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Consumer preferences in wine: traditional vs fungus-resistant varieties in Switzerland

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A growing interest in sustainable viticulture has led to the development of fungus-resistant grape (FRG) varieties, but their acceptance by consumers remains uncertain. This study explores Swiss consumers' perceptions of FRG wines vs. traditional ones. Through blind tastings in three locations, the study investigates differences in acceptance, consumer segmentation and the influence of information about FRGs on wine perception. The aim is to provide winegrowers with insights to help them adapt their FRG marketing strategies.

Background and aims of the study

The most recent FRG acceptance study in Switzerland, focused solely on expert analyses, was completed over a decade ago[1]. Since then, numerous new grape varieties have been developed and consumer interest in sustainability has increased[2]. Thus, the present study addresses the following research questions: (i) Is there a difference in Swiss consumer acceptance of wines made from FRG varieties versus traditional varieties? (ii) Can consumers be clustered according to their appreciation of FRG wines? (iii) Does providing information about FRG varieties influence how consumers evaluate the wines? The results of this study should help winegrowers increase cultivation and production of FRG wines and help retailers promote their sales.

Experimental design

The wines studied included Souvignier gris, Divona (white FRG varieties), Divico and a blend of various red FRG (VB Cal 1-28, VB Cal 1-36, Divico, Cabaret noir, Regent). Additionally, two benchmark wines were selected for each wine colour to represent the taste preferences of Swiss consumers, including Chasselas and Pinot Noir and Gamay varieties. A total of 5 white and 5 red wines were studied. The wines were chemically and sensorially analysed, before being subjected to a consumer test according to the experimental design shown in Figure 1.

Wine description

Sensory differences were found in colour, vegetal notes, and acidity among the white wines. Chasselas 1 had the strongest vegetal bouquet, while Divona 1 had the weakest. Souvignier gris had the highest acidity. In terms of wine composition, FRG wines had a higher alcohol content (avg. 13.7 %) than Chasselas wines (avg. 12 %). Residual sugar levels varied widely with the highest levels found in Chasselas 1 and Souvignier gris wines. The thiol content (3MH) was measured and found to be the highest in Divona wines and moderate in Souvignier gris. Among the red wines the hue and colour composition differed; traditional wines contained more yellow, FRG wines contained more blue and were much darker. The Divico wines had spicy and animal notes. FRG wines showed higher acidity, greater volume, and stronger tannins. The phenolic content in FRG wines was nearly three times higher than in traditional wines.

Consumer hedonic appreciation

The consumer hedonic appreciations of white and red wines are presented in Figures 2A and B, respectively. Mean values ≥ 5 illustrate that, overall, all the wines were appreciated. The violin diagram represents the distribution of numerical data using density curves. Most consumers liked Chasselas 1 wine, as illustrated by the width of the violin curve peaking around 7. For the other wines,

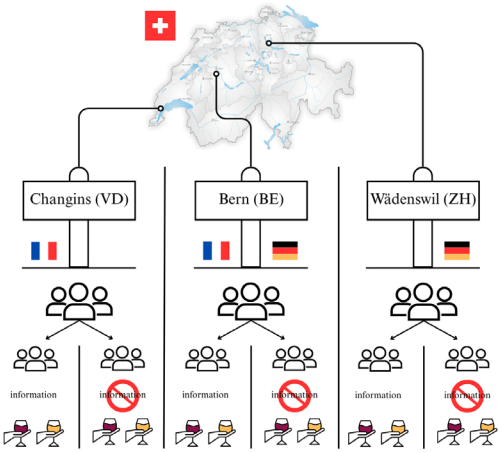


FIGURE 1. Experimental design of the consumer acceptance test.

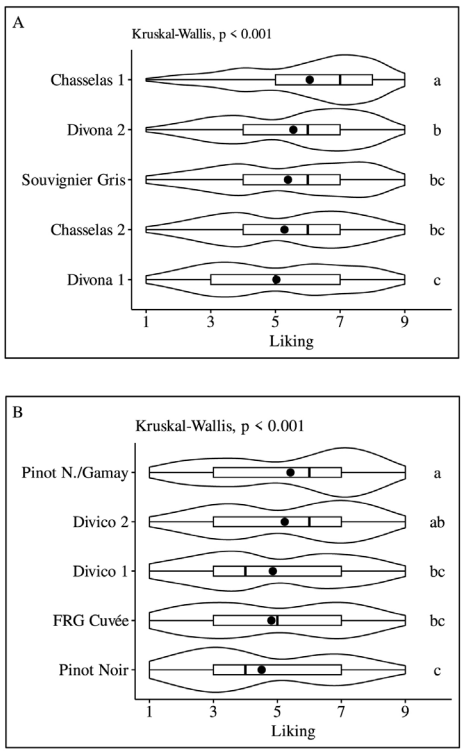


FIGURE 2. Distribution of liking for each wine (A = white wines/B = red wines).

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two peaks are noticeable on the curve, suggesting a divergence in consumer appreciation of these wines, with some enjoying them more than others. This can be seen for both white and red wines.

Consumer clustering

Hierarchical clustering allowed participants to be characterised according to their liking patterns. The ratings for each wine and cluster are shown in Figures 3A and B for white and red wines, respectively.

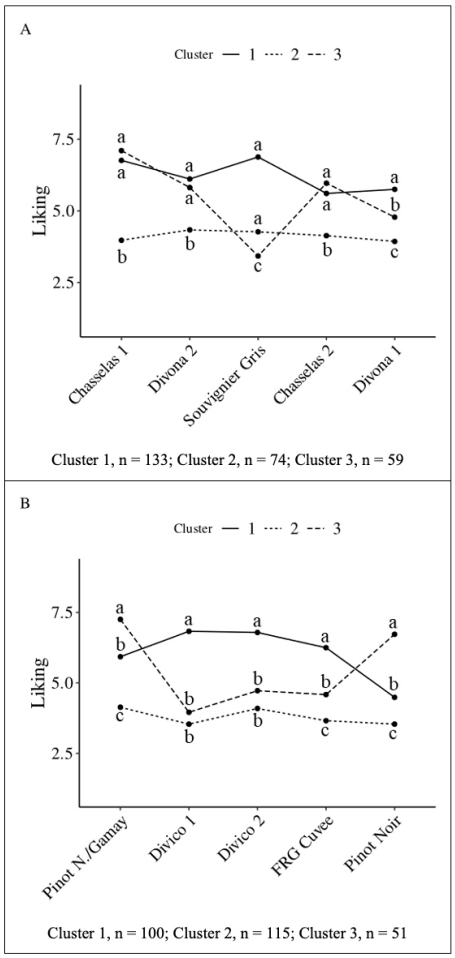


FIGURE 3. Liking for the different preference clusters (A = white wines/B = red wines).

Clusters 1 and 3 rated the white wines more positively than Cluster 2, differing mainly in Souvignier Gris and Divona 1. Cluster 1 includes more consumers who knew the meaning of "FRG" and the FRG variety names, such as Solaris and Regent. They find that FRG varieties have good sensory quality and they like trying new wines when making their purchase decisions. Conversely, Cluster 2 has less wine knowledge, spends less money on wine, and shows little interest in unfamiliar varieties. Finally, Cluster 3 has a higher proportion of consumers who consider FRG varieties to have an inferior sensory quality and who rarely buy wine in supermarkets. Clusters 1 and 3 are mainly defined by sensory attributes which can be predetermined by the grape variety, but can also be promoted by the winemaker, such as acidity, vegetal notes or residual sugar. Thus, it is not possible to disentangle whether grape varieties or wine styles were preferred.

Regarding red wines, Cluster 1 preferred wines from FRG grape varieties (Divico and FRG Cuvée). Cluster 3 shows the opposite trend, favouring traditional grapes. Cluster 2 gave lower and more uniform ratings. Cluster 1 mostly includes German-speaking consumers familiar with FRG varieties, who value origin, labels, novelty, and environmental factors. Cluster 2, mostly from Zurich, is unfamiliar with most FRG grapes (except Souvignier Gris) and pays little attention to origin. Cluster 3, mainly French-speaking from Vaud, contains older participants with higher wine knowledge. They prioritise region, producer, and grape variety, but are less concerned about the environment.

Considering the large colour difference between the traditional and FRG varieties, clustering could again be a response to organoleptic attributes and not grape variety itself. As regards red wines, we conclude that cultural influence based on region and language plays a large role in consumer acceptance. The western region of Switzerland can be characterised by a dominant wine tradition and an interest in supporting local producers (OSMV, 2024), which could explain their preference for known varieties and sensory profiles. The German-speaking regions of Switzerland are more open to new and unknown wines. These findings confirm the existence of FRG-friendly consumer segments already observed in the literature[3] [4]. Additionally, it is known that beyond traditional wine-drinking consumer groups, there is also a group of young, curious, and environmentally aware consumers who are very open to trying new or FRG wines[5]. This offers marketing opportunities and highlights the importance of tasting to engage consumers.

Influence of Information on Fungus-Resistant Grapes

In order to ascertain the impact of information on the overall liking score of each wine for each tasting location, one group of consumers was provided with information on wine variety and the other was not. For white wines, knowledge of grape variety did not affect liking. By contrast, for red wines, a significant effect was observed in Cluster 1, while no significant effects were found for Cluster 2 and Cluster 3. Within red Cluster 1, consumers who were aware that they were tasting wines made from FRG gave them significantly higher ratings than those who were not informed. In general, consumers familiar with FRG names prior to the blind tasting rated FRG wines as good as or better than traditional varieties, indicating that this prior knowledge may have changed overall preferences. However, the moderate effect of the information on most of consumers surveyed suggests that wine quality is the most important attribute for Swiss consumers.

Conclusions

Differences in consumer acceptance between FRG and traditional wines were due to three main drivers: sensory attributes, cluster identification, and prior knowledge of FRG. For most consumers, taste takes precedence over environmental friendliness, with information on wines made from FRG having little effect. Wine sales of FRG wines should focus on sensory quality and tastings. Thus, direct sales remain essential in promoting new wines. ■

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