Above: Woodburn Nursery & Azaleas has expanded its investment in pot-in-pot growing for many reasons, one of which is wind resistance. PHOTO BY CURT KIPP

By Elizabeth Petersen

Growing nursery stock in containers has advantages, but also challenges — including the wind.

Wind damages trees and shrubs in plastic pots by blowing them down and breaking branches. When pots tip over, soil and fertilizer spill out and irrigation is disrupted.

The wider and taller the plant mass, the bigger the problem for everyone who handles nursery stock. Since workers have to lift blown-over plants and reset them — again and again — wind damage adds considerable labor costs, too.

“Growers have to come up with something to deal with ongoing problems caused by wind,” said Wayne Hinton, sales and marketing director for Oregon Wire Products. “They try all sorts of things.”

Solutions that help secure pots and keep plants upright range in cost and effectiveness, from DIY rebar stakes to more tailored solutions. They produce a range of results, too, and growers have to decide which systems are best for their individual needs.

Available systems for stabilizing containerized plants include steel stakes, anchored wire baskets and pot-in-pot systems, both aboveground and in-ground.

Those in the industry must
weigh upfront investment and long-term results when determining how to control wind damage. Is there a greater need to maintain flexibility in their can yards, or is a more permanent system warranted? Most of all, they have to decide what works for their plants and their specific growing conditions.

The strength of steel

Oregon Wire Products, a supplier in Portland, Ore., offers commercial growers several steel alternatives that are simple to use, effective and long lasting.

Galvanized pot holders are wire stands with broad bases that are made for containers in sizes #5 to #25. Each wire stand supports a single pot, but multiples can be anchored together. One wire ring holds the pot around its upper edge and four vertical wire supports connect to a wider ring on the ground. Anchored with stakes, pot holders work well for tall container plants, especially in areas with directional winds.

According to Hinton, growers of arborvitae often use pot holders to support several rows of a block. This creates an effective wind barrier that protects the rest of the yard. Depending on conditions, growers strategically install this type of windbreak on two sides or more to block and divert winds.

Wire pot holders are quite effective at keeping containerized plants upright, Hinton said. They also help maintain uniform spacing, which produces even plant growth and facilitates irrigation. Once anchored, wire stands are a relatively permanent installation. Containers can be lifted easily for market, and the stands are ready to receive another round of plants. When times and plans change, they are easy to move and reconfigure as needed.

Another flexible choice growers can opt for are steel stakes, which are hammered in next to containers, usually two to a pot. Oregon Wire Products offers looped-end or straight-end stakes made of high-tensile, galvanized steel. Effective even for taller plants, steel stakes are strong, versatile, reusable and safe. Hinton said steel stakes outperform those made from natural materials, which do not last as long and can harbor biological diseases.

For shorter plants in smaller can sizes like #2 and #5, Hinton suggests pot-to-pot hold-downs. Made of wire in the shape of a wide U, hold-downs can be used to secure single pots or to connect pots to adjacent ones. They cost less than steel stakes, are reusable, and can be used to connect an entire field of potted stock, Hinton said.

Grounded for life

Pot-in-pot production is highly effective against howling winds. This method involves putting permanent socket pots in the ground, where they can last for a decade or longer. Plants in production containers sit firmly in the socket pots and don’t get blown over.

Woodburn Nursery & Azaleas, a supplier of finished nursery stock throughout the U.S. and Canada, has gradually shifted more than 200 acres of production from B&B to pot-in-pot, including 21 acres recently.

Why pot-in-pot? Brian Taylor, sales manager for Woodburn Nursery & Azaleas, points to several driving factors. For one, the market is increasingly looking for container-grown material, he said. Also, customers are more frequently requesting smaller orders, and pot-in-pot allows the grower to lift and ship plants year round.

Excellent drainage is required for an effective pot-in-pot system. At Woodburn, 3-inch drain tiles and drip irrigation lines are installed in trenches before the plastic pot inserts.
are installed. Once in the ground, inserts are held in place by the surrounding soil, and spacers keep pots from getting stuck.

Pot-in-pot systems offer other advantages, too.

Compared to traditional container production, pot-in-pot lowers the need for irrigation, makes drip irrigation easier to use, reduces heat stress to roots during summer and temperature fluctuations during winter, and it prevents containers from blowing over — as long as socket pots are installed properly.

“We can grow container material outside as opposed to in a protected area such as a hoop house and still protect the root from freezing weather,” Taylor said. “Plants grown outside get more growth because they are exposed to the sun on brighter days.”

At Woodburn, rows of pot-in-pot are all made the same width, which allows effective use of a trimming machine. Because fewer workers are needed, labor costs go down.

Woodburn started with a pot-in-pot system for #6 and #10 pots, but the newly extended system also includes inserts for #15 pots.

The main downside is the large, up-front investment. It is essentially a permanent system, so the configuration needs to be well-thought-out. “If a grower makes an error in planning, it is expensive to fix,” Taylor said.

**Aboveground stability**

This method of anchoring nursery stock offers growers and retailers another option for reducing wind-related damage.

Aboveground systems are less permanent than in-ground pot-in-pot, but also take advantage of the insulation provided by a socket container. Although winds may blow over plants once in a while with aboveground pot-in-pot systems, they are more adaptable to changing needs.

Stabilizers, for instance, are made of rigid plastic that hold containers upright above the ground. They are
staked to the ground with rebar, allowing potted plants and trees to go in and out of the inserts easily. They are cost-effective, too.

“Unlike permanent in-ground pot-in-pot systems, stabilizers are mobile and elevate the container off the ground, which is particularly effective in rainy climates,” said Scott Loosen, owner of Amaroo Enterprises Inc.

Amaroo sells two sizes of stabilizers that fit either 3- to 5-gallon, or 7- to 15-gallon containers.

Like in-ground systems, they offer ancillary benefits that include thermal insulation and protection from root burn from sun exposure in hot climates, Loosen said.

However, their insulation capability is considerably less than in-ground systems. Studies comparing root-zone temperatures and size of root mass have shown that plants properly maintained in in-ground pot-in-pot systems will have minimal root-zone temperature fluctuations and increased root growth compared to aboveground pot-in-pot systems.

On the plus side, compared to in-ground pot-in-pot systems, aboveground systems provide significant labor and cost savings at installation. They allow for adjustments in spacing and eliminate the need for ideally drained soils or installed drainage systems. Also, root escape can sometimes be a problem with in-ground pot-in-pot, less so in aboveground systems.

Especially for short-term holding of large trees and shrubs that are prone to tipping over, aboveground pot-in-pot systems make a good choice for retail garden centers and wholesale yards.

Moving towards automation

In addition to controlling tip-over, container growers must deal with many labor-intensive jobs related to transporting and handling large numbers of plants. Increasingly, they are turning to machines to save money and improve production.

Gold Hill Nursery in Hillsboro, Ore., for example, has invested in cut-

Pot-in-pot growing systems include a socket pot (shown at top) with spacers to keep the inner pot from becoming stuck. Beneath the pot is a drain pipe to catch any irrigation water not consumed by the plant. PHOTO BY CURT KIPP
Rooting Compound

Wood's

3 Convenient Sizes:

Further equipment to develop a large-
garden industry and teaches SAT/ACT test prep
at www.satpreppdx.com. She can be
reached at gardenwrite@comcast.net or
satpreppdx@comcast.net.

continued excellence from our family owned company for over 30 years

Blueberry varieties come in early, mid and late fruiting seasons from June through September. Make sure your nursery carries selections for a full season of ripening for your customers. They’ll appreciate the extended fruit harvest and you’ll appreciate the extended profit potential. Blueberries are in high demand. Let us show you how to maximize your blueberry program and profits.

Contact Information

50 Varieties
Includes some just-released varieties!
Linens • 31/2" Pots • Liter Pots
Advantage™ Cell Grown Transplants
#1 Containers • Grower Support

Visit the Midas Nursery Solutions website to watch videos that demonstrate the power of automation for container growers.

TIPS FOR AUTOMATION

Tip-over remains a challenge, but the fork system used by Gold Hill is 10–15 times more efficient than manual labor at spacing #1 and #5 containers, Gold said. Since winter is the worst time for tip-over, Gold recommends spacing containers as late as possible, using lower, wider containers which are harder to tip over and connecting containers, especially those with larger plants, with bent steel rods to form bridges between plants.

Call Today For A Distributor Near You
503-678-1216

Earth Science Products
P.O. Box 327
Wilsonville, OR 97070
www.earthsienceproducts.com

Elizabeth Petersen writes for the garden industry and teaches SAT/ACT test prep at www.satpreppdx.com. She can be reached at gardenwrite@comcast.net or satpreppdx@comcast.net.