

RESEARCHES REGARDING THE TENDENCY IN SOME CLIMATIC FACTORS EVOLUSION FROM SOUTH MOLDAVIA HILLY REGION WITH REFERENCE TO VITICULTURAL PLANTATION

CERCETĂRI PRIVIND TENDINȚA EVOLUȚIEI UNOR FACTORI CLIMATICI IN ZONA DE SUD A MOLDOVEI, CU REFERIRE LA PLANTAȚIILE VITICOLE

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Abstract. *By its actions beside the normal limits and depending upon the vine bioclimate the climate risk demands causes violent destructions, finally resulting in total or partial losses of biological capacity. Establishing the climate risk it will be taken into account the limit of vine climate risk. The viticultural ecosystem is that functional unit of biosphere created and controlled by humans, in order to obtain a high quality grape production in ever profitable social and economic conditions. The viticultural ecosystem is directly influenced by the global climate changes.*

The human civilization is presently facing more dangerous environmental tendencies (9) among which the ones concerning the approached topic might be:

-Obvious climate changes, especially undertaken by temperature raisings, with deep ecological effects. Higher temperatures mean more extreme climate events (drought, heat waves, etc.).

-Production decrease, generally, the agriculture is extremely vulnerable to many of the convulsions which join the climate change.

Rezumat. *Riscul climatic, prin acțiunea lui în afara limitelor normale, funcție de cerințele bioclimatice ale viței de vie provoacă distrugerii violente, determinând în final pierderi parțiale sau totale ale capacității biologice. În stabilirea riscului climatic se va avea în vedere și pragul de risc climatic al viței de vie. Ecosistemul viticol este acea unitate funcțională a biosferei creată și controlată de om, în vederea obținerii unor producții de struguri, de calitate superioară în condiții economice și sociale tot mai avantajoase. Ecosistemul viticol este direct influențat de schimbărilor climatice globale.*

Civilizația umană se confruntă în prezent cu mai multe tendințe ambientale primejdioase (9) printre care, referitoare la tematica ar putea fi:

-Schimbări evidente de climă manifestate îndeosebi prin creșterea temperaturilor cu profunde efecte ecologice. Temperaturi mai mari înseamnă mai multe evenimente climatice extreme (secetă, valuri de căldură, etc.).

-Producția scade în general, agricultura este extrem de vulnerabilă la orice modificare asociată schimbărilor climatice.

MATERIAL AND METHOD

The paper presents some climatic factors analysis (Dragomirescu Elena, Enache L., 1998) that influences the grape growth and fruition process. In the last time had been noticed a climatical factors evolution deviation from the multiannual average with influences on vegetation phenophases unfolding.

The researchers sustain that it is possible like the raised temperatures, the drought and atmospheric pollution to conduct at some diseases and pest actuation

(for example, the acid rains decline the plant resistance toward pest etching). The agro ecosystem pattern making depends in a large measure (but not decisive) of the relation between plants and insects on the global climatically changes substance. As in plants case, the raised temperatures, the drought frequency and increase, the dryness cause *mutations* and modifications in *pest's* world with hard to evaluate consequences in the wine-growing ecosystem health. From these reasons it is important to know what the tendencies are in climatically factors with direct influences on grape crop evolution.

The research was done at S.C.D.V.V. Bujoru, Galati County. The weather study has been performed between 1979 and 2005. The weather evolution of the climatically factors and those evolution's tendency in the Moldavia south's hillock zone were tracked. The weather observations were recorded at S.C.D.V.V. Bujoru Weather Station. The precipitation regime, pouring precipitation and average temperature evolution were tracked. (Enache Viorica, 2004)

RESULTS AND DISCUSSIONS

In the 1st figure are graphically presented the monthly average precipitation and monthly average temperatures for Bujoru zone. The precipitation's monthly and yearly distribution shows that the maximum and the minimum values appear very distant. The rainier years were 1979 (644, 3 mm) and 1997 (690, 7 mm) and the lower precipitation were recorded in 1986 (251, 5 mm) and 1994 (286, 1 mm).

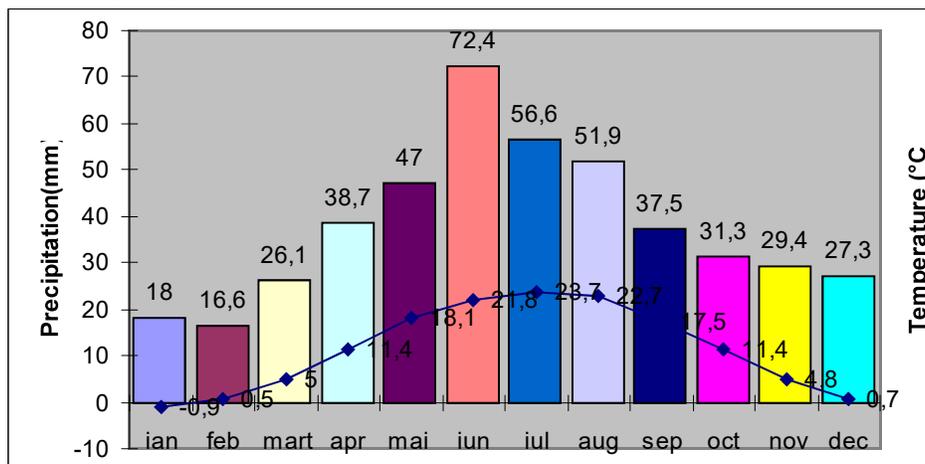


Fig. 1 The medium precipitation's regime and air temperature at RDVV Bujoru Weather Station (1979-2005)

Even if the analyzed period it's relatively short, can be observed a ciclicity tendency of about 7-8 years in which the rainy interval alternates with the droughty one (fig. 2). The mobile average for 5 years that states in a convincing way the clime tendency suggest that in the 1986-1991, 1995-1998 and 2001-present intervals was and it is present the specific to drought phenomenon. Analyzing the yearly precipitation frequency (tab.1), results that the excessive rainy years gravity (25%) it's closed from excessive droughty years gravity. The yearly precipitation sized between 500-600 mm has the biggest frequency (45, 8 %).

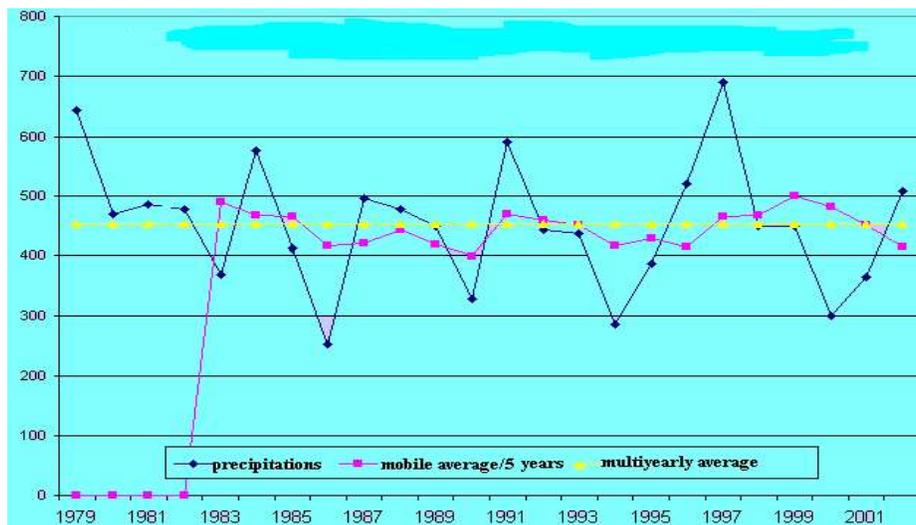


Fig. 2 The yearly precipitations (mm) at RDVV Bujoru Weather Station

Table 1

Yearly precipitation frequency between 1979-2002
Weather Station SCDVV Bujoru

| Nr. | Yearly precipitation interval (mm) | Frequency | |
|-----|------------------------------------|-----------|------|
| | | Ani | % |
| 1. | 200-300 | 2 | 8,3 |
| 2. | 300-400 | 5 | 20,9 |
| 3. | 400-500 | 11 | 45,8 |
| 4. | 500-600 | 4 | 16,7 |
| 5. | 600-700 | 2 | 8,3 |

Even though the yearly precipitation sum excels in lots of years 450 mm, the pouring precipitations are specific to Bujoru zone, unbalanced distributed in the vegetative period, with large drought periods of time framed by short downpour periods.

Under the influence of the termic energy take place the grape vital processes. Each phenomenon it's conditioned by a temperature optimum which can be raised or low and the phenomenon can determine certain physiological and biological bridges. The inferior biological bridge at which the grape biological processes are unleashed is 10°C. As a upper limit, the 30-36°C temperature produce the blighting of the grape leaves (in accordance with type and foliar mass).

The air temperature evolution represented in the 1st fig. through the multyearly average curve it's marked by a minimum in January (-0,9°C) and a maximum in July (23, 7°C). Between those limits the transition is done gradually.

The monthly values analysis of the interval between 1979- 2002 distinguish a – 9,3°C minimum in February, 1985 and a 27,0°C maximum in July, 2001.

As it can be seen in the 3rd fig., the mobile average on 5 tears indicates simple temperature abduction in the 1990-2002 intervals, which is increasing until now.

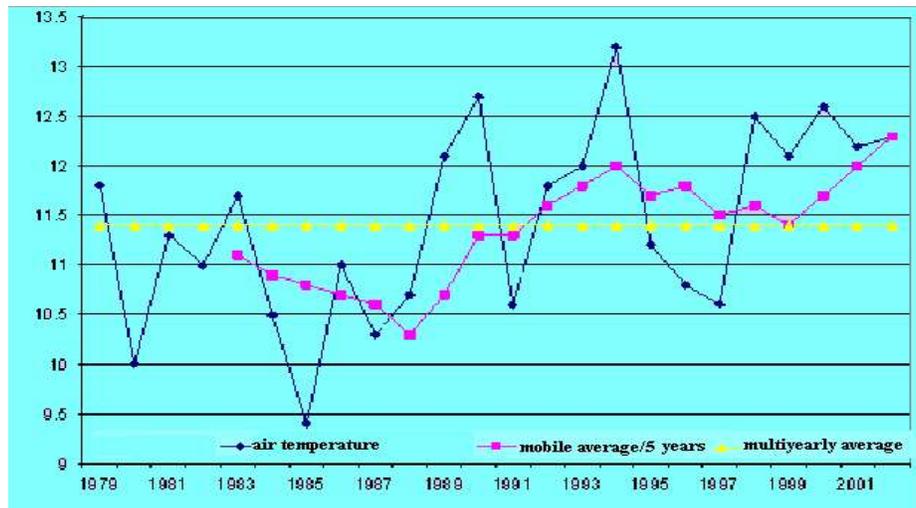


Fig. 3 The yearly average temperature °C at RDVV Bujoru Weather Station

CONCLUSIONS

Following the weather data regarding the monthly and yearly medium precipitation, the monthly and yearly medium temperatures can be argued that:

- in the last two decades there is a zone drying tendency, with a 7-8 years ciclicity when the rainy periods alternates with those extremely dry;
- it's registered a simple air temperature increase in the 1990-2002 intervals, which accentuates until now.

REFERENCES

1. **Dragomirescu Elena, Enache L.**, 1998 - *Agrothermology*, The Didactica si Pedagogica Publishing House, R.A. Bucuresti
2. **Enache Viorica**, 2004 – *Researches regarding the erosional processes ecological implication through wine-growing fields situated on Moldavia south slope lands; reference to "Dealurile Bujorului Vineyard"*, Galati County. Master's Paper - "Gh.Asachi" Technical University, Iasi, Hidrotechnical Faculty.