

THE ANALYSIS OF THE RAIN GANGE SYSTEM AT THE MAIN METEOROLOGICAL STATIONS FROM TIMIS AND CARAS SEVERIN COUNTRIES

ANALIZA REGIMULUI PLUVIOMETRIC LA PRINCIPALELE STATII METEOROLOGICE DIN JUDETELE TIMIS SI CARAS SEVERIN

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Abstract: For Banat, from all the rain gauge risks, the most important are those possible during the whole year, namely the humidity excess and the drought and dryness. To these phenomena we can add torrential rains, acid rains and the storms with hail, phenomena that have a great impact over the environment degradation. From the 30 years old data, there were spotted rain gauge stations and posts from Timis and Caras-Severin contries which showed extreme yearly (annual) obvious values during the period of 1970-2000.

Rezumat: Pentru Banat, dintre toate riscurile pluviometrice, cele mai importante sunt cele posibile in tot anul si anume, excesul de umiditate si fenomenele de seceta si uscaciune. La aceste fenomene putem adauga ploile torentiale, ploile acide si furtunile insotite de grindina, fenomene ce au impact mare asupra degradarii mediului. Din sirul de date pe 30 ani, s-au ales statiile si posturile pluviometrice din judetele Timis si Caras Severin care au semnalat valori extreme anuale evidente, in perioada 1970 -2000.

Key words: humidity excess rain gauge station, drought, dryness, multiannual media, minimum temperatures.

Cuvinte cheie: excesul de umiditate, post pluviometric, seceta, uscaciunea, media multianuala, temperaturi minime.

INTRODUCTION

For the Banat zone, the humidity excess is determined by the rains generated by the oceanic cyclons activity which develops at the outskirts of the Azoric anticyclon and by the mediteranian cyclones with worned evolution.

The increase of the medium yearly quantities with 15-20% over the multiannual media gives the year the name (qualifying) of excessively raining.

From the 20 years old data, there were spotted rain gauge stations and posts from Timis and Caras-Severin contries which showed extreme yearly (annual) obvious values during the period of 1980-2000. The exceptional rainy years, with more than 30% deviations, were 1970 and 1992 when there were recorded quantities that greatly exceeded the multiannual values.

DATA AND METHODS

At the rain gange station from Costeiu de Sus in 1970 there was measured a quantity of 1692.0 mm, with 119.2 mm more than the multiannual average (771.8 mm): 17 large quantity of rain falls, 1334.2mm, was recorded at the Graniceri station in 1954, achieving a percentage of 115.3% compared to the average (610.7mm). Large quantities of rain falls were confined in 1999, when at more observation points there were exceeded 1000 mm: Visag 1010.2 mm (56.0% over the multiannual average) Tirol 1129.7 mm – 50.2%, Resita 1108.8 mm – 42.5%, Toplest 1001.6 mm – 50.2%. In 1955 there were also noticed quantities over

1000mm at Oravita 1261.8 mm and Sasca Montana 1333.8 mm. Another rainy year, at more meteorological and rain gauge stations, especially in the mountain and hill regions was 1966 when the 1000mm limit was exceeded extremely at Tarcu Peak 1680.7 mm, Semenic 1678.3 mm, Valiug 1457.9 mm and Brebu Nou 1377.0 mm.

Tabel 1

The exceptional rainy year recorded at the rain gange stationsf rom Timis and Caras-Severin with a percentage deviation bigger than 30%

Year	Rain gauge station	Multiannual average	Quantity of rain falls	Deviat %
1970	Timisoara	601.0	844.2	40.5
	Recas	615.4	854.1	138.8
	Costeiu de Sus	771.8	1692.0	119.2
	Bucova	904.8	1513.3	67.2
1999	Ortisoara	544.0	980.9	80.3
	Tirol	686.7	1129.7	64.5
	Resita	778.1	1108.8	42.5
	Toplet	666.9	1001.6	50.2

RESULTS AND DISCUSSIONS

Isolatedly there were confined very big rain falls at some stations, as it happened at Rusca Montana in 1977 when there was measured the biggest quantity of rain falls from Banat, 2178.6 mm with a percentage of 91.7% compared to the multiannual average. In the year 1960 at Borlova a quantity of 1845.5 mm fell, and in 1958 at Carpinis 1382.6 mm were recorded.

During the warm season (months IV-X) the biggest quantities of rain falls were recorded in the year 1974 and 1975 at more stations (47% from the totality). This, at the mountain stations in 1974, the maximum quantities oscilated between 1418.3 mm at Cuntu and 1042.9 mm Poiana Marului .

During the cold season (months XI-III) the maximum values were recorded in the year 1979 at a number of 19 station situated in the plain and hill region. The maximum quantities in the plain were included between 329.9m (Periam) and 757.8 mm Carpinis in 1959, while in the hills they varied between 701.0mm (Costeiu de Sus) and 339.3 mm (Visag) both in 1970. In the depressions the quantities are generally more reduced, from 305.0mm (Bozovici) to 295.7 mm (Toplet) in different years. In the mountains the biggest value in 1979 at Rusca Mountains, 1019.3mm being considered the only quantity that exceeded 1000mm during the cold season in analysed years interval. The other values were included between 489.4mm Poiana Marului and 688.8 mm Varful Tarcu, in different years.

In the 1970 winter there were recorded the biggest quantities from a 10 years studied in interval at more stations (95%) from the plain regions. These maximum values oscilated, in the plain region between 239.6mm (Periam) and 418.3 mm (Carpinis). In the mountains the most important quantities were from 326.0mm (Dognecea) to 763.6 mm (Rusca Mountain) recorded in different years.

In the low regions of the plain, the 1970 spring was richer in rain falls at more observation stations being recorded the biggest quantities. At Carpinis there was recorded the biggest quantity 438.6 mm in the year 1978. In the hills and depressions the biggest values of this season were recorded in different values, being included between 518.0 mm Costeiu de Sus.

The summer season is that which achieves the biggest heaviness in the annual quantities of rain falls. There were more years with big quantities such as: 1965, 1970 and 1975. If in the fields, hills and depressions regions the quantities were most un usual varying between 283.4mm at Periam and 644.1mm at Costeiu de Sus, in the from 716.2mm (Vf. Tarcu) to 1001.4mm (Semenic), values registered in the year 1969.

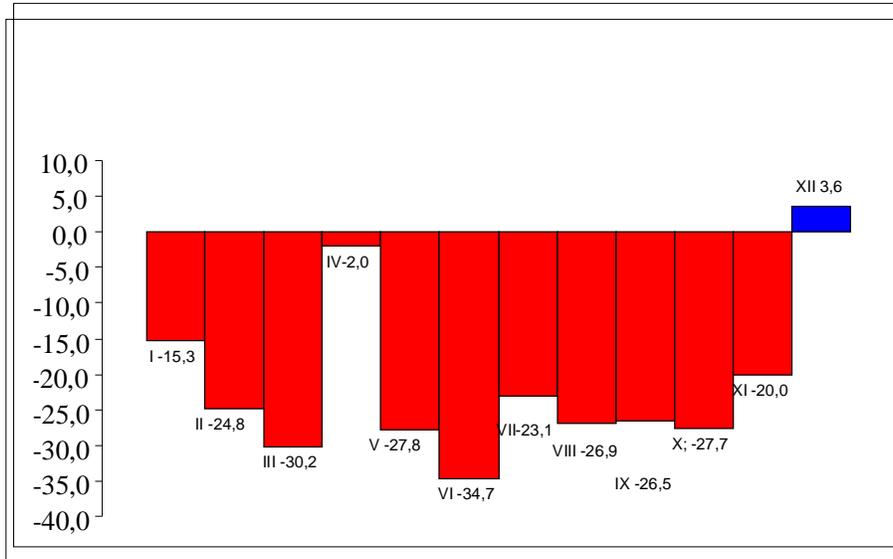


Figure 1. Value or rainfalls in 2000 year

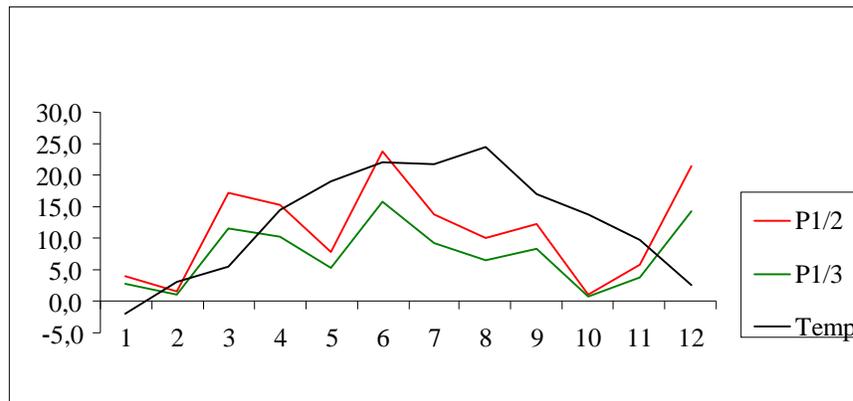


Figure 2. Climodiagram in 2000 year (Walter Leigh)

The autumn of 1972 and 1974 years proved to be the rainiest in the presented period, at more than half of the Banat stations and posts.

From the analysis of the values it can be found out that there are not very big differences between the maximum quantities recorded at the observations points. They are included between 180.9 mm Jimbolia and 490.8mm Rusca Mountains, quantities measured in 1981 respectively 1980.

CONCLUSIONS

During the year 1991, the rain falls fallen in the Banat area were affected by ones of the high floods in the months of June and August, in all the rivers of this areal and there

duration (or length) was shors. All thought they stayed for a short time on some agricultural plots they affected the crops.

The high floods of 1992 were of small proportion and they didn't create problems. More important was that of 15th June in the hart of the Timis river on the Nadrag, Cornet and Valea Mare water waugs. Also in February and April some new high floods develop on Poganis, Caras and Nera rivers, reaching corresponding levels of phase from the hydrometric station from Brebu, Lecu, Carasova, Dalboset.

The damagies recorded were minimum being affected 30 ha of plot, 14 houses, 6 small bridges and the bridge over Valea Mare. The year 1995 may be characterized as a rainy year, the quantities increased and caused floods in June and December. The year 1997 was a rainy year, the rain falls quantities exceeding the multiannual average. Some of the high floods from April –May, July –August, October, November were with long duration and bigger intensities on same rivers. The damage cause in the period 21.04-11.05 on the Bistra river affected again the left bank and dyke which in the Glimboca- Obreja section harned 11km.

In the hydrographic basin of the Barzava and Valea Mare water way during 7-15.VII and 21.VII -8.VIII-the floods distruget the defence works.

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