

Enhancing the traceability of Romanian wines with protected designation of origin, protected geographical indication and varietal wines

Robert HEIZER^{1*}, Mirela HEIZER¹, Dragoş CONSTANTINESCU^{1,2}, Alina DOBREI¹, Alin DOBREI¹

¹ University of Life Sciences "King Mihai I" from Timisoara, Faculty of Engineering and Applied Technologies, Department of Horticulture, e-mail: robert.traian.heizer@gmail.com, mirela.heizer@onvpv.ro, constantinescu.george@gmail.com, ghitaalina@yahoo.com, alin1969tmro@yahoo.com

² National Office of Vine and Wine Products, Bucuresti, Romania, e-mail: constantinescu.george@gmail.com

* Corresponding authors: robert.traian.heizer@gmail.com

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Abstract

One by one, new players in wine production appeared in Romania too, trying to enter in the common European market with the clear aim of selling bottled wine, labeled with details of origin and authenticity. The guarantee of the origin and authenticity of the wines, based on ensuring traceability from the grape to the wine glass, is given by the display of the ONVPV certification mark on the recipients of wines with PDO, GI or varietal wines. National Office of Vine and Wine Products (ONVPV) is a private institution under public law, with legal personality, with attributions in the vine and wine sector. Since the creation of this ONDOV/ ONVPV certification body, between 2002 and 2024, three types of evaluation sheets have improved the method of ensuring the traceability of PDO, PGI and varietal wines. This study presents the evolution of the methods, techniques and tools used in the procedures for the protection and traceability of PGI, PDO and varietal wines, from the establishment of the Certification Body until today.

Keywords: evaluation, protection, authenticity, certification mark, wine faults

Introduction

National Office of Vine and Wine Products (ONVPV) [11] is a private institution under public law, with legal personality, with attributions in the vine and wine sector, financed entirely from its own income, with its headquarters in Bucharest, 49, Soseaua Iancului, sector 2. ONVPV is the technical and scientific organization that manages at the national level, mainly, the Romania's production potential through the Register of Vineyards (RPV), an integral part of the National Vine and Wine Information System (SINVV); manages, controls, registers and ensures the protection of designations of origin, protected geographical indications; manages the production and certifies the attestation of the right to market still and sparkling wines with PDO, still wines with PGI, varietal wines and the traditional terms for the wine products entitled to bear them; manages, PDO, PGI and traditional terms for wine products; authorizes producers of wine grapes intended for the production of PDO wines and/or producers of wine grapes intended for the production of GI or varietal wines, at their request; authorizes producers for the production of PDO wines and/or producers for the production of GI or varietal wines, at their request; controls the quality of wines able of becoming DOP, GI and varietal wines, from a physical-chemical and sensory point of view, within the commissions made up of wine tasters experts, representatives of the ONVPV, the Association of Authorized Tasters from Romania and the association/ organization of producers from the targeted area, for the attestation of the right to sell them with the certification mark of origin and authenticity.[7]

The certification mark to be displayed on the wines entitled to that label is a collective mark [5], intended to avoid any confusion, by its distinctive character unambiguously symbolizing the geographical origin of the wines in question, as being authentic from Romania (the presence of the Romanian tricolor in the mark) and originating from a specific designation of origin or geographical indication (the presence of the alphanumeric series, identifiable also by the QR code which, after reading, returns an unique nominal certificate for every bottled wine). (Figure 1)



Figure 1. The certification mark of origin and authenticity of PDO, PGI and varietal wines (ONVPV, 2021) [15]

The legal protection of geographical indications was first laid down in the Marrakesh Agreement [13], manifested by the Declaration of April 15, 1994, then taken up in Regulation (EU) No 1151/2012 [9], section 83 - 96 and transposed into Romanian law in Law (R) No 84/1998 [8] on trademarks and geographical indications, republished. [2]

The geographical indication presents characteristics, quality, reputation and an indissoluble link with the geographical area of origin of the wine, which includes a combination of factors summarized as succinctly as they are broadly in the concept and definition of terroir. [1]

Terroir means not only perennial geographical territoriality, but also the totality of interconnected biotic, abiotic and human factors. According to RESOLUTION OIV/VITI 333/2010: "Vitivinicultural "terroir" is a concept which refers to an area in which collective knowledge of the interactions between the identifiable physical and biological environment and applied vitivinicultural practices develops, providing distinctive characteristics for the products originating from this area. "Terroir" includes specific soil, topography, climate, landscape characteristics and biodiversity features." [14]

The local know-how, the special technology based on the tradition support nuances and variations, so that, if for PGI it is enough that at least one stage (production of wine grapes) in the wine making process must be located in the area delimited by it, in the case of PDO all stages of production must be carried out in the area. The PDO is a restrictive species of the PGI, designating a much more restricted area, particular for Romania being their overlapping, the PDO being almost entirely within the PGI. In Romania 34 designations of origin and 12 geographical indications are protected at both national and European level.

The Protected Geographical Indication ensures the localization of a wine's origin, just as ensuring and respecting traceability throughout the production chain ensures the authenticity of that wine. Protection needs to be made more effective, with violations punished by enforcing regulations. [10] If those who benefit from PGI protection owe fees to those who provide them PGI protection, those who collect those fees must ensure their protection. [2] In Romania, this protection is ensured through voluntary certification, on the part of wine grape and wine producers, through the system of authorizations and marketing certificates, and on the part of the State, through the technical control apparatus for wine and vine growing, which implements the legislation in force.

Wine aromas define a mixed set of volatile compounds that can stimulate olfactory receptors. To date, more than 1,000 volatile compounds have been found in wines, with a total content that reaches approximately 0.8–1.2 g/L. [6] There are also traces that are almost undetectable with modern analytical tools (sometimes the human nose can detect them and the brain can memorize and identify them). Wines can be blended in various combinations of different grape varieties, selected to optimize quality, taste and richness of aroma.

The key factors determining the development of flavors in wines are: the grapevine (age and varieties), the geological nature of the vineyard soil, the local climate, the terroir ('territoriality' as a combination of some of the above concepts), the vintage (year of harvest), the grapevine cultivation practices (pruning, harvesting and others), the vinification processes, and last but not least: maturation, storage and ageing conditions.

The classification of wine flavors into primary, secondary and tertiary cannot be strictly adhered to, as a flavor can come from different sources. [17] Primary flavors originate in the grape and depend on variety and

terroir. They cover the fruity and floral spectrum and express in particular viticultural practices, soil, microclimate, physical or chemical treatments applied to the vineyard, ranging in their origin up to the ripening of the grapes. These aromas are considered to be of viticultural origin. Secondary flavors may occur either during alcoholic fermentation or during malolactic fermentation. They may vary according to the duration of maceration, fermentation temperature or yeast strain used. They express characteristics of the alcoholic or malolactic fermentation and range in duration of occurrence from the harvesting of the grapes during the must phase up to and including the young wine. These aromas are developed during winemaking. Tertiary aromas occur during oxidation processes in barrel-aged wines (especially in reds) and from the reduction of air-protected wines as the wines mature and age in bottle. The tertiary aromas express the characteristics of ageing and/or maturation in oak barrels. They are the result of the maturation of the wines, they cover the period from young wine to old wine, therefore they come from aging.

Wine faults can be detected by physical-chemical analysis, when the parameters do not comply with the technical data sheet, and by sensory (organoleptic) analysis, when the Taster perceives unpleasant visual, olfactory and/or gustatory sensations. The unpleasant sensation experienced on visual, olfactory and savoring contact with a faulty wine may include elements of physical, chemical, microbial or a combination of these. Wine faults can occur either as a result of the processing of non-conforming wine grapes, improper winemaking practices or poor storage conditions during ripening and aging. [16] There are faults that can be corrected by carefully managed oenological practices and irremediable faults, which can cause irreversible deterioration of the wines. [4] For either of these defects, wines first submitted to the ONVPV's evaluation committees for certification of the right to bear a PGI, PDO or variety denomination are rejected.

This study presents the evolution of the methods, techniques and tools used in the procedures for the protection and traceability of PGI, PDO and varietal wines, from the establishment of the Certification Body until today.

Material and Method

For this study, we used the sensory evaluation sheets of wines since the set-up of the protection and certification body until today (2002 - 2024), the authorization and certification procedures of the ONVPV, the international, European and Romanian legislation on the subject, the specifications for PGI and PDO, the Vineyard Plantations Register - RPV, the National Vine and Wine Information System - SINVV, the ONVPV - B2B application, which represents the digitization of the evaluation sheets used in the ONVPV activity.

The procedures of the ONVPV focus on the system of authorization of plantations producing wine grapes with PGI, PDO or varietal, the authorization of wineries producing wines with PGI, PDO or varietal and the certification of wines for the attesting of the right to be sold with PDO, PGI or varietal.

The following methods were used: the evaluation method using the ONDOV sheet with a 7-point scale, the evaluation method using the OIV sheet for still and effervescent wines with a 100-point scale and the method using the Heizer downgrading due to faults sheet, the last one protected at OSIM by the "Idea's envelope" system [12] in 2021.

The first type of sheet, used between 2002 and 2009 by the National Office of Appellations of Origin for Wines - ONDOV and later, between 2009 and 2015 by the National Office of Vine and Wine Products - ONVPV in the evaluation of wines for their certification with PDO, GI or varietal, used a 7-point scale. After completing the data sheet with his name and the geographical indication of reference for the samples in the panel, the Taster/ Juror had to write down the sample code, the type of wine by color and the traditional mention requested by the producer/bottler.

In the evaluation sheet (Figure 2), the full Controlled Designation of Origin, the denomination and sub-denomination, had to be written, for example Crisana - Diosig. The quality category, which subsequently became a Traditional term after the Romanian adhesion to the European Union, was written on the form in the form: DOC-CMD (for harvesting at full maturity), DOC-CT (for late harvesting), DOC-CIB (for harvesting at the stage of ennobling of the grapes - grapes with noble rot), for example: DOC-CMD Crisana – Diosig. Wine type, by color, should have been written as: VA = white wine, VR = red wine, Vr = rosé wine. Each characteristic (C1, C2, C3 and C4) was rated with points from 1 to 7 (only integers) corresponding to the qualifications on a scale with 7 levels of appreciation. The correspondence between score and rating was as follows: 1 = Outstanding, 2 = Very good, 3 = Good, 4 = Average, 5 = Fair, 6 = Inadequate, 7 = With major faults. The points sum was determined by adding together the points scored for the Visual, Olfactory, Savory and General appreciation. The average score was calculated as a ratio: Sum of points / 4, for the four characteristics and had to be done during the tasting. The final assessment was based on the average score. The wine was accepted if the average score had one of the following values: 1, 2, 3, 4; the wine was rejected if the average score had one of the following values: 5, 6, 7. The Comments section was only filled in for rejected wines. In

Results and Discussion

The vineyards founded through programs using non-reimbursable European funds for the reconversion/restructuring of vineyard plantations, started in 2007, were entering the market one by one and new players in wine production were appearing, with the clear aim of selling bottled wine, labeled with details of origin and authenticity.

The ONDOV Sensory analysis sheet (Figure 2) was used until the number of wines submitted for evaluation started to become more and more substantial and the judging criteria became insufficient to give the applicant a picture that would be useful in deciding whether to submit their wines to local, national or international competitions and contests. This method was very paper- and time-consuming. With more than 50 samples, the evaluation session took about 6 hours. When the sensory evaluation committee was made up of 5 tasters and there were, for example, 40 samples, each taster had to have 40 to 45 sheets (mistakes were made and extra blank sheets were requested), which meant that at least 200 sheets were consumed, which were then centralized by the President of the tasting committee in order to communicate the results of the evaluation. This centralization lasted up to 15 days, including the drafting of the minutes of the meetings, which were countersigned by all the Tasters. (Table 1)

Table 1. Comparison of the effectiveness of the three evaluation sheets

5 applicants/ 5 jurors/ 40 samples				
Parameter	UM	Sheet		
		ONDOV	OIV	HEIZER
Judging time	hours	5	3	1,5
Results transmission	days	15	7	7
Certification of admitted wines	days	10	1	1
Paper consumption during the evaluation	sheets	200	0	0
Paper consumption for sending results	sheets	40	20	20
Accuracy/ Precision	%	50	80	100

It is relevant that the OIV and Heizer forms are the most economical, and the difference between them is the time savings due to the increased accuracy of fault detection.

With the accession to the European Union in 2007 and the adoption of European regulations or the practical transposition of European Commission directives, the common market of which we have become a part, brought the Romanian consumer many more wines from outside its physical borders, putting him in a position to defend his traditions, in the process of modernization. The most accessible way to preserve Romania's position as a wine-growing country (8-th place in the world in terms of surface area [19] and 11-th place in terms of wine production [19]) was to increase the quality of Romanian wine protection through stricter and more technical control.

While the first two years (2015 - 2017) after the introduction of the OIV form were still based on the principle of filling in the form manually, with the same logistical and time-consuming process, in the third part of the year 2017 the ONVPV proceeded to digitize this form and use the B2B-ONVPV application for the evaluation of wines. The time for centralizing and presenting the results to producers was reduced from a minimum of 15 to a maximum of 7 days. In practice, as soon as the wine evaluation session was over, the preliminary results were accessible to the ONVPV, all that remained to be done was to draw up the evaluation reports and send them to the producers who had requested sensory control of the wines. (Figure 4)

Ziua	Seria	Sample	Lot	Vintage	Form	J1	J2	J3	J4	J5	AVG	Rezultat	Actiuni
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Figure 4. Dashboard with the results of using OIV Sensory analysis sheet for PDO still wines with 100 points scale (ONVPV, 2024) [15]

PDO/ PGI are trademark of legal protection of the origin which is awarded by law to wines which have particular characteristics due mainly or exclusively to the area in which they are produced. In Italy, DOCG (Denominazione di Origine Controllata e Garantita), literally translated as "Controlled and Guaranteed

Denomination of Origin” is a much stricter version of the DOC laws, usually putting caps on yields, and requiring a government committee to pass the wine itself via analysis, evaluation, and tasting. In Spain, DOCa stands for Denominación de Origen Calificada (Qualified Denomination of Origin), reserved for wines that have maintained and met a series of quality requirements for a specific period of time (quite long) after acquiring the DO seal. [18]

In Romania, it is not necessary to specify this by adding a particle (letter) to assure the consumer that the designation of origin or geographical indication is guaranteed by the State. By the nature of the protection, control and certification procedures, not only the appellations of origin and geographical indications are guaranteed by the Romanian State, but also the variety denominations appearing on the labels of varietal wines, since the authorization, assessment, certification and technical control of wine-growing and wine-making are carried out without discrimination.

Conclusions

Small local producers are encouraged to form associations in order to benefit from the access to modern technology and to afford to financially support qualified staff in winemaking, to obtain and send to the market wines that are fair, clean and of increasingly high quality, with the protection and guarantee of origin and authenticity thanks to the traceability of their product.

The PDO or GI specifications are so called ”soft law” components. In this sense, we can speak about a voluntary certification system, which includes a certifier - the certification body (ONVPV), a beneficiary of the certification of its products and a non-binding standard (PDO/PGI specification). Wine producers voluntarily and without any constraint submit to the rules regulated by the specifications, thereby accepting the assumption of control of the product chain by the State.

The guarantee of the origin and authenticity of the wines, based on ensuring traceability from the grape to the wine glass, is given by the display of the ONVPV certification mark on the recipients of wines with PDO, GI or varietal wines.

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