OBSERVATIONS REGARDING MULTIPLICATION ON VEGETATIVE METHODS OF *CUPRESSOCYPARIS LEYLANDII* DALLIM. IN IAŞI COUNTY CONDITIONS

OBSERVAŢII PRIVIND ÎNMULŢIREA PE CALE VEGETATIVĂ A SPECIEI *CUPRESSOCYPARIS LEYLANDII* DALLIM. ÎN CONDIŢIILE JUDEŢULUI IAŞI

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Abstract.
Among the multitude of conifers found in green spaces is found the Cupressocyparis genus. The species of the genus Cupressocyparis are of particular importance in the arrangement of green spaces and especially in the conditions from us in the country which are generally favorable and very favorable for these species. The purpose of the paper is to highlight the potential for breeding through cuttings of the most known species, namely Cupressocyparis leylandii Dallim*., which is found in Iasi County. Observations were made regarding the optimal timing for the cuttings, determining the influence of the culture substrate on the cuttings and establishing the rhizogenous substance Radistim 2 on the cuttings that were subjected to treatment.*
Key words: *cuttings, substrate, root biostimulators*

Rezumat.
Din multitudinea de conifere întâlnite în spațiile verzi, genul *Cupressus* este cel mai des utilizat. Speciile din cadrul genului *Cupressus* au o importanță deosebită în designul peisagistic, mai ales în condițiile din țara noastră, care sunt în general favorabile spre foarte favorabile. Scopul lucrării este de a evidenția potențialul de înmulțire prin butași la cea mai cunoscută și utilizată specie și anume *Cupressocyparis leylandii* Dallim. Au fost făcute observații privind momentul optim pentru efectuarea butașilor, determinând influența substratului de cultură asupra butașilor și stabilind influența substanței rizogene Radistim 2 asupra întradăcinării butașilor care au fost supuși tratamentului.
Cuvinte cheie: *butaşi, substrat, biostimulatori de înrădăcinare*

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INTRODUCTION

Landscaping is one of the basic components of green areas that ensure the aesthetic aspect of towns.

Among the many species of coniferous trees among ornamental shrubs, the species belonging to the genre *Cupressocyparis* are very important for the landscaping of green areas and the weather conditions in our country are generally favourable and very favourable for this species [Bernardis, 2024; Gawish et al., 2026; Iliescu, 2002; Klimaszewska et al., 2016; Zaharia, 2003].he necessity of the diversification of the plant assortment is imposed as a priority taking into account the diversity of the biological material and especially the achievements on international level. This paper comes to complete the area specialists, as an efficient and well documented work because it aims to produce vegetative seeding material and the rooting percentage in *Cupressocyparis leylandii* Dallim [Bernardis, 2024; Cioltan & Cioltan, 1989; Jang et sl., 2026; Pașcu et al., 2018; Pecero-Casimiro et al., 2020].

MATERIAL AND METHOD

The experiment was carried out in the greenhouse „Moara de Vânt", Iaşi. The biologic material used to carry out the experiment comprised woodified saplings of *Cupressocyparis leylandii* Dallim.

The saplings were harvested on 15.03.2025, and their preparation and setting for planting were done on the same day. The saplings used in the experiment were 10 cm long, were planted on cross beams, and the thickness of the planting layer was 15 cm. The planting of the saplings in the planting layers comprising: powder perlite (Mt); grain perlite + sand (1:1); powder perlite + peat coal (1:1) was done in holes, which had been previously opened by a planter (Table 1).

The planting distances were 7 cm between the rows and 5 cm on the row, and the planting depth was approximately 2/3 of the sapling length. To ensure the humidity of the planting layer and to maintain the turgescence of the saplings tissues, watering was done manually, using a watering can. During the vegetation period, phytosanitary treatments were applied to maintain the health of the saplings, using fungicides (Topsin, 0,1%). During the period the experiment was carried out, the planted saplings were the beneficiaries of care treatment and work such as: watering and phytosanitary treatment.

During the experiment, the following observations were made: -observations regarding the influence of the layer composition in three levels: powder perlite (Mt.); ground perlite and sand (1:1) and powder perlite and peat coal (1:1) –observations regarding the influence of the treatment with Radistim 2: treated and untreated saplings. The experiment was type 3*2, with 6 variables, in 2 repetitions, 15 de saplings each/ repetition. The variables were displayed following the method of subdivided lots.

To be able to respond to the objectives of the experiment, we have made a series of observations, quantity recordings, and biometrical measurements on the biologic material involved in the experiment. Thus, we have made measurements and determinations regarding: - the percentage of saplings rooted (number of rooted saplings out of the total of saplings planted on variables); - the average number of roots per sapling; - the average length of the sapling roots. To determine the average length of the root on the sapling, we have measured each root and we related the sum to the

number of roots. Based on these measurements, we have determined: - the influence of the culture layer on the saplings; -the influence of Radistim 2 substance on the saplings. The method of processing the data obtained when the saplings were rooted was the mathematical method of data processing, by percentage relation of the data.

Table 1

Experimental variables to produce saplings

Variable symbol	Variable name
V_1a	Powder perlite, non-treated saplings (witness)
V_1b	Powder perlite, treated saplings
V_2a	Grain perlite and sand (1:1), non-treated saplings
V_2b	Grain perlite and sand (1:1), treated saplings
V_3a	Powder perlite and peat coal (1:1), non-treated saplings
V_3b	Powder perlite and peat coal (1:1), treated saplings

RESULTS AND DISCUSSIONS

Cupressocyparis leylandii Dallim. is to be found in almost all nursery gardens, as it has ornamental value and it also protects the environment. An extremely valuable method of production is to multiply the species in a vegetative way, using saplings [Mac Donald B., 2006; Silba, 2009; Zaharia et al., 2003; Zlati et al., 2024].

At the end of the rooting period we made measurements regarding the average length of the roots and the number of roots that grew on the saplings on each variable. The gross data has been processed and interpreted from a statistic point of view, following the influence of the layer and of the Radistim 2 substance on the rhyzogenesis of the yew saplings. Rhyzogenesis is the organogenesis phenomenon most involved in vegetative multiplication. In the study of rhyzogenesis, what needs to be considered is the interaction of many factors, among which the most dominant is the hormonal adjustment caused by the dynamics of auxins in organogenesis. As regards the unilateral influence of the layer on the number of roots, it was observed that all variables had negative differences in relation to the witness (Table 2, Figure 1).

Table 2

The influence of the layer composition on the average number of roots on the *Cupressocyparis leylandii* Dallim. saplings (average)

Variable symbol	Variable name	Average number of roots		Difference	Difference significance
V1	Powder perlite	9,65	100,0	Mt.	
V2	Grain perlite and sand (1:1)	8,45	87,60	-1,2	00
V3	Powder perlite and peat coal (1:1)	8,95	92,70	-0,7	00
DL5% = 0,30 DL 1% = 0,58 DL 0,1% =1,17					

The average number of roots was influenced by the composition of the used layer. Thus, the witness variable was the highest in number, i.e. 9,65. The variable of grain perlite and sand was the one that obtained the lowest average number of roots, 8,45 with a difference of – 1,2 to the witness. The variable of powder perlite and peat coal had a difference of - 0,7 to the witness (Table 3).

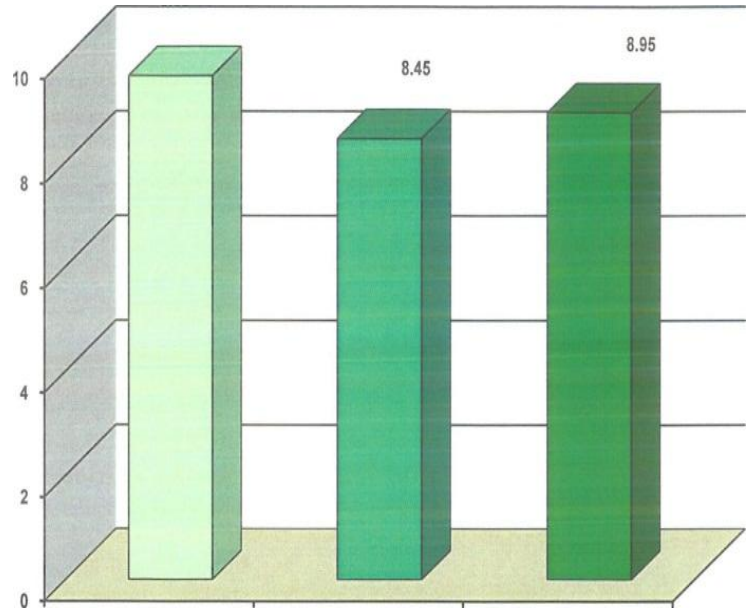

Fig. 1. The influence of the layer composition on the average number of roots on the *Cupressocyparis leylandii* Dallim. saplings

With the non-treated variables, the average numbers of roots was lower than the witness, differences being of -1,4 with the grain perlite variable and of -0,7 with the powder perlite and peat coal (Table 2, Figure 2).

Table 3

The influence of the layer composition on the average number of roots on the *Cupressocyparis leylandii* Dallim. saplings

Variable symbol	Variable name	Average number of roots		Difference
		No	%	
V1a	Powder perlite, Mt.	9,2	100	Mt.
V2a	Grain perlite and sand (1:1)	7,8	84,8	-1,4
V3a	Powder perlite and peat coal (1:1)	8,5	92,4	-0,7

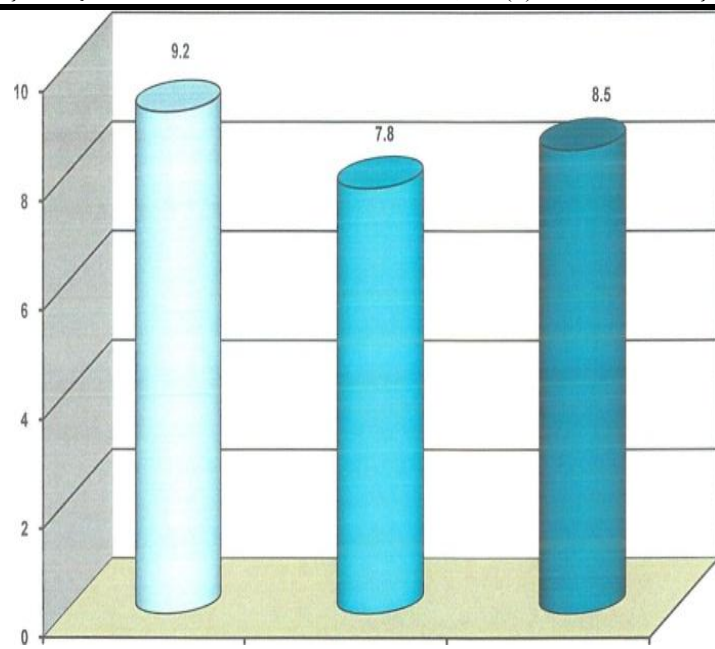

Fig. 2. The influence of the layer composition on the average number of roots on the non-treated variable

With the non-treated variables, there were small differences to the witness variable, the average number of roots being very little influenced by the used layer (Table 3).

Table 3

The influence of the layer composition on the average number of roots on the *Cupressocyparis leylandii* Dallim. saplings

Variable symbol	Variable name	Average number of roots		Difference
		No	%	
V1a	Non-treated powder perlite, Mt.	9,2	100	Mt.
V1b	Treated powder perlite	10,1	109,8	0,9
V2b	Grain perlite and sand (1:1),	9,1	99,0	-0,1
V3b	Powder perlite and peat coal (1:1)	9,2	100	

Thus, the greatest number of roots with the treated variables was reached on powder perlite layer, i.e. 10,1 with a difference of 0,9 to the witness. The grain perlite and sand layer was the one that had the lowest average number of roots of 9,1 with a difference of -0,1 to the witness variable. The powder perlite and peat coal variable did not have any differences to the witness variable (Table 3, Figure 3).

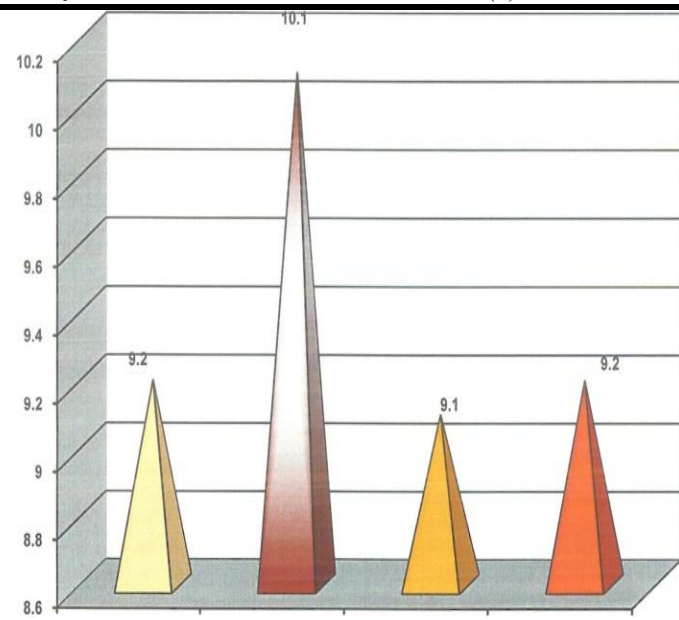

Fig. 3. The influence of the layer composition on the average number of roots on the *Cupressocyparis leylandii* Dallim. saplings (with the treated variables)

CONCLUSIONS

According to the data that was recorded and analysed, at the end of the rooting period the following facts were ascertained:

- A very good percentage of 90% was obtained with the rooting of the non-treated saplings on a layer of black forest soil + sand (1:1), with a difference of 50% to the Prut River sand layer;
- By using the rhyzogenetic stimulator, a percentage of 100% was ensured in combination with the layer of black forest soil + sand (1:1), which influenced the rooting of the previous situation;
- The layer of grain perlite + sand (1:1) has influenced significant positive increases in the length of the radicular system of the non-treated Buxus saplings;
- The combination of the studied factors has influenced the average number of roots, with the rooted samplings there being positive values recorded with the V_4 variables (on a layer of grain perlite + sand 1:1, with a difference of 13,30 roots to Prut River sand, V_6 on a layer of black forest soil + sand 1:1, with a difference of 10,20 roots to Prut River sand.

It was observed that the layer ensures a triple percentage and a double percentage with the number of the saplings roots, treated or non-treated with the rhyzogenetic biostimulator.

The success of a great number of saplings depends on the obtained roots which will adapt to the conditions in the nursery garden.

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