

# VARIABILITY OF RNA CONTENT IN FETEASCĂ NEAGRĂ GRAPE VINE SORT LEAVES

## VARIABILITATEA ARN DIN FRUNZELE DE *FETEASCĂ NEAGRĂ*

**PĂDUREANU SILVICA**

University of Agricultural Sciences and Veterinary Medicine Iași

**Abstract.** *The paper presents the variability of the RNA content of a mature leaf belonging to the Fetească neagră grape vine cultivar, analysed in different phenological phases. On constate that at unbudging, the RNA content is maximum, because in this phases, the proteinic synthesis are very intense, while at flowering, ripening and full maturation of grapes, the RNA content diminish very much. The values of the RNA content of the leaves belonging to the Fetească neagră cultivar offer the possibility of analysing different factors regarding the complexity of the genetic material of the studied genotype.*

The biological role at cellular RNA consist in transmission of genetic information by DNA to proteinic synthesis centres (ribosomes). RNA execute important functions in process of decodification of genetic message and its translation in proteinic biosynthesis (Glick, Pasternak, 1998; Kleber, Schlee, Schopp, 1990; Pădureanu, 2004; Pădureanu, 2005).

### MATERIAL AND METHOD

The biologic material used in the experiment has been represented by *Fetească neagră* grape vine sort cultivated in the ampelographic collection of " V. Adamachi" Experimental Didactical Station belonging to University of Agricultural Sciences and Veterinary Medicine „Ion Ionescu de la Brad” from Iași.

From the relevant sort there were sampled mature leaves from the fertile of shoots from 30 grape vines, in 4 phenophases: unbudging, flowering, ripening up to the full maturity of grapes.

From the relevant leaves 50 mg of mesophil existing between N1 and N2 nervures was sampled, as close as possible to the leaf stalk.

10 determinations of RNA content were effected for each phenophases.

The extraction of nucleic acids was made after Spirin method (Spirin, 1958).

The achieved results for each phenophases have been analyzed from biostatistical point of view (Ceapoiu, 1968).

### RESULTS AND DISCUSSIONS

There is ascertained a progressive reduction of the RNA content in the mature leaf at the studied grape vine sort as long as the grape vine progresses in vegetation.

In the unbudding phenophases, the RNA content is high (8.004 mg/g) v.s. other phenophases, because in this development stage at plant, the proteinic synthesis are more strong, the plant required an more quantity by proteinic compounds at vegetation starting (table 1, fig. 1).

In the flowering phenophases, the quantity of RNA decreases significantly (1.398 mg/g) (table 1, fig. 1).

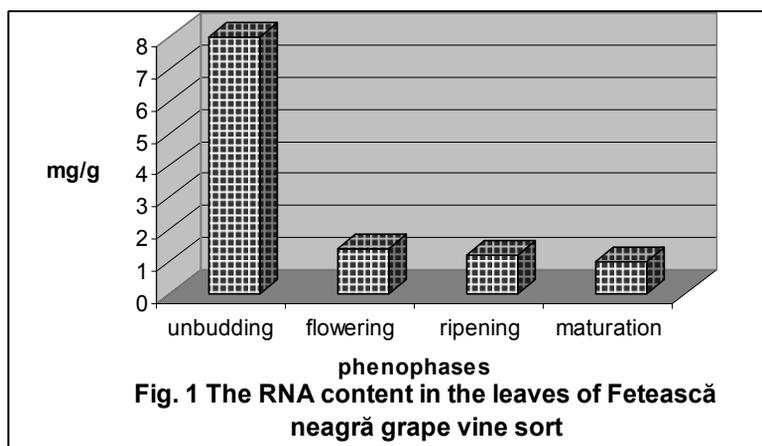
At ripening of grapes, quantity of RNA low diminish (1.233 mg/g) (table 1, fig. 1).

At the full maturation of grapes, is registered a new decrease at the quantity of RNA (1.036 mg/g) (table 1, fig. 1).

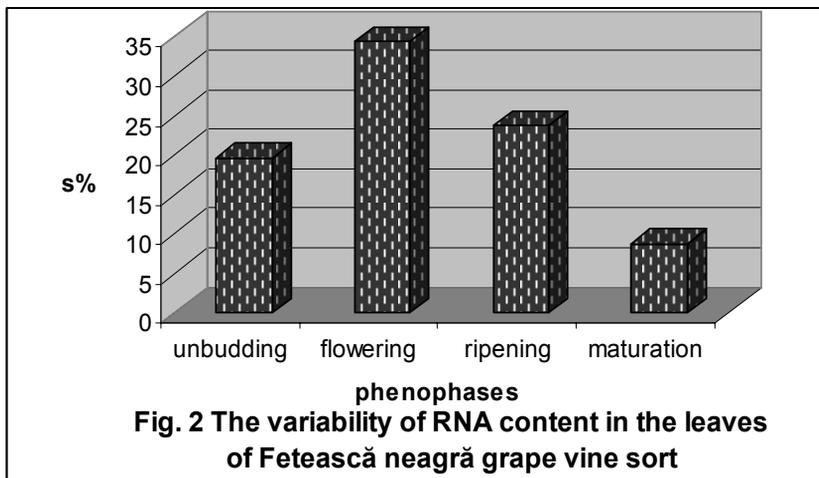
Table 1

The RNA content in the leaves of *Fetească neagră* grape vine sort

Phenophase	The average value	Standard deviation (S)	Variability coefficient (S%)
Unbudding	8.004	0.39	19.62
Flowering	1.398	0.12	34.28
Ripening	1.233	0.07	23.64
Full maturation of grapes	1.036	0.02	8.76



Sueing the RNA content away at four phenophases, it evidenced that the variation of this character is moderate at unbudding, at flowering and at ripening, the variation is big, as soon as at full maturation of grapes, the variation of RNA content is small (fig. 2).



The limit differences is represented in table 2.

Table 2

**The RNA content in the leaves of Fetească neagră grape vine sort**

Phenophase	The average value (mg/g)	Difference by comparison control	Significance of difference
Average (control)	2.918	-	-
Unbudding	8.004	+ 5.086	***
Folwering	1.398	- 1.52	0
Ripening	1.233	- 1.685	0
Full maturation of grapes	1.036	- 1.882	0

DL 5% = 1.34  
 DL 1% = 1.92  
 DL 0.1% = 2.82

## CONCLUSIONS

1. RNA content in the leaves of *Fetească neagră* grape vine sorts is quite high in the unbudding phenophase, when the metabolism is intensified.

2. Starting with the flowering phenophase, the quantity of RNA is decreasing rapidly. This phenomenon is directly correlated with the increased intensity of the biogenesis processes of the cellular organites.

3. The quantity of RNA decreases until the maturation of grapes phenophase.

4. The variation of RNA content is moderate in the unbudding, big in the flowering and ripening, small in the maturation of grapes phenophases.

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