

THE INFLUENCE OF THE ROOTING SUBSTRATE AT 5 GYMNOSPERM SPECIES

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Key words: gymnosperm, rooting substrate, cuttings

Abstract: In this paper there are presented the results regarding the influence of the rooting substrate on 5 species from the *Coniferales* order, subdivision *Gymnospermae*.

The species take it into study are: *Cryptomeria japonica* D.Don (Fam. Taxodiaceae), *Chamaecyparis pisifera* S. et Z. (Fam. Cupressaceae), *Thuja occidentalis* L. (Fam. Cupressaceae), *Juniperus horizontalis* Mnch. (Fam. Cupressaceae) and *Taxus baccata* L. (Fam. Taxaceae).

All the research has been carried out within the Botanical Garden „Al. Buia” from Craiova, in the multiplication greenhouse, using warm substrate.

There has been used 2 rooting substrate perlite and sand (Table 1, Table 2). For the rooting percentage an important role have the rooting substrate and that's why we have to take it into account their capacity for water retaining and the aeration coefficient.

INTRODUCTION

The Gymnosperm are dated over 220 million years, when the terrestrial flora was dominated by these primitive plants. The gymnosperme are woody plants, with a simple structure usually made from vertical traheids with simple aureoled punctuation.

These are represented by trees or bushes with the seeds closed in the fruit, can be encountered in the cold area of the globe, forming large forests, in Romania can be encountered on the hills, mountains as well in the landscape arrangement from the cities parks and gardens.

MATERIAL AND METHOD

In this paper there are presented the results regarding the influence of the rooting substrate on 5 species from the *Coniferales* order, subdivision *Gymnospermae*.

In 2006, during November, there has been made 30 copses (15-20 cm), for each species and put it to root using 2 rooting substrate (perlite and sand). The species take it into study are: *Cryptomeria japonica* D.Don (Fam. Taxodiaceae), *Chamaecyparis pisifera* S. et Z. (Fam. Cupressaceae), *Thuja occidentalis* L. (Fam. Cupressaceae), *Juniperus horizontalis* Mnch. (Fam. Cupressaceae) and *Taxus baccata* L. (Fam. Taxaceae).

RESULTS AND DISCUSIONS

All the research has been carried out within the Botanical Garden „Al. Buia” from Craiova, in the multiplication greenhouse, using warm substrate.

There has been used 2 rooting substrate perlite and sand (Table 1, Table 2). For the rooting percentage an important role have the rooting substrate and that's why we have to take it into account their capacity for water retaining and the aeration coefficient.

Table 1

Fig. 1. The rooting percentage of 5 gymnosperme species on sand substrate Botanical Garden „Al. Buia”

Species	<i>Thuja occidentalis</i>	<i>Taxus baccata</i>	<i>Juniperus horizontalis</i>	<i>Chamaecyparis pisifera</i>	<i>Cryptomeria japonica</i>
Cutting	30	30	30	30	30
Substrate	Sand	Sand	Sand	Sand	Sand
Rooted cutting	27	26	27	26	24
Rooting Percentage (%)	90	86,6	90	86,6	80

Table 2

Fig. 1. The rooting percentage of 5 gymnosperme species on sand substrate Botanical Garden „Al. Buia”

Species	<i>Thuja occidentalis</i>	<i>Taxus baccata</i>	<i>Juniperus horizontalis</i>	<i>Chamaecyparis pisifera</i>	<i>Cryptomeria japonica</i>
Copses	30	30	30	30	30
Substrate	Perlite	Perlite	Perlite	Perlite	Perlite
Rooted copses	28	26	27	28	25
Percentage (%)	93,3	86,6	90	93,3	83,3

For the species *Thuja occidentalis* the cutting have rooted in a percentage of 90% on the substrate made from sand, and on the perlite substrate the rooting percentage has been with 3,3% higher than on the first rooting substrate 93,3% (fig. 1, fig. 2).

For the species *Taxus baccata* the cuttings has rooted in a 86,6% percentage on both the rooting substrate (fig. 1, fig. 2).

Also on both substrate the cuttings of the species *Juniperus horizontalis* had the same rooting percentage 90% (fig. 1, fig. 2).

For the species *Chamaecyparis pisifera* on the substrate made from sand the cuttings has rooted in a percentage of 86,6% and on the perlite substrate the rooting percentage has been of 93,3% (fig. 1, fig. 2).

In the case of the species *Cryptomeria japonica* the cuttings have rooted in a percentage of 80% on substrate made from sand and 83,3% on the perlite substrate (fig.1, fig.2).

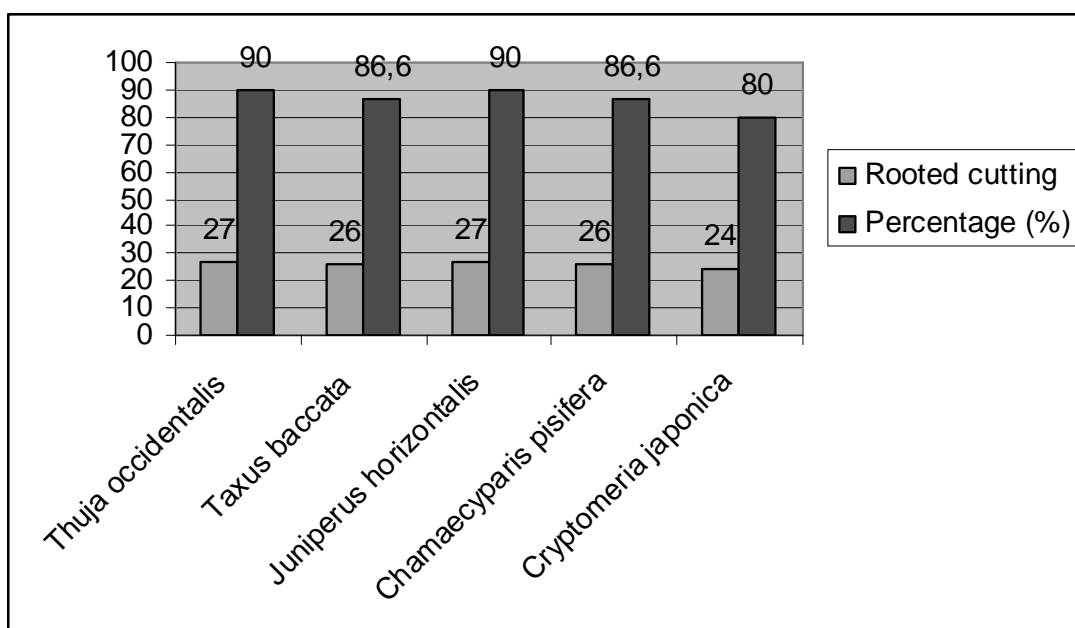


Fig. 1. The rooting percentage of 5 gymnosperme species on sand substrate Botanical Garden „Al. Buia”

Grafic 2

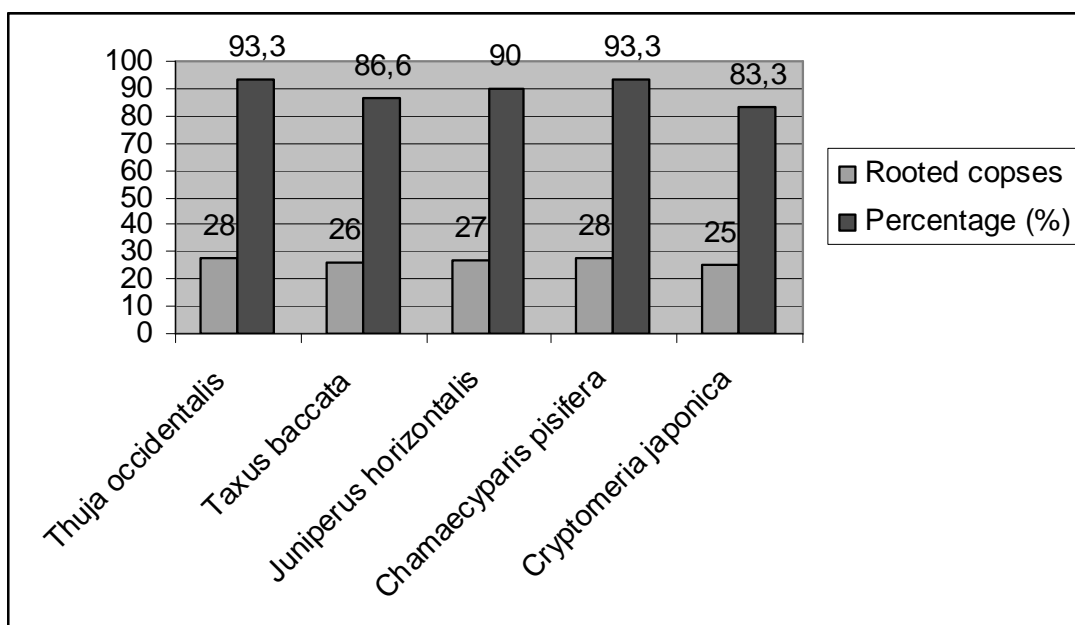


Fig. 2. The rooting percentage of 5 gymnosperme species on perlite substrate Botanical Garden „Al. Buia”

CONCLUSIONS

Regarding the rooting of the cuttings at the species *Thuja occidentalis* best results have been recorded on the perlite substrate in a percentage of 93,3%.

For the species *Taxus baccata*, on both substrate, have rooted the same number of cuttings in a percentage of 86,6%.

Also, for the species *Juniperus horizontalis*, on both substrate, have rooted the same number of cuttings in a percentage of 90%.

The cuttings of the species *Chamaecyparis pisifera* have rooted on the perlite substrate in a percentage of 93,3%.

For the species *Cryptomeria japonica* best result have recorded on the perlite substrate in a percentage of 83,3%.

From the 5 gymnosperm species take it into the study, best results have been recorded for the species *Thuja occidentalis* and *Chamaecyparis pisifera*, on the perlite substrate in a percentage of 93,3%.

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