

THE QUALITY OF THE ARCHIVAL WINES OF THE RIESLING VARIETY

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Abstract

According to the data of the Ministry of Agriculture, Forestry and Food there were 19.129 hectares of vineyards actually cultivated in Slovenia in year 2015. However, there was a significant diversity in representation of grape varieties on this relatively small area, which represents only 2.8 per cent of agricultural land. Such diversity in combination with various technological approaches in the care of wine enables us to obtain a wide variety of different wines. We have a good experience with the grape variety Riesling, which is in Slovenia especially present in the Podravje wine region. Riesling variety gives in good harvests a base for the best wines, for prolonged maturation of wine, especially in cases of special high-quality wines. This article presents the results of the evaluation of sensory quality of archival wines from Riesling varieties. We established that the wines are still of an excellent quality, despite the age. In our opinion an excellent quality is associated with the fact that more than a half of the estimated sample wines were of a special quality. Archival wines were chemically analyzed for the presence of free and bound sulphur in the wine. We established fairly unequal values, especially regarding the total sulphur content. Nevertheless, the sulphur content was in most of the analyzed samples adequate.

Keywords: Riesling grape variety, quality, archival wine, chemical analysis

Material and methods

The research was carried out in archival wines of the Riesling variety. According to the data of the Grape and Wine Producer Register, the variety is planted on 1,991 ha and takes the leading position in the Slovenian vineyards. This variety is suitable for different styles of wines. In fact, it is especially suitable for wines of special quality. In young quality wines, the colour ranges from yellowish green to golden yellow and gold in special quality wines. In well-managed wines, there is the scent of lemons, which is displayed in certain wines with an enhanced freshness, the aroma of maturing apples, as well as those aromas that remind us of different flowers with milder odour. In mature wines of the Riesling variety, delicate floral and fruity scents change into noble scents that remind us of the smell of dry vegetation, teas, apricots or peaches, in young wines of special quality the smell reminds us of the smell of mandarins and oranges, and in archival wines the smell of honey, nuts and dried figs. The taste, which is neutral but well balanced, gives the impression of lightness, liveliness; however, after a sip it soon disappears. The Riesling is, in good vintages, excellent wine of perfectly balanced taste and as such, it is suitable for long maturation. What is more, in good vintages also its predicates are excellent: late harvest, selections, berry selections, ice wine and dry berry selections.

The study included 25 archival wines of different vintages. At bottling all the wines were evaluated in accordance with the Regulations on the procedure and method of evaluation of must, wine and other products. Based on the decision regarding the evaluation of the wines, it is evident that all the wines were premium quality wines; 16 samples representing wines of special quality, namely late harvest, selection, grape selection, dry berry selection and ice wine. The oldest wine is of the vintage 1988, while the youngest is of the vintage 2006. The wine with the lowest degree of alcohol (9.5% alc/vol) was the Riesling - Ice wine of vintages 1998 and 1999 and the wine with the highest degree of alcohol (15% alc/vol) was the Riesling-premium wine, vintage 2003. Detailed information on the wines used in our research is presented in Table 1.

All the wines were analyzed for the content of free and total sulphur dioxide. Sensory evaluation of the wines was carried out by seven members. The evaluation team was composed of wine producers with basic education in the field of sensory evaluation of wine. We evaluated by the adjusted 20-point Buxbaum's method, with separate estimates for clarity, colour, odour, taste and harmony. The primary purpose of the sensory evaluation was to determine the quality of archival wines.

Table 1: Details of the wines included in the study

Sample number	Variety and quality	Vintage	Alcohol (vol %)	Sweetness level
1	LR – premium wine PDO late harvest	2002	10,5	semi-sweet
2	LR – premium wine PDO	2006	10,5	semi-dry
3	LR – premium wine PDO	2002	12,5	semi-sweet
4	LR – premium wine PDO	2004	11,0	dry
5	LR – premium wine PDO	1988	11,0	semi-dry
6	LR – premium wine PDO	2002	11,5	semi-dry
7	LR – premium wine PDO late harvest	2002	12,0	sweet
8	LR – premium wine PDO selection	2003	11,0	sweet
9	LR – premium wine PDO late harvest	2005	11,0	sweet
10	LR – premium wine PDO ice wine	1998	9,5	sweet
11	LR – premium wine PDO ice wine	1999	9,5	sweet
12	LR – premium wine PDO dry berry selection	2002	10,0	sweet
13	LR – premium wine PDO dry berry selection	2003	10,0	sweet
14	LR – premium wine PDO	2002	12,5	semi-dry
15	LR – premium wine PDO	2003	12,5	semi-dry
16	LR – premium wine PDO	2003	15,0	semi-sweet
17	LR – premium wine PDO selection	2003	13,5	sweet
18	LR – premium wine PDO selection	1992	10,0	sweet
19	LR – premium wine PDO berry selection	2002	12,5	sweet
20	LR – premium wine PDO late harvest	2006	11,5	sweet
21	LR – premium wine PDO	1993	13,0	semi-sweet
22	LR – premium wine PDO selection	1997	10,0	sweet
23	LR – premium wine PDO selection	2002	12,0	sweet
24	LR – premium wine PDO ice wine	2002	13,5	sweet
25	LR – premium wine PDO dry berry selection	2003	11,0	sweet

Source: Tadina, 2011: p. 24.

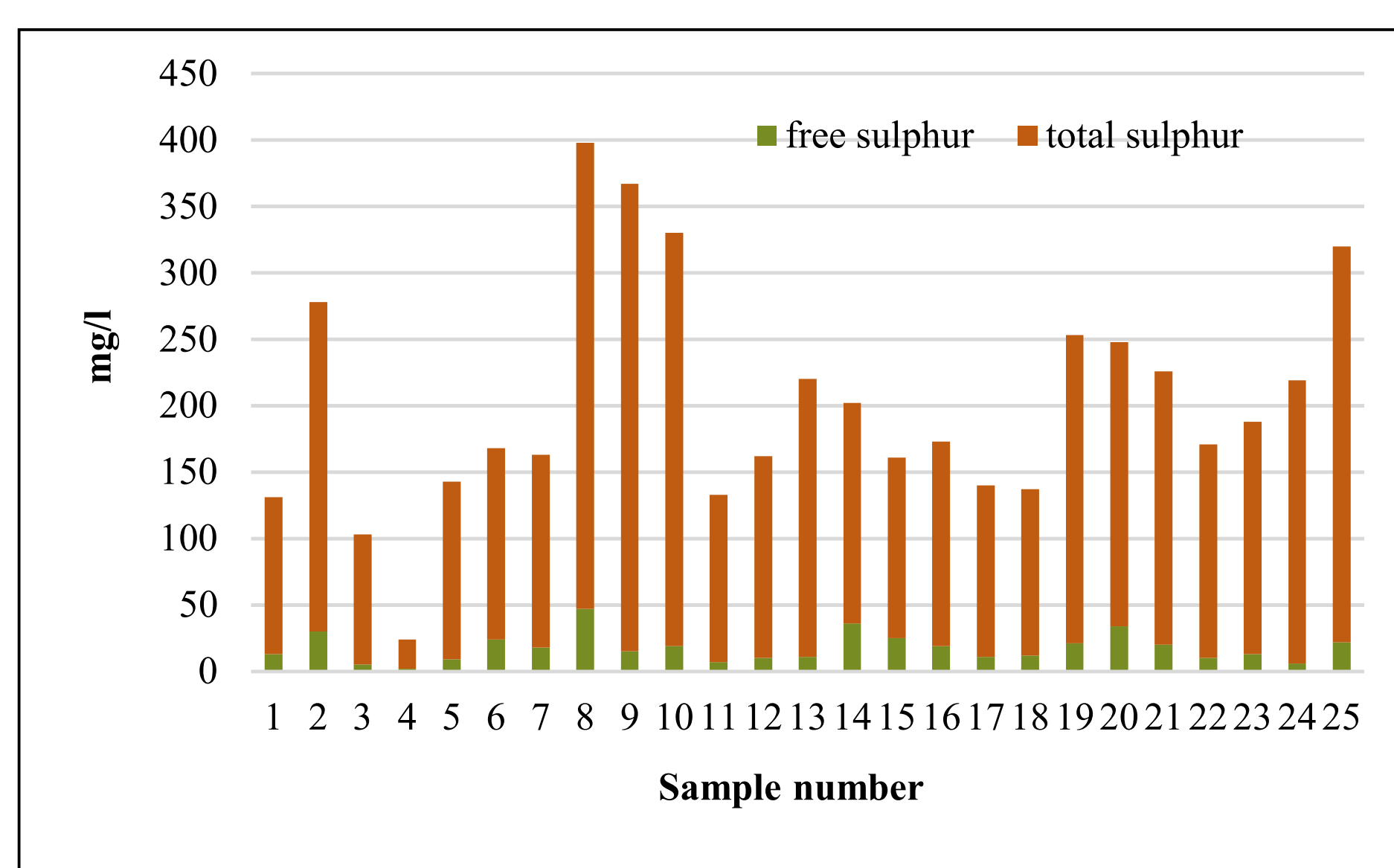


Diagram 1: The content of free and total sulphur

Results and discussion

The results of the chemical analysis of the 25 samples of wines are cited in Diagram 1. The wines were analyzed for the content of free and total sulphur. According to the professional literature, the level of free sulphur more than 25mg/l is recommended for the stability of white wine. The maximum level of free sulphur is for white wines of superior quality 45 mg/l and for white wines of superior quality of special vintages (late harvest, selection, grape selection, dry berry selection, ice wine) is 50 mg/l. The content of free sulphur was in all the samples within the permissible values, the minimum content of 2 mg/l was found in the sample 4, and the maximum content of 47 mg/l was determined in the sample 8. What is more, in more than a half of the samples the determined content of free sulphur was below 20 mg/l.

The maximum permissible concentration of total sulphur is determined by The Rules on the conditions of the grapes to be met in order to process them into wine, the permissible technological procedures and oenological means for wine growing as well as the conditions concerning the quality of wine, must and other products marketed, Official Gazette, No. 43/2004. White wine of superior quality with the residual sugar content greater than 7 g/l may contain a maximum of 240 mg/l of the total sulphur, whereas premium wine of late harvest 300 mg/l, premium wine selection 350 mg/l and premium wine grape selection, dry berry selection and ice wine 400 mg/l of the total sulphur. In three samples we established higher total sulphur content than permitted by The Rules. Four samples exceeded the level of 300 mg/l of the total sulphur. The sample 9 stands out the most - premium wine of late harvest, where we found 52 mg/l higher total sulphur content than permitted. Very low total sulphur content was measured in the sample 4, namely 22 mg/l. Sensory analysis was performed in a group of seven assessors. The evaluation was conducted by 20-point Buxbaum's method, taking into account the average ratings, while the lowest and the highest assessments were not taken into account. Diagram 3 presents the average estimates of the sensory analysis of the 25 samples. The lowest assessment was entitled to the sample 11, namely 12 points, as the evaluators observed the wine fault caused by oxidation. The aforementioned sample also had a very low content of free sulphur, namely 7 mg/l, and what is more, a relatively low alcohol content of 9.5% alc/vol. In addition to the sample 11, three other wine samples received a rating of less than 16 points. These are the sample 4 with an average rating of 15.93 and the content of free sulphur 2 mg/l, the sample 5 with an average rating of 15.07 and the content of free sulphur 9 mg/l as well as the sample 7 with an average rating of 15.37 and the content of free sulphur 28 mg/l. The remaining samples were sensory evaluated in the range of 16.6 to 19.93 points.

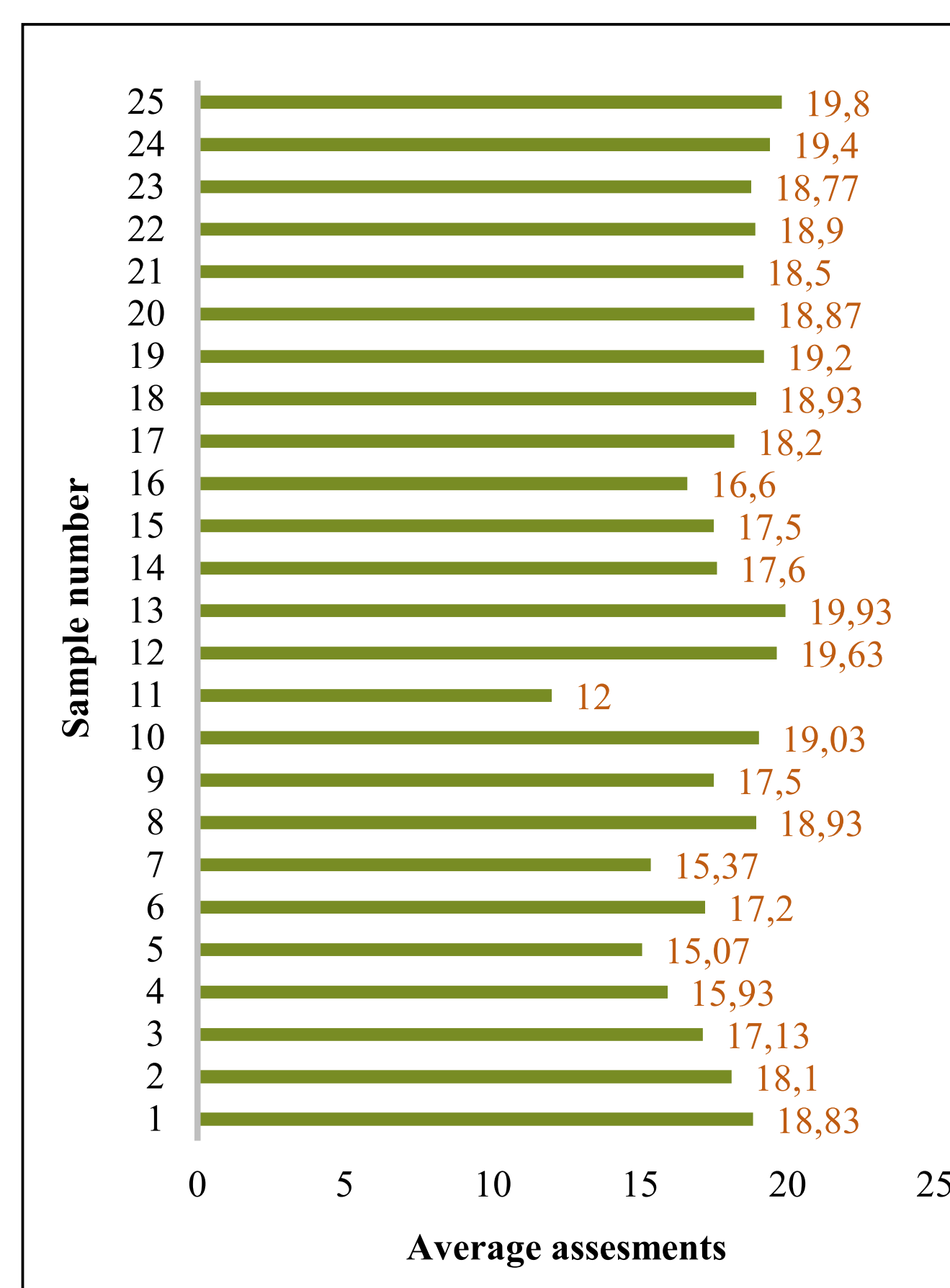


Diagram 2: Average assessments of the sensory analysis

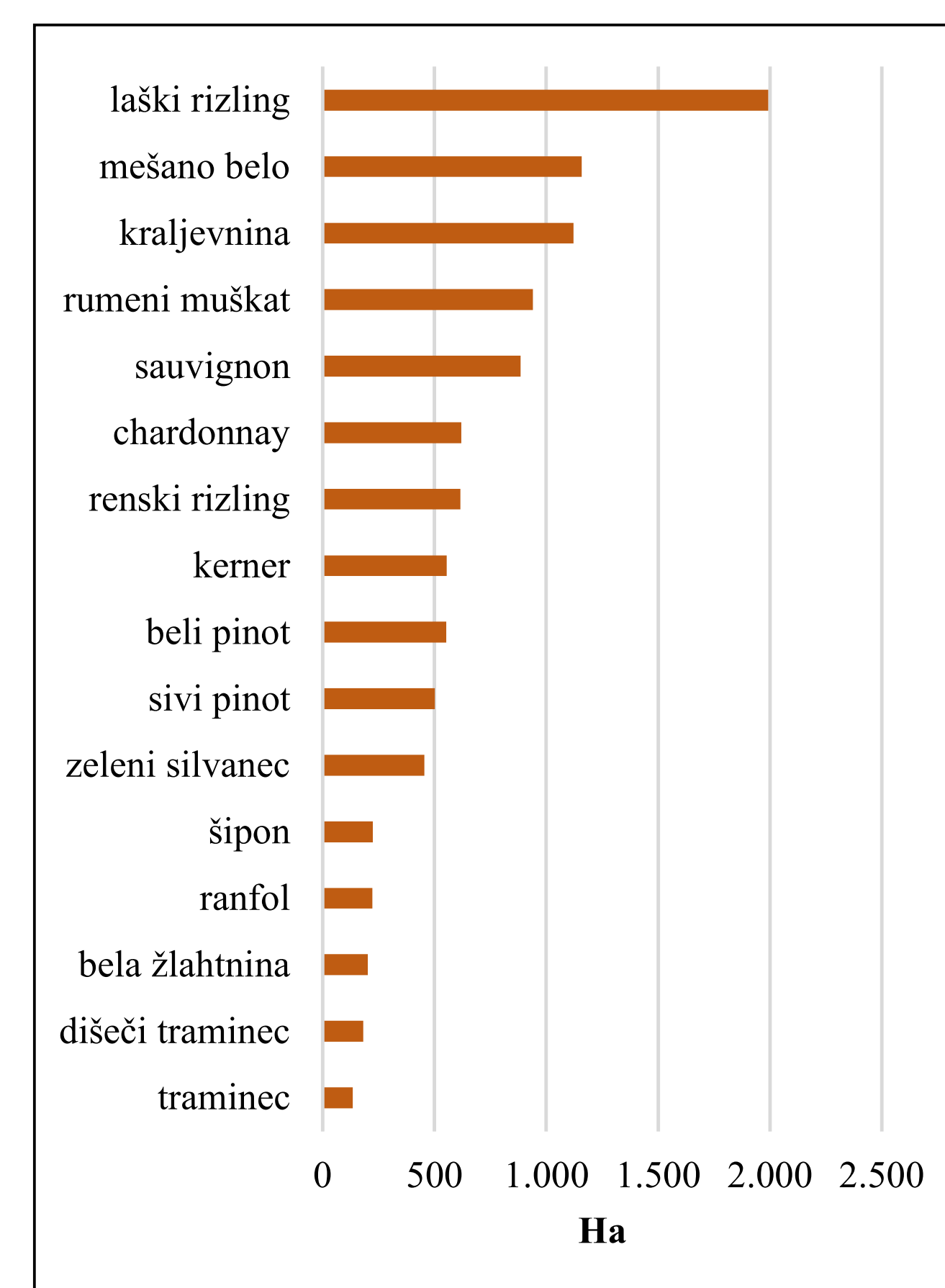


Diagram 3: The representation of white varieties in the Slovenian vineyards (Source: Register of Grape and Wine, 2015)

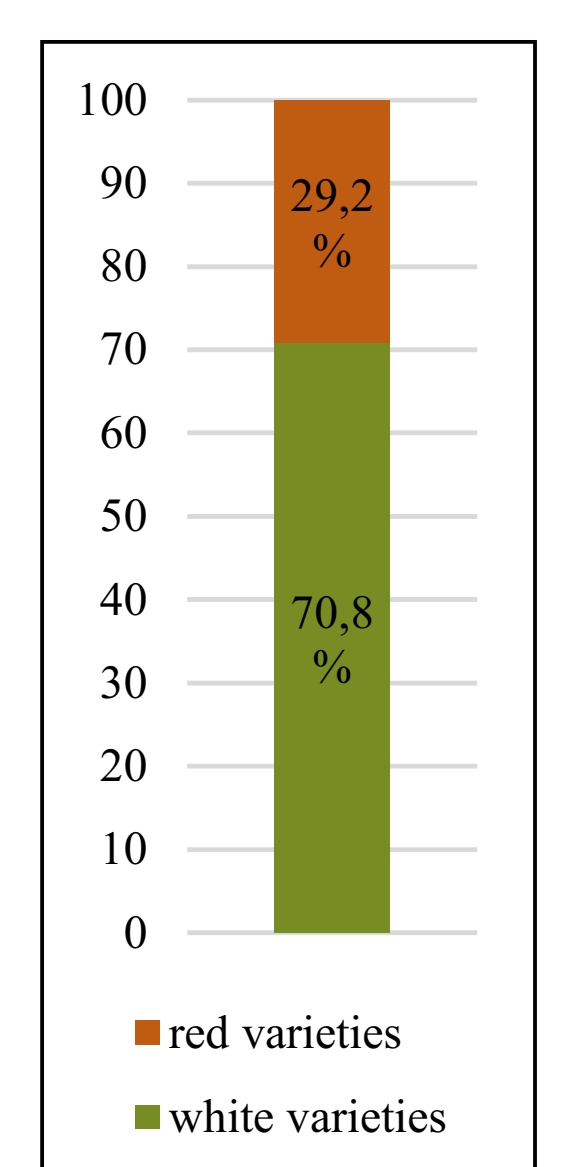


Diagram 4: Percentage of white and red varieties in the Slovenian vineyards

Conclusions

The Riesling variety is dominant in Slovenia. Actually, it allows the production of wines of all quality levels, from regional wines to world-class wines of special quality. The wines of those vintages, when the natural conditions are better, are of a special quality and suitable for prolonged maturation or archiving. Wine varies in the process of maturation, gains in nobleness, culminates in the development and begins the aging process. Many factors have an impact on how long wine retains its nobleness. In the study of the 25 archival wines of the Riesling variety we found out that most of the wines were still of an adequate quality, after more than five years of aging in bottles. The analysis of the total sulphur content indicated the recommended levels in most of the samples. However, the free sulphur content was below 10 mg/l in 28% of the samples, and in one of these samples we identified a wine fault, namely oxidation.