

ROMANIAN VINEYARD AREAS AND THE EVOLUTION OF WINES WITH TRACEABILITY IN THE PERIOD 2007-2022, USING EUROPEAN RESTRUCTURING/RECONVERSION FUNDS

Dorin Ștefan DUȘA^{1,3}, Robert Traian HEIZER², Mirela Gabriela HEIZER³,
Sabin Ioan BANIȚĂ^{1,4}, Anamaria CĂLUGĂR¹, Dragoș George CONSTANTINESCU^{2,3},
Alin DOBREI², Claudiu Ioan BUNEA¹

¹University of Agricultural Sciences and Veterinary Medicine Cluj-Napoca, Department of Viticulture and Oenology, Institute for Advanced Horticultural Research in Transylvania, Faculty of Horticulture and Rural Development Affairs, 3-5 Manastur Street, 400372, Cluj-Napoca, Romania

²University of Life Sciences "King Mihai I" from Timisoara, 119 Calea Aradului, 300645, Timisoara, Romania

³National Office of Vine and Wine Products, 49 Soseaua Iancului, District 2, Bucharest, Romania

⁴S.E.R.V.E. Winery, 107125 Ceptura de Jos, Prahova, Romania

Corresponding author email: mirela.heizer@onvpv.ro

Abstract

This study provides an overview of the substantial changes in the structure of the wine grape assortment in Romania through the use of European funds allocated for vineyards reconversion/restructuring. Between 2007 and 2022, both new international varieties, which previously existed only in ampelographic collections, and old Romanian varieties, which are more adaptable to climate change and are increasingly appreciated by the wine drinking public, were introduced into the Romanian wine assortment. The study presents an update on the evolution of the areas cultivated with the most widespread wine grape varieties destined for wines with protected designation of origin, protected geographical indication and varietally. On this basis, the quality level of the wines obtained during the 15 years studied was analyzed, based on the assessments made by the specialist tasting committees of the governmental Body which, on the basis of the traceability ensured by the producer, guarantees their origin and authenticity.

Key words: assortment, PDO, PGI, tasting, winegrapes.

INTRODUCTION

With Romania's accession to the European Union, structural funds have been accessed to the same extent as in the other Member States, including funds that have enabled the restructuring and/or reconversion of vineyards in order to add value to the Romanian wine sector and bring it into harmony with the European common market.

The specific Romanian legislation has been revised, updated and supplemented, through the provision that allows the annual modification of the support programs for the following year, so that they can be adjusted to take into account any new condition that was not foreseen at the time of their initial presentation (Reg. 555/ 2008). The support for measures to reconversion/restructuring of vineyards was provided from

the state budget through the budget of the Ministry of Agriculture and Rural Development and from the European Union's non-repayable external contribution from the European Agricultural Guarantee Fund (Hot. 578/2014). The beneficiaries of the financial support were producers in the wine sector, private individuals or legal entities operating in the wine sector and their associative forms (Hot. 868/2018). Reconversion/ restructuring programmes are all eligible measures which, by their implementation, lead to an increase in the competitiveness of wine producers by adapting production to market demand. (Ord. 247/2008) Varietal reconversion consists of changing the existing wine grape varieties in the vineyard to qualitatively superior varieties or clones of these varieties in order to adapt production to market requirements (Ord. 247/2008).

Restructuring is the relocation of parcels and consists of planting vineyard parcels located in unfavourable conditions on other sites offering favourable climatic and soil conditions on the same area, or of modernising the vineyard site, through a set of eligible measures leading to increased efficiency and improved quality of wine products (Ord. 247/2008).

In 2014, the specific legislation was supplemented by replanting following compulsory vineyards deforesting for sanitary or phytosanitary reasons by exchanging existing varieties in the crop that have been affected by diseases with the same varieties or with other varieties or clones of these varieties in order to adapt production to market demand. Romania's National Support Program for 2009-2013 reported the total absorption of structural funds for viticulture (Ord. 1763/2014).

Initially legislated until 2019, the support measures for the reconstruction of vineyards in Romania have been extended until 2023 by a new ministerial order (Ord 1508/2018).

The content of any support program is regulated at European level (Reg. 1150/2016). All plans for the reconversion/ restructuring of the Romanian vineyards, carried out using national and European support measures, have benefited from cross-compliance with the specific environmental and climate objectives (Reg. 2289/2021).

This study will show that as a previous research study predicted “from 2013-2016, the planting rate started to decrease” (Antoce & Călugăru, 2017).

Since 2007, immediately after Romania's accession to the European Union, the reconversion/ restructuring of vineyards began, which was also legislated, following the European model.

MATERIALS AND METHODS

In order to characterize the evolution of the area of vineyards in Romania in the period 2007-2022, we have chosen from the list of varieties allowed for the reconversion/ restructuring of vineyards, according to Romanian and European legislation, the grapevine varieties that have had a remarkable evolution: increasing, decreasing or, surprisingly, after a steep upward or downward trend, remained constantly.

The European regulation on the common market policy for the wine sector entered into force on 1 August 2008, so in this study 2007 as chosen as a starting point for comparison. (Reg. 1237/2007).

The period analysed in this study was 2007-2022. All the vineyard areas in this study were authorised by the National Office of Vine and Wine Products, in each year of those studied, for the production of wines with a controlled designation of origin, geographical indication or variety denomination, ensuring their traceability.

The data, collected from the National Office of Vine and Wine Products, from the digital database called National Register for Vine Plantations, have been statistically processed and interpreted.

RESULTS AND DISCUSSIONS

The reconversion/ restructuring programmes for vineyards that have not reached the end of their production cycle have also brought major changes for Romania, both in the wine assortment and in the more judicious location of vineyards, with their migration from the lowlands to the hills where possible. Between 2007-2022 with the support of European funds, the area of Romanian vineyards increased from 78812.9 ha to 83183.8 ha, in an up-and-down manner (Figure 1).

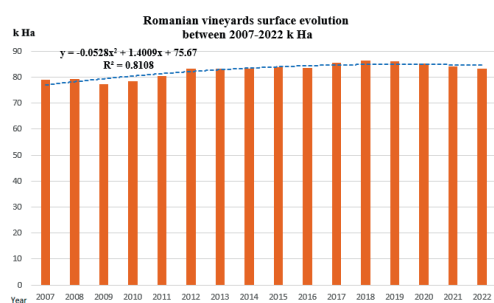


Figure 1. Vineyards surface evolution 2007-2022 (kHa)

Most of the areas planted to certain international wine grape varieties have decreased over the 16 years analysed in this study (2007-2022). 'Aligoté' had a very significant decrease ($R^2 = 0.9344$) from 7727.55 to 5093 ha (Figure 2).

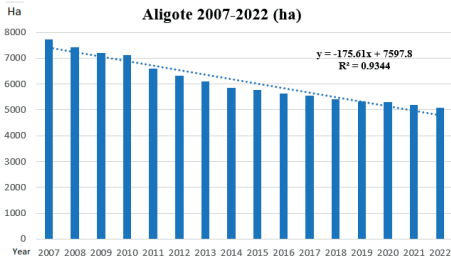


Figure 2. 'Aligote' surface decline 2007-2022

'Sangiovese' decreased significantly from 105.59 to 75.69 ha ($R^2 = 0.8249$) (Figure 3).

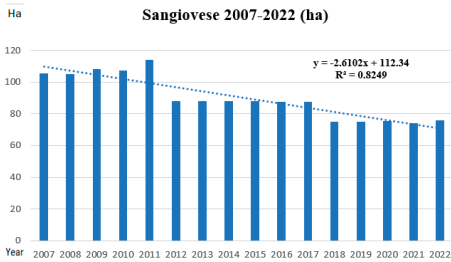


Figure 3. 'Sangiovese' surface decline 2007-2022

'Portugais bleu' decreased significantly from 409.96 to 28.87 ha ($R^2 = 0.8103$) (Figure 4).

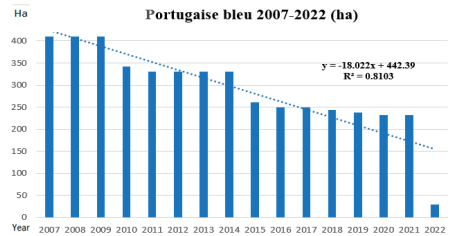


Figure 4. 'Portugais bleu' surface decline 2007-2022

'Zweigelt' decreased after 4 years after the reconversion start, significantly ($R^2 = 0.7739$), from 109.95 to 75.48 ha (Figure 5).

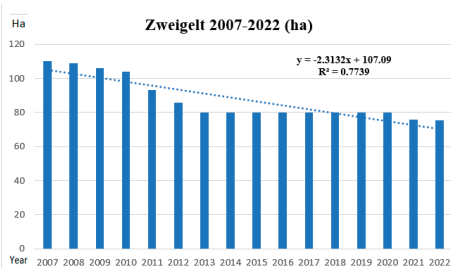


Figure 5. 'Zweigelt' surface decline 2007-2022

'Riesling italian' had a significant decrease ($R^2 = 0.7569$), from 8354.87 to 6861 ha (Figure 6).

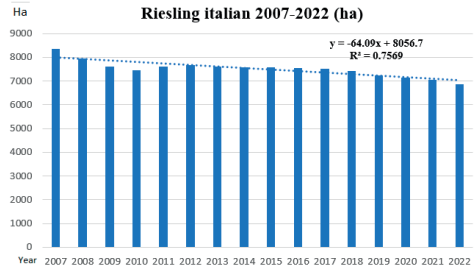


Figure 6. 'Riesling italian' surface decline 2007-2022

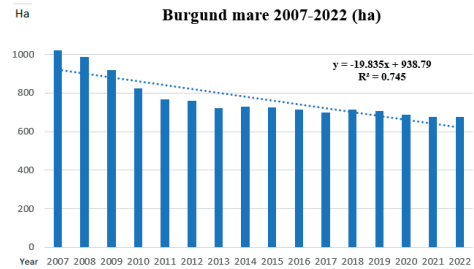


Figure 7. 'Burgund mare' surface decline 2007-2022

'Burgund mare', from 1020.09 to 676.3 ha, had a significant decrease too ($R^2 = 0.745$) (Figure 7). 'Merlot' decreased from 11472.65 to 10973 ha) having very large and frequent fluctuations ($R^2 = 0.5321$) (Figure 8).

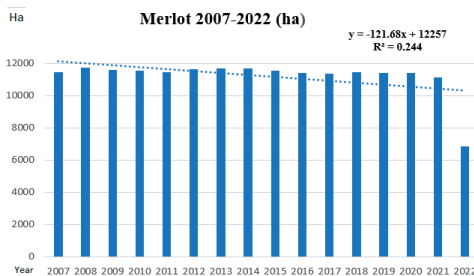


Figure 8. 'Merlot' surface decline 2007-2022

Other wine grape varieties or clones have replaced all of these decreased varieties. The same downward trend is observed in the indigenous varieties. 'Feteasca regala' has a very significant decrease ($R^2 = 0.8783$) from 13949.88 to 12012 ha (Figure 9).

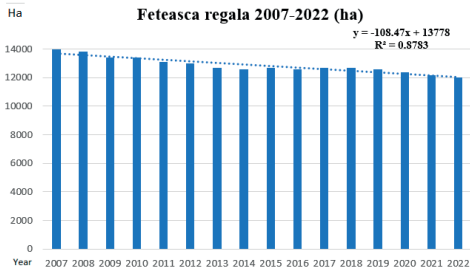


Figure 9. 'Feteasca regala' surface decline 2007-2022

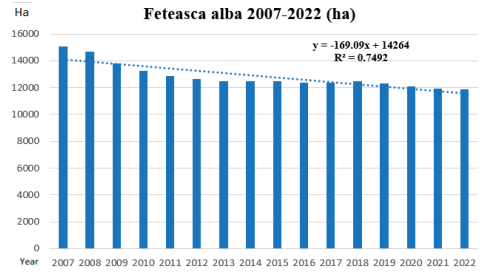


Figure 12. 'Feteasca alba' surface decline 2007-2022

'Majarca' decreased from 68.99 to 7.78 ha, with a significant decrease as seen in Figure 10, and $R^2 = 0.7762$.

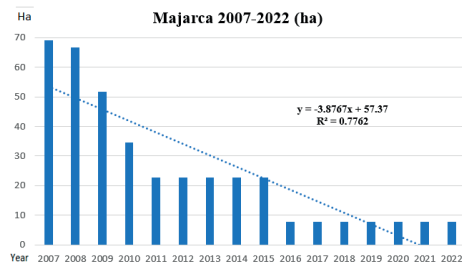


Figure 10. 'Majarca' surface decline 2007-2022

'Babeasca neagra' decreased from 3545.46 to 2504.5 ha (Figure 11). The data show a decrease in interest in this variety from producers, probably also due to the competition it has from producers from the Republic of Moldova.

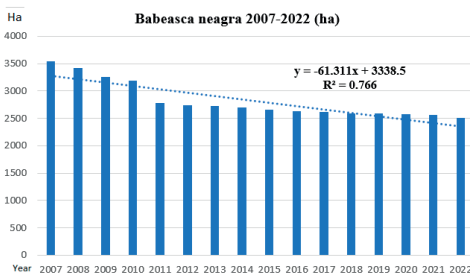


Figure 11. 'Babeasca neagra' surface 2007-2022

'Feteasca alba' decreased from 15075.34 to 11872.6 ha (Figure 12) with a $R^2 = 0.7492$. The decrease of this variety could be due to the low resistance to the disease and the need of many phytosanitary treatments. Although, is a autochthonous variety and which is a different product for international wine market.

'Aromat de Iasi' decreased significantly from 65.87 to 54.31 ha (Figure 13).

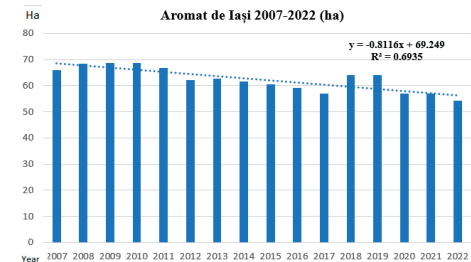


Figure 13. 'Aromat de Iasi' surface decline 2007-2022

'Mustoasa de Maderat' decreased from 421.5 to 284.03 ha (Figure 14).

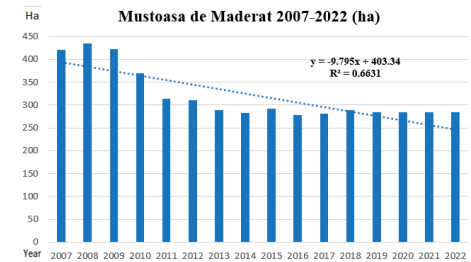


Figure 14. 'Mustoasa de Maderat' surface 2007-2022

'Iordana' (from 433.97 to 297.4 ha) (Figure 16).

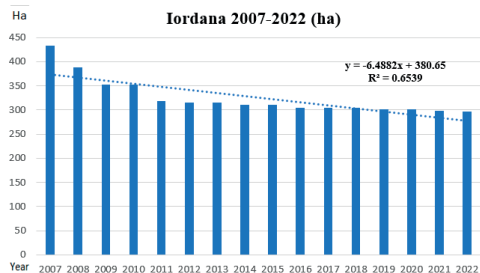


Figure 15. 'Iordana' surface decline 2000-2022

'Cramposie' decreased from 660.74 to 358.09 ha (Figure 16).

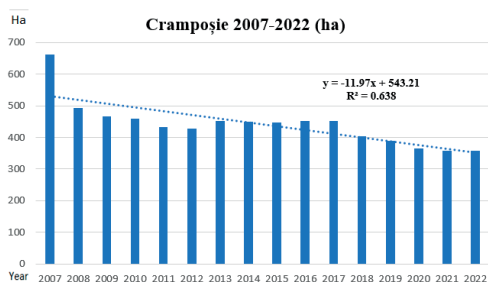


Figure 16. 'Cramposie' surface decline 2007-2022

'Babeasca gri' decreased with one abrupt fluctuation, from 332.49 to 295.06 ha (Figure 17).

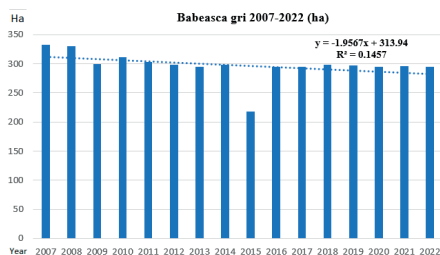


Figure 17. 'Babeasca gri' surface decline 2007-2022

In the case of other varieties, either a decrease, followed by stagnation, or an increase, followed by constant maintenance of the plantation size, is observed over the 16 years analysed (2007-2022).

'Muscat Ottonel' increased very significant ($R^2 = 0.9409$) in the first 10 years after the start of the Reconversion and then remain on a plateau, from 337.07 to 4944 (Figure 18).

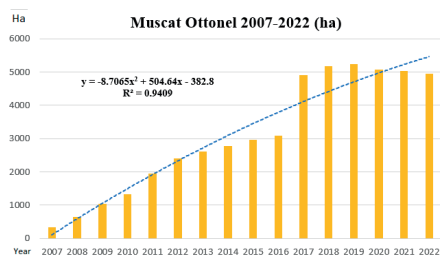


Figure 18. 'Muscat Ottonel' surface 2007-2022

'Chardonnay' increased significantly ($R^2 = 0.9596$) from 626.16 to 2088 ha, then decreased

and remained around 2000 ha (Figure 19). 'Pinot noir' surface increased significantly ($R^2 = 0.9531$) from 694.84 to 2021) (Figure 20). This variety is mainly use for sparkling wines so the increase of the surface of Pinot noir.

'Sauvignon blanc' increased ($R^2 = 0.9264$) from 3760.97 to 5632 (Figure 21).

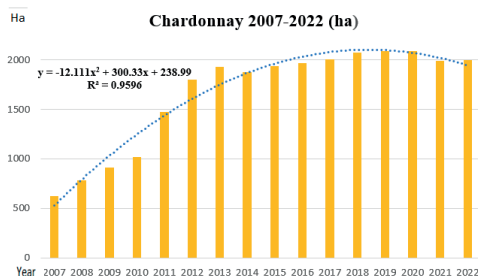


Figure 19. 'Chardonnay' surface 2007-2022

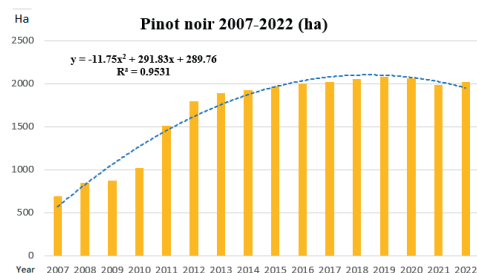


Figure 20. 'Pinot noir' surface 2007-2022

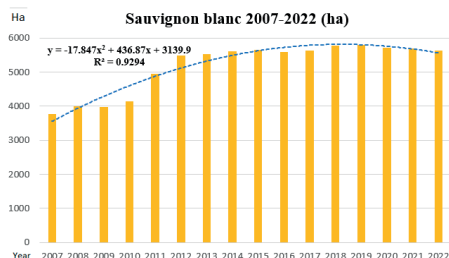


Figure 21. 'Sauvignon blanc' surface 2007-2022

'Cabernet Sauvignon', which increased significantly ($R^2 = 0.987$) from 3387.16 ha immediately after the start of reconversion to 5452.5 ha, followed by a plateau with almost insignificant variations until the end of the studied period (Figure 22).

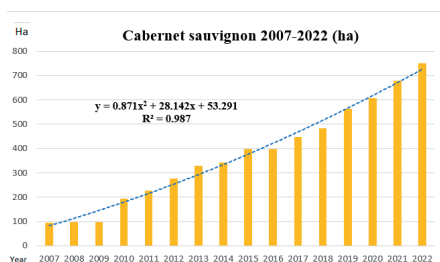


Figure 22. 'Cabernet Sauvignon' surface 2007-2022

'Pinot gris' increased ($R^2 = 0.8917$) from 1114.72 to 1457 (Figure 23).

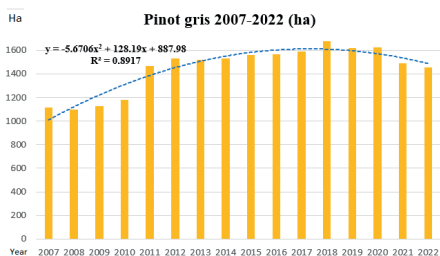


Figure 23. 'Pinot gris' surface 2007-2022

'Cadarca' increased from 51.99 to 98.9 ha, then decreased and remained around 80 ha (Figure 24).

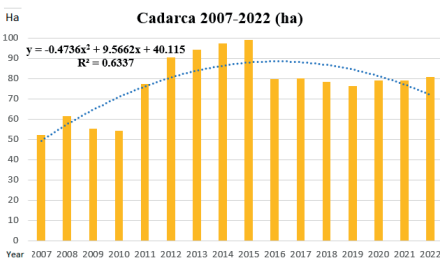


Figure 24. 'Cadarca' surface 2007-2022

'Traminer aromat' increased from 1.41 to 30.44, with a lot of fluctuations (Figure 25).

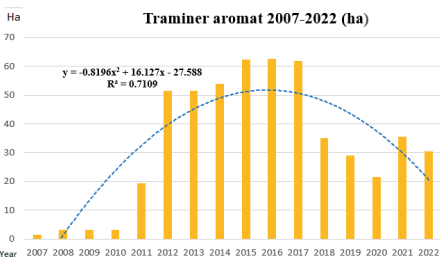


Figure 25. 'Traminer aromat' surface 2007-2022

Areas planted to certain wine grape varieties, either international or native, have steadily increased over the 16 years analysed: 'Busuioaca de Bohotin' - from 96 to 752.1 ha) (Figure 26), 'Cabernet Franc' - from 12.3 to 157.6 ha) (Figure 27), 'Cramposie selectionata' - from 0.01 to 20.3 ha, then began a massive and steady growth to 135.4 ha) (Figure 28), 'Feteasca neagra' - from 1307.2 to 3205 ha (Figure 29), 'Negru de Dragasani' - from 0.33 to 362.19 ha (Figure 30), 'Riesling de Rhin' - from 20.61 to 459.98 ha (Figure 31), 'Syrah' - from 19.39 to 685 ha (Figure 32), 'Tamaioasa romaneasca' from 862.77 to 1757 ha (Figure 33), 'Traminer roz' - from 293.55 to 597.1 ha (Figure 34), 'Viognier' - from 0 to 57.68 ha (Figure 35).

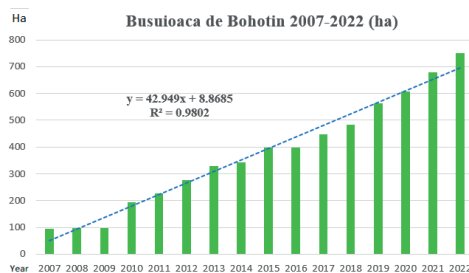


Figure 26. 'Busuioaca de Bohotin' surface 2007-2022

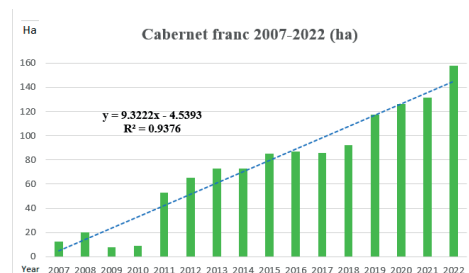


Figure 27. 'Cabernet franc' surface 2007-2022

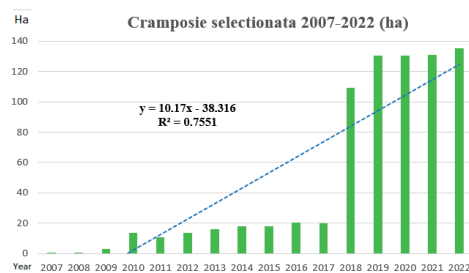


Figure 28. 'Cramposie selectionata' surface 2007-2022

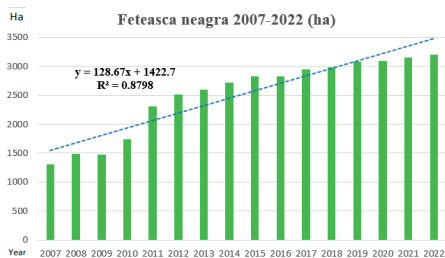


Figure 29. 'Feteasca neagra' surface 2007-2022

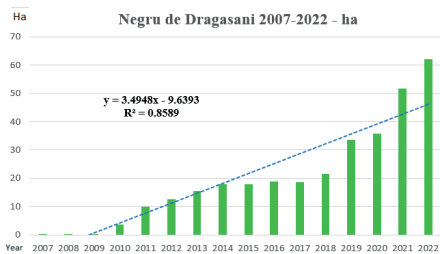


Figure 30. 'Negru de Dragasani' surface 2007-2022

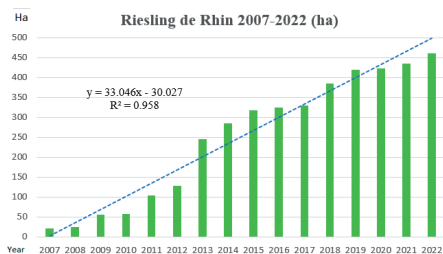


Figure 31. 'Riesling de Rhin' surface 2007-2022

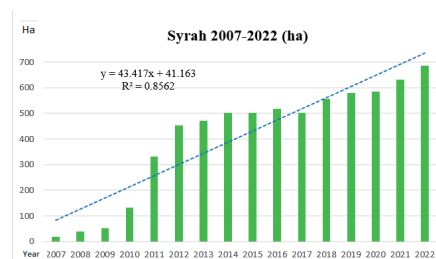


Figure 32. 'Syrah' surface 2007-2022

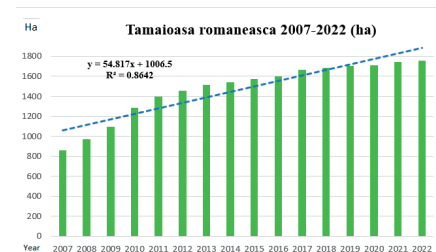


Figure 33. 'Tamaioasa romaneasca' surface 2007-2022

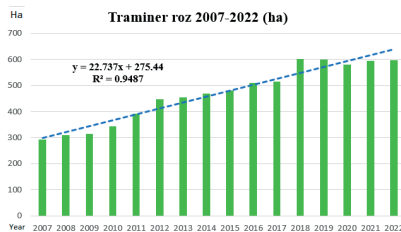


Figure 34. 'Traminer roz' surface 2007-2022

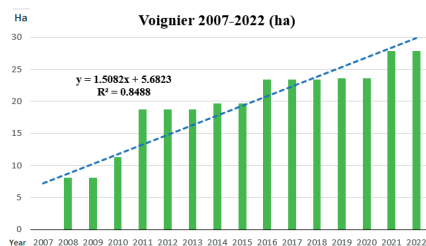


Figure 35. 'Voignier' surface 2007-2022

Even though Romania has valuable autochthonous wine varieties, it represents only 20.71% of the total surface cultivated. The Romanian varieties for white wines have a percentage of 17.41%, while the autochthonous varieties for red wines represent only 3.30% of the total surface cultivated with wine varieties (Cichi et al., 2020).

Some of Romanian varieties such as 'Mustoasa de Maderat', 'Majarca', 'Iordana', 'Feteasca alba' and 'Feteasca regala' have a decrease during the last 16 years, this state of art being influenced by many factors: climate change, as shown by the statistically significant increase of temperature, severe heatwaves, drought and aridity and restrictions in agricultural practices in different regions (Bucur & Babeş, 2016; Vlăduţ et al., 2023).

The areas cultivated with some varieties (international and indigenous) fluctuated slightly around certain values: 'Francusa' (about 300 ha), 'Furmint' (about 21 ha), 'Galbena de Odobesti' and 'Rkatiteli' (about 400 ha), 'Grasa de Cotnari' (about 500 ha), 'Neuburger' (about 70 ha), 'Novac' (about 73 ha), 'Plavaie' (about 150 ha), 'Sarba' (about 270 ha), and 'Zghihara de Husi' (about 60 ha), during the 16-year period analyzed, while other varieties had only significant increases: 'Feteasca neagra' ($R^2 = 0,8798$), 'Negru de Dragasani' ($R^2 = 0,8589$), 'Syrah' ($R^2 = 0,8562$), and 'Tamaioasa romaneasca' ($R^2 = 0,8642$), and

'Cramposie selectionata' ($R^2 = 0,7551$) too, stagnated between 2007-2017, followed by a steep rise, so this native wine grape variety is on an uptrend. The relevant increase in the areas planted with Romanian varieties such as 'Tamaioasa romaneasca', 'Busuioaca de Bohotin', 'Negru de Dragasani', 'Feteasca neagra' or 'Cramposie selectionata', in the period 2007-2022, is mainly due to the marketing strategies of the wineries to exploit and promote local varieties and to bring distinctive products to the international wine market.

In conditions where these native varieties are not sufficiently promoted to be cultivated, the extension of planted areas, ensuring traceability, certification of wines and their participation in international competitions, represent a combination of actions for the preservation of the national genetic heritage of grapevines and the conservation of Romanian resources of high genetic value. 'Feteasca neagra', one of the most valuable wine grape varieties in Romania for the production of premium red wines, occupies only 3% of the Romanian wine-growing area and has been steadily increasing over the last 16 years.

CONCLUSIONS

The new investments in Romanian vineyard took into account the necessary increase in wine quality, thus, the new were mostly destined for the PDO wine production. Through the reconversion/ restructuring programs with national and European funds, Romanian vineyards increased their surface by only 4370.9 ha, which means an average of 273.18 ha per year. 'Negru de Dragasani', a native Romanian variety for red Premium quality wines had an interesting increase mainly to its high ecological plasticity and marketing strategies of the small wineries, selling specific Romanian wines.

In the current context, there is a real need for a strategic national alliance between government institutions, wine growers and producers, wine market sectors to achieve a better valorisation of areas with a vocation for wine grape production. There is also a need to identify and evaluate Romanian wine grape varieties with high market potential.

ACKNOWLEDGEMENTS

This data analysis was carried out with the support of National Office of Vine and Wine Products from Romania.

REFERENCES

- Antoce, A.O., & Călugăru, L.L. (2017). Evolution of grapevine surfaces in Romania after accession to European Union – period 2007–2016, *BIO Web of Conferences* 9, 03018 (2017), 40th World Congress of Vine and Wine, DOI: 10.1051/bioconf/20170903018
- Bucur, G.M., & Babeș, A.C. (2016). Research on Trends in Extreme Weather Conditions and their Effects on Grapevine in Romanian Viticulture. *Bulletin UASMV Horticulture* 73:126–134.
- Cichi, D. D., Cichi, M. & Gheorghiu, N. (2020). The current state of the vitiviniculture sector in Romania, *Analele Universitatii din Craiova, seria Agricultura – Montanologie – Cadastru (Annals of the University of Craiova - Agriculture, Montanology, Cadastre Series)* Vol. L; 32-39.
- Vlăduț, A.Ș., Licurici, M. & Burada, C.D. (2023). Viticulture in Oltenia region (Romania) in the new climatic context. *Theoretical Applied Climatology*, 154, 179–199.
- ***HOTĂRĂRE nr. 578 din 9 iulie 2014 privind stabilirea modului de acordare a sprijinului financiar din partea Uniunii Europene pentru producătorii din sectorul vitivinicol în perioada 2014-2018, cu completările ulterioare
- ***HOTĂRĂRE nr. 868 din 31 octombrie 2018 privind stabilirea modului de acordare a sprijinului financiar din partea Uniunii Europene pentru producătorii din sectorul vitivinicol în perioada 2019-2023, cu completările ulterioare
- ***ORDIN nr. 211 din 15 martie 2007 pentru aprobarea Normelor de aplicare a programelor de restructurare/reconversie a plantațiilor viticole, pentru campaniile 2006-2007 și 2007-2008, derulate cu sprijin comunitar, cu modificările și completările ulterioare
- ***ORDIN nr. 247 din 23 aprilie 2008 privind aprobarea Normelor de aplicare a programelor de restructurare/reconversie a plantațiilor viticole, derulate cu sprijin comunitar pentru campaniile 2008/2009-2013/2014, cu modificările și completările ulterioare
- *** ORDIN nr. 1763 din 10 noiembrie 2014 pentru aprobarea Normelor metodologice privind condițiile de punere în aplicare a măsurii de restructurare/reconversie a plantațiilor viticole, eligibilă pentru finanțare în cadrul Programului Național de Sprijin al României în sectorul vitivinicol 2014 – 2018, cu modificările și completările ulterioare
- ***ORDIN nr. 1508 din 17 decembrie 2018 pentru aprobarea Normelor metodologice privind condițiile de punere în aplicare a măsurii de restructurare/reconversie a plantațiilor viticole, eligibilă pentru finanțare în cadrul Programului național de sprijin în sectorul vitivinicol 2019-2023, cu modificările și completările ulterioare

***REGULAMENTUL (CE) NR. 1234/2007 din 22 octombrie 2007 de instituire a unei organizări comune a piețelor agricole și privind dispoziții specifice referitoare la anumite produse agricole ("Regulamentul unic OCP"), cu modificările și completările ulterioare

***REGULAMENTUL (CE) NR. 555/2008 din 27 iunie 2008 de stabilire a normelor de aplicare a Regulamentului (CE) nr. 479/2008 al Consiliului privind organizarea comună a pieței vitivinicole în ceea ce privește programele de sprijin, comerțul cu țările terțe, potențialul de producție și privind controalele în sectorul vitivinicol, cu modificările și completările ulterioare

***REGULAMENT nr. 1150 din 15 aprilie 2016 de stabilire a normelor de aplicare a Regulamentului (UE) nr. 1308/2013 al Parlamentului European și al Consiliului în ceea ce privește programele naționale de sprijin în sectorul vitivinicol, cu modificările ulterioare

***REGULAMENT nr. 2289 din 21 decembrie 2021 de stabilire a normelor de aplicare a Regulamentului (UE) 2021/2115 al Parlamentului European și al Consiliului în ceea ce privește prezentarea conținutului planurilor strategice PAC și sistemul electronic pentru schimbul securizat de informații

*** <https://www.onvvpv.ro/ro/content/legislatie>