DOI: 10.2478/vjbsd-2022-0012

# ANALYSIS OF THE GRAPE AND WINE MARKET IN SLOVAKIA

**Jana Ladvenicová*, Dominika Čeryová, Zuzana Bajusová**

Slovak University of Agriculture in Nitra, Slovakia

The cultivation of grapes and the production of grape wine have a long tradition in Slovakia. In the paper, we deal with the analysis of the grape and wine market in Slovakia in the years 2011–2020. Vineyards have approximately 1% representation in agricultural land. The average area of vineyards in the monitored period was at the level of 11,485 ha, of which 80% were fruiting vineyards. Their acreage was mainly comprised of cider varieties (97%) and a small portion of table varieties (2%) and hybrids of all varieties (1%). The production of grapes showed a fluctuating trend, but on average 46,913 t of grapes were produced in Slovakia. The average yield was 5.3 t/ha. The territory of Slovakia is divided into 6 wine-growing regions, the largest being the Malokarpatský region, the average area of which was 4,930 ha, and the smallest region, Tokaj, with an average area of 1,091 ha. On average, 340,000 hl of wine were produced in Slovakia, of which 67% was white wine production. Imports exceeded exports of wine. The number of winemakers as well as traders with wine products is growing from year to year.

**Keywords:** grapes, wine, production, price, export, import, harvest

## Introduction

Stevenson (2003) states that, based on archaeological sources, vineyards were cultivated as early as 4000 BC – however, in these times, the exact method of wine production is not known. In our territory – the Slovak Republic – the cultivation of vines probably started long ago. The end of the 19th century was an important period for viticulture in the territory of the Slovak Republic. At that time, all the vineyards were destroyed due to root aphids and extreme climatic conditions – completely new vineyards must be planted, and this marked a completely new era in Slovak viticulture (Randuška, 2009). Lieskovský et al. (2013) found that over past 20 years almost half vineyard area in Slovakia has been abandoned or converted to arable land. Abandonment of the vineyard is a continuous process resulting from the economic and cultural changes.

Wine production has a rich history. The Slovak Chamber of Wine states that there are currently 52 wineries in Slovakia, which together produce 1,828 different types of wine. In our territory we currently have 6 wine-growing regions, which are:

1. Malokarpatská vinohradnícka oblasť (Small Carpathian vineyard area),
2. Nitrianska vinohradnícka oblasť (Nitra vineyard area),
3. Stredoslovenská vinohradnícka oblasť (Central Slovak vineyard area),
4. Južnoslovenská vínohradícka oblasť (South Slovak vineyard area),
5. Východoslovenská vinohradnícka oblasť (Eastern Slovak vineyard area),
6. Tokaj (Tokaj) (www.sdv.sk, 2021).

Marcinčák and Semjon (2022) add that the Tokaj region is an important area of the Eastern part of Slovakia. In Slovak Tokaj, traditional grape varieties are grown and produce specific wines typical for the area.

Wine is a unique commodity. It was one of the first commodities traded by the first states active in international trade. The most successful wine producers are those who master the market forces of supply and demand and whose products match the quality (Bisson, 2002). McKenzie (2020) argues that winemakers can be vine growers themselves, but they can also buy grapes through good relationships from other growers, or both. This is the main difference between viticulture and winemaking. Thus, viticulture is a science associated with the study, agriculture, and production of grapes, while in winemaking, the grapes reach the winemaker directly. As a decisive influence on the success of small growers in wine production, we can consider above all the monitoring of economic indicators, not only from the point of view of retrospective control, but especially from the point of view of timely operative interventions in wine production. The sector of growing vines, viticulture, and winemaking are classified as the most demanding sectors in terms of financial inputs (Janku and Kremský).

Dominé (2015) state that the vine has the best locations in warm climates, more precisely on southern, southwestern, and southeastern slopes, where it has excellent conditions. The vine is not demanding from the perspective of soil, so it can also be grown on stony, gravelly, or sandy soils. The natural characteristics represent an asset for producing wine grapes, but the availability of quality water and the composition of the soil are decisive in semi-arid areas (Riera and Brümmer, 2022).

## Materials and methods

The basis for the processing of the contribution is mainly data from the Situational and Prospective Reports, data from the Ministry of Agriculture and Rural Development of the Slovak Republic and data from the Central Control and Testing Institute of Agriculture in Bratislava. The monitored time period was the years 2011–2020. To evaluate the development, we used the calculation of the average. In the contribution, we used a time series of data on the area and use of vineyards, production, average grape harvest, vineyard area by individual wine-growing regions, consumption, and production of wine, import and export of wine, development of the average annual price of wine producers and the number of winegrowers and wine and wine products merchants.

## Results and discussion

The cultivation of grapes as well as the production of grape wine itself has a long tradition in Slovakia. As can be seen from Table 1, vineyard acreage fluctuated during the analyzed period. The average area of vineyards was 11,485 ha. Almost 80% of this area is made up of fruiting vineyards. Interest in winemaking is growing, which was reflected in 2020 in the increasing area of fruiting vineyards compared to 2019 by 1,780 ha.

As part of the common organization of the wine market, EU funds help with:

- restructuring of vineyards – represents a basic pillar of individual measures, its aim is to increase the quality of production, consumption of wines with protected designation of origin, competitiveness of wines, to reduce production costs, adapt to new market conditions, increase interest in viticulture and thereby maintain employment in the selected region;
- crop insurance – this measure is effective from April 2017, the crop can be insured against damage caused by adverse weather events, diseases, vine pests, animals, etc.;
- for promotion either in an EU member state or in a non-member state – is oriented towards providing information to consumers (designation of origin, quality, responsible consumption of wine and its risks with alcohol consumption) in the form of promotion, surveys, campaigns, various events;
- investments – these are investments in wine companies that are supposed to ensure their competitiveness, they are used to purchase needs for storing production, to label products, etc.

In addition to this aid, aid from the EAGF (European Agricultural Guarantee Fund) and ERDF (European Regional Development Fund) is also financed in the form of:

- direct payments – allocated each year according to the number of ha;
- non-project operations and project measures from the Rural Development Program.

Table 1 shows the area of vineyards in Slovakia in the period 2011–2020. The average area of vineyards reached 11,485 ha in the monitored period. The area of vineyards decreased by 2,705 ha during the monitored period. The average area of fruiting vineyards reached 9,227 ha, but overall, we recorded a decrease of 474 ha during the monitored period. The positive thing is that in recent years there has been a growing interest in viticulture and the renewal of traditions, so in 2020 we can see a growing area of productive vineyards compared to 2019. The area of non-productive vineyards decreased by 2,231 ha over the entire period. The average share of non-productive vineyards from the total area of vineyards reached 19.61%.

The productive vineyards were used to grow cider varieties, table varieties and hybrids of all varieties. Cider varieties had the highest representation, the average representation of which was 97%. Among the white ciders, Veltlínske zelené (Gruner Veltliner), Rizling vlašský (Riesling Italian), Muller Thurgau, Rizling rýnsky (Riesling de Rhin), Rulandské biele (Pinot noir), Rulandské šedé (Pinot Gris), and Tramín červený (Traminer Rot) are the most represented ones in our country. Of the musty blue varieties, Frankovka modrá, Svätovavrinecké, Cabernet Sauvignon, Rulandské modré, Alibernet are mainly represented. Table varieties (2%) and hybrids of all varieties (1%) also have a minor presence on the total area of fruiting vineyards. Of the table varieties, Pannonia Kincse and Chrupka biela are the most prominent varieties.

The territory of Slovakia is divided into six wine-growing regions, located from the southwest, south to the southeast of the country. They include wine-growing districts and wine-growing villages. The largest wine-growing region is the Malokarpatský region, whose average area for the entire monitored period was at the level of 4,930 ha. It is divided into 12 wine-growing regions and consists of approximately 157 wine-growing villages to the year 2020. Winegrowers in this area focus on the production of mainly white wines, the most widely cultivated variety is Veltlínske zelené. The second largest region is the Južnoslovenský vinohradnícky region, whose average area for the monitored years reached 4,653 ha. This area consists of 8 wine-growing districts and approximately 133 wine-growing villages. The area is considered to be the warmest of the individual wine-growing areas, as it extends in the south of the country on the Danube Plain, where there are fertile soils. Winegrowers mainly focus on the Rizling, but also Tramín červený Frankovka modrá and Cabernet Sauvignon. The third largest area is the Nitra wine-growing region, whose average area for the monitored period reached 3,375 ha. This area consists of 9 wine-growing districts and approximately 192 wine-growing villages. This area is considered to be very diverse in terms of cultivated varieties and geographical location. Winegrowers mainly focus on growing varieties such as Rizling vlašský, Veltlínske zelené, Tramín červený, or Rulandské biele. The Central Slovak wine-growing region reached an average area of 2,095 ha in the monitored period. The area consists of 7 wine-growing districts and 133 wine-growing villages. The most cultivated varieties include Rizling vlašský, Veltlínske zelené, Rulandské biele, Tramín červený and Müller Thurgau. The East Slovak wine-growing region had an average area of 1,130 ha. It consists of 4 wine-growing districts and approximately 101 wine-growing villages. The area consists of three territories: Zemplín, Turnňa and Abov. Thanks to the

**Table 1** Area of vineyards (ha) and share of productive and non-productive vineyards (%)

| Indicator/year | m.u. | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | Ø |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Vineyards total | ha | 13,953 | 12,615 | 11,773 | 11,074 | 11,159 | 10,803 | 10,672 | 10,625 | 10,927 | 11,248 | 11,485 |
| Productive | ha | 10,226 | 10,612 | 10,341 | 8,939 | 8,873 | 8,875 | 8,619 | 8,057 | 7,972 | 9,752 | 9,227 |
| Productive (%) | % | 73.29 | 84.12 | 87.84 | 80.72 | 79.51 | 82.15 | 80.76 | 75.83 | 72.96 | 86.70 | 80.39 |
| Non-productive | ha | 3,727 | 2,003 | 1,432 | 2,135 | 2,286 | 1,928 | 2,053 | 2,568 | 2,955 | 1,496 | 2,258 |
| Non-productive (%) | % | 26.71 | 15.88 | 12.16 | 19.28 | 20.49 | 17.85 | 19.24 | 24.17 | 27.04 | 13.30 | 19.61 |

Source: Ministry of Agriculture and Rural Development of the Slovak Republic, own processing

**Table 2** Use of productive vineyards in %

| Variety/year | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | Ø |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Cider varieties | 97.47 | 97.63 | 98.77 | 98.31 | 96.59 | 96.65 | 97.39 | 95.69 | 96.56 | 94.90 | 97.00 |
| Table varieties | 1.55 | 1.36 | 1.06 | 0.93 | 1.94 | 2.06 | 2.25 | 3.43 | 1.81 | 3.68 | 2.00 |
| Hybrids of all varieties | 0.99 | 1.01 | 0.16 | 0.76 | 1.48 | 1.29 | 0.36 | 0.88 | 1.63 | 1.42 | 1.00 |

Source: own processing

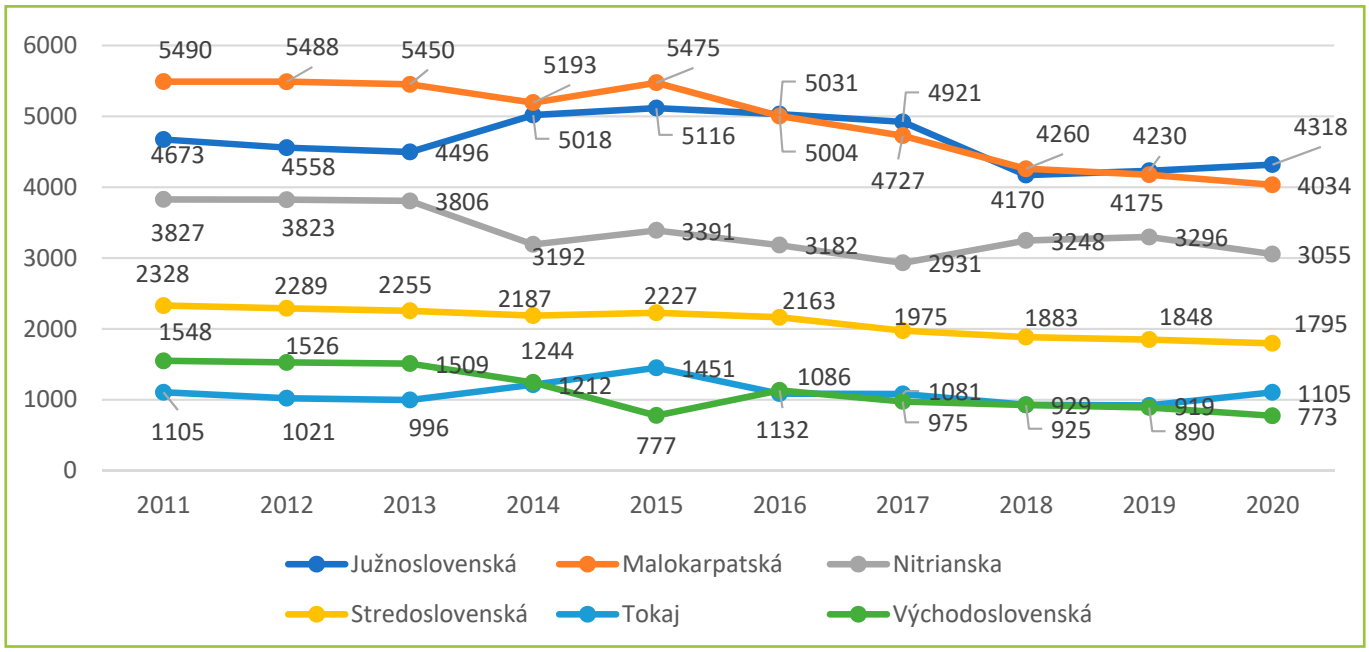



**Figure 1** Areas of vineyards by vineyard regions (ha)
Source: own processing, Central Control and Testing Institute in Agriculture

diverse soil conditions, varieties such as Rizling vlašský, Müller Thurgau, Tramín červený and Ruladské biele are grown. Blue varieties do not have suitable growing conditions. The Tokaj wine-growing region is the smallest of the individual wine-growing regions, the average area reached 1,091 ha in the monitored period. The area extends to Dolny Zemplín, in the south-eastern part of Slovakia. This area consists of only 7 wine-growing villages. Varieties Furmint, Lipovina, and Muškát žltý are grown. The area of individual vineyard areas is shown in Figure 1.

Wine consumption and wine consumption per inhabitant is shown in Table 3. Comparing the years 2011 and 2020, we can state that both monitored indicators have increased. The most significant total consumption was 100,967 thous. liters and 18.6 liters of wine per inhabitant in 2014. The average consumption for the monitored period was at the level of 76,129 thousand liters of wine, and an average of 14.11 liters of wine per inhabitant.

In Slovakia, an average of 339,830 hl of wine were produced during the monitored period. Of this, the production of white wine dominates, which has an average share of 68% of the total wine production. The highest wine production was in 2018 at the level of 381,000 hl of wine. Highest share of white wines was produced in 2015, 255,000 hl. Global wine production is estimated at 258 million hl in recent years. Production is mainly affected by the COVID-19 pandemic.

**Table 3** Total wine consumption and wine consumption per inhabitant of the Slovak Republic

| Indicator/year | m.u. | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Consumption | thous. l | 71,608 | 69,399 | 73,129 | 100,967 | 80,210 | 71,883 | 68,612 | 68,987 | 77,977 | 78,513 |
| Consumption per 1 inhabitatnt. | l | 13.3 | 12.8 | 13.5 | 18.6 | 15.7 | 13.2 | 12.6 | 12.7 | 14.3 | 14.4 |

Source: Central Control and Testing Institute in Agriculture

**Table 4** Wine production

| Wine/year | m.u. | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | Ø |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Wine total | thous. hl | 369 | 325 | 374.5 | 293.98 | 376.27 | 309.7 | 298.4 | 380.83 | 318.95 | 352.76 | 339.83 |
| White wine | thous. hl | 243.5 | 217.8 | 249.2 | 210.77 | 254.61 | 217.2 | 202.2 | 251.46 | 212.07 | 238.06 | 229.69 |
| White wine | % | 66 | 67 | 67 | 72 | 68 | 70 | 68 | 66 | 66 | 67 | 68 |

Source: Central Control and Testing Institute in Agriculture, own processing

**Table 5** Import and export of wine and cider (thous. hl.)

| Indicator/year | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | Ø |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Import | 663 | 580 | 902 | 1037 | 740 | 576 | 853 | 738 | 728 | 682 | 749.9 |
| Export | 168 | 168 | 201 | 180 | 209 | 184 | 488 | 385 | 588 | 310 | 288.1 |
| Balance | -495 | -412 | -701 | -857 | -531 | -392 | -365 | -353 | -140 | -372 | -461.8 |

Source: Central Control and Testing Institute in Agriculture, own processing

**Table 6** Import and export of grapes (t)

| Grape/Year | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | Ø |
|---|---|---|---|---|---|---|---|---|---|---|---|
| **Import** | | | | | | | | | | | |
| Cider grape | 4,492 | 4,786 | 10,771 | 2,322 | 1,366 | 3,239 | 2,850 | 3,409 | 1,170 | 1,197 | 3,560 |
| Table grape | 15,504 | 14,153 | 13,693 | 13,004 | 14,641 | 15,863 | 15,602 | 15,217 | 16,098 | 18,353 | 15,213 |
| **Export** | | | | | | | | | | | |
| Cider grape | 0 | 2 | 16 | 4,161 | 355 | 780 | 705 | 177 | 115 | 73 | 638 |
| Table grape | 2,193 | 1,475 | 1,694 | 898 | 786 | 1,799 | 1,463 | 2,032 | 1,470 | 1,051 | 1,486 |
| **Balance** | | | | | | | | | | | |
| Cider grape | -4,492 | -4,784 | -10,755 | 1,839 | -1,011 | -2,459 | -2,145 | -3,232 | -1,055 | -1,124 | -2,922 |
| Table grape | -13,311 | -12,678 | -11,999 | -12,106 | -13,855 | -14,064 | -14,139 | -13,185 | -14,628 | -17,302 | -13,727 |

Source: Central Control and Testing Institute in Agriculture, own processing

**Table 7** Number of winegrowers and traders with wine products

| Indicator/year | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | 21-12 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Winemaker | 457 | 488 | 523 | 535 | 572 | 581 | 602 | 659 | 690 | 742 | 285 |
| Trader | 153 | 163 | 169 | 176 | 193 | 202 | 216 | 233 | 250 | 280 | 127 |

Source: Central Control and Testing Institute in Agriculture, own processing

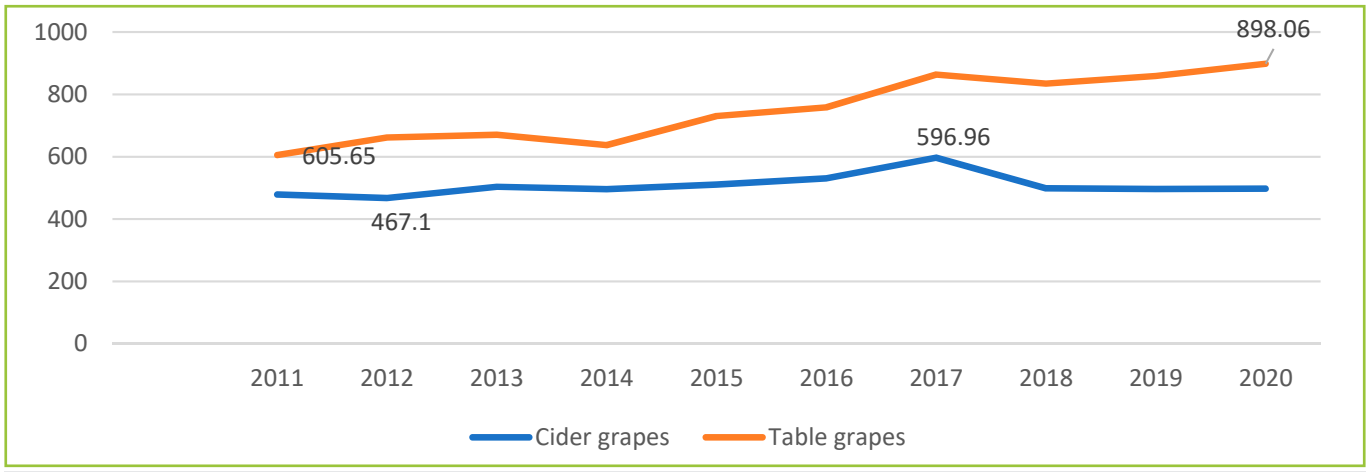



**Figure 2** Development of the annual price of grape producers (€/t)
Source: Central Control and Testing Institute in Agriculture, own processing

We export wine production from Slovakia, but wine is mainly imported. Overall, imports exceed exports. We have a negative balance in foreign wine trade, it is a passive trade balance. The average import of wine and cider was 750,000 hl during the monitored period and average export 288,000 hl. The average balance was negative, at the level of – 462,000 hl of wine. Imports of wine in Slovakia are mainly from Hungary, Italy, Germany, Argentina. Wine is exported to the Czech Republic and Spain.

From the point of view of import and export of grapes, import exceeds export again. The average import of table grapes (15,213 t) significantly exceeds the import of cider grapes (3,560 t). The average export of cider grapes (638 t) is lower than the average export of table grapes (1,486 t). From the point of view of foreign trade with grapes, we achieve a negative balance in both commodities. We import cider grapes mostly from Hungary, and we also export to this country, as well as to the Czech Republic. Table grapes are imported from Italy, Germany. Exports are made mainly to Hungary and the Czech Republic.

Figure 2 shows the development of the annual producer price in €/t for both cider and table grapes. The highest price for producers of cider grapes was 597 €/t in 2017, and the lowest in 2012 was 467 €/t. The highest average price of table grape producers was reached in 2020 at 898 €/t and the lowest at the beginning of the monitored period at 606 €/t. The average price of producers of table grapes reached 752 €/t during the monitored period, the average price of cider grapes was lower and reached 508 €/t.

The number of vintners as well as traders with wine and wine products grew from year to year. Overall, for the monitored period, we can see, based on Table 7 an increase of 285 winemakers and 127 wine and wine product traders.

## Conclusions

Vineyards have their irreplaceable place in the structure of agricultural land, even if they only account for 1% of its area. The development of the area of

vineyards decreased in comparison between 2011 and 2020, this was due to the decrease in the area of productive vineyards as well as non-productive vineyards. The history of grape growing in Slovakia goes back a long way. The economic year for winegrowers lasts from August 1 of the previous year to July 31 of the following year. The part of the country that is planted with vines is called a viticultural region. In Slovakia, it consists of six wine-growing regions, the largest being the Malokarpatský wine-growing region and the smallest being the Tokaj region. The average production of fruiting vineyards in the analyzed period reached 46,913 t, and the average yield was at the level of 5.31 t/ha. In Slovakia, mostly cider varieties are grown, but also table varieties and hybrids of all varieties. Wine consumption per inhabitant reached an average of 14.11 l. From the total production of wine, the production of white wine prevails. The number of winemakers and traders with wine products grows every year. In the field of foreign trade in wine and cider, we have a negative balance.

## References


BISSON, L. F. 2002. The present and future of the international wine industry. In Nature publishing goup, vol. 1, 2002, pp. 696–699. ISSN 0028.

DOMINÉ, A. 2015. Víno. Slovart CZ, 2015. ISBN 978-80-7391-701-2.

JANKU, J. – KREMSKÝ, P. (dátum neznámy). Útlm vinohradníctva sa ešte nepodarilo prekonať. In Trend.

LIESKOVSKÝ, J. – KANKA, R. – BEZÁK, P. – ŠTEFUNKOVÁ, D. – PETROVIČ, F. – DOBROVODSKÁ, M. 2013. Driving forces behind vineyard abandonment in Slovkia following the move to a market-oriented economy. In Land Use Policy, vol. 32, 2013, pp. 356–365.

McKENZIE, H. 2020. From Grapes to Glass: An Essential Guide to Viniculture. www.usualwines.com A large glass of real wine, by the bottle.

MARCINČÁK, S. – SEMJON, B. 2022. Cultural Heritage in the Region of Eastern Slovakia. In Environmental History (Netherlands), vol. 13, 2022, pp. 35–55.

RANDUŠKA, P. 2009. Vademecum o víne. Bratislava: Ikar, 2009. ISBN 978-80-551-2012-6.

RIERA, F. S. – BRÜMMER, B. 2022. Environmental efficiency of wine grape production in Mendoza, Argentina. In Agricultural Water Management, vol. 262, 2022.

STEVENSON, T. 2003. Wine (101 essential tips). ISBN 978-07-8949-685-0.

KATALÓG VINÁRSTIEV. 2021. www.sdv.sk

CENTRAL CONTROL AND TESTING INSTITUTE IN AGRICULTURE. Available: https://www.uksup.sk/

MINISTRY OF AGRICULTURE AND RURAL DEVELOPMENT OF THE SLOVAK REPUBLIC. Available: https://www.mpsr.sk/


## Contact address


Jana Ladvenicová, Slovak University of Agriculture in Nitra, Faculty of Economics and Management, Institute of Economics and Management, Tr. Andreja Hlinku 2, 949 76 Nitra, Slovakia

jana.ladvenicova@uniag.sk