

Studies on the Quality of Rootstocks in the Viticultural Centre Blaj

Maria ILIESCU¹⁾, Daniela POPESCU¹⁾, Maria COMȘA¹⁾

¹⁾Research Station for Viticulture and Enology Blaj, G.Baritiu Street 2, Blaj, Romania;
marina_iliescu@yahoo.com

Abstract. The quality of the initial material (graft and rootstock) is determined by the agricultural techniques applied. The study conducted at RSVO Blaj aimed to identify the degree of maturation of rootstock strings in 2011, correlated with climate factors and the stage of obtaining grafts technology that could influence carbohydrate losses. The material used (string rootstocks grafted at the base, middle, or top) was harvested fresh from plantation, and from the silo (silage in November 2011). Keeping the propagating material at optimum hydration avoid losses of carbohydrates by extended hydration before grafting.

Keywords: biological material for propagation, rootstocks, carbohydrates, wood maturation

Introduction. The degree of wood maturation in rootstocks (carbohydrates content: soluble sugars and starch) is an important indicator, which allows both the assessment of physiological processes during the whole vegetation period and the quality of the initial material used to produce grafts (Iliescu *et al.*, 2010; Iliescu *et al.*, 2011).

Obtaining grapevine cuttings of high quality with a consistently high yield at the Blaj viticultural centre is conditioned by a complex of factors, of technological and eco-climatic nature.

The quality of the initial material (graft and rootstock) is determined by the agricultural techniques applied. However, a determining role is given by the eco-climatic factors during the active growing period and during the dormant period (Țăra *et al.*, 1992; Țăra *et al.*, 1994).

Aims and objectives. The study conducted at RSVO Blaj aimed to identify the degree of maturation of rootstock strings in 2011, correlated with climate factors and the stage of obtaining grafts technology that could influence carbohydrate losses. We particularly aimed at emphasizing the transformation and loss of carbohydrates in cuttings of rootstock by rehydration prior to the grafting period.

Materials and methods. The experiment used stock strings from SCDVV Blaj, certified biological material of the SO₄₋₄ variety.

The material used (string rootstocks grafted at the base, middle, or top) was harvested fresh from plantation, and from the silo (silage in November 2011).

The dosage of carbohydrates (soluble sugars and starch) was carried out by chemical method, using the reagent anthrone.

Results and Discussion. In the Târnavă vineyard, the period of active vegetation of the grapevine is lowering (compared to vineyards in southern Romania) because heliothermal resources are scarce.

Climate change in recent years is one of the major challenges of these times, a complex area in which we must first improve our knowledge and understanding of phenomena, in order to take corrective measures in dealing effectively with grapevine growing technologies.

The increase of average monthly temperatures influenced the growth and fructification processes on the vine, the maturation of rootstock and scion strings, the ripening of fruit strings, the quality of grape production.

In the Târnave vineyard, the average annual temperature for 2011 was above the annual average (by aprox.1-1.5 ° C). There was less rainfall, well below the multiannual average.

The determination of carbohydrates is the most reliable laboratory indicator for assessing the degree of maturation of rod strings, of scion strings and of strings for grafted rootstock.

Determining the degree of maturation was made the string of rootstock harvested at different times (the plantation - in autumn and winter; storage - spring). Carbohydrate content of the string was similar to the strings collected in February (the plantation) at the strings of storage (Fig. 1).

At hydration grafted material losses of carbohydrates are between 0.5 to 1.5 g%, depending on the number of days of hydration (Fig. 2).

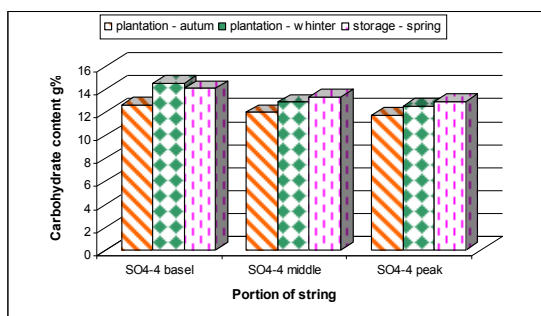


Fig. 1 Carbohydrate content of strings of rootstock SO4-4

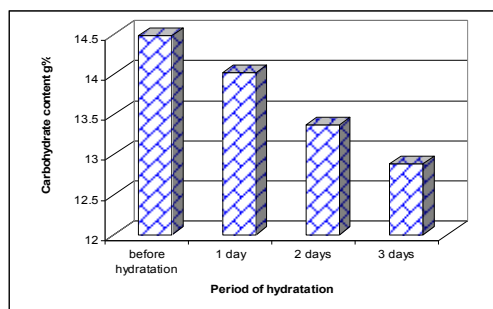


Fig. 2 Variation in carbohydrate content depending on the time of hydration

Conclusion.

- Keeping the propagating material at optimum hydration avoid losses of carbohydrates by extended hydration before grafting.
- Carbohydrate content of strings of rootstock was similar to strings from storage and those harvested from plantation in winter.

REFERENCES

1. Țăra, G., M. Iliescu and A. Băcilă (1992). Maturarea lemnului la vița de vie în condițiile podgoriei Târnave. Rev.Horticultura. 6: 17.
2. Țăra, G., M. Iliescu and A. Băcilă (1994). Contribuții la studiul rezistenței la ger a viței de vie. Vol. omagial "125 ani USAMV" Cluj-Napoca. 211.
3. Iliescu, M., M. Farago, L. Tomoiagă and M. Comșa (2010). Nutriția la vița de vie în podgoria Târnave, Ed. AcademicPres, Cluj Napoca. 12.
4. Iliescu, M., A. Comsa, M. Comsa and F. Cudur (2011). Studies regarding the quality of the viticultural breeding material in the vine center Blaj, Bulletin USAMV Cluj Napoca. 68:524.