Riesling wines from Ukraine: specifics of the regional wines

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Introduction

Riesling (Rhine Riesling) is an aromatic grape variety with a noticeable acidity. It is suitable for the production of different styles of high quality still and sparkling wines. Being strongly "terroir-expressive" variety Riesling reveals its variable character in wines depending on the region.

The biggest plantations of Riesling are located in Germany. Among the other known Riesling producing countries are Australia, Austria, France and USA. However, little is known about Ukraine, which is on the 6th position worldwide by Riesling vineyards with 2700 ha.

Fig. 1. German wine: Statistics 2018/2019 (https://www.deutscheweine.de).

The current project aimed to discover:

- particularities of Ukrainian Riesling wines;
- how the local climatic conditions and winemaking practices influence the wine composition.

Most of the Riesling vines in Ukraine are cultivated at warmer conditions compared to German regions. Therefore, this project can be useful also for the future strategies of adaptation of German Riesling wines to the global warming and climate changes.

Materials & Methods

16 Riesling wines from Ukraine of 2011-2017 vintages were selected and studied.

1 14 wines were originated from the south of Ukraine, where the main vineyards are located: Odessa, Mykolaiv and Kherson regions. Being on the **46th-47th** parallels of latitude, the mild and warm climate in these regions is influenced by the proximity to the Black Sea.

2 Two other wines were from the smaller Zakarpattia region on the west of Ukraine, near the Carpathian mountains (between **48th and 49th** parallels of latitude).

Results & Discussion

Most of the studied Ukrainian wines were dry with residual sugar < 4 g/L, alcohol content 11-13% v/v, total acidity up to 5-6 g/L and pH level usually between 3.1 and 3.4. Because of the free SO_2 content regulations in Ukraine, these values were relatively low in the studied Riesling wines: often ≤ 10 mg/L, including the recent harvest 2017. Total SO_2 content was usually below 100-120 mg/L.

The varietal aroma composition of some Ukrainian wines of 2016-2017 vintages had higher terpenes content compared to the other studied wines including German Rieslings. The aged samples from 2012-2014 possessed elevated level of vitispirane (up to 65 µg/L) and 1,1,6-trimethyl-1,2-dihydronaphthalene (TDN).

Sensory evaluations showed that German Rieslings in comparison with Ukrainian wines were perceived fresher with more pronounced citrus notes. The Ukrainian wines usually possessed more ripe and developed aromas. The low free SO_2 content had an impact on the sensory evaluation of Ukrainian Riesling wines, especially on the older vintages.

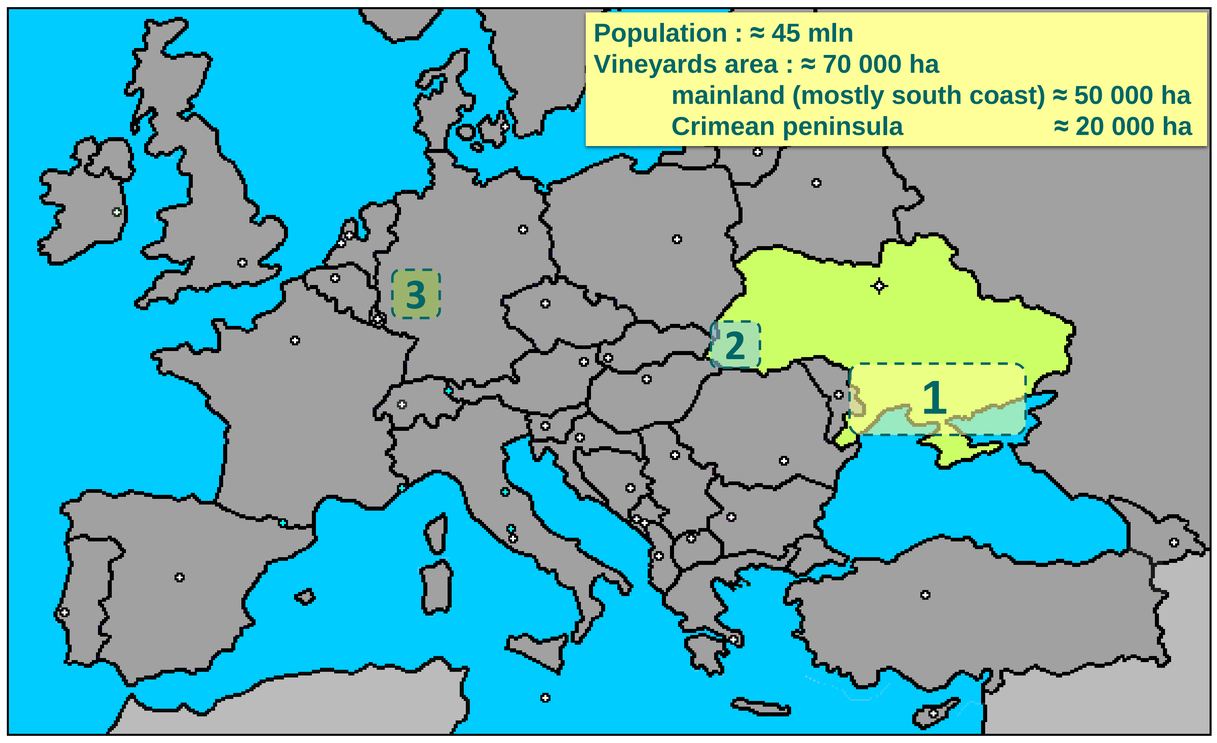

Fig. 2. The map of Europe. Location of the vineyards, areas of origin of the studied Riesling wines: 1. South region; 2. West region; 3. Rheingau region.
http://www.comfcity.in.ua/svyatohliba/wp-content/uploads/sites/12/2015/07/ukraine-1003258.jpg (modified)

Table 1. WINEGRAPE VARIETIES IN UKRAINE, vineyard area in 2010

International	Georgian	Ukrainian	'000 ha
	Rkatsiteli (W)		11,5
Aligote			9,6
Cabernet Sauvignon			4,9
Sauvignon blanc			3,1
Chardonnay			3
Merlot			2,8
Riesling			2,7
		Odessky Cherny (R)	2,4
Isabella			2,4
	Saperavi (R)		1,5
		Sukholimanskiy Bely (W)	1,5
		Bastardo Magarachsky (R)	1,3
Gewurztraminer			1

(W) – white grape variety; (R) – red grape variety.

Anderson K., Aryal N.R. (2013). Which Winegrape Varieties are Grown Where? University of Adelaide Press, The University of Adelaide.

Sensory descriptive analyses of the Riesling wines (2011, 2015-2017 vintages) were carried out in the universities of Odessa (Ukraine) and Geisenheim (Germany) with the local trained panels.

Additionally following analyses of the wines were performed: general wine parameters (FTIR); low volatile sulfur compounds (HS-GC-PFPD); sugars and organic acids (HPLC); fermentation bouquet aroma – esters, higher alcohols and fatty acids (SPME-GC-MS); free and bound terpenes and norisoprenoids (SPME-GC-MS); NMR analysis.

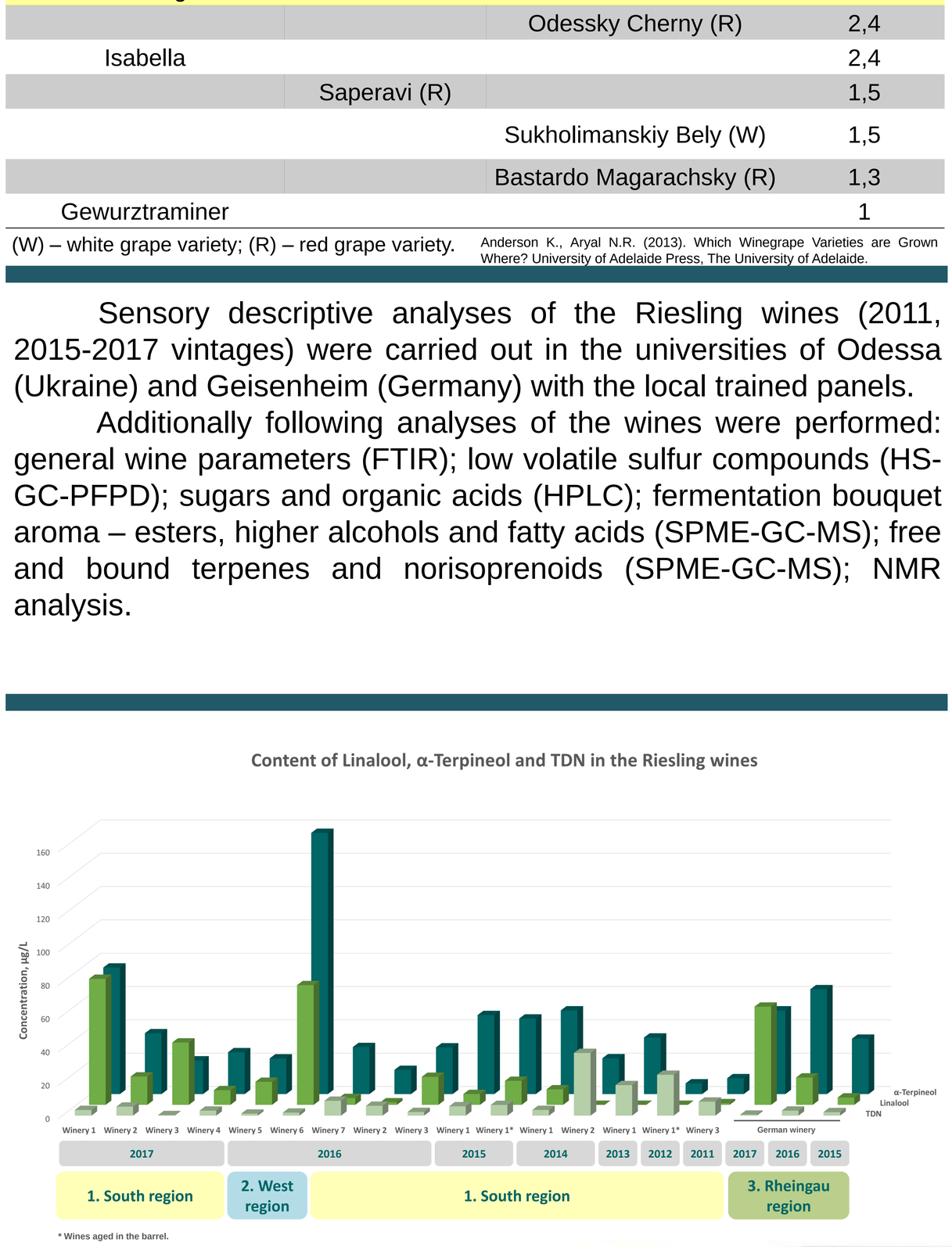

Fig. 3. Content of selected aroma compounds.

www.hs-geisenheim.de