

## LITERATURE CITED

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## Comparison of Propagation Mixes

### Cathy Kowalczyk and Carolyn Mihalega

Willoway Nurseries, Inc., 4534 Center Road., Avon, Ohio 44011 U.S.A.

The propagation department at Willoway Nurseries in Avon, Ohio is always trying different techniques to increase rooting percentages and rooting quality. With well over 1 million cuttings propagated annually, timing as well as different methods of cutting preparation, including IBA treatments, are always evaluated in order to obtain the best results.

This year we decided to trial a coir medium for some of our hard-to-root species as well as those species that take longer periods of time to root. The mix we used was Sun Gro Horticulture coir mix available in 3-ft<sup>3</sup> loose bags. The components of this mix are simply coir pith and coarse perlite (3 : 1, v/v).

Coir is a waste product of the coconut industry and is produced in Sri Lanka, the Philippines, Indonesia, Mexico, and parts of the Caribbean and South America. Sri Lanka is the leading processor of coir product and is reportedly one of the most reliable and consistent sources. Coir produced there also has the lowest electrical conductivity. Coir is the name given to the fibrous material of the coconut fruit. Coconut husks are ground and the long fibers are screened out. The long fibers are used in the manufacturing of such products as brushes, floor mats, hanging basket liners, and automobile seat and mattress stuffing. After the long fibers are extracted, the coir dust (called pith) is used to produce horticultural growing mixes.

Coir mixes have many desirable properties. These mixes wet rapidly and uniformly. Drying of coir media is also very uniform and requires less watering after root development. These mixes retain high porosity which in turn improves root development and quality. The pH range of coir is between 5.6 to 6.5. Electrical conductivity can range from 0.3 to 2.9 mmhos cm<sup>-1</sup>. Electrical conductivity is the most important factor that producers and coir users must consider.

Coir has a slightly lower nutrient holding capacity than Canadian sphagnum peat moss. Fertilizer programs may need adjusting when using this product.

Our "in house" propagation mix works well for most of the cuttings that we propagate. Its components are sphagnum peat moss, styrofoam, hardwood bark, sand, haydite (compressed shale product) (5 : 2.5 : 1 : 1 : 0.5, by volume) and 7#

agricultural lime per yard. Certain species are also rooted with our sand/perlite mix. The coir mix gave us another opportunity to improve our rooting percentages and root quality on hard-to-root species and those species that require a greater length of time to root. The Sun Gro Horticulture coir/perlite mix was very successful on *Syringa*, *Magnolia*, *Viburnum* (fragrant), *Rhus*, and *Berberis* to mention a few. Many species rooted up to 3 to 4 weeks quicker in the coir mix than our propagation mix, allowing those cuttings to be transplanted earlier.

The coir and perlite mix was a bit more costly than our "in house" propagation mix. However, the rooting response that was achieved outweighed the extra expense. The coir fiber is also sold in bulk, as a compressed brick, so it is possible to make your own mix. It has been reported, however, that this "raw" material is very difficult to break up and mix with other components, such as perlite. It is more economical to purchase it as a commercial mix such as the coir and perlite (3 : 1, v/v) that we used in our trials. Many other formulations, using different media components are commercially available as well.

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## Cocount-Coir-Based Media Versus Peat-Based Media for Propagation of Woody Ornamentals

**Jeffrey Stoven and Heather Kooima**

Bailey Nurseries, Inc., 6750 103<sup>rd</sup> St. South, Cottage Grove, Minnesota 55016 U.S.A.

**This trial was conducted in order to determine if coconut-coir-based media makes a significant difference in the propagation of *Juniperus* versus the standard growers media containing peat.**

### INTRODUCTION AND METHODS

Woody ornamentals such as the *Juniperus* species, have several that are both easy and difficult to root. One cultivar from each of these two categories was tested. Several varying amounts of coir were used in the media trials. Each medium contained a different amount of perlite.

The media were as follows:

- MetroMix and perlite
- Coconut coir
- Coconut coir and perlite (3 : 1, v/v)
- Coir and perlite (1 : 1, v/v)

The juniper cuttings were stuck and rooted for approximately 10 weeks. After this time, the cuttings were evaluated for root growth. They were removed from their trays and the medium was washed off. Cuttings were divided into three groups: no callus, callous only, and callous and roots.

### RESULTS

The results were impressive. The rooting that was planted in the peat-based standard media and coconut-coir-based media were more successful. 'Maney' had