

Studies regarding the seedling diameter in Uivar, Vermeş- Izgar and Luncavița- Verendin amelioration perimeters

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Abstract

This paper presents a synthesis of base seedlings diameter in improving perimeter Uivar, Vermeş-Izgar and Luncavița – Verendin. This perimeter consisting of degraded lands by sheet erosion. Was followed the base diameter of seedlings plants.

Key words

Degraded lands, afforestation works

The research was held in three distinct areas in terms of altitude, Timis Plaine at an altitude between 240 and 260 m, Poganișului Hills at 500-600 m and Banat Mountains at 1600-1700 m, incorporating three types of landscape: plain, hill and mountain.

In Campia Timișului, in Uivar village, located in Timis county, was established the area for improvement Uivar, made by 6 stationary types, namely: Răuți, Sânmartinu Maghiar, Ionel, Otelec, Uivar, Pustiniș.

In Poganișului Hills area, was established the improvement area Vermeş – Izgar and in Vermeş village in Caraș- Severin county. This perimeter is divided into 4 stationary types: Dosul Murariului, Ștefârța- Dealul Logii, Dealul Curții Șușara (Vermeş village) and Simera (Izgar village).

In Banat Mountains area was established the improvement perimeter Luncavița- Verendin, Caraș Severin county.

All the improvement perimeters part in this study are covering a total of 225,48 ha.



Measuring the diameter with electronic callipers

Material and Method

The material used for the study is made of the seedlings that were installed in the areas of improvement.

The method currently used for the crops establishment was to plant the seedlings which were already grown by 2-3 years, depending on the species, in a soil that was prepared in autumn by deep plowing (35-40 cm), disced or by ripping, in the Timis Plaine

area, where the land permitted the mechanized soil preparation. In the areas of improvement Vermeş-Izgar and Luncavița- Verendin, the soil preparation was held in hobs of 60x80 cm, as well as 40x60 cm.

For the diameter of the parcel (mm) for each seedling, the measurements were made with an electronic calliper with an accuracy of 0,01 mm.

Results

Base seedlings diameter at play to some extent the degree of development of plants, mainly in terms of sturdiness. (Table 1 and Table 2).

Table 1

The average diameter of seedlings (mm) from Uivar improvement perimeter, on soil types (sites)

Compositio n %	Improuvme nt perimeter	Diameter of seedlings (mm)						
		St (Peduncula te Oak)	Ce (Turkey Oak)	Fr (Ash Tree)	Plea (Eurameric an poplar)	Sc (Acacia)	Pin (Black pine)	Păd (Hawthorn e)
		<i>Med(min- max)</i>	<i>Med(mi n- max)</i>	<i>Med(mi n- max)</i>	<i>Med(min- max)</i>	<i>Med(mi n- max)</i>	<i>Med(mi n- max)</i>	<i>Med(min- max)</i>
A. Chernozem calcaric- salinic- gleic								
60%St 30%Fr 10%Pd	Răuți	12,3(10,1- 14,5)		20,3(11, 3- 29,3)				4,2(2,3- 6,1)
60%St 30%Fr 10%Pd	Pustiniș	14.9(11,4- 18,4)		24,1(12, 6- 35,6)				5,3(2,9- 7,7)
B. Chernozem cambic- salinic								
60%St 30%Fr 10%Pd	Otelec	16,5(10,8- 22,2)	-	20,8(10, 3 - 31,3)	-	-	-	4,1(1,8- 6,4)
C. Chernozem aluvic- calcaric- salinic								
100%Plea	Otelec	-	-	-	34,3(17,4- 51,2)-	-	-	-
D. Aluviosol gleic- salinic- alcalic								
60%St 30%Fr 10%Pd	Sânmartinu Maghiar	10,6(9,1- 11,5)	-	24,2(18, 8- 29,6)	-	-	-	4.1(1.9- 7.2)-
100%Plea					32,6(20,6- 44,6)			
E. Pelosol gleic-								
60%Ce 30%Fr 10%Pd	Uivar	-	16,4(10, 5- 22,3)	21,2(15, 3- 27,1)	-	-	-	3,8(1,2- 6,4)
60%Ce 30%Fr 10%Pd	Ionel		19,6(12, 6- 26,6)	22,4(16, 8- 28,0)				4,6(2,3- 6,9)
100%Plea	Uivar	-	-	-	30,7(13,1- 48,3)			

Table 2

The average diameter of seedlings (mm) from improvement perimeter Vermeş – Izgar and Luncavița- Verendin, on different soil types (sites)

Compoziția %	Perimetrul de ameliorare	Diametrul mediu la colet al puieților (mm)						
		St (Pedunculate Oak)	Ce (Turkey Oak)	Fr (Ash Tree)	Plea (Euramerican poplar)	Sc (Acacia)	Pin (Black pine)	Păd (Hawthorne)
		Med(mi n- max)	Med(mi n- max)	Med(min - max)	Med(min- max)	Med(min - max)	Med(min - max)	Med(min- max)
F. Luvosol stagnic								
75%Sc 25%Fr	Simera	-	-	27,6(20,9 - 34,3)	-	17,2(12,4 - 22)	-	-
75%Sc 25%Fr	Dosul Murariului			29,4(19,3 - 39,5)		20,8(14,1 - 27,5)		
100%Sc	Dealul Curtii-Șușara	-	-	-	-	19,6(11,3 - 27,9)	-	-
G. Preluvosol vertic- stagnic- stagnogleizat								
100%Plea	Simera		-	-	32,9(14,4- 51)	-	--	-
H. Vertosol stagnic-								
75%St 25%Fr 25%Pd	Ștefârța- Dealul Loghii	19,4(14,0- 24,8)		28,9(14,3 - 43,5)	-	-		6,3(2,3- 10,3)
75%Sc 25%Fr				24,4(16,2 - 32,6)	-	20,6(12,5 - 28,7)		
.I. Dystricambosol highly degraded								
100%Sc	Luncavița Verendin	-	-	-	-	16,4(11,7 - 21,1)	-	-
100%Pin		-	-	-	-		23,7(12,8 - 34,6)	-

Conclusions

The diameter registered by the seedlings after 3 years from planting is comprised in wide limits, from 3,8 - 34,3 mm, depending on the species, edaphic conditions and the bio-climate; environment(temperature, precipitations, vegetation and the surroundings).

According to the nature of the species, we can distinguish:

- Species with high growth potential (rapidly growing species), Euramerican poplar and Acacia.

- Species with a reduced growth potential (slower growing species), the Pedunculate Oak, Turkey oak, The Black Pine and the Hawthorne.

- Intermediate species: Ash Tree

Taking into account the Ash Tree that can be found on various types of soil, it is possible to group the soil as following:

- Soils on which the increase in diameter was high (24,4- 29,4 mm), the vertisols and luvisols

- Soils on which the increase in diameter was weaker (20,3- 24,2 mm), calcaric chernozem, hyposodic Chernozems, Aluvia chernozem, gleyic Fluvisolsand pelosolul gleic;

The diameter growth differences are due to the different climatic regime, taking into account the fact that the most important diameters were registered in the improvement perimeters located in Pogonis Hills and in Timis Plain.

References

1. Ciortuz I., 1981, Ameliorații silvice, Ed. Didactică și Pedagogică, București.
2. Ciortuz I., Păcurar V., 2003, Ameliorații silvice, Ed. Lux Libris, Brașov.
3. Damian I., 1978, Împăduriri, Ed. Didactică și Pedagogică, București.
4. Nețoiu C., Vișoiu D., Bădele O., 2008, Dendrologie, Ed. Eurobit, Timișoara.
5. Târziu D., 1997, Pedologie și Stațiuni Forestiere, Ed. Ceres, București.