

Propagation of Difficult to Root Semi-hardwood and Hardwood Evergreen Cuttings[®]

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INTRODUCTION

The semi-hardwood cuttings of *Daphne tangutica* and hardwood cuttings of *Chamaecyparis obtusa* 'Tempelhof' and *Chamaecyparis pisifera* 'Mops' have a reputation for being difficult to root. In 2008, propagation trials were conducted with the cuttings of those genera in peat/perlite-based conventional medium and Oasis[®] phenolic grower foam medium. The objective of the study was to explore the possibility of rooting difficult-to-root semi-hardwood and hardwood evergreen cuttings in Oasis phenolic grower foam medium.

MATERIALS AND METHODS

Plant Material and Propagation of Cuttings. *Daphne tangutica* cuttings were harvested on 15 April 2008 and stuck on 16 April 2008 and the cuttings were treated with Hormex 3 rooting hormone. *Chamaecyparis obtusa* 'Tempelhof' and *Chamaecyparis pisifera* 'Mops' cuttings were harvested on 23 Jan. 2009 and stuck on 28 Jan. 2009 and the cuttings were treated with Hormodin 3 rooting hormone.

Rooting Media: The cuttings were propagated in a conventional mix (control medium) and Oasis[®] phenolic grower foam.

Control Medium: *Daphne tangutica* cuttings were propagated in perlite, aged bark, and peat moss (4 : 3 : 3, by vol) mix. *Chamaecyparis obtusa* 'Tempelhof' and *C. pisifera* 'Mops' cuttings were propagated in perlite and sand (1 : 1, v/v).

Oasis Phenolic Grower Foam: Oasis foam growing medium is made from a thermoset phenolic resin and it is open-celled foam.

Irrigation: The cuttings were propagated under a boom irrigation system and irrigated as required.

Rooting Evaluation: Rooting evaluation of *D. tangutica* cuttings was done on 5 May 2008 and *C. obtusa* 'Tempelhof' and *C. pisifera* 'Mops' cuttings was done on 15 May 2009. The percentage of rooted cuttings was recorded and photographs were taken.

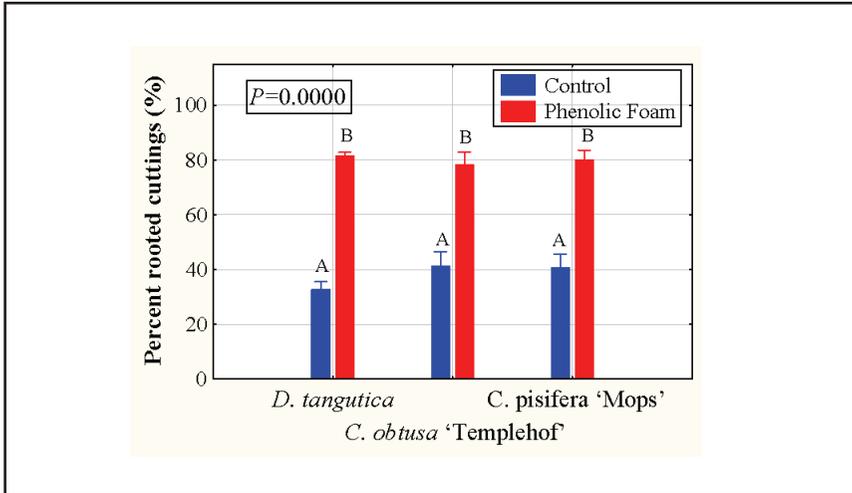


Figure 1. Effect of two different types of rooting media, (A) control medium and (B) Oasis phenolic grower foam medium, on the rooting of semi-hardwood, *Daphne tangutica*, and hardwood, *Chamaecyparis obtusa* 'Templehof' and *Chamaecyparis pisifera* 'Mops', evergreen cuttings. In the case of *Daphne* the control medium was a [perlite, aged bark, and peat moss (4 : 3 : 3, by vol) mix] and in the case of *Chamaecyparis obtusa* 'Templehof' and *Chamaecyparis pisifera* 'Mops', the control was [perlite and sand (1 : 1, v/v)].

Trial Location: *Daphne tangutica* trial was conducted at Spring Meadow Nursery and *C. obtusa* 'Templehof', and *C. pisifera* 'Mops' trial was conducted at Willoway Nursery.

RESULTS AND DISCUSSION

The rooting response of all the three genera is presented in Figs. 1 and 2. The results indicated that all the three genera performed significantly better in Oasis phenolic foam growing medium compared to the conventional peat- or perlite-based growing medium. In the case of *D. tangutica*, 81% of the cuttings rooted in phenolic foam and only 33% of the cuttings rooted in control medium. In the case of *C. obtusa* 'Templehof', 80% of the cuttings rooted in phenolic foam and only 20% of the cuttings rooted in control medium. Lastly, in the case of *C. pisifera* 'Mops', 85% of the cuttings rooted in phenolic foam and 50% of the cuttings rooted in control medium. The improved performance in Oasis phenolic foam growing medium can be attributed to its air and water ratio. Oasis foam growing medium, which is open celled, is engineered for optimal balance of air and water and is forgiving to excess watering.

CONCLUSIONS

The current study opens up a new avenue for successful propagation of several of the semi-hardwood and hardwood evergreen cuttings which doesn't like wet feet.

Acknowledgements. We thank Spring Meadow Nursery and Willoway Nursery for letting us conduct these trials on sight.

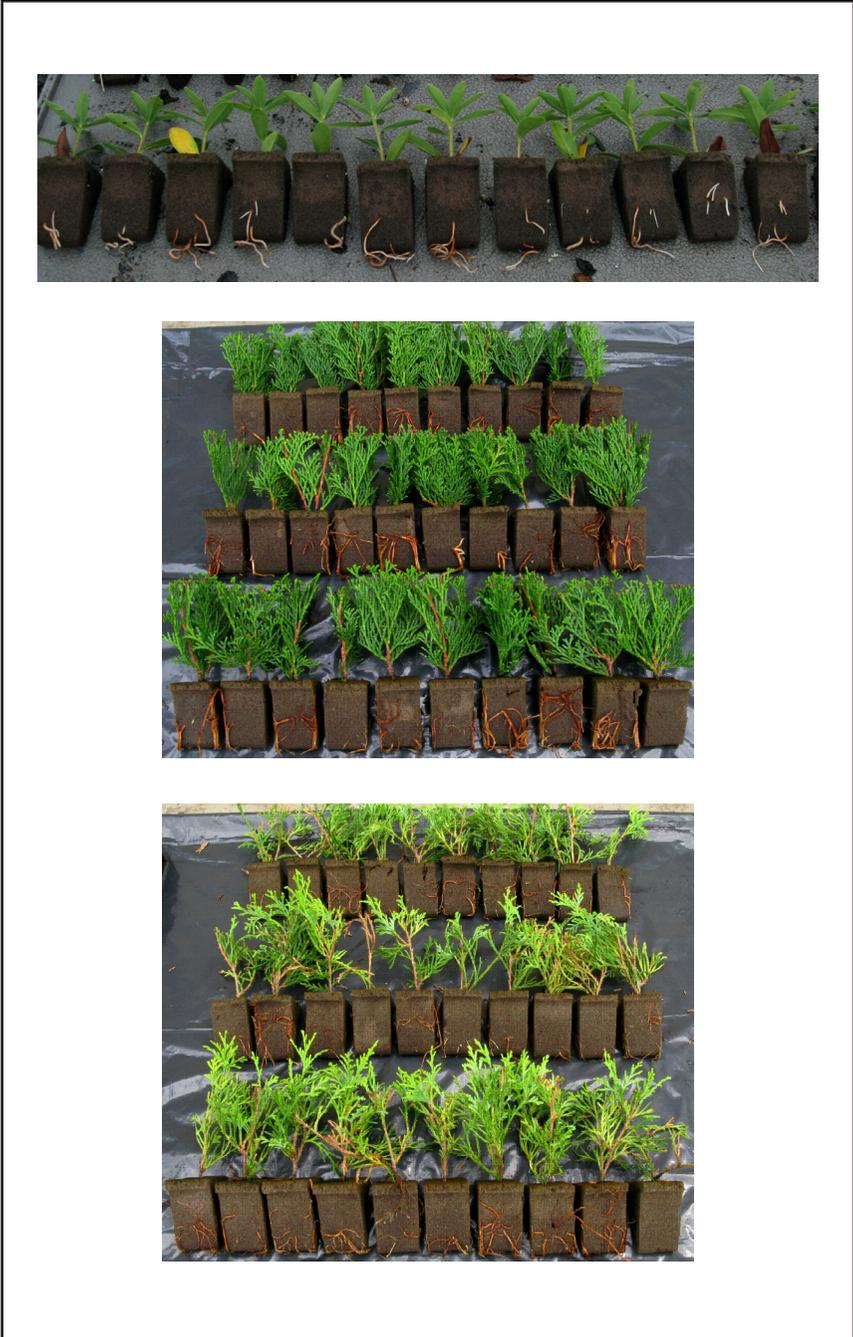


Figure 2. Photos depicting the rooting response of (top) *Daphne tangutica*, (middle) *Chamaecyparis obtusa* 'Tempelhof', and (bottom) *Chamaecyparis pisifera* 'Mops' in Oasis phenolic grower foam medium.