CLIMATE CONDITIONS WITHIN THE BASIN CREANGA MICA

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Abstract

After Monograph climatic zoning the geographical production unit enters in the mountain climate (IV). This climate is favorable for medium mountain forests (IVC) with a subsistence moderate temperature fluctuations.

Key words: climate, temperature, evapotranspiration, precipitation, wind.

INTRODUCTION

Sustainable Forestry and maintaining biodiversity research, knowledge of climatic conditions is one of the basics. Plays important role in the choice of tree species, shrubs that will be in the stands composition and roles will successfully maintain ecological, economic, social forest. Climate influences the choice of optimum periods for implementing the silvicultural work, so it is necessary climatic characteristics knowledge in the area.

MATERIAL AND METHODS

The Research Material is a basin with an area of 1200 ha. Covered by vegetation forest which is part of National Forest Fund.

Research methods are collections of information and scientific documentations from magazines, specialized books, measurements, data downloads and processing.

RESULTS AND DISCUSSION

The thermal system

The annual average temperature is maintained positive throughout the region, winter inversions often occur. After Koppen's territory zoning the province lies within Dfbx climate, characterized by boreal climates, wet, harsh winters and hot summers. The main characteristics of this type consist of an air with relatively high climatic air humidity, cloudiness and rainfall high throughout the year. The hottest month temperature is below 22 degrees. Winter precipitation is maximum at the beginning and minimum at the end. Climatic data environments that are mentioned in this chapter were obtained from the weather stations in the area.

Lowest monthly average temperatures are recorded in January and February and highest in July and August. In hot summers can reach really high cotes. Thus Miercurea - Ciuc were recorded July 30, 1953 were 36.5 C, and the Gyergyószentmiklós of July 7, 1929 were 35.5 C.

Table 1

Monthly average, annual and annual air temperature amplitude

Weather stations	**Months**												**Annual average**	**Amplitude**
	I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII		
0	1	2	3	4	5	6	7	8	9	10	11	12	13	14
Gheor-gheni	-6,8	-4,7	0,4	6,2	11,4	14,4	16	15,5	11,8	6,6	0,2	-4,3	5,6	22,14

In very cold winters were recorded temperatures to - 38C (January 11, 1963) at Joseni, or - 35.5 C Gyergyószentmiklós. Due to reduced circulation in winter is cold air stagnation in small depressions (valleys), where a layer of cold air where the temperature can drop to - 20C, unlike nearby mountainous area, resulting in thermal inversions. The same phenomenon, but much smaller can be observed in other seasons. After data from the meteorological station Gyergyószentmiklós results that are recorded annually 160-165 days per year with frost, the average first frost date is at the end of September and the last in mid-May. Cloud is influenced by atmospheric circulation and local orography factors. It was found that it is high in intra depressions or high peaks in the area. Station records Gyergyószentmiklós 155-160 overcast days per year, the highest frequency of these days is the period from November to January, and the number of sunny days is about 100-120/year, especially in the months from June to October. Characteristics of the thermal regime presented reveals a number of features such as the following.

Appearance, or conversely, the disappearance of the phenomenon of frost advanced data growing season, provided that no soil is not protected by a layer of snow can cause damage, especially youth culture. In contrast to this, the reduced frequency of late frosts and great range of them minimize the risk of compromising the natural seeding and young crops.

In dry areas, high temperatures, combined with the lack of rainfall makes the soil water deficit to widen, leading young crop drying and partial drying of older stands situated on sunny slopes.

Average temperatures shown juxtaposed to the temperature requirements of forest species existing in the area, indicating a high degree of favorability, so good conditions for forest cultures.

Rainfall

Rainfall influenced the direction perpendicular (NS) to the volcanic mountains of the west winds, they act as a firewall in the way of warm and humid air masses. Following the plateau eruptive chain falls an annual precipitation between 600 and 1200 mm, with a greater distribution of them in the west. Monthly and annual rainfall averages obtained after Gyergyószentmiklós station are shown below.

Table 2

Average monthly and annual rainfall

Weather stations	Months												Annual average
	I	II	III	IV	V	VI	VII	VIII	IX	X	XI	XII	
0	1	2	3	4	5	6	7	8	9	10	11	12	13
Gheor-gheni	20,9	25,2	30,0	47,0	67,5	98,7	91,9	77,3	46,9	36,3	26,3	24,4	603,0

Due to the high mountains of Harghita area they act as a barrier in the way of humid air masses coming from the west and northwest, across production unit rainfall is more higher than the eastern side of the massif of Harghita. The number of rainy days is higher in the mountains to the depression, so they are in number 140-180 and 100-110 in the mountainous depressions. In the protection unit they are in number about 110-120 per year.

Evapotranspiration

In relation to rainfall we stand in an area of high suitability for forest vegetation. In dry years, high temperatures combined with lack of rainfall makes water deficit in part to stress, which leads to the young crop production and partial drying of older tree lying on sunny slopes.

The wind

In the production unit in mind that the highest frequency have winds that blow from the north-west and west (20-22%), which generally are felt most time of the year. During spring and autumn are common and the southern or eastern winds. The depressions often observed phenomenon of atmospheric calm (61%), especially in winter when there are thermal introversion. The average wind speed in the protection unit 4-4 m/s knocked the wind is not signaled than in isolation. So through this view are very favorable conditions for forest vegetation, especially spruce lowlands protection unit, mixtures of spruce and beech, conifers and beech in the upper areas of the unit and plates as for other deciduous species as sycamore, rowan, goat willow, aspen.

Climate summary

The main climate indicators that were presented above lead to employment in the studied climatic province Dfbx (after Koppen) characterized by boreal climates, moist, but harsh winters and hot summers. The main features of this type of climate are relative air humidity, cloudiness, precipitation throughout the year, the temperature of the hottest under 22 C, with maximum rainfall in early summer to late winter.

In this type of climate blizzards and droughts occur rarely. From the above it follows that in this unit the climate is favorable for the development of spruce, fir and beech. In addition to these basic species can introduce other coniferous or deciduous species valuable as larch, pine, duglas, sycamore, trees species will increase resistance against harmful factors.

CONCLUSIONS

Optimal development of forest dependent species recorded climatic conditions and is one of concern number one specialists. Without a climate favorable to sustainable development in forestry is impossible which prevents the exercise roles forest ecological, economic and social.

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