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Phenolic compounds evolution during ripening of red grapes *Feteasca neagra* variety (*Vitis vinifera*)

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Abstract: *Fetească neagră* is an ancient indigenous grape variety from Romania, which gives nice coloured rich in phenolic compound wines.

• Introduction

The aim of the study was to assess the dynamics of the phenolic compounds accumulation in the red grapes *Fetească neagră* variety, during grape ripening (2019-2020).

• Material and method

Grapes Cabernet Sauvignon variety were obtained from private vineyards in Dealu Bujorului region during the period 2019-2020. A quantity of 5 kg grapes has been harvested periodically, at time intervals of 5 days during the ripeness stage, full maturity and respectively, technological maturity. All grapes were manually destemmed and randomly grouped and used immediately for standard and phenolic maturity measurements.

For ripening characterisation the physico-chemical analysis of main composition characteristics of grapes (sugar content, titrable acidity, the weight of 100 berries, anthocyanins content and total polyphenols content) was carried out.

One hundred grape berries were weighted and used for determining the sugar content, the titratable acidity according with the analytical methods recommended by the OIV. Sugar concentration was measured using a refractometer. The titratable acidity was measured by titrimetry using NaOH 0.1 N and Bromothymol blue as indicator. The determination of grape anthocyanins content was done by Poussant-Leon method with small modifications

Conclusions: The results showed that sugar content of the red grapes *Fetească neagră* variety at full maturity ranged from 196-232 g/L, total acidity of grapes at full maturity presented values between 6.2 to 7.1 g/L expressed in sulfuric acid, while the weight of 100 berries gives values ranging from 131-168 g. The anthocyanins content was in the range of 891-1256 mg/kg.

Climatic conditions of each vintage influence the final amount of polyphenols in grapes. Presence of rains is causing a slight decrease in polyphenols and cold and wet weather is leading to a slowdown in the accumulation of anthocyanins in the skins of the berries.

• Results and discussions

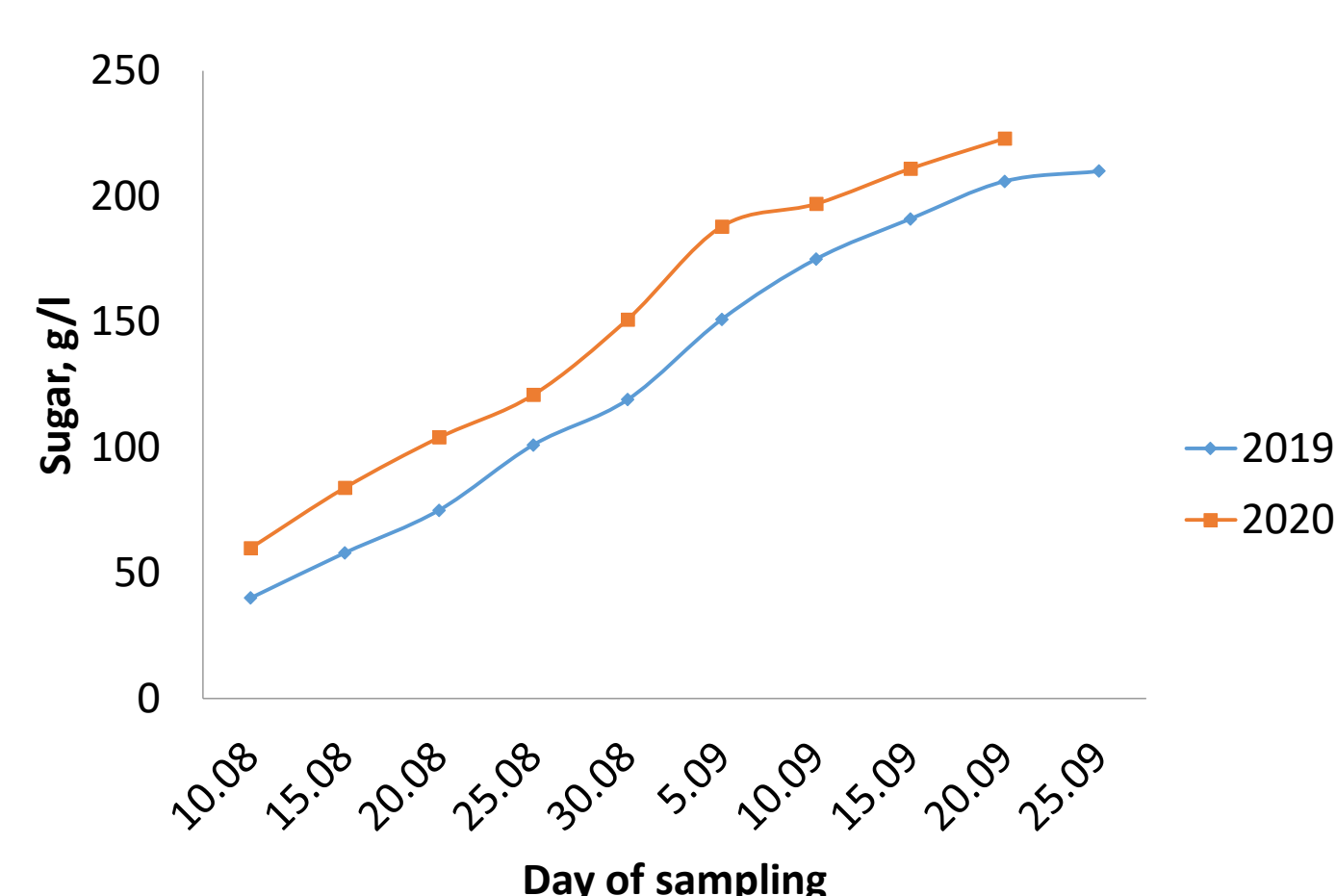


Figure 1. Evolution of sugar content during grapes maturation (2019-2020)

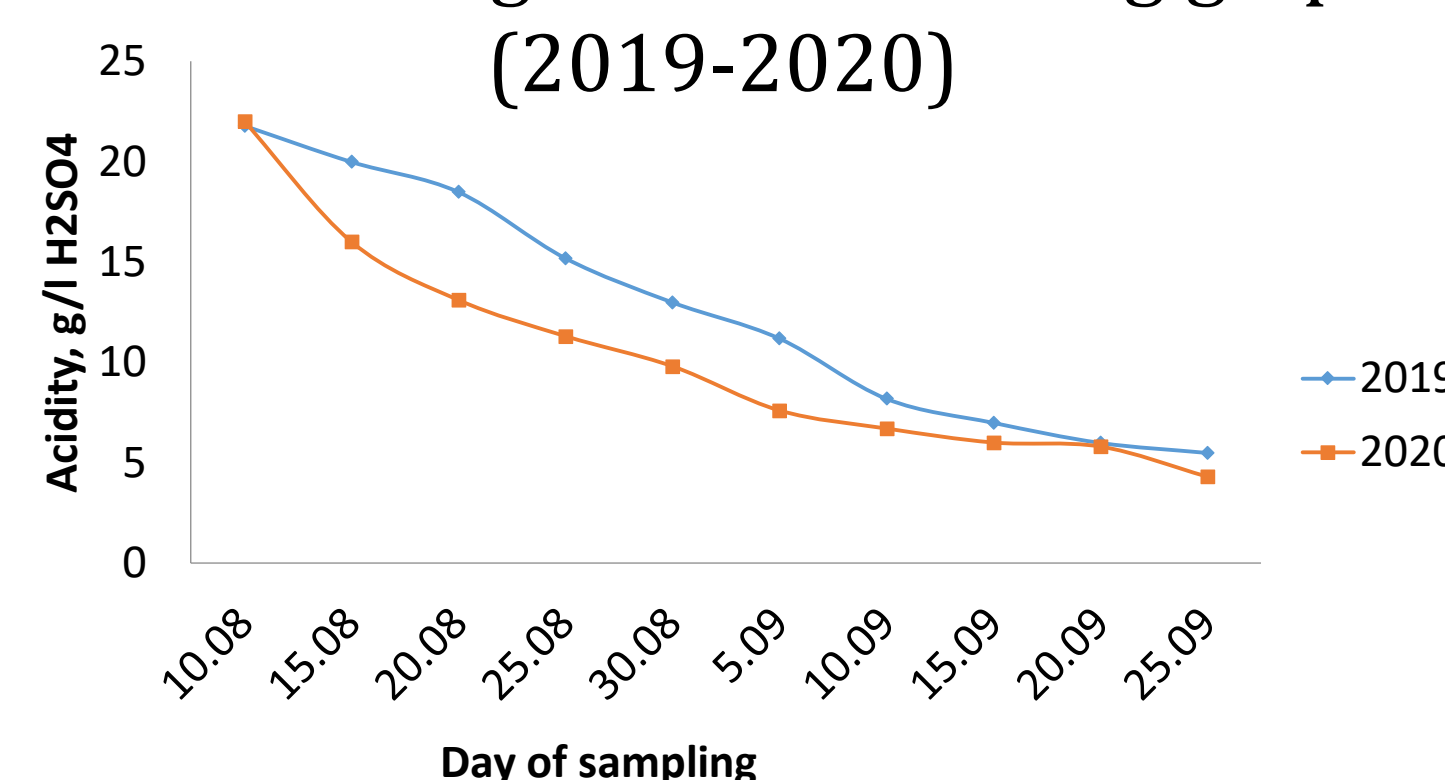


Figure 2. Evolution of acidity content during grapes maturation (2019-2020)

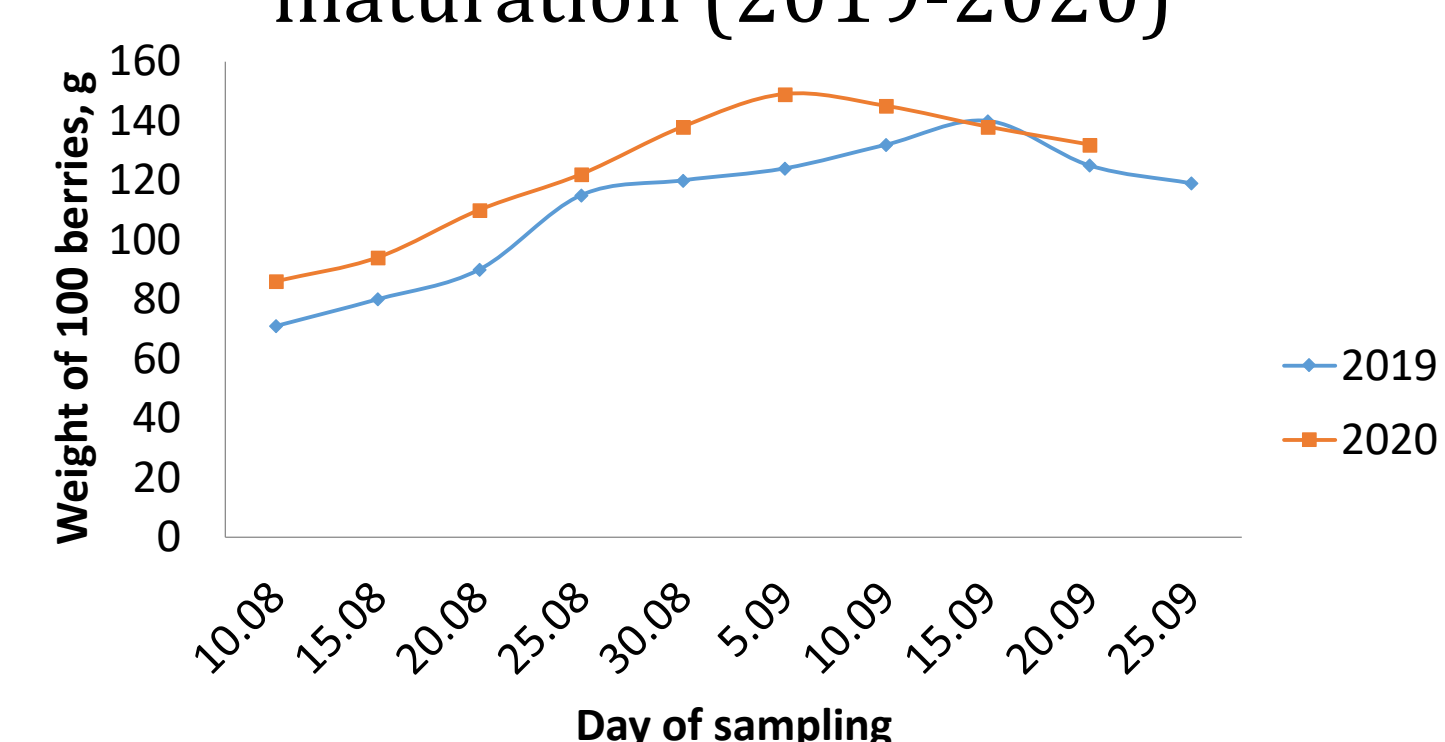


Figure 3. Evolution of weight of 100 berries during grapes maturation (2019-2020)

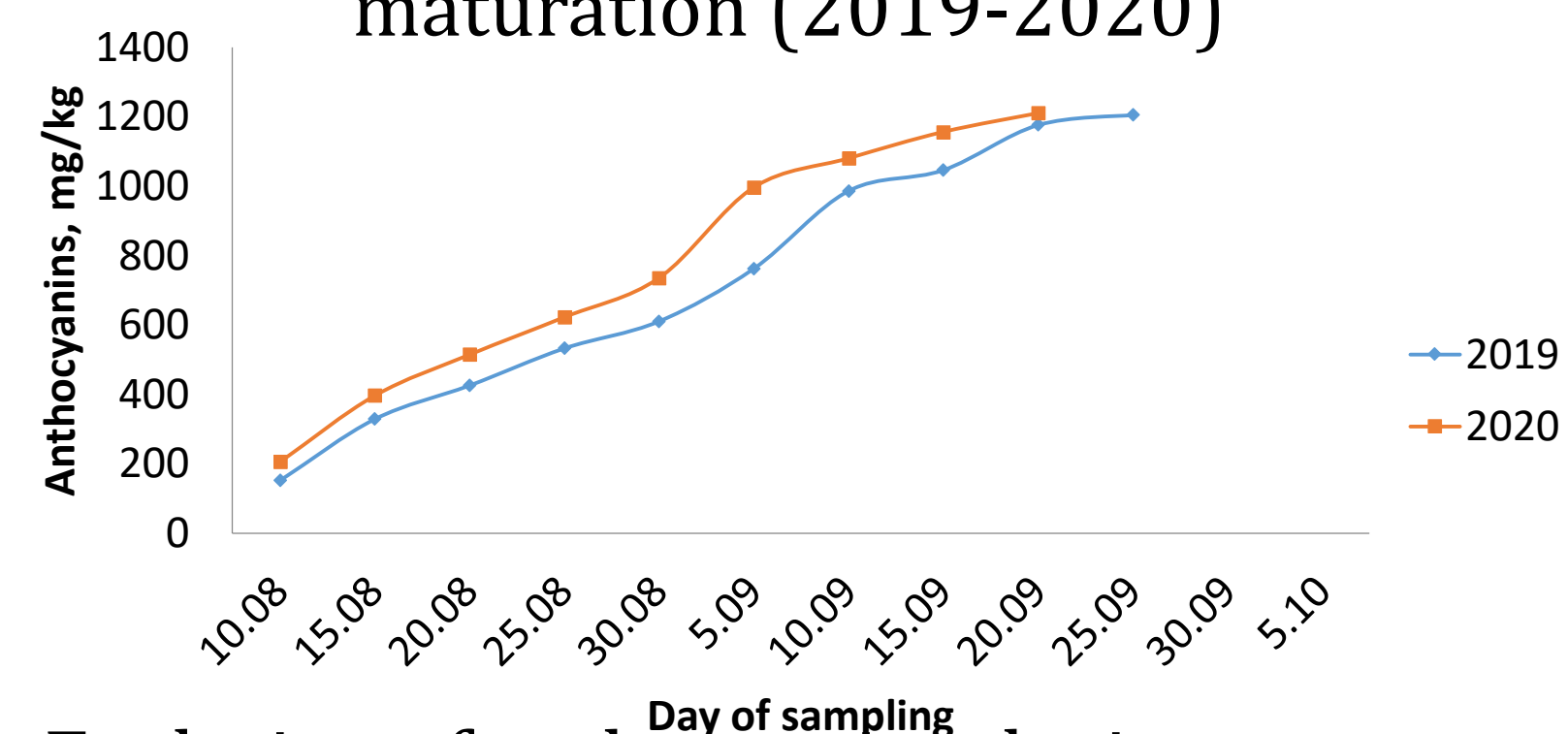


Figure 4. Evolution of anthocyanins during grapes maturation (2019-2020)

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