INFLUENCE OF ROOTING SUBSTRATE FOR SOME ORNAMENTAL SHRUBS FROM BOTANICAL GARDEN AL. BUIA, CRAIOVA

ION STAN[1*]
[1]University of Craiova, Faculty of Agriculture
*Corresponding author:stanion@personal.ro

Keywords: Rooting substrate, Spirea vanhoutei Zabil., Forsithia intermedia Zab., Deutz gracilis Siebold &amp.

ABSTRACT

As is well known green areas, parks, gardens, squares and recreational areas are an attribute of modern development and a source of oxygen. Vegetation in the urban environment contributes actively to air oxygenation, reducing atmospheric carbon dioxide, reducing chemical pollution, retaining dust particles or dusts, reducing noise and mitigating excess climate factors, thereby contributing to health care population. In view of the increasing demands of planting material for landscaping in public or private spaces, action is needed to improve the technologies for the production of tree seedlings and ornamental shrubs. Among these species are those studied in this paper, with the aim of improving the rooting technology of the cuttings made from them and increasing the rooting quality of the planting material.The seedlings resulting from these plants are used for hedges and decorative and utilitarian shapes.Through the studies and researches carried out in the present paper we tried to highlight the rooting substrate consisting of: sand, perlite and perlite + sand on some ornamental wood species: *Spiraea vanhouttei* Zab. Fam. *Rosaceae*, *Forsythia intermedia* Zab. Fam. *Oleaceae*, *Deutz gracilis* Siebold & amp; Zucc. Fam. *Hydrangeaceae*. The production of ornamental shrubs can be done in specially constructed nurseries as well as in protected areas. In order to obtain new ornamental plants at the Botanical Garden "Al. Buia " from Craiova it is used the vegetative propagation method.

INTRODUCTION

Spiraea vanhouttei Zabil. (Figure 4) is part of the category of ornamental shrubs. Originally from China, Japan, it is very widespread in parks and gardens where it stands out through abundant flowering. This shrub form bushes up to 2 m tall with arched pendants. The 3-5 cm leaves are dark green on the front and bluish green on the back. The white flowers are grouped into numerous shadows. Blooms in May-June, abundant in full light, but also vegetates to semium-berry. This shrub is well tolerated and, under favorable conditions, flourishes abundantly in hedges, which makes it highly appreciated. (DumitriuTataranu, 1960) It is a little pretentious to the soil. (Preda, 1989). Supports drought, frost and noxes.

Forsythia intermedia Zab. (Fig. 5) is a decorative shrub by flowers and port, in parks and gardens, less pretentious to the soil, but prefers light, well drained soils and reefs. (Preda, 1989) This shrub is resistant to drought and frost, it grows well in the big cities, it carries well the pollution with gas and smoke. Leaves oblong, oblong-lanceolate, opposite, green. The flowers are decorative in yellow, appear in front of the leaves, 3 cm in diameter, flourishing among the first spring species (DumitriuTataranu, 1960).

Deutzia gracilis Siebold&Zucc. (Figure 6). A bushy shrub of Japanese origin, about 1 m tall, produces spring-to-autumn fragrant white, white-eyed leaves in racems, 1.5-2 cm long. Long leaves of 3-6 cm, light green. (Dumitriu Tataranu, 1960) (fig. 6) .

MATERIAL AND METHODS

Three species of ornamental shrubs: *Spiraea vanhouttei* Zabil, *Forsythia intermedia* Zab., *Deutzia gracilis* Siebold & Zucc, were studied in this paper. For each of these species we have studied the influence of the rooting substrate in order to obtain as soon as possible new healthy plants.The experiences were set up in the Botanical Garden "Al. Buia ", Craiova, in the Nursery sector. They were placed in the solarium of the respective sector, and the rooting substrate was made of perlite, sand, perlite + sand (1: 1). The rooting substrate was not heated and we used only the Rigenal rooting stimulator.

The cuttings were made from healthy plants 7-8 years old from the "Al. Buia " Botanical Garden, they were harvested from the upper parts of the donor plant. There have been made 20 cuttings of each species and each rooting substrate.

The cuttings were about 20-25 cm in length and cut at the bottom under the bud, and at the top in the stalk, 4-5 mm above the bud, keeping in mind that the length of the cutter is at least 4 buds. For these cuttings we have trim the leaves to a third of their size, and the cuttings were set as 5 cm between the rows and 2 cm between the cuttings in a row. The cuttings were made in autumn 2011, more precisely on October 15th.

RESULTS AND DISCUSSION

Regarding the rooting percentage of the studied species, most of them had a good rooting percentage in all substrates. At *Spiraea vanhouttei*, rooting percentages were 90% on perlite and perlite + sand and 85% on sand. (Figure 1).

The percentage of rooted cuttings for *Forsythia intermedia* was 95% on the perlite substrate, 85% on the sand substrate, and on the perlite + sand substrate the percentage was 90% (Figure 2)

Also, for *Deutzia gracilis*, the rooting percentage was 90% on the first two substrates, namely the perlite and the sand and 85% on the substrate made up of perlite + sand. (Figure 3).

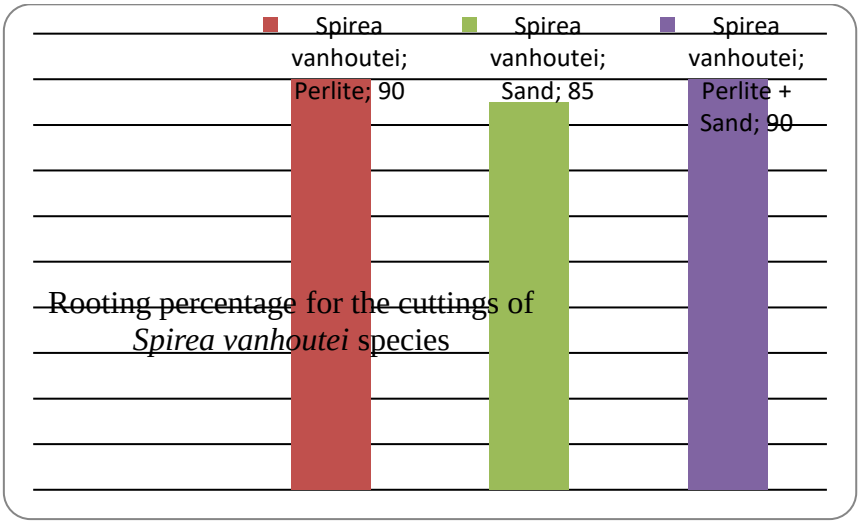

Fig. 1 – Rooting percentage for the cuttings of the Spirea vanhoutei species

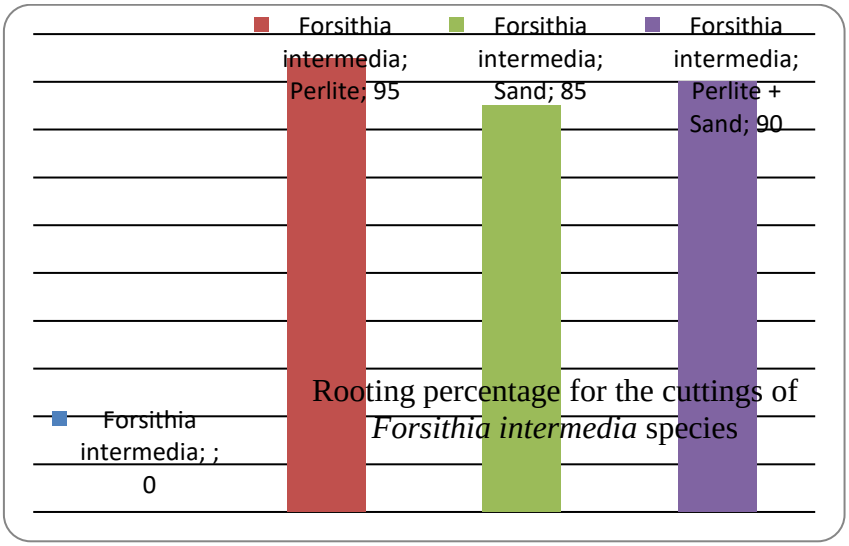

Fig. 2 – Rooting percentage for the cuttings of the Forsithia intermedia species

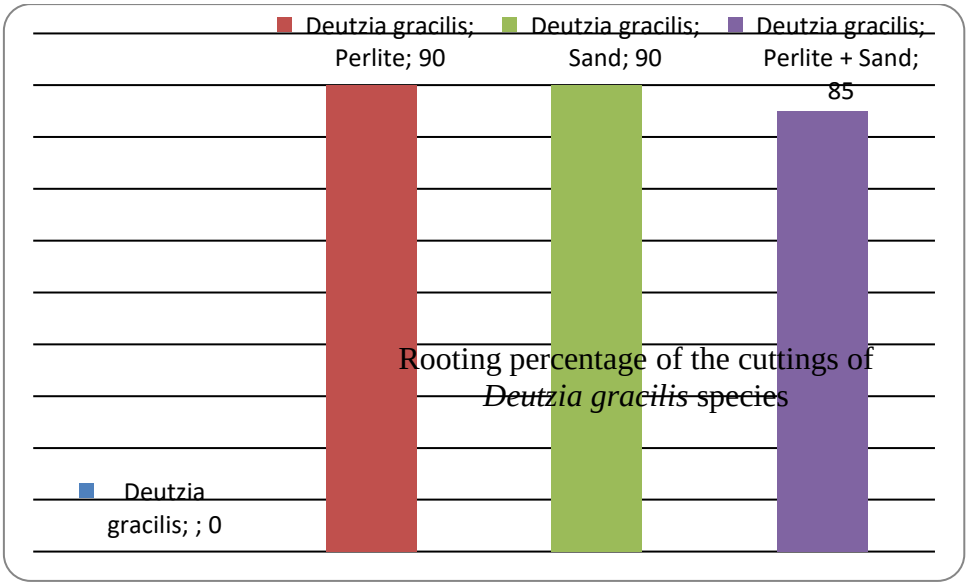

Fig. 3 – Rooting percentage for the cuttings of the Deutzia gracilis species

Fig. 4 Spiraea vanhouttei Zabil.

Fig. 5 Forsythia intermedia Zab.

Fig. 6 Deutzia gracilis bold&Zucc.

CONCLUSIONS

Regarding the rooting percentage the best results were recorded for *Forsythia intermedia* with a 95% rooting percentage on the perlite substrate, and the worst 85% was recorded for *Spiraea vanhouttei* and *Forsythia intermedia* on the substrate made of sand as well as *Deutzia gracilis* on the substrate made of perlite + sand.

The maximum rooting percentage on the perlite + sand substrate was 90% for *Spiraea vanhouttei* and *Forsythia intermedia,* and the lowest, i.e. 85%, was for *Deutzia gracilis.*

REFERENCES

1. **Dumitriu Tătăranu I. (1960).** Arbori și arbuști forestieri și ornamentali cultivați în R.P.R. Editura Agro-Silvică București.
2. **Iliescu A. F. (1998).** Arboricultură ornamental. Editura Ceres, București.
3. **Luban E. (1971).** Producerea materialului săditor dendrologic pentru parcuri și grădini: Editura Ceres; București.
4. **Miliției I. (1968).** Horticultură, Vol. 2. Editura didactică și pedagogic, București.
5. **Preda M. (1989).** Dicționar dendrofloricol. Editura Științifică și Enciclopedică București.
6. **Radu S., Contescu L. (1994).** Pepiniere. Editura Ceres București.

7. **Stănescu V. (1979).** Dendrologie. Editura Didactică ȘI Pedagogică Bucureștit.
8. **Stănică F. și colab. (2002)** Înmulțirea plantelor horticole lemnoase. Editura Ceres București.
9. **Sonea V. Palade L. Iliescu A. F. (1979).** Arboricultură ornamental și arhitectură peisageră. Editura Didactică și Pedagogică București.