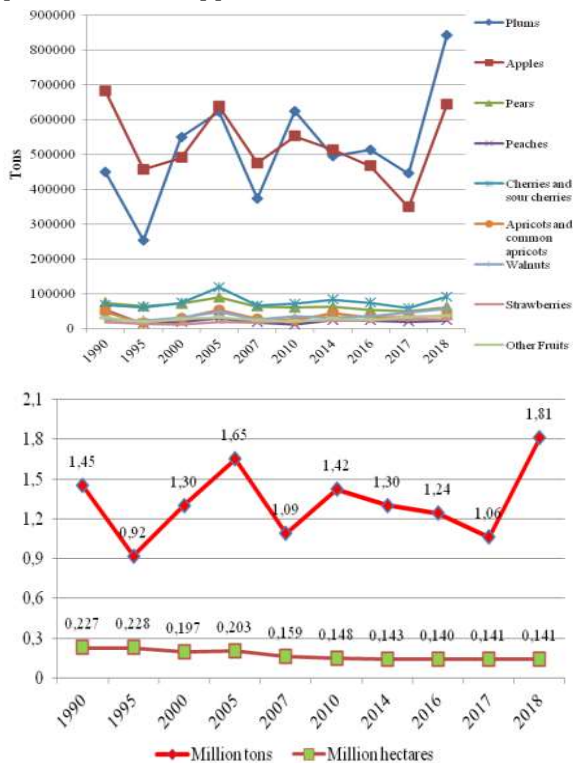


Figure 1 The evolution of fruit production in Romania from 1990 to 2018

Considering the current situation of the fruit sector in Romania, measures are needed to lead both to the replacement of aged fruit plantations and to the increase of the total fruit area. There is also a need for better diversification of the assortment of fruit species.

Fruit brandies are produced all over the world - from pisco in Chile and Peru and *rakije* in the Balkans, to Italy's grappa and Edelbrand in Germany and Austria - none match palinka for diversity of flavor and character. There are hundreds of varieties of this oldest drink, all of which take on the subtle characteristics of the Carpathian Basin's unique fruit varieties, climate and soil, as well as local traditions passed down through the generations.

Palinka is a traditional alcoholic beverage

that is popular in Romania and other parts of Eastern Europe. It is a type of brandy that is made by fermenting and distilling fruit, typically plums or other stone fruits such as apricots, cherries, or peaches. The process of making palinka involves crushing and fermenting the fruit, then distilling the resulting mash to produce a clear, colorless liquid with high alcohol content. The alcohol content of palinka can vary, but it is typically around 40-52%. This traditional spirit can reach up to 65°. Tourists that visits Romania should never leave without even tasting a small glass of palinka, one of the traditional Romanian spirits that has such a unique taste and it's 100% natural, with no pesticides added on the fruit. Usually, guests are welcomed with palinka instead of coffee along with the meal they serve.

Statistics says that palinka makes up for 40% of the alcoholic beverage's consumption in Romania. No wonder why the percent is that high, because Romanian people are used to drink it after every meal to help digestion and it's known as a stomach bandage. Also they use it for a tooth ache or to treat flu.

Palinka is often homemade, using traditional methods passed down through generations of families. The preparation of fruit distillates constituted a basic activity for many residents of the various fruit-growing areas. The first records of palinka production in Romania date back to the year of 1570 in Turț, Satu Mare county and "țuica" (obtained by fermenting and distilling plums) is documented in Bistrița, in 1386, in a Hungarian tax collection act under the name "cujka".

The taste and aroma of palinka can vary depending on the type of fruit used and the method of production, but it is generally described as having a strong, fruity flavor with a slightly sweet taste and a smooth finish. The aroma is often described as being floral, with hints of honey and spice.

All legal producers of palinka comply with Regulation (EC) No. 110/2008 of the European Parliament and of the Council of January 15, 2008, regarding the definition, designation, presentation, labeling and protection of geographical indications of spirits and repealing Regulation (EEC) no. 1576/89 of the Council and ORDER no. 147 of March 8, 2005 for the approval of the List containing geographical names protected and recognized in Romania for spirit drinks.

The Commission's proposal for a rule on geographical indications for wines, alcoholic

beverages, and agricultural products was the subject of a draft report from the European Parliament on October 18, 2022, while the Council's working party level deliberations continue. The Commission's proposal, which would consolidate the three laws that presently cover the processes for registering geographical indications (GIs) for wine, alcoholic beverages, and agricultural products, was approved on March 31, 2022. Increased producer group authority and responsibility, regulations for sustainability initiatives, clarification of guidelines for the use of GI goods as ingredients, and enhanced online GI product protection are all part of this plan. The European Union Intellectual Property Office would be given the authority to take over the Commission's responsibilities for managing geographical indications, including the review, opposition, cancellation, and changes procedures (EUIPO). first printing. At significant points during the legislative process, the briefings on "EU Law in Progress" are updated.

The sustainability of palinka production depends on several factors, including the sourcing of the fruit used to make the brandy, the distillation process, and the disposal of waste products.

In terms of fruit sourcing, sustainable practices involve using locally grown, organic fruit and avoiding the use of pesticides and other harmful chemicals. Animal fertilizer may be used to help fruits in growing bigger and be more juicier. This helps to ensure the health of the soil, protect biodiversity, and support local farmers and communities.

Overall, ecological orchards are essential for obtaining high-quality distillates that are environmentally sustainable and promote the health and well-being of consumers. By using natural and sustainable practices, ecological orchards help to support a healthy ecosystem.

For an eco-friendly orchard we need the presence of foraging insects such as bees, butterflies or bumblebees. They are essential for pollination and therefore for the development of the fruits. This is why many fruit growers have chosen to install hives amid the trees to foster pollination in the orchard. Certified eco-friendly fruit growers contract with beekeepers and promise to respect the hives. Such contracts formalize a mutual commitment to protect these essential insects. It is worth nothing that some fruit growers are sometimes beekeepers as well.

Also, maintaining grass strips between the rows of trees and planting many hedgerows

nearby is also attractive to bees.

An eco-friendly orchard uses biocontrol techniques against the codling moth like mating disruption or insect-proof nets. Using these techniques makes it possible to limit the use of phytosanitary products.

To fight against aphids, the help of ladybirds, hoverflies (a kind of small fly), Aphelinus mali that parasitize them, and earwigs that feed on them, is important. To control the red spider mite, likely to ravage orchards, fruit growers introduced a few years ago its predator, another mite called typhlodrome. The predator now deals on his own with red spider populations, which has allowed growers to completely suppress acaricide treatments in most orchards.

The presence of great tits (songbird) is also favored because they eat up hundreds of insects, worms and caterpillars every day. A pair of great tits can consume up to 10,000 insects between nesting and the time fledglings leave the nest.

Therefore, growers have organized the presence of these auxiliaries by favoring shelter spaces to accommodate them, such as hedgerows, lodgings for forficules (*Forficulidae*), nest boxes or even insect hotels.

Being eco-friendly also means managing water and waste. Thanks to the weather stations installed in the orchards, fruit growers can analyze the data collected by probes placed in the soil to measure the moisture content. This allows them to reduce the water supply to what is strictly necessary, notably thanks to drip irrigation, which is getting more and more common in orchards. 94% of irrigated surfaces are controlled using decision-making tools in order to limit water consumption (water balance, tensiometer, dendrometer).

Eco-friendly fruit growers are responsible for the disposal of their waste. They are committed to participating in recycling channels such as Adivalor for used containers or anti-hail nets. Anti-hail nets can be recycled to produce urban furniture such as public benches.

The fruit producers are assisted by a technical advisor, independent of input suppliers, and approved by the Technical Commission. Technical support is supplied to 100% of Eco-friendly Orchards members. Technical advisors are members of research and experimentation networks who provide the apple growers with the knowledge that enables them to fine tune their practices according to the latest technical breakthroughs.

On the other hand, in order to achieve long-term sustainability, several policies have been established by the EU committee, including Green Deal and Farm to Fork. Some of EU's green Deal objectives are:

- The market for organic food is set to continue growing and organic farming needs to be further promoted. It has a positive impact on biodiversity, it creates jobs and attracts young farmers. Consumers recognize its value.
- To stimulate sustainable food consumption and promote affordable healthy food for all.
- The circular economy action plan will include a 'sustainable products' policy to support the circular design of all products based on a common methodology and principles. It will prioritize reducing and reusing materials before recycling them.
- A sustainable product policy also has the potential to reduce waste significantly.
- To reduce significantly the use and risk of chemical pesticides, as well as the use of fertilizers and antibiotics.
- To create a toxic-free environment.

All of the above can be possible thanks to the innovations financed through Horizon Europe projects.

Also, The Farm to Fork Strategy is a new comprehensive approach to how people value food sustainability. It is an opportunity to improve lifestyles, health, and the environment.

The creation of a favorable food environment that makes it easier to choose healthy and sustainable diets will benefit consumers' health and quality of life, and reduce health-related costs for society.

The goals are to reduce the environmental and climate footprint, food system and strengthen its resilience, ensure food security in the face of climate change and biodiversity loss and lead a global transition towards competitive sustainability from farm to fork and tapping into new opportunities.

From an economic point of view, distilleries located in rural areas can help to support local economies by providing employment opportunities and to buy goods and services from local farmers. This can help to stimulate economic growth and reduce poverty in rural communities.

Also, agricultural companies can offer farm tours, farm stays, and other activities that allow visitors to learn about local agriculture and food production, this could also promote the agritourism and the cultural tourism in the area.



Figure 2 The Farm to Fork Strategy

MATERIAL AND METHOD

Sălaj is known throughout the country for the "miraculous golden drink", called Palinca. Among the well-known distillates from Sălaj are Aciu-Palincă de Zalău, Ioi Pălinca and Pălinca de Bădăcin - prized palinka at international competitions.

Țuica de Bădăcin and Pălincile de Bădăcin, registered trademarks, are the result of several years of work and efforts that led, in 2013, to the establishment of the company, Rotin Bădăcin SRL, in the heart of Transylvania. The company is based in Bădăcin, a documented village since the year of 1213. It is a fruit-growing area with a rich tradition in the production of distillates and fruit products. Currently, the company has 6 employees, who take care of the orchards, are involved in the technological process and the packaging process.

The location of the village in a hilly area is an advantage for the cultivation of fruit trees, whose fruits are the raw material for the manufacture of palinka distillate. Also, the temperate, respectively moderate continental character of the climate in this area is favorable for fruit growing.

Rotin Bădăcin understood the importance of ecological agriculture and sustainable practices in order to achieve a quality product, so the fruits used to obtain distillates come from ecological crops, from its own orchards and from other producers in the Sălaj area. Ecological orchards produce higher quality fruit, which is essential for obtaining high-quality distillates. The use of synthetic fertilizers and pesticides can negatively impact fruit quality, flavor, and aroma, and can even leave residues that can

affect the distillation process and the final product.

The orchards are composed of six crops: 5,50 hectares of cherry (*Prunus avium*), 2,8 hectares of plums (*Prunus domestica*), 2,5 hectares of quinces (*Cydonia oblonga*), 1,5 hectares of apples (*Malus pumila*), 1,30 hectares of pears Williams (*Pyrus communis L.*) and 1,1 hectares of peaches (*Prunus persica*).

The process of making Pălinca de Bădăcin typically involves the following steps:

Harvesting the fruit: The fruits are harvested by hand in summer (cherries, apricots, peaches) and late summer or early fall (quinces, plums, apples, grapes) when it is ripe. Special attention is paid to harvesting the fruits, only well-ripened and healthy fruits end up being processed.

Washing and crushing the fruit: The fruits are washed to remove any dirt or debris, the pits are eliminated and then the fruits are crushed to release the juice. The process of removing the pips eliminates the possibility of the presence of hydrocyanic acid in palinka, giving the final product a special quality.

Fermenting the juice: The juice is left to ferment in Letina VIN4000A14 fermentation tank (Figure 3). The fermentation tank comes with a programmable, touchscreen control panel. It regulates the pump and temperature inside the tank, allowing the producer to automatize the entire process. The horizontal fermenter is made out of quality stainless steel and comes equipped with an anchor-type agitator along the length of the fermentation tank that is driven by a geared motor. The motor has an inverter, which allows it to be regulated from 0 to 5 rpm in both directions. The fruit mash cap is broken and submerged by the gentle mixing, which releases the pigments, flavors and odors.

During the fermentation process, yeast converts the sugar in the fruit into alcohol.

Letina (<https://letina.com/en/>) products are produced in line with the most recent EN ISO 3834-3 - this document outlines the basic quality specifications needed for fusion welding metallic materials, both in lab settings and outdoor installation locations, VLAREM II (Flemish Regulations on Environmental Permitting), and ASME/PED 2014/68/EU (The American Society Of Mechanical Engineers / The Pressure Equipment Directive) requirements for pressure vessel fabrication and fusion welding. Compliance with quality is certified by TÜV SÜD.



Figure 3 Letina fermentation tank

Distilling the fermented juice: Once the fermentation is complete, the fermented juice is distilled in the Kothe (<https://www.kothe-dt.de/de/index.html>) copper still (Figure 4) whose monitoring is done by computer. It works with steam. The still separates the alcohol from the water and other impurities, resulting in a clear, colorless liquid with high alcohol content.

Alcohol concentration and fragrance of the distilled mash can be adjusted with ease using the Superaromator, a customized distillation column of the Kothe cooper still. Also, the Kothe cooper still comes equipped with a unique distillation column with new hoods with expanded copper surfaces and turbulent liquid movement and a Dephlegmator with pre-condensation twice the copper surface.



Figure 4 The Kothe EXCLUSIVE cooper still

Aging: The apples palinka and plums palinka is aged in oak barrels to provide a range of flavors and aromas, such as vanilla, caramel, and spice notes. These flavors come from compounds in the oak wood, such as tannins and lignin, which are extracted into the spirit during aging. Oak barrels can also impart a rich, golden color to palinka as the spirit interacts with the

wood. This is due to the presence of natural compounds such as flavonoids and anthocyanins in the oak wood.

Bottling and labeling: Palinka is bottled using a filling machine and the labeling is done manually with the help of molds. The process of labeling is presented in Figure 3.

The packaging of palinka bottles are recyclable and environmentally friendly materials. Also, for shipping the products, the use of plastic bubble wrap is avoided, this being replaced by wrapping paper and cardboard.

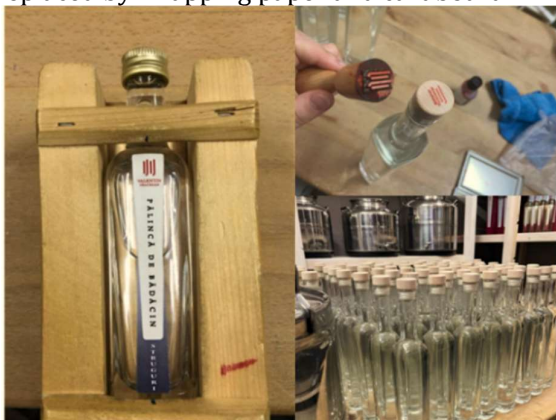


Figure 5 The process of labeling

The European Commission's Europe's Beating Cancer plan, published in February 2021, suggests several initiatives concerning cancer prevention, such as limiting online advertising and promotion, reviewing EU legislation on the taxation of alcohol, and mandatory labelling of ingredients and nutrient content on alcoholic beverages by the end of 2022. Health warnings on labels should follow by the end of 2023. First attempts to label ingredients of alcoholic drinks were already made in the late 1970s, but the Council was not able to agree on any of the proposed models. The European associations representing the alcoholic beverages sectors presented their self-regulation proposal in March 2018, suggesting that some sectors would list all ingredients on labels, while others could use online means of communication instead. Stakeholders have differing views on the desirability and feasibility of listings on-label, and the European Parliament has called on the European Commission to consider a health warning and calorie content on alcoholic beverage labels.

The distillery can be visited by tourists to learn the whole story behind the products and of course to taste them.

Sălaj county has a rich cultural heritage, with many historical sites and museums that

showcase the region's history. The Sălaj County Museum is an excellent place to start, where visitors can learn about the county's history and see exhibits on traditional crafts, agriculture, and local customs.

In Bădăcin the tourists can also visit the "Iuliu Maniu" Memorial House, historical monument - The Church "Schimbarea la Față", the local producers and they can enjoy the beautiful landscapes and the delicious traditional cuisine.

Visitors can also visit other tourist attractions in the county, such as: "Vasile Fati" Jibou Botanical Garden, The Holocaust Museum and Báthory Fortress in Șimleu Silvaniei, "Ligia Bodea" Folk Art Museum in Iaz, Zalău County Museum of History and Art, Porolissum Archaeological Complex, the natural reserve "Grădina Zmeilor" and "Izvoarele Barcăului" Reserve from Tusa.

Just as in Budapest (<https://palinkaexperience.com/en/museum/>) where it is the Museum of Palinka, in the village of Pericei in Sălaj county there is going to be developed a museum like that with European funds. Even though most museums in Transylvania have exhibits related to this subject, for example the Museum of Țării Oașului has "Pălinchie din Vama" (Figure 6) - a whole restored building, with all the necessary equipment for the production of palinka, this museum will be an important point of attraction for tourists.



Figure 6 The museum "Pălinchie din Vama"
(<https://oasmuseum.ro/palincie/>)

In Romania, there are also national competitions for the best palinka, such as: The "Transylvanian Spirit" Festival of palinka and fruit distillates, organized in the municipality of Sfântu Gheorghe or The Wine and Palinka Festival at the Museum of the Country of Crișurilor in Oradea. At the competition that took

place in Sfântu Gheorghe there were two men from Bihor County who won the biggest prize with the red Williams pear palinka.

On an international level, the Romanian palinka is at the top. For example, at the Quintessence Pálinkaverseny Hungary 2020 distillate producers' competition, in which 1606 varieties from 5 countries participated, Romanian producers receive the recognition of refinement and confirmation of high standards in the processing of this drink through the 98 medals received from 141 samples presented.



Figure 7 The jury room at the London Spirits Competition

(<https://londonspiritscompetition.com/en/>)

By tasting this drink at its production place, people can learn from the old people that the drink it's toxic only if you drink too much. It was shown that a small amount of palinka can help you deal with some health problems.

Due to its high alcohol content, palinka is suitable for disinfection. And due to its antibacterial properties, bacteria, fungi and viruses are immediately destroyed or their activity is reduced by palinka. Its pore-tightening effect also protects our body. Professionals say that to achieve the best flavor it is recommended to consume palinka at room temperature. Do not drink palinka on an empty stomach because that is extremely harmful but after meals, palinka has great digestive effects.

Another benefit of palinka is the regulation of liver functions, thanks to the content of vitamins A, B, C, D1 and D2. These are powerful antioxidants, thermally non-degradable and easy to assimilate. Palinka is recommended in biliary dyskinesias, dysfunctions of the liver caused by its poor blood supply (Mureşan et al, 2015).

Of course, nowadays, modern medicine

prefers artificial pills and does not advertise the natural alternatives. At the same time, it is undeniable that the advice of elder people and the effects of palinka can be justified, and palinka has always had the strong disinfecting effect that helped the patients' body to recover. Whether it is nasty cold or coughs or sore throats, these symptoms can be relieved by palinka quickly. In addition, it also relieves the strong toothache and it is even more effective than the strongest painkillers. The mechanism is as follows: penetrates the pathogenic cells and blots protein and consequently destroy them. Palinka that is stronger than 70% evaporates too fast to have the appropriate effect.

When it comes to cold, symptoms of influenza, cough or sore throat, palinka consumption is recommended because it is believed to disinfect and cleanse the airways. Some people use it as pain killer and antispasmodic too. From our grandmothers we know that a massage on your skin with palinka can help you with your flu.

Traditionally in the past, palinka was used to clean the spot of dog or snake bite. Palinka mixed with white lilac was used to fight eye pain. Pouring palinka – or any other alcohol – onto wounds and bone fractures is an old tradition applied by many even today.

Nowadays aroma therapy is becoming more and more popular among people who are interested in alternative medicine and would like to find other ways than taking pills.

Also, it was proven by a German study that maximum of 30 ml of palinka before meal can help you beat anemia and constipation.

However, it is important to keep in mind that excessive alcohol and palinka consumption is very harmful for the human body and regular consumption can lead to addiction!

RESULTS AND DISCUSSIONS

Rotin Bădăcin has created jobs in the rural area thanks to the distillery, and for the future it proposes to expand its activity towards fruit processing, something that could create even more jobs for the young people in the village. This could help to reduce the migration of young people to the big cities.

This business model can be an inspiration for young farmers who could adopt organic farming and sustainable practices in their farms by accessing government funds and EU funds.

Ecological agriculture can open up new market opportunities for farmers and

agricultural businesses in Sălaj, including direct-to-consumer sales, farmers markets, and specialty food products.

Also, agricultural companies could offer farm tours, farm stays, and other activities that allow visitors to learn about Romanian customs, traditional agriculture and traditional products, this could also promote agrotourism and cultural tourism in the Sălaj area.

CONCLUSIONS

Tradition and sustainability may work together to benefit people and the environment. A more sustainable future for all may be attainable by utilizing traditional knowledge and practices and by encouraging sustainable development that respects local cultures and ecosystems.

Farmers are committed to respecting an eco-responsible production process who have shared the same ethics: producing healthy, tasty and quality fruits, following environmentally friendly methods that respect biodiversity in orchards, while ensuring the economic balance of their fruit farms.

This innovative agro-ecological approach is based on the principles of integrated fruit production, which focuses on supervision of orchards, biological control methods and cutting-edge techniques to ensure quality production for all consumers.

With good products, palinka from Bădăcin is considered for sure one of the best palinka in Romania. With its unique, traditional ways to be created and the unforgettable flavor, it is relished by every tourist that visits the country.

The increase in sustainability could be achieved by increasing the number of tourists using more aggressive marketing based on specific activities such as: palinka tastings, traditional products and meals, participation in activities in the ecological orchards and in the palinka, organizing excursions to historical points and protected ones from the area.

REFERENCES

- Baciu, A., 2005. General Fruit Growing. Publishing house: Universitaria, Craiova.
- Borz, C., 2012. Monograph of Bădăcin village and the Maniu family, Publishing house: Caiete Silvane, Zalău.
- Dascălu, I., 2019. Research on the growth of the economy of the rural space through the development of the tree-vineyard sector, Timișoara.
- Donca, G., Bocu, D., Panti, A., Chis, M., 2022. Sustainable management of an integrated virtual farm, Annals of the University of Oradea, Fascicle: Ecotoxicology, Animal Science and Food Science and Technology, vol. XXI / A.
- European Commission, 2016. Food security, sustainable agriculture and forestry, marine and maritime and inland water research and the bioeconomy, <http://ec.europa.eu/>
- European Parliament & European Council, 2008. Regulation (EC) No 110/2008 of the European Parliament and of the Council of 15 January 2008 on the definition, description, presentation, labelling and the protection of geographical indications of spirit drinks and repealing Council Regulation (EEC) No 1576/89 (<https://eurlex.europa.eu/LexUriServ/LexUriServ.do?uri=OJ:L:2008:039:0016:0054:RO:PDF>)
- Eurostat, 2018. Farm Structure Survey 2016, <https://ec.europa.eu/eurostat/documents/2995521/9028470/5-28062018-AP-EN.pdf/8d97f49b-81c0-4f87-bdde-03fe8c3b8ec2>
- FAO, FAD, UNICEF, WFP, WHO, 2018. The State of Food Security and Nutrition in the World 2018. Building climate resilience for food security and nutrition, Rome, FAO.
- Gîtea, M.A., Gîtea, D., Tit, D.M., Purza, L., Samuel, A.D., Bungău, S., Badea, G.E., Aleya, L., 2019. Orchard management under the effects of climate change: implications for apple, plum and almond growing, Environmental Science and Pollution Research.
- Gîtea, M.A. & Gîtea, D., 2017. Study of the chemical and technological properties of fruits from different apple varieties, Annals of the University of Oradea, Fascicle: Environmental Protection, Vol. XXVIII, Year 22.
- Godea, I., 2005. From the ethnology of moderation: palinka, brandy and cognac among Romanians, București. <https://www.oradeamea.com/palincabihor/>
- Gruia, M.C., 2016. Contributions to the improvement of the technology for the production of tree planting material in small and medium farms. Publishing house: Digital Data, Cluj-Napoca.
- lordănescu, O., Micu R., 2011. General and Special Fruit Growing. Publishing house: Eurobit, Timișoara
- lordănescu, O., 2008. Fruit growing. Publishing house: Eurobit, Timișoara.
- Ministerul Agriculturii, Pădurilor și Dezvoltării Rurale, 2005. Order no. 147 of March 8, 2005 for the approval of the List containing geographical names protected and recognized in Romania for spirit drinks. Monitorul Oficial nr. 214 din 14 martie 2005. <https://legislatie.just.ro/Public/DetaliiDocument/59940>
- Mureșan, B., Cimpoi, C., Hosu, A., 2015. Antioxidant content in romanian traditional distilled alcoholic beverages. https://www.researchgate.net/publication/282314796_Antioxidant_content_in_romanian_traditional_distilled_alcoholic_beverages
- Pop, F. & Robert, L., 2012. The story of palinka, Publishing house ECOU Transilvan, Cluj-Napoca.