THE SUBSTRATUM INFLUENCE ON CUTTING'S ROOTING OF *RODODENDRON GRANDIFLORUM*

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Abstract

Rododendron grandiflorum is a shrub cultivated as decorative plant for its small, lasting and shining leaves, oval-elongated (3-5cm/2.5-3.5 cm), with short tail (0.5-1.5 cm) and for the various colored sepals (pink, red, violet) gathered around the yellow flowers with no decorative value.

In present it is known as a decorative plant cultivated in field. In areas with less favorable climatic conditions where the minimal temperature goes down during winter below the resistance limit, they are cultivated in pots placed outdoor during the summer and indoor during the cold season.

In our country Rododendron grandiflorum is not very spreaded because of the shortage of cuttings caused by the low rate of multiplication.

In order to increase the efficiency of multiplication on vegetative way, between 2006-2010, in the gren houses from Oradea we have watched over the Rododendron grandiflorum cuttings rootedness process using stimulating substances of Radistim type.

Keywords: *Rododendron grandiflorum*, rooting substrate variants, cuttings

MATERIALS AND METHODS

The cuttings were gathered on the first decade of November. There have been used 10-12 cm long cuttings.

The experiment included 3 variantes:

V_1-rooting in perlite;

V_2- rooting in peat;

V_3- rooting in peat 50%+ perlite 50%.

For each variant have been used 500 cutings.

The cuttings were planted on 6x6 cm distance, 3 cm depth, before plenting the substratum has been trumped to eliminate the air baggs from the rooting area. The experiment took place in a green house, the thickness of the rooting substratum was 10-12 cm.

In the rooting period the temperature oscillated between 10°C-24°C in air and 15°C-20°C in rooting substratum. The relative humidity oscillated between 75%-85%. The light was directioned by covering the cutttings with a green net. We have made observations and determinations about the period of rooting process, the cutings' rooting percentage, the lenght and the number of roots for every cutting. The complete rooting period took 210 days.

RESULTS AND DISCUSSIONS

The number of rooted cuttings varied from 335 rooted cuttings on V_1-rooting in perlite variant, to 452 rooted cuttings on V_3-rooting in peat 50%+ perlite 50%, (table 1).

On relative aspect, the number of rooted cuttings had rised with 20% on V_2-rooting in peat and with 35% on V_3- rooting in peat 50%+ perlite 50%, as on V_1-rooting in perlite variant.

Table 1

The number of rooted cuttings of *Rododendron grandiflorum* (average values) Oradea, 2006-2010

Variantes	The number of rooted cuttings		±D	Signification of the difference
	Absolute (pcs.)	Relative (%)		
V_1-rooting in perlite	335	100	-	-
V_2- rooting in peat	402	120	67	x
V_3- rooting in peat 50%+ perlite 50%	452	135	117	xx

LSD 5% - 62, LSD1% - 99; LSD 0.1% - 158

The rooting substratum has a great influence on the quality of the rooting material. The number and the dimensions of roots of every cutting watched to prove that. The medium number of roots per cutting oscillated between 6.8 on V_1-rooting in perlite variant, and 12.7 on V_3- rooting in peat 50%+ perlite 50% (table 2).

Table 2

The average number of roots per cutting Oradea, 2006-2010

Variantes	The medium number of roots per cutting		±D	Signification of the difference
	Absolute (pcs.)	Relative (%)		
V_1-rooting in perlite	6.8	100	-	-
V_2- rooting in peat	9.8	144	3	xx
V_3- rooting in peat 50%+ perlite 50%	12.7	186	5.9	xxx

LSD 5% - 1.8, LSD 1% - 2.9; LSD 0.1% - 4.6

On relative aspect, the substratum quality has rised the number of roots cutting with 44% on V_2- rooting in peat variant, and with 86% on V_3-rooting in peat 50%+ perlite 50% variant. The rise of rooting capacity shows from the lenght and the thickness of the cuttings roots, too.

The thickness and the lenght of the roots alternates but the highest values, obtained on V_3- rooting in peat 50%+ perlite 50% variant (table 3).

Table 3

The dimensions of the cuttings roots (average values) Oradea, 2006-2010

Variantes	The lenght of the roots (extrem values) (cm)	The number of the roots per cutting with		The number of roots per cutting (pcs.)
		Diameter < 1mm (pcs.)	Diameter > 1.1 mm (pcs.)	
V_1-rooting in perlite	0.6-0.8	5.4	2.5	7.9
V_2- rooting in peat	0.7-12.9	6.8	3	9.8
V_3- rooting in peat 50%+ perlite 50%	0.7-14.5	8.4	4.3	12.7

On V_1 rooting in perlite variant, the cuttings roots were 0.6-0.8 cm long and on V_3-rooting in peat 50%+ perlite 50% variant we obtained 0.7-14.5 cm lenght. About thickness of the roots we acquired following: the average number of roots with diameter < 1mm, per cutting, was 5.4 on V_1-rooting in perlite variant and 8.4 on V_3- rooting in peat 50%+ perlite 50% variant, and the medium number of roots with diameter > 1.1 mm was 2.5 on V_1-variant and 4.3 on V_3-variant.

This paper describes an experiment of rooting the cuttings of *Rododendron grandiflorum*. We prowed that the substratum has an great influence to the rooting process. From three variantes of rooting we obtained the best resultes on rooting in peat 50%+perlite 50% variant.

CONCLUSIONS

1. *Rododendron grandiflorum*, as an ornamental tre, with great economical value, can be multiplicate vagetively, using cuttings.

2. Using a proper substratum increases the rate of multiplication.

3. A proper substratum rises the quality and the number of roots per cutting, too.

4. The substratum composed by peat 50%+ perlite 50% has rised the rooting rate. The rooting percentage was 84% on V_3- rooting in peat 50%+ perlite 50%, 80% on V_2-rooting in peat variant and 70% on V_1-rooting in perlite variant.

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