

## Researches Regarding the Influence of Special Green Works on Evolution of Ripening in Four Varieties of Grapes for Wine from Vineyard Târnave

Florentina CIOBANU<sup>1</sup>, Nastasia POP<sup>1</sup>, Maria ILIESCU<sup>2</sup>, Anca Babeş<sup>1</sup>, Claudiu Ioan BUNEA<sup>1</sup>, Anca Eva ARDELEAN<sup>1</sup>, Mihai Lucian LUNG<sup>1</sup>, Andreea Flavia TRIPON<sup>1</sup>

<sup>1</sup>) Faculty of Horticulture, University of Agricultural Science and Veterinary Medicine, 3-5 Manastur Street, Cluj-Napoca, Romania; flo030@yahoo.com.

<sup>2</sup>) Research Station for Viticulture and Enology, 2 G. Baritiu Street, Blaj, Romania.

**Abstract.** This paper was done in order to establish the influence of special green works (grapes thinning, partial deleafing and grapes bagging) on ripening evolution at the varieties: ‘Muscat Ottonel’, ‘Neuburger’, ‘Traminer roz’ and ‘Sauvignon blanc’, in ecoclimatic conditions of Târnave Vineyard. The grapes ripening was observed starting with 19th August, after dough ripening. Several determinations were conducted regarding sugars accumulations, acidity and the weigh of 100 berries, at a one week interval (the 19th of August, 29th of August, 5th of September and 12th of September). Out of the methods known for sugars determinations within the must (refractometric method, densymetric method and chemical method) it was used the refractometric one. The principle of the method is based on the determination of the dry matter percent within the must by using the refratometer. The content of sugars is then calculated with the aid of the corresponding tables. The result is expressed in g/l (sugar grams/must litres). Titration in the presence on phenolphthalein was used to determine the total acidity within the must. The acidity is expressed in g/l H<sub>2</sub>SO<sub>4</sub>. Variant 2 (deleafed) of ‘Traminer roz’ accumulated the highest sugars content. The acidity decreases with the sugars concentration. An important decrease is observed in the first period of maturation (19th of August- 5th of September), excepting the ‘Neuburger’ variety, which had an acidity decrease during the 5th- 12th of September period.

**Keywords:** ripening, grapes thinning, partial deleafing, grapes bagging, sugar, acidity

**Introduction.** Given the fact the studied varieties are aromatic and semiaromatic, must take in consideration that grape maturity influence wine aroma. It is demonstrated that wines from grapes with higher sugar content are more fruity (Sanchez *et al.*, 2005). One of the most influencing factors on the aroma characteristics is the stage of grapes ripening (Bayonove, 1993).

**Aims and objectives.** This paper was done to establish the influence of special green works (grapes thinning, partial deleafing and grapes bagging) on ripening evolution.

**Materials and methods.** During the year 2011 were observed grape varieties: ‘Muscat Ottonel’, ‘Neuburger’, ‘Traminer roz’ and ‘Sauvignon blanc’, in ecoclimatic conditions of Vineyard Târnave. Several determinations were conducted regarding sugars accumulations and juice acidity at a one week interval (the 19<sup>th</sup> of August, 29<sup>th</sup> of August, 5<sup>th</sup> of September and 12<sup>th</sup> of September). Out of the methods known for sugars determinations within the must it was used the refractometric one. The result is expressed in g/l (sugar grams/must litre). Titration in the presence on phenolphthalein was used to determine the total acidity within the must. The acidity is expressed in g/l H<sub>2</sub>SO<sub>4</sub>. The variant used were: V<sub>MI</sub>- without special green works, V<sub>1</sub>- grapes thinning, V<sub>2</sub>- partial deleafing and V<sub>3</sub>- grapes bagging.

**Results and Discussion.** In figures 1, 2, 3 and 4 is shown the correlation between the amount of sugar and total acidity registered during ripening grapes. It can be seen in all varieties is a negative correlation, distinctly significant of the sugar and total acidity, otherwise normal situation indicating strong dependence of these two parameters the greater the amount of sugar, the acidity decreases.

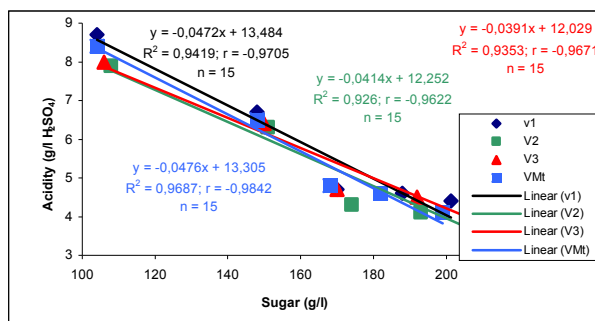


Fig. 1. The correlation between the accumulation of must sugar (g/l) and total acidity (g/l H<sub>2</sub>SO<sub>4</sub>) during ripening of grapes from ‘Muscat Ottonel’, at SCDVV Blaj in 2011

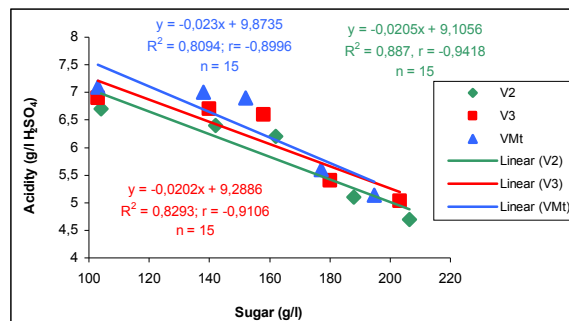


Fig. 2. The correlation between the accumulation of must sugar (g/l) and total acidity (g/l H<sub>2</sub>SO<sub>4</sub>) during ripening of grapes from ‘Neuburger’, at SCDVV Blaj in 2011

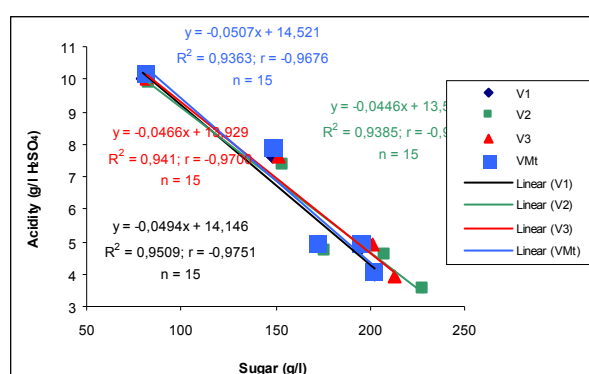


Fig. 3. The correlation between the accumulation of must sugar (g/l) and total acidity (g/l H<sub>2</sub>SO<sub>4</sub>) during ripening of grapes from ‘Traminer roz’, at SCDVV Blaj in 2011

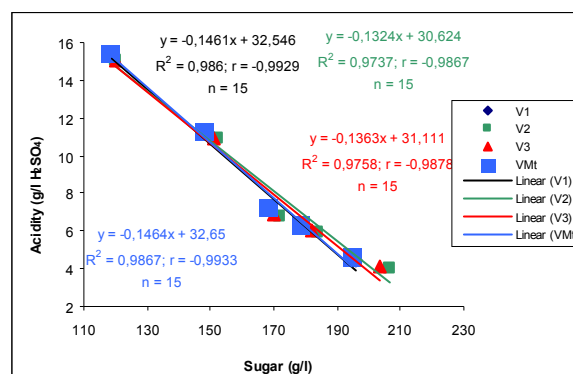


Fig. 4. The correlation between the accumulation of must sugar (g/l) and total acidity (g/l H<sub>2</sub>SO<sub>4</sub>) during ripening of grapes from ‘Sauvignon blanc’, at SCDVV Blaj in 2011

**Conclusion.** The acidity decreases with the sugars concentration. An important decrease is observed in the first period of maturation (19<sup>th</sup> of August- 5<sup>th</sup> of September), excepting the Neuburger variety, with the decrease during the 5<sup>th</sup>- 12<sup>th</sup> of September period. In every variety the most sugar was accumulated in variant 2 (deleafed), and this is most obvious at Traminer roz which accumulated the highest sugars content.

## REFERENCES

1. Bayonove, C. (1993). Les acquisitions recentes en chromatographie du vin, applications a l’analyse sensoriale des vins. Les composes terpeniques. In B. Doneche (Ed.), Paris, France: Lavoisier: 99-119.
2. Sánchez Palomo, E., M.C. Díaz-Maroto, M.A. González Viñas, A. Soriano-Pérez and M.S. Pérez-Coello (2007). Aroma profile of wines from Albillo and Muscat grape varieties at diferent stages of ripening, Food Control. 18:398–403.