

resume growth if the terminal bud was not too hard at the time of sticking the cuttings. Rooting takes about 14 to 21 days and the root growth of the cuttings is quite fast. A check several weeks after rooting might suggest moving the rooted cuttings into a large pot. The root system is very vigorous and the rooted cuttings should be ready for potting up or planting out during the next spring.

Overwintering in a minimum heat house seems to be adequate and in general the plants are trouble free. Rooting and overwintering is on the order of 100%.

LITERATURE CITED

Griffiths, M. 1994. Index of garden plants. Timber Press. Portland, Oregon.

Low Maintenance Plants and a Soil Mix for Roadside Planters in the Northeast[®]

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INTRODUCTION

The Rhode Island Department of Transportation and the University of Rhode Island are collaborating to develop low maintenance plant and soil combinations for use in bridge and bike path concrete planters in Providence, Rhode Island. Green roof plant and soil technologies combined with sub-irrigation are being tested in replicated concrete mesocosms (scaled-down versions of the actual planters). We are evaluating three mineral-based soil mixtures and 10 plant taxa selected from over 40 accessions. The goal of the work is to develop a planting scheme and soil mixture that offers a range of textures, colors, and multi-season interest, while requiring minimal maintenance and little or no supplemental irrigation.

MATERIALS AND METHODS

Nine replicate mesocosms were fashioned from 1.22-m (i.d.) concrete sewer risers set on concrete blocks. The mesocosms were lined with 2.5-cm polystyrene insulation and rubber roofing membrane (60 mil EPDM). Each mesocosm drains through landscape fabric and $\frac{3}{4}$ inch crushed stone into a 3.8-cm perforated PVC pipe that allows sampling of runoff water. Subirrigation reservoirs [Planter Technology, Inc., controlled watering modular (CWM) container irrigation systems, Hayward, California] were installed before the mesocosms were filled. Three soil mixtures are being evaluated initially: Mix 1 [80% Hydrocks™ (Garick Corp., Cleveland, Ohio) lightweight expanded clay aggregate + 10% field soil + 10% compost]; Mix 2 [80% Norlite™ expanded shale + 20% compost]; and Mix 3 [40% Hydrocks™ + 40% field soil + 20% compost]. Ten plant taxa, listed in Table 1, were chosen based on performance in greenhouse trials. On 21 May 2004 three plants of each taxon were planted 17.8 cm apart in a random pattern. The mesocosms were watered once a week for a month. All plants were measured weekly through the summer. Pseudovolumes were calculated from measurements of north-south and east-west widths, and height. Soil water content was monitored using TDR (Time Domain Reflectometry) sensors.

DISCUSSION

We are 1 year into a 5-year effort that will culminate in the installation of planters on a bike path adjacent to I-195 over the Providence River. The planters will need to

tolerate humidity, sun, heat, fluctuating and/or freezing winter temperatures, and road/ocean salt spray. Plants will receive no overwintering protection and almost no maintenance. The plants in our mesocosms will be assessed over the next 2 years for winter survival, growth rate, flowering, and competition. Our goal is an attractive planting that is durable and low maintenance.

Forcing plants in the greenhouse may have affected shoot growth and flowering, e.g., *Talinum calycinum* went dormant soon after transplant. *Sedum japonicum* and *S. hispanicum* flowered in the greenhouse but has not flowered outside. The flowering of *S. spurium* 'John Creech' and *S. boehmeri* was delayed.

Weed growth is an important maintenance issue. Soil mixes containing field soil (Mixes 1 and 3) needed regular weeding. Soil Mix 2 does not have any field soil and was almost weed-free.

As well, soil water content will be monitored across the profile of each container to determine the influence of the container watering system on soil moisture in these lightweight soils.

Table 1. List of plant and growth rates from 21 May to 1 Sept. 2004.

Plant Name	Increase in plant volume (%)		
	Soil #1	Soil #2	Soil #3
<i>Sedum boehmeri</i>	372	479	233
<i>Drosanthemum hispidum</i>	2	108	26
<i>Sedum spurium</i> 'John Creech'	436	1072	1378
<i>Sempervivum</i> Specialty Blend	83	45	125
<i>Allium schoenoprasum</i>	6778	4564	7661
<i>Sedum japonicum</i>	255	102	314
<i>Delosperma aberdeenense</i>	1012	4604	1411
<i>Sedum hispanicum</i>	230	233	541
<i>Talinum calycinum</i>	0	0	0
<i>Jovibarba hirta</i> 'Emerald Spring'	918	140	225

Table 2. Water content ranges in all containers.

Soil mix (no.)	Container (no.)	Water content ranges (m ³ H ₂ O/m ³ soil)	
		1 July 2004	19 July 2004
1	3	0.100	0.142
1	5	0.106	0.130
1	9	0.104	0.144
2	2	0.076	0.133
2	6	0.075	0.104
2	7	0.073	0.104
3	1	0.164	0.222
3	4	0.198	0.229
3	8	0.154	0.215