

# VITICULTURE OF BOHEMIA AND MORAVIA









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# History of wine-growing and wine-making in the territory of the Czech Republic

*It may be assumed that the very first winegrowers in our territory were the Celts. However, tangible evidence of their viticultural activity is missing. The Roman Emperor Probus (276–282) abolished the ban on planting of vineyards in the colonies behind the Alps. That ban was enforced from Emperor Domitian in 91 AD by the Roman latifundia owners and wine exporters to Germania and Gaul. The Roman Legion from Vindobona “Legio decima Gemina, Pia Fidelis” built a base on the Amber path under Pálava.*

During excavations of walled buildings on the Roman Hill in 1926, a pruning knife was found. It was 28 cm long, with a 10 cm blade – “securis”. It is an evidence of viticultural activity of Roman soldiers in our territory. **Archaeological excavations in southern Moravia and Moravian-Slovakian borderland uncovered numerous pruning knives and grape seeds from the period of the Great Moravian Empire (833–906), confirming the developed viticulture of the Slavonic inhabitants.**

## *Old legends and historical written reports of the Czech and Moravian vineyards*

According to an ancient legend, the first wine came to Bohemia in 892, when the Prince of the Great Moravian Empire Svatopluk sent a big barrel of wine for the celebration of the birth of Spytihněv, son of Prince Bořivoj and his wife Ludmila. Ludmila, who was then pagan, sacrificed little wine in a small stone cup to the goddess of the harvest, Krosyna, and plead for a rain to save the crop. Her plea was heard. After her baptism, Ludmila and her suite set out for Mělnicko, where she came from and where they found an appropriate place for planting a vineyard – the southern slope between the communes of Nedomice and Dřísy. When they wanted to stay overnight in the Mělník fortress, the pagan fortress-guards did not let them in. Ludmila and her suite had to spend the night out of the gord's gates. It is said that the grass was forever green on that place and in the 14<sup>th</sup> century, Emperor Charles IV had the Mělník inhabitants plant a vineyard there with a grapevine brought from Burgundy.

The first written remark upon Bohemian vineyards is from 1057 and can be found in the Prince Spytihněv's deed of donation to the collegiate Saint Stephen Church in Litoměřice, mentioning the vineyards in the environs and winegrowers, who have beautiful Czech names. The first written reference of the Moravian vineyards is in the foundation charter of the Benedictine monastery in Třebíč from 1101.

## *Planting new vineyards in larger scale*

In the 12<sup>th</sup> and 13<sup>th</sup> century, large vineyard areas were being established thanks to the monasteries. Premonstrates and Cistercians were particularly renowned for such activities. As Christianity spread, so did the demand of the wine – not only for the sacral purposes, wine appeared more and more frequently on the tables of the nobility and wealthy burghers, too. Gradually it became a daily beverage of all our people. The increase in demand evocated planting of more vineyards and it was necessary



to settle both the common and the proprietary relations between individual vineyard owners within the vineyard hills. Hence the vineyard and Bergrecht rules originated. The vineyards became a source of quite significant benefits. For the feudal nobility there were earnings from the land pay and rectorial tithes from land that was prevailingly situated on steep slopes that would lie fallow were it not for the vineyards.

In many south-Moravian wine communes, the Falkenstein Bergrecht laws were the model. It was drawn up in 1309 for the vineyards of the Viennese order of Clarists. Austrian Falkenstein became also the Supreme Court of Appeal in vineyard disputes for the communes under the jurisdiction of the Falkenstein Bergrecht. In 1355 the Moravian Margrave Jan Jindřich published exemplary vineyard rules for Moravia and the town council of Brno issued a decree on the obligatory registration of the burghers' vineyards in the taxation





register. It is evident from this register that the Brno burghers invested more than a third of their wealth to the vineyards. They planted them mainly in Židlochovice, Hustopeče and Mikulov. Those who did not register their vineyard could not sell wine in Brno. A great amount of wines was imported to Brno from Austria and competed with domestic wines. Upon the request of burghers of Brno King John of Luxemburg decreed in 1325 that from harvest until Easter, only the wines from Brno's burghers were allowed to be served. The town council appointed wine tasters, who were standing at the gates of Brno and permitted only Moravian wines to enter the town, at the same time they determined the price at which these wines shall be sold. From the wine tasters later evolved the Wine Commissioners Guild.

*“Obligatory planting of vineyards  
an the southern slopes” decreed by the Czech King  
and Roman Emperor – Charles IV*

Charles IV, Czech King and Roman Emperor, realized the economic advantages of viticulture and therefore he issued a decree in 1358 for the city of Prague and other royal towns on vineyard planting. According to the decree, everyone who owned land on the southern slopes around Prague and royal towns was ordered to plant a vineyard in a fortnight, and those who did not want to plant a vineyard on their own, had to abandon land to these who were willing to do so. Whoever did not want to do so had to pass the property to someone who is willing to plant it. For that were the new-planted vineyards exempted from all taxes and dues for 12 years and after that period had the vineyard-holder to surrender a tithe payment to the landlord and to the king a half-tub – 30.5 litres – from each vineyard, which covered a surface area of 28.5 acres. All new-planted vineyards were the same size. The punishments for any damage to vineyards were very severe. Even during Charles IV's lifetime the vineyard area expanded so rapidly,

that in 1370 he had to prohibit the import of all foreign wines in the period between Saint Havel (16. 10.) and Saint George (24. 4.).

*The Burgomasters and wine quality inspection*

Under the rule of George of Poděbrady and the dynasty of the Jagiello the vineyards probably reached their maximum. They also spread to less slanted terrain, edging out fields. Disarray occurred in registering vineyards and many wines were of low quality. The King had to intervene. Vladislav Jagiello ordered every vineyard to be listed in Burgomaster's Land Registry by vineyard hills and number of vineyard. In 1497, the King also decreed qualitative inspection of all young wines, which was carried out by the burgomaster and his helpers. If any wine was found adulterated or spoilt by sulphur, it was to be removed from the cellars and along with the barrel hewn to pieces. This is the first decree on qualitative inspections by degustations issued in Europe. Detailed vineyard rules were issued for Prague, Louny and other viticultural towns in the 16<sup>th</sup> century. They specify the discretions and duties of the burgomasters, vineyard owners, vintners, who organised the vineyard work and the vineyard workers, for whom it determined the length of labour time in single months of the year and also the height of the daily wages for women and men. These vineyard rules drew a very truthful image of conditions in our medieval towns. The vinery owners chose among themselves one burgomaster and his four helpers. They all attended to order at the vineries, during wine-making and selling, so that all the rules were observed. The vintners mainly supervised the work of younger wine-makers and labourers. Somewhere young wine-makers had to take additional exams in order to be accepted to the Wine-makers Guild, which was not only an economic organisation but also, after the Thirty Years' War, an organisation with religious duties.





### *“The Vineyard Positioning and the Manner of Cultivation of Vines in Order to Achieve the Best Results”*

The declining quality of specialised viticultural knowledge in the period of culminant area expansion of vineyards and branching out of business interests in the 16<sup>th</sup> century led often to neglecting of viticultural work. Therefore Jan Had, Prague teacher, wrote a specialist book In 1558, called “The Vineyard Positioning and the Manner of Cultivation of Vines in Order to Achieve the Best Results” –, written in Czech. Apart from a description of viticultural work, it contains the characteristics of the grape varieties cultivated at that time. Among those are also some cultivated up to the present day – Muscat Blanc, Némčina (Pinot Gris), Bronišť or Bryňšť (Weisser Traminer) and some are now just relict of assortment of that times – Běl (Gelber Heunisch), Vídeňka (Weisser Heunisch), Klenice (Goher) and Běločko (Topol).

### *Taxation in the times of Rudolf II*

In 1590 Rudolf II issued a comprehensive set of viticultural instructions. He emphasised the duty to register the vineyards to the Burgomaster’s Land Register. From the registered vineyards the Emperor got payments of land taxes – Bergrecht, which was 8 pints (15.5 litres) of wine from one vineyard. He claimed the payment in money instead of wine, which was 13 Bohemian groschen and 5 white coins. He also warned against wine adulteration, i.e. mixing Czech wines with foreign wines. The Emperor demanded “that wines should be preserved in such a manner as they were originally grown”. Both Moravian and Bohemian medieval vineyards produced mostly white wines. The demand of red

wines did not increase until the end of the 15<sup>th</sup> century. In the 16<sup>th</sup> century the demand of vintage wine also increased. New systems of working were applied in planting new vineyards and wine cellars. New varieties were brought to us by the neobaptists, among others it was probably also Sauvignon, which was then called Fié or Feigentraube. In addition to young wines, mature wines were sold for high prices. Cellars of mansions were equipped with capacious barrels, which put the spacious cellars to better use.

### *“Under the bush” wine-selling after the Thirty Years’ War*

The Thirty Years’ War ended the development of the town vineyards in Bohemia to a great extent, where there were approx. 1654 3,336 hectares of vineyards according to the records of Inland Revenue. After that, 11% of the vineyards in North Bohemia were abandoned. The interest of burghers in vineyards fell rapidly. The vineyard were maintained only in the countryside. According to the Land Registry, there were 17,701 ha of rustic and 627 ha of dominical vineyards in Moravia. Of this 40% was in the first category, 46% in the second and 14% of the third category. In the district of Brno, 60% of the vineyards were abandoned, in the district of Znojmo 50% and in Uherské Hradiště 25%. The renewal of Moravian vineyards proceeded relatively quickly. In 1748, there were 16,616 ha of vineyards again. Such quick renewal intimidated the Austrian wine-makers, who requested Maria Theresa in 1763 to reduce the vineyard area in Moravia, because Moravian wines represented a fierce competition for them. The Emperor Josef II had a positive approach to





Moravian wine, he abolished all Bergrecht rules and in 1784 he issued a new official set of vineyard regulations for Moravia. At the same time he permitted everyone to sell, produce, wine and fruit juice they themselves had produced. So started the “under the bush” wine sales. In the very same year Moravian physicist Řehoř Volný classified Moravian wines according to quality. In the first class ranked the wines of Sedlec, Mikulov, Popice, Dolní Dunajovice and Velké Pavlovice. Wines from Rakvice, Zaječí, Přítluky, Pouzdřany, Věstonice, Velké Bílovice and Němčičky were placed in second class. The wines of Křepice, Nosislav, Velké Němčice, Židlochovice, Dolní Bojanovice and Prušánky were put in the third class.

### *19<sup>th</sup> century – “Generation of beer and spirits”*

At the beginning of the 19<sup>th</sup> century the interest in wine and vineyards declined. Industry started to develop and the industrial generation preferred beer and spirits to wine. Cheap Hungarian wines were being imported. The farmers were growing industrial crop-plants, mainly sugar-beet. In 1890 Phylloxera, a pest of grapevines, which destroyed subsequently nearly all European vineyards, came to our land too. In order to protect them from phylloxera, the vines must be grafted onto resistant rootstock. Also fungous diseases – oidium (*Uncinula necator*) and peronospora (*Plasmopara viticola*), brought from America, were spreading. Against such diseases the vineyards need to be treated several times during the summer period with sulphurous and cupric chemicals. The cultivation of vineyards became more and more expensive. The area under vine in Moravia was dwindling and in 1930 it sunk to a mere 3,870 ha. The gradual vineyard reconstruction achieved 7,000 ha before the Second World War. In 1960 there were still only 6,781 ha of vineyards. Not until the implementation of large-scale production forms of wine-growing was the area of 14,019 ha reached in 1980, but it sunk back to 11,183 ha during the next fifteen years. Thanks to the massive support of viticulture at the turn of the millennium the current area of vineyards – 18,500 ha – was reached. The spreading of specialised knowledge was taken care of not only by the expert magazine “Vinařský obzor” (the Vintner’s Horizon), founded in 1906, but also by the viticultural schools founded 1868 in Znojmo, 1873 in Valtice, 1882 in Mělník, 1885 in Bzenec and 1903 in Mikulov. Secondary viticultural school is now only in Valtice and the students may gain university education at the Faculty of Agronomy of the Mendel University of Agriculture and Forestry in Lednice. The vintners are united into an educational association Moravín, founded in 1964, and they have their professional organisation – Union of vintners of the Czech Republic. In the new millennium, the quality of our wines, produced in modern-equipped companies, has been rising and at present, the demand is unprecedentedly high. The newly conceived Wine Act from 1995 and its amendments have contributed significantly to this.



**The Mělník sub-region**  
37 wine communes, 94 winegrowers,  
413 ha of vineyards, 91 allotments

## *Ch* aracteristic of the wine regions and sub-regions of the Czech Republic

*The Czech Republic has 377 wine communes  
with 20,394 winegrowers operating therein.*

*The total registered vineyard area is 18,554 ha.*

*The vineyards are planted on 1,303 vineyard  
allotments. The total area of vineyard allotments  
under the vine or not is 52,232 ha, from that  
30,136 ha is in the first category, 20,435 ha  
in the second and 1,660 ha in the third category.*

### **The Wine region of Bohemia**

has 66 wine communes, 174 winegrowers, 713 ha of registered vineyards and 171 vineyard allotments.

#### **The Mělník sub-region**

(37 wine communes, 94 winegrowers, 413 ha vineyards and 91 allotments)

**Includes not only Mělník and its surroundings, but also Brandýs nad Labem, Heřmanův Městec, Slaný, Kutná Hora, Beroun, Kralupy nad Vltavou, Kladno and Prague.** The biggest wine communes are Mělník, Liběchov, Kutná Hora and Slaný. Most vineyards of this sub-region are planted with Müller Thurgau, Ryzlink Rýnský (Rheinriesling), Svatovavřínecké (Saint Laurent), Modrý Portugal (Blauer Portugieser) and Rulandské modré (Pinot Noir), which has a very long tradition in this region. In addition, Rulandské bílé (Pinot Blanc), Rulandské šedé (Pinot Gris), Tramín (Traminer) and from the blue varieties Zweigeltrebe are planter there. Wines of Mělník were exported to Prague, where they were very popular,





especially the red wines. In the historical building on the Mělník square there is a museum, where many records of the history of viticulture of the town and its environs are to be seen. The “Mělník Vintage” takes place in Mělník annually. There is an annual display of Czech wines in Kutná Hora during the Saint Wenceslas celebrations.

#### The Litoměřice wine sub-region

(29 communes, 59 winegrowers, 281 ha of vineyards, 80 allotments)

**Includes the communes of Litoměřice, Most, Roudnice, Velké Žernoseky, Louny, Žatec and their surroundings. The biggest centres are Most, Velké Žernoseky, Hoštka, Michalovice, Lovosice.** The prevailing grapevine varieties are Müller Thurgau, Ryzlík rýnský (Rheinriesling), Rulandské bílé and Rulandské šedé (Pinot Blanc and Gris). From the blue varieties Svatovavřínecké (Saint Laurent), Modrý Portugal (Blauer Portugieser), Rulandské modré (Pinot Noir) and Zweigeltrebe are often cultivated. In the environs of Litoměřice, like in the environs of Mělník, appeared one of the first Czech vineyards. The Radobýl Hill was given to the town of Litoměřice by the Emperor Charles IV in 1359 as a land for planting vineyards. In the contiguous Velké Žernoseky a beautiful lapidary cellar was built by the Cistercians in 1251 for keeping of wines from the vineyards alongside the Labe River and the ravine “Porta Bohemica” to Bohemian Central Highlands. Wine can be found in the cellars of the mighty Roudnice Castle even today. The town of Most in the North Bohemia, where there used to be 53 wine communes, gained the vineyard rules from Charles IV in 1374. The vineyards were planted not only on natural slopes, but also on slanted historical platforms inside the town and on the hoppers of brown-coal mines. The exhibition of wines “Vinařské Litoměřice” (Viticultural Litoměřice) takes place annually in Litoměřice.



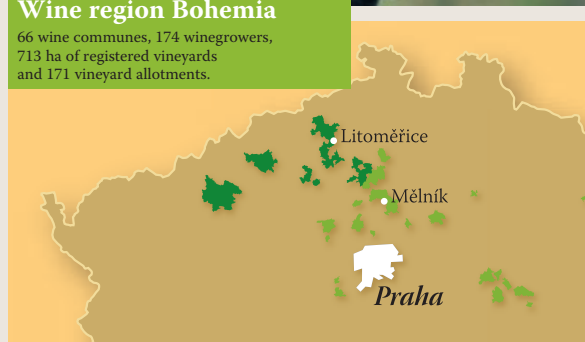
#### The Litoměřice sub-region

29 wine communes, 59 winegrowers,  
281 ha of vineyards, 80 allotments



#### Wine region Bohemia

66 wine communes, 174 winegrowers,  
713 ha of registered vineyards  
and 171 vineyard allotments.





## The Wine Region Moravia

has 311 wine communes, 20,220 winegrowers, 17,841 ha of registered vineyards, 1,132 ha of vineyard allotments.

### The Znojmo wine sub-region

(91 wine communes, 1,254 winegrowers, 3,460 ha of vineyards, 224 allotments)

**The biggest wine communes are Vrbovec, Dolní Kounice, Znojmo, Pravlov, Hostěradice, Hnanice, Božice, Tasovice, Miroslav, Havraníky, Hrádek, Slup,**

### The Mikulov sub-region

30 wine communes, 2,659 winegrowers, 4,705 ha of vineyards, 182 allotments



### The Velké Pavlovice wine sub-region

75 wine communes, 7,627 winegrowers, 5,068 ha of vineyards, 319 allotments



**Olbramovice, Šatov and N. Šaldorf.** This sub-region that is renown mainly for white, aromatic wines – there are 2,365 ha of white varieties. From that prevail Veltlínské zelené (Grüner Veltliner, 486 ha) and Müller Thurgau (450 ha). Large areas are also planted with Ryzlink rýnský (Rheinriesling, 255 ha) and Sauvignon (214 ha). Ryzlink vlašský (Welschriesling, 168 ha) and Rulandské bílé (Pinot Blanc, 173 ha) have a long tradition in this region. Strongly aromatic varieties like Tramín (Traminer, 144 ha), Pálava (50 ha) and Muškát Moravský (Moravian Muscat, 64 ha) provide interesting, smooth wines annually. The blue varieties, used when making red wine, are in an area of 1,064 ha and Svatovavřínecké (Saint Laurent, 382) prevails. The second most planted variety is Frankovka (Frankonia, 236 ha), followed by Rulandské modré (Pinot Noir) and Zweigeltrebe, both with 150 ha of vineyards. Close to Znojmo there are prominent vineyard locations from Kraví Hora to Hnanice. The meander of the river Thaya flows around the famous location Šobes. Other notable vineyard allotments are Šác, Lampelberk by the borders of Austria, Kamenný vrch in Tasovice, Stará hora and Frédy in Horní Dunajovice, Weinperky by Miroslav and Volné pole by Hostěradice and many more locations in the region of Dolní Kounice. In Znojmo – Oblekovice there is a Varietal laboratory for grapevine of the ÚKZÚZ company, where new cultivated varieties, both Czech and foreign, are being tested whether they are appropriate for Czech wine regions. In Znojmo, which lives a vintners' life more and more intensively, a grandiose annual Znojmské vinobraní (Znojmo vintage) takes place.

### The Mikulov wine sub-region

(30 wine communes, 2,659 winegrowers, 4,705 ha of vineyards, 182 allotments)

**The biggest communes in the Mikulov region are Valtice, Novosedly, Mikulov, Dolní Dunajovice, Sedlec u Mikulova, Brod nad Dyjí, Popice, Pavlov, Horní Věstonice, Hlohovec, Strachotín, Břeží, Bulhary, Bavory, Drnholec and Dolní Věstonice.** The Mikulov





wine sub-region became famous particularly because of its white wines grown on limestone sub-soil, primarily around Pálava. The white varieties are planted on a considerably greater area (3,502 ha) than the blue ones (1,224 ha). From the white varieties prevail Ryzlink vlašský (Welschriesling, 697 ha) and Veltlínské zelené (Grüner Veltliner, 478 ha), which are both traditional in Mikulov region and were always used for the making of sparkling wines. Second are Ryzlink rýnský (Rheinriesling, 356 ha) and Müller Thurgau (378 ha). These are followed by Sauvignon (300 ha), Chardonnay (262 ha) and Rulandské šedé (Pinot Gris, 212 ha). The area of vineyards planted with Tramín (Traminer, 162 ha) is larger than any other Moravian region. Concerning the blue varieties, the most often planted varieties are Svatovavřínecké (Saint Laurent, 334 ha) and Frankovka (Frankonia, 248 ha). A considerable area of vineyards is taken up by Zweigeltrebe (182 ha) and Rulandské modré (Pinot Noir, 169 ha). The planting of Modrý Portugal (Blauer Portugieser, 91 ha) has decreased rapidly, but on the other hand, Cabernet Sauvignon (92 ha) was planted out in an area larger than in any other sub-region. The winegrowers hope that in the light of gradual warming it will be possible to gather mature grapes most of the years. The Ridges of Pálava (CHKO Pálava – the Protected Landscape Area of Pálava) are a good shelter against the cold northwest winds and there are many excellent locations on the leeward side to the southeast, south and southwest. The locations of the vast vineyard areas by the Dunajovicke Hills, at the Brodské Hillsides or the vineyard municipalities lying north from Pálava (Pouzdrány, Popice, Strachotín) are also very favourable. The wonderful vineyard slopes of Valtice lay next to the borders of Austria. Valtice is the capital of wine, where several viticultural organisations reside: The Secondary viticultural school, National Wine Centre, Wine Salon of the Czech Republic and Wine Academy Valtice. Between Valtice and Lednice stretches the Lednice-Valtice area, including the UNESCO heritage site. There is an exposition of wines in Mikulov Castle.

### The Wine Region Moravia

311 wine communes, 20,220 winegrowers,  
17,841 ha of registered vineyards,  
1,132 ha of vineyard allotments.



### The Velké Pavlovice wine sub-region

(75 wine communes, 7,627 winegrowers, 5,068 ha of vineyards, 319 allotments)

**One of the biggest wine communes of the Velké Pavlovice region is Velké Bílovice**, which is thanks to its area of 804 ha by far the biggest wine communes of the CR. The vineyards are kept by 1,062 winegrowers, which is also the biggest number of wine-growers in one commune. **Other notable communes are Čejkovice, Velké Pavlovice, Kobylí, Hustopeče, Rakvice, Němčičky, Zaječí, Přítluky, Bořetice, Klobouky u Brna, Vrbice, Starovičky, Brumovice, Moravský Žižkov, Starovice and Nosislav.** This sub-region is the heart of production of Moravian red wines. The total area of vineyards planted with white varieties is 2,951 ha. The prevailing variety on the deep loamy soil is Veltlínské zelené (Grüner Veltliner, 645 ha), followed by Müller Thurgau (453 ha), the main variety of the area of Kloboucko, along with traditional Neuburské (Neuburger, 225 ha). Another traditional variety of this region is Ryzlink vlašský (Welschriesling, 362 ha). Other quality varieties are



### The Znojmo wine sub-region

91 wine communes, 1,254 winegrowers,  
3,460 ha of vineyards, 224 allotments



### The Slovácko sub-region

115 wine communes, 8,627 winegrowers,  
4,534 ha of vineyards, 407 allotments



evenly spread and their areas between 150 and 180 ha. These are Ryzlink rýnský (Rheinriesling), Rulandské šedé, bílé (Pinot Gris, Pinot Blanc), Chardonnay and Tramín (Traminer). The vast area of blue varieties (2,099 ha) is planted with Svatovavřínecké (Saint Laurent, 511 ha) and Frankovka (Frankonia, 459 ha). Except for the Modrý Portugal (Blauer Portugieser, 289 ha) and Zweigeltrebe (278 ha), the most planted variety is André (131 ha), which was cultivated in the Vine Research Centre in Velké Pavlovice. This assortment is completed by Rulandské modré (Pinot Noir, 208 ha). In the central part of the region from Velké Němčice past Hustopeče, Velké Pavlovice, Němčičky, Bořetice, Kobylí, Vrbice, Čejkovice, to Velké Bílovice stretches the central part of the sub-region with soils on limestone clay, marl and grit, often covered by mighty layers of loess. In these parts, the blue varieties reign upon the soils rich in magnesium. In the northern part of the sub-region around Hrušovany and Žabčice there are vineyards upon sandy soil, where apart from Veltlínské zelené (Grüner Veltliner), Rulandské šedé (Pinot Gris) and aromatic varieties Tramín (Traminer), Pálava, Muškát Moravský (Moravian Muscat) also flourish. Hustopeče was a traditional centre of viticulture. Also the burghers of Brno and Olomouc planted their vineyard around this town. The medieval Hustopeče was like Mikulov or Znojmo the centre of the wine market. With regard to the vast area of vineyards around the town acted the town council of Hustopeče as the Court of Appeal in viticultural affairs. That resulted in a drop of importance of Austrian Falkenstein, to which a lot of Moravian communes appealed.

### The Slovácko sub-region

(115 communes, 8,627 winegrowers, 4,534 ha of vineyards, 407 allotments)

**One of the biggest wine communes are Mutěnice, Blatnice pod sv. Ant., Hovorany, Prušánky, Bzenec, Lipov, Moravská Nová Ves, Strážnice, Břeclav, Hrušky, Josefov, Polešovice, Dolní Bojanovice, Tvrdonice, Vracov, Šardice, Ořechov, Vnorovy and Kyjov.** The white varieties form two thirds and the blue varieties one third of the sub-region's production. On the 2,987 ha of white varieties Müller Thurgau (540 ha) and Ryzlink rýnský (Rheinriesling, 458 ha) prevail, followed by Veltlínské zelené (Grüner Veltliner, 385 ha), Rulandské bílé (Pinot Blanc, 335 ha), Ryzlink vlašský (Welschriesling, 238 ha) and Chardonnay (229 ha). The following places are covered by Rulandské šedé (Pinot Gris, 157 ha), Sauvignon (152 ha), Muškát Moravský (Moravian Muscat, 128 ha), which was cultivated in the Vine Research Centre on in Polešovice, and Tramín (Traminer, 102 ha). The blue varieties take up an area of 1,525 ha and Frankovka (Frankonia, 459 ha) and Svatovavřínecké (Saint Laurent, 305 ha) prevail. Zweigeltrebe (254 ha) was planted intensively, along with late-mature André (90 ha) and Cabernet Moravia (71 ha). Modrý Portugal (Blauer Portugieser, 198 ha), which matures earlier, is being cultivated on larger area of vineyards.

The sub-region is very various – there is Podluží in the south, where most of the wine communes are situated in the valley of the river Morava, through which the chilly northeast winds blow. Convenient locations for vineyards are situated on the sides of a ridge above the stream Kyjovka or on higher situated flat lands with light soil. Northwards from Podluží there is a broken hilly terrain with higher situated vineyards, where the effect of the warm breeze from the south is not so evident. Full wines with sappy character are grown there upon the loamy soil. Many important wine communes can be found there – Mutěnice with a remarkable wine station, Hovorany and Čejč. The vineyards are scattered to convenient locations under the protection of the Ždánice forest in the northern part of Slovácko – Ždánice, Žarošice, Archlebov. Bigger vineyard complexes are situated around Kyjov and Moštěnice, but mainly around Vážany and Polešovice, where there is a cultivation station and where the Moravian Muscat variety originated. In the middle part of the northern border of the region lies the town of Bzenec, famous for Ryzlink rýnský (Rheinriesling) with a local name Lipka. The eastern part of Slovácko lies at the foothills of White Carpathian Mountains and opens its southern slopes to the warm breeze. Full and harmonic wines are being grown here upon deep retentive soil around Strážnice, Blatnice pod sv. Antonínem, from where came the mixed wine Blatnický roháč, made from Ryzlink rýnský (Rheinriesling), Rulandské bílé (Pinot Blanc) and Sylvánské zelené (Sylvaner). Large areas of vineyards are also found in Lipov and Petrov, which is famous for wine cellars called Plže.



## Climatic conditions of the wine regions of the Czech Republic

*The Czech Republic has two different wine regions – Bohemia and Moravia.*

### WINE REGION BOHEMIA

comprises the relicts of the former extensive viticulture in Bohemia, where over 3,000 ha of vineyards used to be in the period of its highest prosperity. The vineyards were always situated in the warmest parts of Bohemia alongside the river Labe and the lower reach of the rivers Vltava and Ohře, in the central-Bohemian valley and in Bohemian Central Highlands. Nowadays, the most of the vineyards are around Mělník, Litoměřice and Most. The average annual temperature in the Mělník region is 8.9 °C. The average sum of active temperatures above 10 °C is approximately 2,800 °C and the annual rainfall is 520 mm. Most of the Mělník vineyard allotments lie on erinaceous marl of the Czech cetaceous basin, which is sometimes covered by sandstone and clay stone, towards Prague with loess. In the Roudnice region lime loess occurs, river gravel sand and the first vulcanite of Bohemian Central Highlands, whose conical igneous rock adorn the horizons of the Litoměřice wine sub-region. Between the cones of Bohemian Central Highlands there are valleys with very dry and warm conditions. The dark soil of mouldered basalt offer perfect conditions for grapevine to flourish and very original wines with mineral overtone are grown there.

### MORAVIAN WINE SUB-REGIONS

are to a large extent consistent with the ecological division of this region, which is bio-geographically a part of the Panon province. The Znojmo wine sub-region is a part of the bioregion of Lechovice and it is one of the warmest places in the CR. The western flow results in rain shadow of the Bohemian-Moravian Highlands. It also brings unexpected incursions of colder air, which slows the vegetation in favour of emphasising the aromatic substances in the period of ripening of the grapes. There are gravel sand platforms and drifts of loess in the south. In the north, the land around Dolní Kounice verges into Palaeozoic formations of the Brno massif. The bioregion of Mikulov comprises the the Hill Country of Mikulov with limestone soil around Pálava, the Dunajovické Hills and the Valtická Upland with mighty drifts of loess and sand platform of Boří forest. The climate is very warm and dry here, with a number of protected and particularly warm locations. The communes northwards from Pálava have a different geomorphologic characteristic, but the divergence concerning climate is not remarkable.





Most of the Hustopeče bioregion lies on the Hustopeče-Kyjov Upland, which is formed of limestone flysch and loess. On the north-eastern border of the sub-region Velké Pavlovice the elements of the Canon and Carpathian province mix. This brings increased rainfall totals. The topography of this region is hilly, with the occasional salient spines like Přítlucká kupa seceding. The first sequence of vineyard slopes is warmer than the higher located slopes within the hills.

The most varied ecological conditions are in the Slovácko sub-region, which is divided by the wide river flood-plain into two parts. Behind the right-hand bank side there are vineyard slopes of Chřiby to the north with underlying Ždánice forest. All this territory is a part of Ždánice-Litenčice bioregion. The left-hand bank side already belongs to the Hlucký bioregion, which is a part of the Carpathian province. The close slopes of White Carpathian Mountains along with characteristic geomorphology of the Carpathian formation cause the differences between leeward and windward sides, which are enfolded by limestone and flysch sediment, in which there are layers of sandstone and clay stone. The climate has a continental character, but to some extent it is effected by the warmer and dryer climate of the adjacent Pannonia. The southernmost part of the Slovácko sub-region is a part of Thaya-Moravian bioregion with the flat Podluží, vineyard slopes on the terrain ridge by the river Kyjovka.



## Types of grapevine grown in the wine regions of the Czech Republic

Only the varieties of grapevines registered in accordance with Act No. 219/2003 Coll. may be planted and used for the production of wine or grapes. 25 white cider varieties, 17 blue cider varieties, 9 table varieties for production of grapes for consumption and 7 rootstock varieties for reproduction of vine used for protection against Phylloxera are registered for that purpose.

### The most important white must varieties based on prevalence

**Müller Thurgau** – medium growth, very fructiferous, less resistant to winter chills, middle early-maturing. Wines sappy, subtly aromatic, muscat-fruity scent with grapefruit or peach tones, lower acidity content. Very popular for the harmony of the components. Variety convenient for loamy soils and middle class locations. Prone to decay of berries.

**Veltlínské zelené (Grüner Veltliner)** – medium growth, very fructiferous, middle resistance to winter chills, middle late-maturing. Wines depending on the extent of harvest and class of location – simple, middle quality or higher category of quality wines with special attributes, where spiciness is present. Mainly on loamy soils, where the aroma of lime tree blossom prevails, but also when less burdened with fruitage or on poorer soil, where the aroma is one of bitter almonds and, if it grows on loess, the spiciness verges into peppery tones. Wines suitable for the production of sparkling wines.

**Ryzlink vlašský (Welschriesling)** – Medium to vigorous growth, very fructiferous, good resistance to winter and





spring chills, late-maturing. For simple wines good location is appropriate, for quality wines with special attributes only excellent locations. Grown on loamy or stony soil. Higher acidity level may be softened. In young wines fruity blackberry or gooseberry tones predominate, later the scent of meadow flowers.

**Ryzlink rýnský (Rheinriesling)** – medium to vigorous growth, middle yield, good resistance to winter and spring chills. Necessitate excellent locations, should be grown for quality wines with special attributes. Needs stony or loamy soils with good structure, they must not be cold. Wine has very decent, subtle scent and typical spiciness. In young wines the tones of lime tree blossom predominate, later apricots, peach, pineapple and in maturity quince. Wines are usually mineral and may be stored for a long time.

**Rulandské bílé (Pinot Blanc)**– medium growth, middle yield, the resistance to winter chills also medium, middle late-mature. The characteristics of the variety present best when on good and excellent locations, on loamy and limestone soils. Wine is full, often with mineral substance and soft floral scent. In young wine the level of acid is higher, in mature wine peach tones appear, bread crusts and hazelnuts. An elegant wine with a long-lasting finish.

**Sauvignon blanc** – very vigorous growth, middle resistant to chills, middle yields, middle late-mature. Necessitates excellent locations, suitable for stony or poor soils. On loamy soils it grows excessively and thickens the bushes. Then the tones of nettle, grass and green paprika prevail. The wines from warmer locations are ripening better and the wine takes on blackcurrant, gooseberry, lemon zest and kiwi and tropical fruit tones.

**Chardonnay** – medium growth, good frost-resistance, middle to good yield, middle to late maturing. Needs excellent locations and ripening of the grapes to the cat-

egory of special attributes. The variety is suitable for loamy and limestone soils. In colder climate zones the aroma is one of green apples with acacia. In mature wines the scent evokes honey and hazelnuts, on gravel soil it takes on a mineral, siliceous character. In warmer climate zones it has tones of mango, cream, banana, pineapple, melon. Wines are always very full, with bold acidity when young.

**Rulandské šedé (Pinot Gris)** – medium growth, good frost-resistance, medium yield, middle maturing, earlier than Pinot Blanc. Suitable for loamy soils, tolerates sandy soil. Needs medium good locations, where the acidity level is maintained, whereas on warmer location it is lost very quickly. Wine has a honeyed sweetish scent with smooth orange. It is very full, with higher levels of glycerol and alcohol and a long finish.

**Tramín červený (Traminer)** – medium to vigorous growth, good resistance to winter chills, medium late-mature. Needs good locations, loamy structured soils, low content of lime. Golden-yellow in colour, with honey and raisin tones in the scent along with hints of aromatic substances of tea-rose and through bottle aging even orange, cinnamon and honeysuckle. Wine is very full-bodied with higher viscosity, lower acidity level and often with residual sugar.

**Neuburské (Neuburger)** – usually vigorous growth, lower resistance to frost and good to various yield. The variety is suitable for medium good locations, it can be planted out in drier platforms, convenient for loess soils, medium early-mature. Younger wines have the aroma of walnuts, during maturing the viscosity increases and a scent of cream and supple fullness can be detected.

**Muškát Moravský (Muscat of Moravia)**– vigorous growth, medium to good frost-resistance, good yield, early maturity. Provided the class of the location may be lower, acidity levels will be maintained better. Loamy and sand loamy soils are also appropriate. The variety was cultivated in the Vine Research Centre in Polešovice. Wines are green-yellow in colour with floral muscat aroma and pleasant light and balanced character, if they do not lose their acid level and do not become drab.

**Veltlínské červené rané (Frühroter Veltliner)** – the bushes grow vigorously, medium frost – resistance, medium yield. The bunch is large with pink medium berries. It may be used for consumption grape. The berries mature early or middle early. Because of its vigorous growth it is suitable for poorer, gravel soils or platforms. The variety is not demanding on the location. The colour of wine is golden-yellow, it is well-balanced and has a neutral scent, with no personality. It is sometimes used in cuvées as an ingredient that softens the acidity and quickens the maturing.

**Pálava** – this variety was developed at the Vine Research Centre in Perná by crossing Red Traminer and Müller Thurgau. It is of medium growth and medium frost-resistance. It is suitable for the poorer soils, where it does not suffer so much from oidium (*Uncinula necator*).



It needs good locations. The yields are very good. Wines are golden-yellow and their Taminer aroma of roses is combined with the tones of vanilla. Full and elegant wine with low acidity level, supple with lasting finish.

**Sylvánské zelené (Sylvaner)** – middle vigorous or weaker growth, medium frost-resistance, high yield. It is suitable for fertile, deep soils and it needs good locations in order to reduce the acidity level already on the bushes. Green-yellow in colour, neutral to spicy scent. Young wine is less harmonic, even rough. It rapidly ripens to supple fullness and roundness, with pleasant effect of integrity of the wine.

**Irsai Oliver** – medium to vigorous growth, medium frost-resistance, ripen early. The grapes may be used as table grapes. The berries have a pleasant golden-yellow colour and muscat aroma and taste, which is transferred to wine, too. Wine has a light green-yellow colour, with muscat aroma and spicy taste. It is a light wine with a short finish.

**Muskát Ottonel (Muscat Ottonel)** – The growth of bushes is medium to weak, yield is unstable, good frost-resistance. The variety necessitates fertile soil and it is sensitive to the amount of lime in the soil and cupric spray substances. During inclement weather during flowering colour may occur. Wines are light yellow in colour, with pleasant and clear muscat aroma. The taste is medium-bodied, sometimes with lower acidity level.

**Aurelius** – this cultivar was developed in the Vine Research Centre of Perná by crossing of Neuburger and Rheinriesling. It is of medium or vigorous growth, frost-resistance is medium. It is suitable for both fertile and poor soils, just slightly humid, so that the berries do not suffer from decay. It requires good locations, ripens medium quickly and the grapes have regularly good sugar level. Wines are green-yellow, the aroma is very similar to Rheinriesling, but more intense with tones of quince and lime. The taste is harmonic, moderately spicy and full.

### **The most important blue must varieties based on prevalence**

**Svatovavřínecké (Saint Laurent)** – It grows vigorously and has a good frost-resistance. The yield is sometimes unstable. The inner berries ripen slower and contain more acids, because the grapes are thick. Therefore it is important to plant this variety onto excellent locations and drier soils, where it does not suffer from decay of thick grapes. The wines are of dark garnet colour with violet reflections. The harsh expression of tannins and acids is accompanied by the aroma of sour cherries and sometimes blackcurrant. The wine has medium to full body, during bottle-aging the character changes to crisp and then velvety smoothness.

**Frankovka (Frankonia)** – It grows vigorously and the resistance to frosts is good. Yield is regular and good. The grapes mature late, therefore it needs first-class

locations and warm soils. It is also suitable for gravel soils. Wines have a dark garnet colour. In young wines the high acidity dominates over other characteristics. After maturing the hard tones soften and pleasant spiciness combined with fruitiness presents with a mellow expression of extractive wine, which may, in the best vintages, result in surprising smoothness.

**Zweigeltrebe** – The bushes grow medium vigorously and the frost-resistance is good. Yield is high and regular. The resistance to fungal diseases is good. It needs fertile



soil and, in order to get well ripened grapes, not only good location, but also pruning. The wine has a garnet colour with the aroma of sour cherries and berry fruits. In the fruit-spicy taste the tannins are more bold. That may be softened by controlled harvest, which makes the wine smooth.

**Rulandské modré (Pinot Noir)** – The bushes are of medium vigorous growth and have a good frost-resistance. The yields are medium high and regular. The grapes ripen medium-late and are small and thick, prone to rot. It necessitates excellent locations and loamy soil. The colour of the wine is pale ruby to brick-red with a golden rim, where wine touches the glass. In young wines the tones of strawberries, brambles and cherries prevail. After maturing the aroma of plum jam appears with a hint of leather, smoke or rotting leaves. Both acids and tannins are very smooth and the taste is full with a long finish.

**Modrý Portugal (Blauer Portugieser)** – Variety with vigorous growth has a low frost-resistance. The bushes recover quickly from frost damage. Yield is high and regular. The resistance to fungal diseases is lower, especially to oidium (*Uncinula necator*). The Blauer Portugieser is suitable also for poorer and drier soils. The grapes ripen medium-early, the locations can be medium-good. Wines have a ruby colour with a youthful scent of flowers. It is low in tannins, light and perfectly drinkable.



**André** – Is of a weaker growth and has a good frost-resistance. The grapes ripen very late, therefore it needs excellent locations with deep loamy soils and by an excessive harvest also pruning. This variety was bred at the Vine Research Centre in velké Pavlovice by crossing Frankovke (Frankonia) and Svatovavřinecké (Saint Laurent). The wine has a dark garnet colour with ripe bramble aroma. In young wines it is underlined by firm tannins and acidity. In bottle-aged wine the fullness exceeds with ample fruitiness and red-wine characteristics.

tobacco, coffee or truffles appears. The mature wine has a supple smoothness and a very pleasant long finish.

**Dornfelder** – It grows vigorously and is medium resistant to chills. The yield is high and the grapes are large and long. The variety needs pruning. It necessitates deep, fertile soils and good locations. This wine has a dark garnet colour, sometimes with garnet reflections. The aroma is boldly fruity with primary tones of light red wine from northern vineyards. The taste is full bodied with a long finish and smoothness.



**Cabernet Sauvignon** – The growth is vigorous and frost-resistance very good. Yield is regular and good. The grapes ripen very late, so they need the best locations. In cold vintages it does not ripen. The wine has a garnet colour, sometimes with garnet reflections. The typical aroma of blackcurrant is accompanied, depending on the maturity, by the scent of cherries, brambles, tobacco, cedar wood or jam. The wine is opulent, with a very long finish. The aggressive tannins of young wines transforms through bottle-aging to velvet.

**Cabernet Moravia** – The bushes grow vigorously, the frost-resistance is good and the ripening of the grapes is very late. It necessitates excellent locations and pruning. It is not demanding on the soil conditions. This variety was developed by L. Glos in Moravská Nová Ves by crossing Cabernet Franc and Zweigeltrebe. The wine has a dark garnet colour. The aromatic substances of blackcurrants, typical of the Cabernet varieties, is combined with fruitiness and structured tannins, which need bottle-maturation.

**Merlot** – A variety of vigorous growth with medium good frost-resistance. Yield is good and the late-maturing grapes are prone to decay. The sugar content increases rapidly towards the end of ripening. It needs excellent locations, but it has no demands on the class of the soil. Wine has a dark ruby to garnet colour and it is very attractive for its sweet aroma of black cherries or stewed cherries. During maturing a scent of plums, figs and also

**Neronet** – A teinturier with dark red berry juice. It was developed by Prof. V. Kraus by crossing (Saint Laurent x Blauer Portugieser) x Alibernet. It is of medium growth and frost-resistance, the grapes are sparse and ripen medium-early. Loamy soil and medium good locations are sufficient. Wine is of a very dark red colour with blue reflections. There is a hint of blackcurrant and sour cherries in the aroma. The wine is medium full-bodied and by its addition to red wines the flamboyance and tannic structure will improve.

**Alibernet** – A teinturier with red berry juice. It is of medium growth and frost-resistance. The grapes are sparse with small berries that ripen late. This variety needs good locations and loamy soils. The wine has a dark red colour and the aroma is very similar to Cabernet Sauvignon. It is medium- to full-bodied and represents a bold type of red wine with southern character.

**Rubinet** – a teinturier with very dark red berry juice. It was developed by Prof. V. Kraus by crossing (Revolta x Alibernet) x André. It is of medium growth and frost-resistance. The grapes are sparse and ripen early. The variety is suitably for medium good locations and to loamy soils. The wine is intensely dark black-red and has the aroma of tobacco and Cabernet. It improves the flamboyance, aroma and structure of red cuvées from the traditional blue varieties.



## The process of making white wines

For the designation of a date to harvest the grapes, the process of ripening is monitored by repetitious detection of sugar levels with the use of a field refractometer, the assessment of the content of all acids, measuring the pH of the cider and observing the colour of berries, seeds and peduncle of the grape. The grapes for production of lower-category wines are gathered mechanically by the grape-gatherers, the grapes for quality wines with special attributes are gathered manually into low capacity crates. In order to get very subtle wines, the grapes are squeezed as a whole without crushing in modern pneumatic presses with low pressure. Should the variety aroma be emphasised, the grapes are deseeded in deseed-machines, where the grapes are separated from the stalk and they either stay whole or are crushed. The pulp is put aside for a few hours, so that the aromatic substances are extracted from the skins and the flesh just beneath the skins. To prevent the pulp from oxidising, it is kept cold by “dry ice” immediately upon the process of crushing. Then the pulp is juiced. The newly-gained cider is cooled and filled into rustproof basins, where the decantation takes place. It may be done by sedimentation, when the small parts of skins and pulp sink spontaneously to the bottom of the basin. An addition of bentonite is often used for making the process quicker and to reduce the amount of proteins. After the sediment has settled the pure cider is removed to another basin to ferment. The cider without sediment may ferment spontaneously, or a yeast starter of selected yeasts and nutrients for them may be added, so that fermentation progresses without any risk. The fermentation basins are cooled by cold water or by double-surface condensers, through which the coolant flows. The controlled fermentation proceeds in temperatures 18–20 °C. Young wines remain in the basins for another short period of time and are then tapped according to the requested type of wine, to rustproof tanks or large oak barrels or to little oak barrels – barrique (225 litres).

## The process of making red wines

Red wines are produced from blue grapes. The red pigment is stored in the skins of the blue berries. Just the teinturier varieties also contain pigment in the pulp of berries. The red pigment is released from the skins mainly because of warmth, alcohol and carbon dioxide. After deseeding the blue grapes the pulp is gained, which is a mixture of liquid (cider) and solid material (skins and pulp). The fermenting pulp is called pumace and its fermentation proceeds in open or closed basins. Carbon dioxide, which forms during fermentation causes the solid part of pumace to float and a “pumace hat” appears at the surface. In order to extract the pigment, the hat

must sink under the surface of the water. This is done manually many times a day. In the closed basins, the hat is sunk by a hydraulic machine or by remounted, when the hat is splashed with the fermenting cider, taken from the bottom of the basin. It is also possible to aerate the cider by leaking it to a smaller basin, where the cider for splashing the hat is taken from. In order to produce lighter red wines suitable for early consumption, the white wine is tapped and the pumace is pressed. The wine from pressing usually contains more tannins and is treated separately. Young wine is decanted and is left in a warm environment for the biological degradation of malic acid. This biological process may proceed spontaneously thanks to lactic bacteria in wine, or the lactic bacteria (*Oenococcus oeni*) can be inoculated to the wine, where it dissolves the malic acid to lactic acid and carbon dioxide. After dissolving the malic acid the wine is harmonised. The lighter red wines mature in rustproof basins, bold red wines in large barrels or in the barrique barrels.

## Quality-based wine categorization

According to the Act. No. 321/2004 Coll., the wines are divided into categories according to quality. The principle of this division is the ripeness of the grapes at the time of the harvest, determined by the sugar level and measured in the grades of normalised cider-meter (°NM), which tells the natural sugar level in kilograms in 100 litres of must. If all of the sugar is fermented, the approximate percentage of natural alcohol content may be assumed.

Wine categories according to quality	Minimal must sugar content	Natural alcohol content
<b>Stolní víno – Table wine</b>	11 °NM	6.5 %
<b>Zemské víno – Regional wine</b>	14 °NM	8.3 %
<b>Jakostní víno – Quality wine</b> (varietal or branded)	15 °NM	8.9 %
<b>Quality predicate wine</b> (varietal or branded)		
Kabinetní víno – Kabinett wine	19 °NM	11.3 %
Pozdní sběr – Late Harvest	21 °NM	12.5 %
Výběr z hroznů – Special selection of grapes	24 °NM	14.3 %
Výběr z bobulí – Special selection of berries	27 °NM	16.1 %
Výběr z cibéb – Special selection of raisins	32 °NM	19.0 %
Ledové víno – Ice wine	27 °NM	16.1 %
Slámové víno – Straw wine	27 °NM	16.1 %

Grapes used for quality wines and quality predicate wine must originate from vineyards of the given region and the harvest must not exceed the pre-defined maximum yield per hectare. Quality predicate wine require variety, origin, sugar content and weight verification carried out by inspection on the harvest day. Regional wines may be made not only from registered varieties but also from other varieties specified by the regulation.









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