Particularities of wines of the Romanian variety *Feteasca neagra*

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Abstract

Feteasca neagra is a Romanian grapevine variety for red wines, cultivated in many vineyards and enjoying a generally good reputation. However, the wines made from this variety have not been very well characterized in the literature until now. Even experienced tasters sometimes identify them rather by exclusion, as "those wines which are not Cabernet Sauvignon, Merlot or Pinot noir". With the help of experts from the Association of Winetasters of Romania (ADAR), 32 wines of *Feteasca neagra* obtained in various viticultural centers of Romania were subjected to sensorial analysis in an effort aimed to identify the specific features which single out a *Feteasca neagra* wine. While the study did indicate certain such characteristics, the overwhelming impression was that of extreme diversity, which may be interpreted in different ways. On one hand, the variety shows great versatility and produces a wide range of good quality wines; on the other hand, a major "re-branding" operation may be required to assert its tipicity and to have a more clear delimitation from other grapevine varieties.

Introduction

Feteasca neagra (also known in Europe as *Schwarze Mädchentraube*) is an old Romanian variety cultivated traditionally mainly in the South of the Moldavia province, but later progressively introduced into other viticultural areas of the country, due to its increasingly recognized potential for quality red wines. Considered by many specialists the Romanian "equivalent" of Cabernet Sauvignon in good years, it does have its drawbacks, being slightly difficult to grow and not so constant in crop quality.

What is interesting about a good wine of Feteasca neagra (denominated as FN from now on here) is that it is so difficult to recognize. Various physico-chemical characteristics, such as the alcoholic strength, color, body and so on, are quite similar to those of other high-quality red varieties. A reputed winetaster confessed that for a long time he used to identify the FN by elimination – that is, after dismissing the possibility of a Cabernet Sauvignon, Merlot or Pinot noir [Stoian, 2001]. In the area of aroma too there are no clear-cut indicators, not even agreement. The same taster mentioned above claimed that FN wines have a discrete, but clear aroma of dried prunes, which a touch of cinnamon after ageing. Other authors [Macici, 1996] point to black currant as an indicator of FN wines – and this would speak for their resemblance to Cabernet Sauvignon wines. So while FN seems to have what it takes to join the club of the great red varieties – it is not clear what differentiates it from them.

This study started from these realities and basically tried to investigate one more time how exactly are perceived the FN wines and what differentiates them from others.

Materials and methods

A number of 32 FN wines of the vintages 1994-2004 obtained in various viticultural centers of Romania were subjected to a complex sensorial analysis. All wines had participated in a national contest held in 2005, and therefore had been evaluated once from a quality

viewpoint. Among them there were 20 dry, 6 half-dry, 3 half-sweet and 3 collection wines. Some physico-chemical parameters of these wines were determined before the sensorial analysis and are presented in Fig. 1 below.

The sensory evaluation was performed by 70 tasters, members of the Association of Authorized Winetasters of Romania (ADAR). The method used was that of the blind tasting, that is for each sample the judges were told only the vintage year. They also knew that all the tasted wines were of the Feteasca neagra variety. The tasters were instructed to use a specially designed winetasting score sheet [Antoce and Namolosanu, 2007], adapted for the evaluation of the perception of the main parameters of a red wine and also adapted to accommodate the most frequent flavours and aromas frequently cited in the descriptions of FN wines. A total of 13 parameters were evaluated: acidity, sweetness, astringency, extract, total aroma intensity, color intensity, color nuance, and 6 aroma fragrances (flower, fruit, vegetal, burned/spicy, complex notes, others). Due to space constraints only the first 6 parameters are discussed in this paper. The first 7 of the named parameters were scored using a continuous scale from 0 to 100; for the 6 aroma fragrances the evaluators had to mark one of 5 boxes arranged on a rising scale from "weak" (1) to "strong" (5). It was not possible to have all the 32 wines tasted by all 70 tasters; but each wine was tasted by at least 54 tasters. A total of 2126 data sets were gathered as a result of the evaluation and subsequently analyzed by usual statistical techniques.

Results and discussion

1. General physico-chemical parameters

Figure 1 provides a general image of the tested wines and their main physico-chemical parameters. Most of the wines had an alcoholic content of 12 to 14% in volumes. The mean acidity value was around 6 g/l expressed in tartaric acid, with a few marked exception going as low as 4 g/l and as high as 8.5 g/l. Most of the wines were dry, but there were also a few with significant residual sugar. The non-reducing extract varied between 22 and 40 g/l.
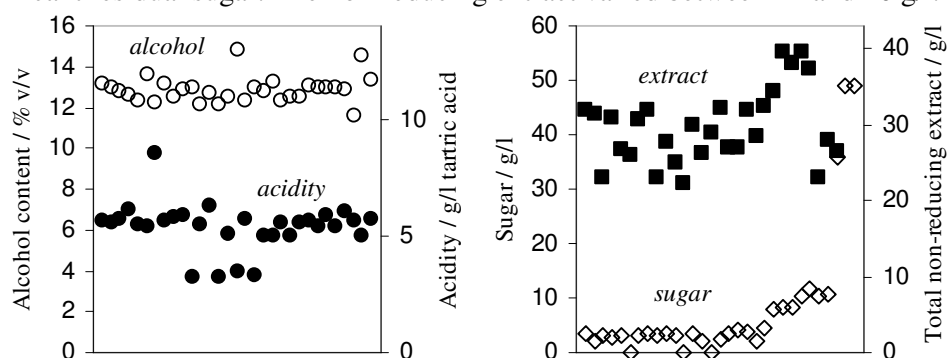

Fig. 1. Physico-chemical parameters of the teste wines. The parameter values of each wine are plotted on the vertical axes; the wines are listed from left to right on the horizontal axis in the tasting order actually employed (sweetest wines were the last).

We can say that the FN wines produced in the Romanian terroirs usually acquire a mean strength of 12.5% alcohol, which is just right to bring out the tipical aroma for a quality red wine. The acidity in some areas is a bit too low and needs to be corrected, but a mean of 6 g/l tartaric acid makes the wine velvety and not too tart. As for sugar, for many years the FN wines belonged to the half-sweet range, due to requests from certain external markets. Recently, however, there have been many voices which criticize the relatively high content of residual sugar, especially when coupled with a decrease in the alcoholic concentration. This is considered obsolete and even bad for the image of Romanian red wines in general and for FN

in particular. Therefore, there is a pressure in favour of dry FN wines, fueled by the hope that this variety, if correctly vinified, could compete with the notorius wines of Cabernet or Merlot varieties. At present most of our FN wines for export are made as dry wines and only when aimed at special markets are they made into half-dry wines. However, the Romanian consumer seems to prefer FN half-dry wines over the dry ones.

2. Perceived characteristics

Some of the chemically measured characteristics of FN wines were also assessed by sensory analysis and ranked using a scale from 0 to 100 points, in order to see how are they perceived when interacting to each other in the complex matrix of the wine. The results are presented comparatively below.

2.1. Acidity

The average grades granted by the judges for the acidity of the 32 wines are presented in Fig. 2, together with the standard deviations. It may be interesting to note that the tasters correctly perceived the increased acidity of wine no. 7; this is the wine corresponding to the highest point in the acidity graph given in Fig. 1. With this exception, all the other wines received average marks which indicate rather low acidity values – around 30 on a scale of 100. The fact that the winetasters were able to identify the sample with the highest chemically determined acidity (of 8.5 g/l tartaric acid)) means that the perception of acidity is not masked by any other characteristic in dry FN wines. Only the sweetness is supposed to lower the perception of acidity, but this fact was not observed in our study, due to the fact that the only three wines that are half-dry (FN30 to FN32, 36-49 g/l sugar) also had low acidities (5.0-5.7 g/l tartaric acid) and were perceived as such.
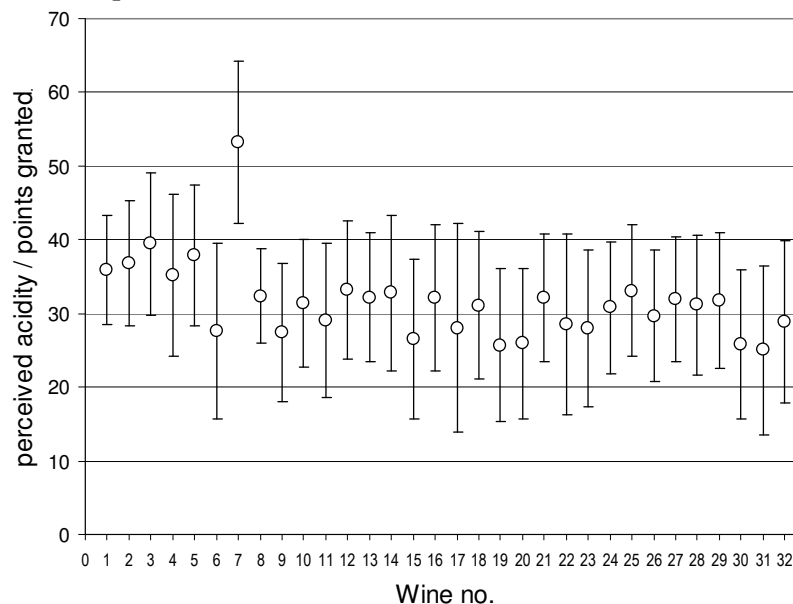

Fig. 2. The perceived acidity of the 32 wines tested.

2.2. Sweetness

Figure 3 presents the average grades (and standard deviations) granted by judges when asked how sweet do they find the wines, again on a 100 points scale. The last 3 wines, which were the sweetest – as shown already in Fig. 1 – were also correctly discerned by the tasters. We can observe from the plot that for the dry wines the perception of sweetness depended on the fluctuation of the acidity. However, starting with the half-dry wines, we can observe the

formation of distinct groups, well correlated with the sugar amount of the wines. There is the group FN23-FN25 with 8.0 to 8.34 g/l sugar, then the group FN26-FN29 with 10.2-11.6 g/l sugar, the wine FN30 with 36 g/l sugar and the group FN31-32 with 49 g/l sugar. This good correlation between the sugar content and the perception of sweetnes in all these wines is of course also due to the relative little variation in acidity (5.4-6.0 g/l).
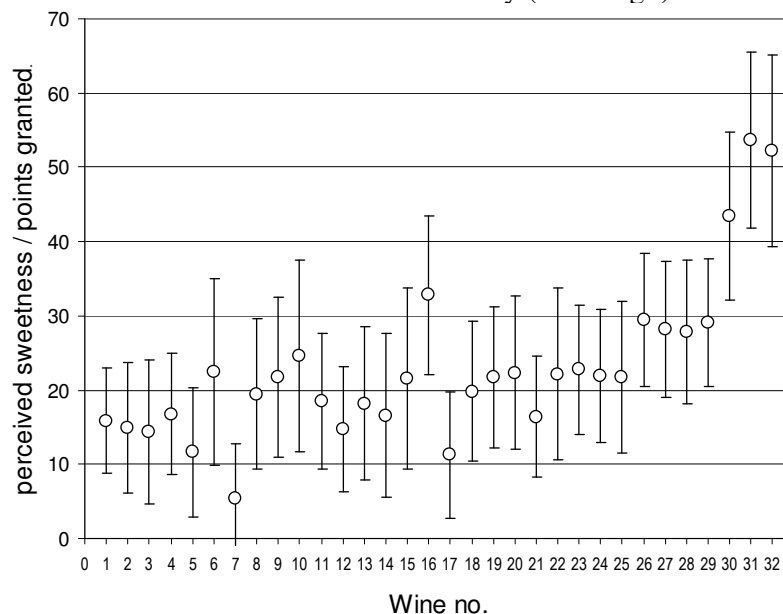

Fig. 3. The perceived sweetness of the 32 wines tested.

2.3. Astringency

The astringency is a sensory parameter that cannot be strictly measured and was determined in this study only by sensory means. The astringency is, in most cases, correlated with the extractivity of a wine, but it also depends on the quality of the tannins extracted from grapes or from barrels, and to the degree of tannin polymerization which increases with the ageing of wine.
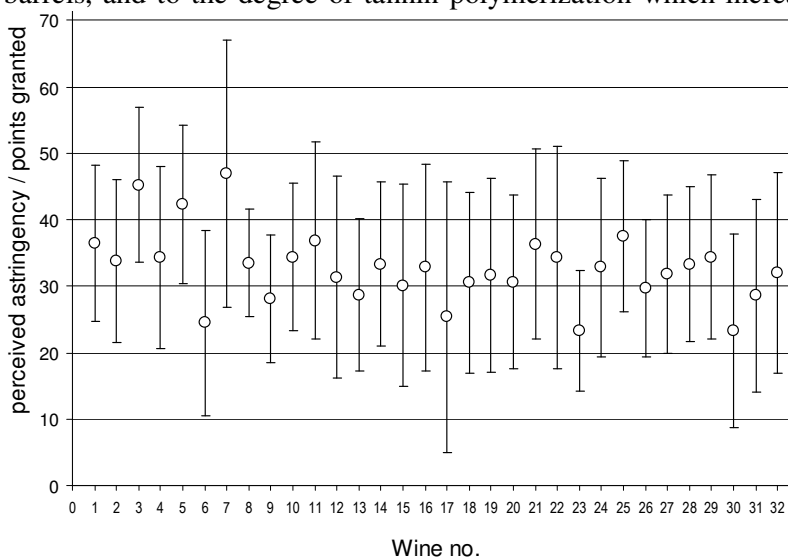

Fig. 4. The perceived astringency of the 32 wines tested.

As seen in Fig. 4, again the wine FN7 stands out, as its high acidity and relatively high extractivity (30 g/l) make the perception of astringency more intense. The lowest astringency

was observed for the oldest wine presented in winetasting, FN23, which is a 1994 vintage wine.

2.4. Extract (dry content)

The least correlated results between chemical and sensory analysis were those obtained for the extractivity of wines. It seems that the perception of the body and mouthfeel depends on many other parameters and not only on the substances which form the chemically analyzed dry-content. Many contradictions were noticed between the measured extract and its perception. For instance, the wine FN3, which seemed to be very well appreciated as a high-bodied wine, has in fact a dry-content of only 23 g/l, and no other outstanding chemical parameter, being altogether a well-balanced

Fig. 5. The perceived extract of the 32 wines

wine. Low values for mouthfeel were reported for FN7, FN12 and FN17. While FN12 is correctly evaluated as light-bodied – the measured dry content being 22.1 g/l – FN 7 and FN17 have dry contents above 30 g/l. FN7 may have been perceived as a light-bodied wine because of its high acidity (8.5 g/l tartaric acid), but no such explanation can be found for FN17, which seems to be well-balanced, with its 12.3% alcohol, 2.5 g/l sugar, 5.7 g/l tartaric acid and 32.1 g/l dry content – yet is perceived as very light-bodied.
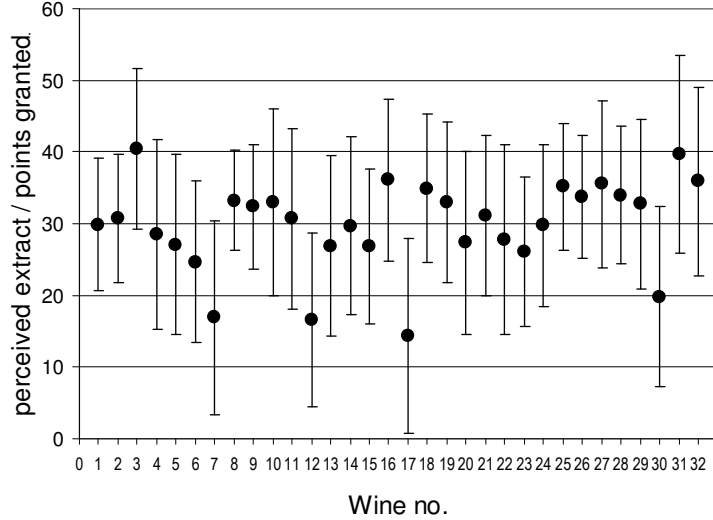
2.5. Colour intensity

Although for the colour intensity evaluation no colour reference was provided, most of the winetasters agreed that Feteasca neagra is generally a wine with a medium colour intensity. This fact is due to its natural lower content of anthocyanic pigments (from 280 to 350 g/l in the 7-20 Odobesti clone) comparing to the concentrations accumulated by other varieties such as Cabernet Sauvignon or Merlot. Due to their wide cultivation, the colour intensity of these great wines varieties is always in the mind of Romanian tasters and athough no colour intensity reference

Fig. 6. The perceived colour intensity of the 32 wines tested.

was imposed it is only normal that they placed the FN wines on an average of 40 (on a scale of 100 points).
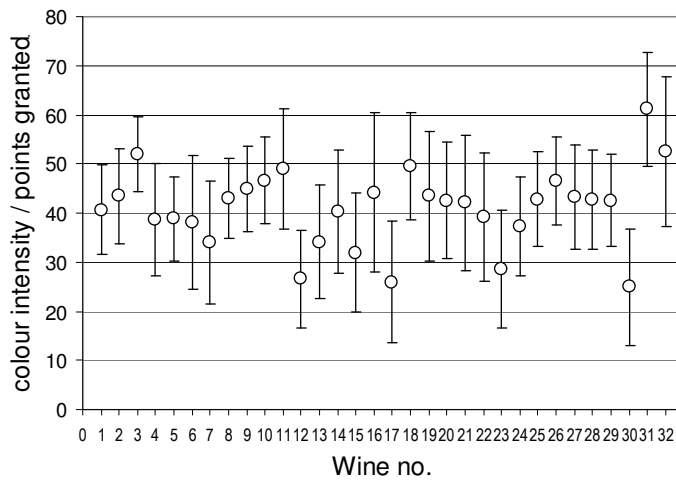
2.6. Aroma intensity

As a tipical grape for red wines, Feteasca neagra does not produce highly aromatic wines. Altough the average aroma intensity measured by judges is around 30 (on a 100 point scale), one can notice that there are some wines which stand out from the crowd, such as FN3 and F18 (both obtained in a very good region for quality red wines called Dealu Mare). Generally, with the exception of FN30, the wines with residual sugar were judged as more aromatic than the dry ones, irrespective of the region of origin.

This fact seems to be in agreement with the consumer (at least Romanian consumer) who tends to favour FN as a half-dry or half-sweet wine. This may be a hint that the recent tendency of vinifying Feteasca neagra mostly to dry wines may not be the best approach in some cases. However, the study needs to be supported with more chemical analysis of the volatiles of the FN wine before recommending changes in technology.
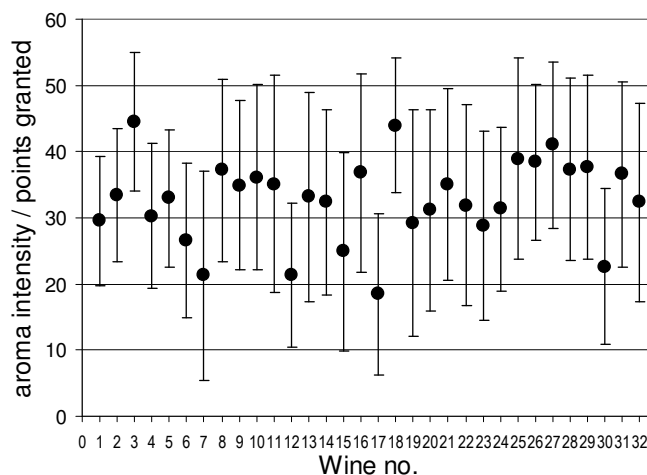

Fig. 7. The perceived aroma intensity of the 32 wines.

Conclusions

Sensory analysis of 32 wines of Feteasca neagra has shown that, in good years and well vinified, the variety displays good potential. Certain common characteristics which differentiate Feteasca neagra from other varieties; however, there was also wide variation which, while indicating great versatility, also seems to point out that Feteasca neagra lacks a strong, characteristic image and therefore is sometimes difficult to differentiate. In order to present Feteasca neagra as a truly valuable Romanian variety details muts be worked out in order to give it a clearer identity.

Literature

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