

POINSETTIA PROPAGATION¹

R. E. Widmer

Approximately five years ago a form of perlite used by plasterers was offered to greenhouse operators for the rooting of cuttings. At that time the Department of Horticulture conducted trials on the rootings of chrysanthemums, coleus, geraniums, English ivy, grape ivy and African violets in sand and in perlite. Results of the trials were variable.

Recently a horticultural grade of perlite was placed on the market. A study to compare the rooting of three varieties of poinsettias, Improved Albert Ecke, Barbara Ecke and Mrs. Paul Ecke, in sand and in horticultural perlite was conducted in the summer of 1955. Tip cuttings, five to six inches long, were used and no attempt was made to make the basal cut at any particular point on the stem. All cuttings were treated with a root-promoting hormone applied with a powder duster. The cuttings were protected from drafts and were shaded only when necessary to prevent excessive wilting. There was shade on the greenhouse throughout the period of the study. The cuttings were watered every morning in bright weather. Three lots of cuttings were made and the results are shown in Table 1.

Table 1. Rooting of poinsettia cuttings in sand and in perlite

Lot 1		Started August 3, 1955, removed August 25, 1955					
Variety		Improved Albert Ecke					
Rooting	Total Number Cuttings	Root Development				Rotted or Dead	Percent Rooted
		Heavy	Medium	Small	Callous		
Sand	20	13	3	3	1	0	95
Perlite	20	10	5	3	2	0	90
Variety		Barbara Ecke					
Rooting	Total Number Cuttings	Root Development				Rotted or Dead	Percent Rooted
		Heavy	Medium	Small	Callous		
Sand	22	6	6	7	3	0	86.36
Perlite	22	5	4	7	5	1	72.73
Variety		Mrs. Paul Ecke					
Sand	27	9	7	7	4	0	85.19
Perlite	27	12	3	6	6	0	77.78

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Lot 2. Started August 10, 1955, removed September 17, 1955

Variety		Improved Albert Ecke						
Rooting Medium	Total Number Cuttings	Root Development					Rotted or Dead	Percent Rooted
		Heavy	Medium	Small	Callous			
Sand	17	10	4	1	2	0	88.24	
Perlite	17	7	6	4	0	0	100.00	
Barbara Ecke								
Sand	11	2	2	3	4	0	63.64	
Perlite	11	3	3	4	1	0	90.91	
Mrs. Paul Ecke								
Sand	14	3	8	3	0	0	100.00	
Perlite	14	12	0	1	1	0	92.86	

Lot 3. Started August 22, 1955, removed September 17, 1955

Variety		Improved Albert Ecke						
Rooting Medium	Total Number Cuttings	Root Development					Rotted or Dead	Percent Rooted
		Heavy	Medium	Small	Callous			
Sand	26	12	8	6	0	0	100.00	
Perlite	26	11	4	9	2	0	92.31	
Barbara Ecke								
Sand	43	3	5	20	13	2	65.12	
Perlite	43	1	6	17	17	2	55.81	
Mrs. Paul Ecke								
Sand	29	8	9	11	1	0	96.55	
Perlite	29	3	8	11	2	5	75.86	

Analysis of the data presented indicated that the percentage of cuttings of all varieties rooted in sand and in horticultural perlite did not differ significantly at the five percent level. The varieties were significantly different in percentage of rooting at the five percent level. The variety Improved Albert Ecke had the highest percentage of rooting and the variety Barbara Ecke, the lowest percentage of rooting.

The amount of roots formed, as well as the percentage of cuttings rooted, should be considered in interpreting the data. In order to analyze the results on the basis of degree of rooting, each cutting with a heavy root system was assigned a value of three, with a medium root system two and with a small root system one. The mean root classification obtained by using this system is shown in Table 2.

Table 2 Mean root classification of poinsettias rooted in sand and in perlite.

Lot 1.	Started August 3, 1955, removed August 25, 1955		
	Variety	Sand	Perlite
	Improved Albert Ecke	2.53	2.39
	Barbara Ecke	1.95	1.88
	Mrs. Paul Ecke	2.09	2.29
Lot 2.	Started August 10, 1955, removed September 17, 1955		
	Variety	Sand	Perlite
	Improved Albert Ecke	2.60	1.77
	Barbara Ecke	1.86	1.90
	Mrs. Paul Ecke	2.00	2.85
Lot 3.	Started August 22, 1955, removed September 17, 1955		
	Variety	Sand	Perlite
	Improved Albert Ecke	1.85	2.08
	Barbara Ecke	1.39	1.33
	Mrs. Paul Ecke	1.89	1.64

Once again the rooting in perlite was not significantly different from the rooting in sand, but the varieties were significantly different at the five percent level in degree of rooting. The three lots of cuttings also differed significantly at the five percent level in degree of rooting.

Conclusions

Poinsettia cuttings root equally well in sand and in horticultural perlite. Factors other than rooting must be considered when deciding which rooting medium is to be used. As perlite is light in weight less labor is required to fill a bench with this material. Although sand is heavier, it is usually lower in cost. Sterilizing the rooting medium between lots of cuttings makes frequent changing of the rooting medium unnecessary, thus minimizing the labor factor. On the other hand new perlite is usually sterile while sand is not usually sterile. It is up to the grower to decide which material is preferable in his greenhouse.
