Inventory of Viticultural Yield and Quality Parameters in Respect of Soil Management

Claudiu BUNEA[1], Daniela POPESCU[1*], Adela HOBLE[2], Silvia WINTER[3], Johann ZALLER[4]

[1]Department of Horticulture and Landscape, University of Agricultural Sciences and Veterinary Medicine Cluj-Napoca, Romania
[2]Department of Land Measurements and Exact Sciences, University of Agricultural Sciences and Veterinary Medicine Cluj-Napoca, Romania
[3]Institute of Integrative Nature Conservation Research, University of Natural Resources and Life Sciences Vienna - BOKU, Austria
[4]Institute of Zoology, University of Natural Resources and Life Sciences Vienna - BOKU, Austria
[*]corresponding author: hodordaniela@yahoo.com

BulletinUASVM Horticulture 74(1) / 2017
Print ISSN 1843-5254, Electronic ISSN 1843-5394
DOI:10.15835/buasvmcn-hort:12649

Abstract. The purpose of this research was to analyse the yield and quality of eight grapevine varieties (one Romanian autochthonous varieties: 'Fetească Regală', 'Traminer roz', and seven world-wide varieties: 'Rhine Riesling', 'Sauvignon Blanc', 'Muscat Ottonel', 'Pinot Gris', 'Chardonnay'and 'Italian Riesling' cultivated in two different types of soil management (low and high intensity).

Keywords: *must, pH, sugar content, total acidity, yield*

Introduction

In each landscape window there were picked 5 vines per plot (4 plots x 5 vine = 20 vines/ landscape window) (Hoble *et al.*, 2016). The vineyard was located on a slope and these four plots were selected to represent the lower (1 plot), middle (2 plots) and upper part (1 plot) of the slope.

Aims and objectives

The aim of this article was to assess the quantity and quality parameters of 8 wine grape varieties in respect of management intensity.

Materials and methods

For quantity parameters: there were counted grapes on a vine, then put in a 10 l bucket and weighted. Finally, there were calculated the averages for: number of grapes/vine, weight of grape (g) and yield (kg/vine). For quality parameters: there were harvested small parts of grapes from grape vines on 5 vines/plot, from the sunny and shaded, bottom and top, in order to obtain a homogeneous sample of 0.500 kg/plot. After, were analyzed averages of: sugar content (g/L), pH of must and acidity (g/L H_2SO_4). High management intensity represent bare soil inter row, and low management intensity represent permanent cover with grass.

Results and discussion

For 'Sauvignon blanc' it was determined a yield of 4.6 kg/vine (low management intensity), and 6.3 kg/vine (high management intensity) (Fig. 1). For 'Fetească Regală' was obtained a yield of 5.6 kg/vine (low management intensity), and 4.1 kg/ vine (high management intensity) (Fig. 1).

The highest amount of sugar was registered for 'Pinot Gris' (215 g/L) and 'Traminer roz' (206 g/L) (high management intensity), and the lowest amount of sugar was determined for 'Chardonnay' (179 g/L) (high management intensity). These results are in agreement with previous study presented by Bunea *et al.* 2010.

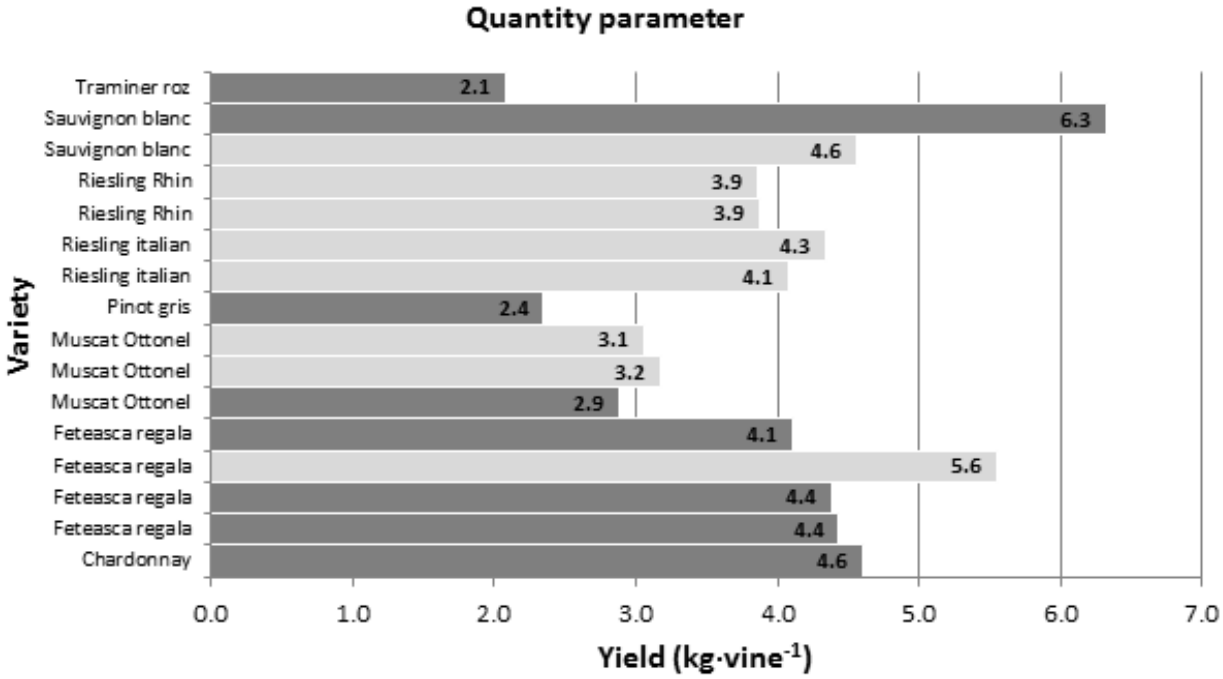

Fig. 1. The yield obtained in the conditions of 2015 year in the region of Aiud and Târnave Vineyard (Grey= high management ; White= low management)

The lowest difference registered for pH of must (0.04) was for both 'Italian Riesling' (low management intensity) and 'Fetească Regală' (high management intensity). The highest difference for pH of must (0.41) was observed for 'Muscat Ottonel' - low management intensity.

For 'Fetească Regală' variety it was obtained a difference of 1.44 kg/vine, highest in low intensity management ($p>0.05=0.52$ kg/vine). The difference (10.72 g/L) of amount of sugar was determined in high intensity management ($p>0.05=2.15$ g/L).

Acknowledgements. 2013-2014 BiodivERsA/ FACCE-JPI joint call for research proposals, with the national funders UEFISCDI - Romania, FWF Der Wissenschaftsfonds - Austria, ANR - Agence Nationale de la Recherche - France, Bundes Ministerium für Bildung und Forchung - Germania and Ministerio de Economía y Competitividad - Spain. This work was supported by a grant of the Romanian National Authority for Scientific Research and Innovation, CCCDI - UEFISCDI, project number 6/2015.

REFERENCES

1. Hoble A, Popescu D, Bunea C, Rusu T and Winter S (2016). Survey of Târnave Viticultural Landscape. Agricultura 1-2(97-98): 42-49.
2. Bunea CI, Ardelean M, Pop N, Bunea A, Babes A, Calugar A (2010). Influence of Variety and Type of Cultivation (Organic and Conventional) on Quality, in Five Wine Grape Varieties, Grown in Cluj County, Romania. Bulletin UASVM Horticulture, 67(1)/2010