

August 2012

greenhouse GROWER

Recycling Rainwater

Improve water quality and reduce costs with the latest collection and treatment techniques. page 16

Special Report:
Controlled-Release Fertilizers
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Introducing Variety
Central Search page 96

Supplement: **New Varieties Guide**

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The **GROW** INITIATIVE

The Grow Initiative is our plan to put the industry into a position of long-term, profitable growth, and it's made up of five key priorities:

1. Drive Consumer Success
2. Cultivate New Customers
3. Demand Quality
4. Sharpen Business Management
5. Invest In The Industry

This month, cultivate new customers and focus on quality on pages 16 and 22.

LEARN MORE AT
[GreenhouseGrower.com/
grow-initiative.](http://GreenhouseGrower.com/grow-initiative)

ON THE COVER

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Recycling Rainwater

By Laura Drotleff

Improve water quality and reduce costs with the latest collection and treatment techniques.



Special Report: Controlled-Release Fertilizers

Following page 32

By Christopher J. Currey, Roberto G. Lopez, Neil S. Mattson, and Brian A. Krug

See if controlled-release fertilizers are

superior to water-soluble fertilizers when growing bedding and potted plants, as well as how each affects pH and electrical conductivity.



2011 Silver Awards

The Peat Report: Special Supplement and Front Cover Supplement

2010 Silver Award

Trade Show/Conference Coverage - Spring Trials

2010 Silver Award

Organization Profile

2012

New Varieties Guide

Begins on page 43

This colorful 32-page insert highlights the new and exciting varieties you need to know for 2013.



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Growing Hellebores

Terra Nova Nurseries' Dan Heims and Conor Carey offer tips on growing this well-rounded perennial

by **DAN HEIMS** and **CONOR CAREY**

HELLEBORES might be the perfect perennial. What other plant has lustrous, handsome foliage and sumptuous flowers in an array of shapes and colors? What other plant tolerates dry as well as wet soils, has few pests and is deer-resistant?

These plants are the first to greet the garden center customer in early spring. The cheerful flowers are a perfect complement to spring bulbs with foliage that persists until winter and acts as a foil for annuals and perennials in the summer. Tolerant of severe winters and hot, humid summers, hellebores fill an important niche in the landscape-plant market. They can handle sun as well as shade. In other words, they rock!

Grower Tips

Planting: Plant one 30-cell liner per 6-inch or gallon pot in well-drained media. Make sure not to cover the crown

by planting too deeply. This is the most common failure. The soil level of the pot and liner should match evenly.

A preventative fungicide at potting can be beneficial. A tank mix of mefenoxam and thiophanate-methyl or any other broad-spectrum fungicide will do. Be sure to read the label for desired rates and application intervals. As with any chemical, test on a small group of plants before applying to the entire crop.

Media: Plant hellebores in a well-drained media with a moderate organic matter content.

pH/EC: Maintain a pH of 5.5 to 6.5 and an EC of 1.0 to 1.5 via the pour-through method.

Temperature: Hellebores do well with night-time temperature of 40°F to 45°F and 60°F to 65°F during the day. Much root growth occurs during cooler periods. Plants prefer a cooler location in a greenhouse. Bench temperatures are usually 10-plus degrees higher than the ground.

Light: Provide 2,000 to 3,000 foot-can-

continues on page 75 ►



Helleborus 'Winter Jewels Peppermint Ice' from Terra Nova Nurseries

dles of light. Use shade cloth between 50 percent and 70 percent depending on location during the summer.

PGRs: Configure can help to promote basal branching and can be used when bulking the plant. It can sometimes cause distorted growth on the leaf that was emerging at the time of application, but the plant will quickly grow out of it. It is generally better to use lower rates and apply more frequently as opposed to higher rates with a single application.

Fertilizer/Watering: Supply a low to medium rate of constant liquid feed at 100 to 150 ppm of 20-10-20. Allow the plants to dry slightly between irrigations, but keep plants moist throughout production.

Pests/Disease: Aphids and thrips are the main pests of hellebores. Pythium and

Breeding Hellebores

Composed of up to 16 species, today's helleborus hybrids are a glowing example of the work of hybridizers in Europe and England, and the U.S. When Dan Heims traveled through Germany, Belgium, Holland and England with Germany's top plantsman, Ulrich Fischer, he was exposed to the best breeders and breeding in the world.

Enter the O'Byrnes: Ernie and Marietta O'Byrne from Eugene, Ore., who have been collecting the best of the best from the same breeders Dan visited. By careful selection over the last several decades, the O'Byrnes have strived to select only the most disease-resistant, large-flowered stock plants with pure colors.

Large-flowered doubles have been quite elusive, but stock plants were made of the fullest doubles. These stock plants are then carefully pollinated and marked by the specific cross. The goal is a full, double flower with evenly-spaced tepals. Plants with finer foliage are selected since the flowers are more easily seen when not blocked by "fat foliage."

Even the angle at which the flowers are presented is calculated into the breeding equation. Flowers that hang down (as seen in most old cultivars) are hard to see; those that point too far upward suffer from Botrytis. Each year, plants are culled from the stock areas and replaced with only the strongest, best-looking plants. This prevents inbreeding, which muddies colors and produces weaker, more inferior and less vigorous plants.

Phytophthora can be problems if the plants stay waterlogged for prolonged amounts of time. Fungal leaf spotting can be an issue if the foliage remains wet for prolonged periods of time. Remove the previous year's foliage either before new growth begins or as new leaves emerge. The O'Byrnes recommend a mixture of pyrethrins and canola oil sold by Gardens Alive called Pyola Oil that is very effective and is acceptable to organic growers.

Scheduling: The finish time from a 30-cell liner to a 6-inch pot is 10 to 12 weeks. It takes 16 to 18 weeks to finish from a 30-cell liner to a 1-gallon pot. Dormancy is required for flowering. **GG**

Dan Heims and Conor Carey,
Terra Nova Nurseries.
TerraNovaNurseries.com.

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