

TESTING FERTILITY STATUS BY ANALYZING THE LIQUID FROM THE GRAPEVINE “WEEPING” TO FETEASCA ALBĂ IN ȘTEFĂNEȘTI - ARGES AND BREAZA GROW-WINE CENTERS

TESTAREA STĂRII DE FERTILITATE PRIN ANALIZA LICHIDULUI REZULTAT DE LA PLÂNSUL VITEI DE VIE LA SOIUL FETEASCĂ ALBĂ, ÎN CENTRUL VITICOL ȘTEFĂNEȘTI - ARGES ȘI BREAZA

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Abstract: The disbudding phenophase to Fetească albă variety started slowly in intensity, being dependent on environmental factors (air temperature, soil), grow-wine center, applied cutting system, and status of soil with nutrient spring supply. Nutrient supply has been weak, establishing a direct relation between soil mobile NPK content and fluid from weeping wine. The chemical composition of the liquid from the weeping wines quantity and quality was variable, depending on the applied fertilizer dose, grow-wine center and year of the study. Big quantitative differences were recorded in the Breaza grow-wine center, (815,6 ml) and qualitative composition of the liquid from the total N was higher in the Ștefănești grow-wine center (19,6 mg/l) and low differences between centers for the supply of mobile P and a higher supply of mobile K (60,1 mg/l) in the Breaza grow-wine center. Global nutrition showed higher average values (85,7 mg/l) in the Ștefănești grow-wine center.

Key words: fertility, fertilization, variety

Rezumat: Fenofaza dez muguriturii la soiul Feteasca albă a început lent ca intensitate, fiind dependentă de factorii de mediu (temperatura aerului, a solului), centrul viticol, sistemul de tăiere aplicat, precum și aprovizionarea solului cu nutrienți primăvara devreme. Aprovizionarea cu nutrienți a fost slabă, stabilindu-se un raport direct între conținutul solului în NPK-mobil și conținutul lichidului rezultat la plânsul viței de vie. Compoziția chimică a lichidului de la plânsul viței de vie a prezentat variații cantitative și calitative, în funcție de doza de îngrășământ aplicată, și anul de studiu. Diferențe mari cantitative au fost înregistrate în centrul viticol Breaza, (815,6 ml), iar compoziția calitativă a lichidului în N total a fost mai mare în Ștefănești (19,6 mg/l), diferențele mici între centre privind aprovizionarea cu P-mobil și o aprovizionare mai mare de K mobil (60,1 mg/l) în centrul viticol Breaza.

Cuvinte cheie: fertilitate, fertilizare, soi

INTRODUCTION

After springtime cutting, grapes start the vegetation period when soil and air temperature are favourable. The accumulation of nutrients in plants depends on the soil fertility.

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Supply of any chemical element from the soil is well balanced with liquid quantity and with nutrients quantity from the liquid resulted from grape crying. A ratio can be notice between the resulted grape crying liquid, nutrition quantity and the supply of soil (Davidescu și colab. 1972, 1981).

Fertility tests of soil through chemical analysis of soil and plant it is realized for the determination of status supply with nutrients. According to Condei, 1980, optimal supply is:

- PAL – 20-30 mg/P₂O₅ / 100 g soil;
- KAL- 40-50 mgK₂O/100 g soil,
- Ca CO₃ activ < 5 %;
- Mg changeable 15-20 mg/ 100 g soil;
- B hidrosolubil 2,5-5 ppm.

MATERIAL AND METHOD

Experience (trial) I - was located in western site of viticulture center Ștefănești – Goleasca, in a Fetească albă variety vineyard grafted on rootstock Berlandieri x Riparia Kober 5 BB, 15 years old. Planting distances were 2.20 / 1.20 m. Applied cutting type was Guyot. Landform plateau was represented by 0% slope, altitude 742 m and rows vines orientation was N-S direction.

Second experience (trial) was placed in the center Breaza vineyard, located in the eastern part of Dealu Mare vineyard, where it was studied Fetească albă variety grafted on rootstock Berlandieri x Riparia Teleki 8 B, 17 years old. Planting distances were 2.20 / 1.20 m. The leading type was middle high and cutting system was mixt, characterized by branch with 12-14 eyes and replacement branches with 2-3 eyes. The soil type was sandy-loam with sandy texture in the surface horizon and underlying clayey. Soil reaction was slightly alkaline to strongly alkaline in underlying horizons, ranging from 6.6 to 7.4. The experiments were conducted in 2002-2004. Chemical fertilizers used for fertilization was:

- Ammonium nitrates 34.55%;
- Simple superphosphate granulated with 18% P₂O₅;
- Potassium salt with 48-50% K₂O.

RESULTS AND DISCUSSION

“Crying” phenophase it was dependent on climate conditions (air temperature, soil temperature), variety, cutting system and soil status supply with nutrients in the spring beginning. The nutrition status can be appreciated by ratio between soil content in mobil NPK and liquid resulted from grapevine “crying”.

In Breaza centre, grapevine “crying” start early with a few days by rapport Ștefănești centre, because the soil average temperature had in each year higher values (tab. 1).

Liquid collected was averaged 815.6 ml, wine center Breaza respectively Ștefănești 652.0 ml wine center.

Regarding the total potassium content of liquid from grapevines “crying”, can observe a weak supply this element, ranging from 57.1 mg / l in wine center Ștefănești to 60.1 mg / l at Breaza (Fig.1).

Table 1

The liquid resulted in phenophase "crying" in Fetească albă between 2002-2004

Grapevine center	Liquid quantiti (ml)			
	2002	2003	2004	Media
Breaza	1280,4	520,6	645,8	815,6
Ștefănești	925,5	300,0	730,5	652, 0
Crying started				
	2002	2003	2004	
Breaza	14 III	18 III	20 III	
Ștefănești	20 III	26 III	23 III	
Soil average temperature (°C)				
	2002	2003	2004	
Breaza	10	10	10	
Ștefănești	9	8	8,5	

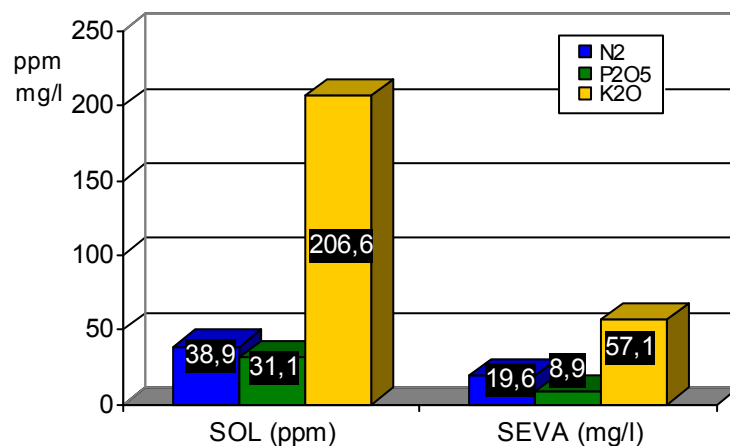


Fig. 1 - The content of the soil and the liquid from the "crying" of vines in total forms NPK - Fetească albă, wine center Ștefănești - Argeș (2002-2004)

Total nitrogen supply status increased from 14.1 mg/l in wine center Breaza to 19.6 mg / l in wine center Ștefănești (Fig. 2).

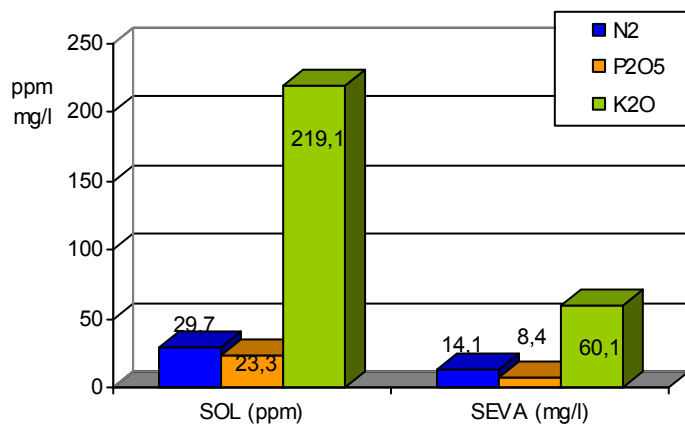


Fig. 2 - The content of the soil and the liquid from the "crying" of vines in total forms NPK - Fetească albă, wine center Breaza (2002-2004)

CONCLUSIONS

1. Supply status of soil and plant, represent the difference regarding the total NPK content by soil type and growing centre.
2. Chemical composition of resulted liquid from grape crying is influenced by the soil supply level.
3. Based on studies showing the necessity of completing the necessary nutrients through fertilization to prevent possible installation of physiological disorder.

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