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Completing the circle

THE GREEN INDUSTRY
RESPONDS TO DEMANDS
FOR A GREENER
PLANT CONTAINER

By Curt Kipp

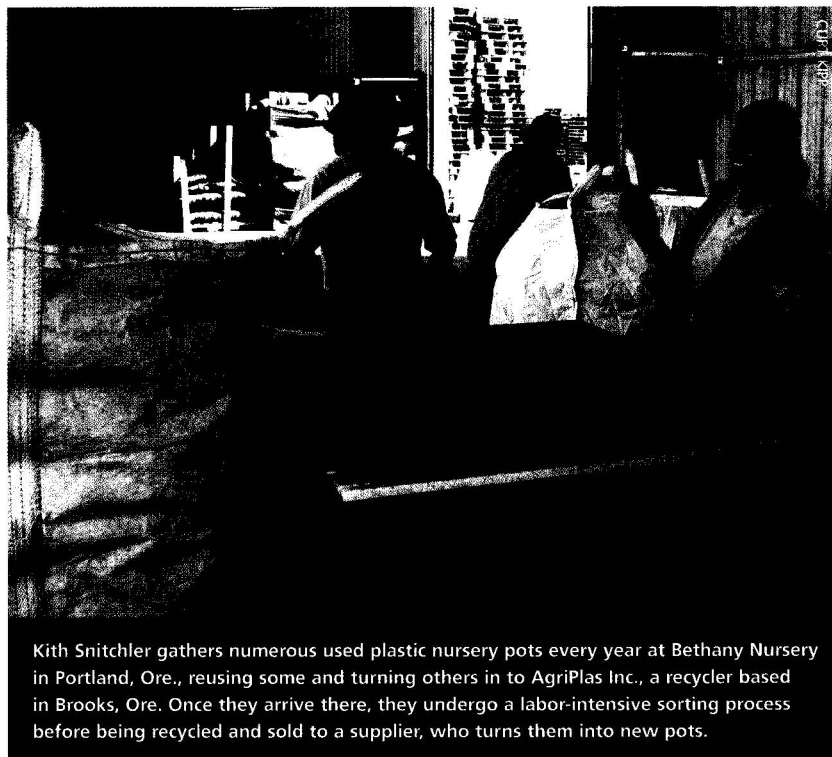
You have entered the yard of a confirmed gardening addict. The evidence is unmistakable. Right there, next to the deck or the garage, is a stack of empty plastic pots, flats and trays. Such an image leaves no doubt — here is a person who spends money on plants the way Sarah Jessica Parker buys shoes. Good news for the local garden centers as well as growers.

That pile of pots may have a downside, however. It could be headed for the local landfill, or worse yet, the burn pile.

It doesn't have to be this way. Meet Kith Snitchler.

In a storage area at Bethany Nursery in Portland, Ore., Snitchler collects pots and trays of all sizes.

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Kith Snitchler gathers numerous used plastic nursery pots every year at Bethany Nursery in Portland, Ore., reusing some and turning others in to AgriPlas Inc., a recycler based in Brooks, Ore. Once they arrive there, they undergo a labor-intensive sorting process before being recycled and sold to a supplier, who turns them into new pots.

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POT RECYCLING

Some originate from his small growing operation, but most are turned in by his retail customers. "I don't think there's anything that we throw away," he said.

Snitchler uses some of the containers to repot plants that didn't sell and will need a larger container for the next season. He returns other containers to the growers where they originated, sometimes for credit. The rest are taken to a recycler, where they are recycled into pots, planks and other goods.

A growing, green trend

Snitchler is not alone. Many growers and garden centers recycle and reuse plastics, and encourage their customers to do the same.

"(Customers) love it," Snitchler said. "People are really interested in knowing about it and knowing that nurseries are taking steps to do this."

In Oregon, many of the plastics sent for recycling end up at either Agri-Plas, Inc. in Brooks, Ore., or the Eugene, Ore.-based recycling program that International Paper recently purchased from Weyerhaeuser.

Agri-Plas got started more than a decade ago by recycling agricultural baling twine. It then expanded to take in nursery plastics. The privately held firm expects to collect some 15 million pounds of agricultural plastics in 2008, up from 13.5 million pounds in 2007 and 6 million pounds a few years earlier.

"We thought when we started with nursery plastics, we'd be dead in January or December," co-owner Allen Jongsma said. "It's been a 12-months-a-year deal, because every nursery is different. They transfer plugs at different times of year. They change pots at different times of year."

Agri-Plas processes the pots, turning them into shredded plastic or reconstituted pellets, and sells them to such companies as McConkey Co. Inc., which is based in Sumner, Wash.

"Most of our nursery pots end up going into a new nursery pot," Jongsma said. "It completes the cycle."

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Using reprocessed pellets that Agri-Plas makes, McConkey can create pots that are, in some cases, 100 percent recycled content. Others are blended virgin and recycled plastic.

"The technology has changed and come far enough that it's economically feasible," said Bernie Butler, manufacturing and logistics director for McConkey Co.

The plastics recycled are not limited to the pots. Agri-Plas accepts films, drip tape, trays, crates, baling twine, tarps and woven bags, to name a few – as does its main Oregon competitor, International Paper.

"We take everything from the nursery except the PVC pipe," Jongsma said. "We just ask that they keep it reasonably clean, if possible."

IP's operation processes the same plastics and in similar amounts, program manager Lorena Young said. She spends a lot of time looking for additional sources of recyclable plastic and in some cases will pay for it. She said she is able to reach more remote areas because IP doesn't just take plastic; it takes other recyclables, too. That justifies farther trips.

"There's a whole lot more that can be accomplished," Young said. "And regardless of how many of us are in the marketplace, there's more than any of us can handle."

And that's just it. There are many nurseries and many nursery customers who either don't recycle plastics or aren't aware of opportunities to do it.

"We've got quite a ways to go," Butler said.

Pushing for an increase

Two main factors are pushing an increase in plastic recycling.

The first factor is the rising cost of oil, which is making plastic containers more expensive. "Nurseries are trying to do a better job of reusing pots," Jongsma said. "The cost of plastics is high." But pots can't always be reused due to pest and disease concerns. By recycling them, one can

get new, clean pots, and Agri-Plas is experimenting with a way to turn them into fuel.

The second factor is demand for recycling from customers and regulators, both of whom now expect it. "Green is the big thing," Butler said.

Pushing in the other direction are several barriers that make it more difficult to recapture nursery plastics before they end up in a landfill. They include:

- **Lack of standardization.** Recycling plastic soda bottles is easy because they are made solely from polyethylene terephthalate (PET). Likewise, all plastic milk jugs are high-density polyethylene (HDPE).

That's not true of plant containers. A given plant container could be made from PET, or any one of a number of resins. "Different plastics have different properties that work well in different environments," Butler said.

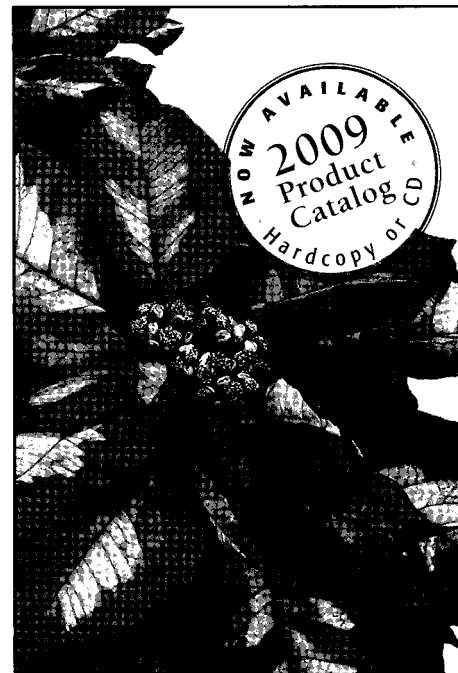
Often, the containers are not stamped with a code indicating the type of resin. Even with a code, the task of sorting plastic pots by resin type is labor intensive. According to Jongsma, it requires a trained eye due to the endless variety of containers that nurseries use. This wouldn't matter if the plastics could be mixed during the recycling process, but they can't.

"If you mix polystyrene and polypropylene and polyethylene, you end up with garbage," Butler said.

- **Contamination concerns.** The presence of dirt and foreign objects can play havoc with specialized, expensive recycling equipment. Agri-Plas relies on customers to clean containers before turning them in, but the company can't afford to take chances.

"We have to go through every pot individually," Jongsma said. "We find all kinds of different material in the pots – rocks, metal, lizards, lunch bags ..."

- **Transportation costs.** The plastics must be taken to a central facility, either by the nursery operator or the recycler. In Oregon, IP and Agri-Plas



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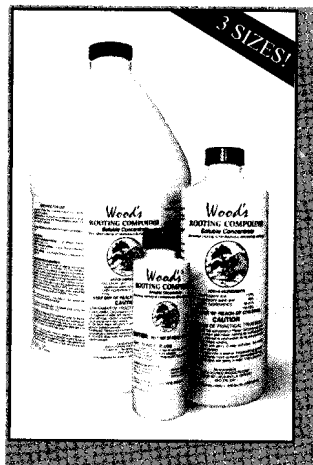
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POT RECYCLING

have been successful because many nurseries and other users that recycle exist close by. Still, given fuel costs, their drivers must maximize the load carried.

• **Profitability.** Most agree that recycling agricultural plastics is a tough business in which to make a profit, because of all the factors mentioned above.

One has to have knowledge of the different films and containers, access to an inexpensive labor source, the capital resources to invest in the equipment, access to several plastic "donors" nearby, and the patience to develop relationships with a variety of nursery operators.

In the Pacific Northwest, there are enough nurseries concentrated in a relatively small geographic area to generate the critical mass needed to make recycling profitable. Recyclers can combine multiple pickups into one trip.

"It generates enough revenue to get it, bale it, and get it somewhere," Young said.

In other states, agricultural plastic recycling programs are beginning to pop up. Penn State University has compiled a list of such vendors, which can be viewed at <http://plasticulture.cas.psu.edu/activities.html>.

However, plastics recycling still is not offered as widely as industry leaders would like.

Developing solutions

Despite the presence of some alternatives, the green industry remains primarily dependent on non-green containers, made of plastic derived from fossil fuels. Industry leaders are well aware of the irony involved. Both in Oregon and nationally, the calls for more Earth-friendly containers are increasing.

"If the industry doesn't move forward on this, someone else will, and the burden would likely fall on the industry, not the consumer," said Jonathan Bardzik, director of marketing



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Do you take pots back?

Retailers: Do you allow customers to return used plastic pots to your store for recycling? How is it working? Tell us about it, and we will share your comments on the Digger blog at www.diggermag.blogspot.com. E-mail your comments to Curt Kipp at ckipp@oan.org and watch the blog for the results.

and industry relations for the American Nursery & Landscape Association.

ANLA is pushing a three-legged approach to the container issue. "Those three legs are recycling, reusing and re-engineering," Bardzik said, "each with their own set of challenges and issues."

Under the leadership of ANLA Retail Committee chairman Platt Hill, the association is exploring an effort towards greater standardization of nursery containers. This would promote reuse even as they move between industry players. The association also wants to push for greater recycling in the industry. It is hoping to broker an industry wide meeting soon to talk with EPA officials and others about plastics recycling on a national basis.

"We're looking at what it would take to get the stuff accepted curbside," Bardzik said. "It would be a home run for everyone."

Curbside recycling of nursery plastics is available in a small but growing number of areas nationwide, such as Bethesda County, Md., Portland, Ore., and Sonoma County, Calif.

Plastic nursery container 2.0

The third leg of the stool is perhaps the most ambitious. ANLA leaders would like to "re-engineer" the traditional nursery container so it is greener.

"One of the outcomes we're looking for is a container that can be recycled at a municipal recycling facility,

or can be chopped up and buried in the ground," said Marc Tefteau, ANLA director of research and regulatory affairs.

In 2006, ANLA signed a three-year cooperative research and development agreement, or CRADA, with the USDA. Both parties are helping fund research into the possibility of creating a keratin-based biodegradable plastic. There's a readily available source for the keratin – chicken feathers from poultry processing plants. Now, researchers just need to figure out how to formulate a resin from it that best fits grower and consumer needs.

"We're striving hard to get some pots available for testing by next spring," Tefteau said. "I'm optimistic of the progress we've made so far."

There already exist a variety of nursery pot alternatives derived from

such materials as rice hulls, peat, wood fibers, and even cow manure. They tend to cost more and many are best suited for specialized uses. Some are shipped from overseas, adding to transportation costs.

There may never be a perfect pot that works best for every possible application. Nonetheless, the industry will keep working to recycle more, reuse more, and when feasible, use greener alternatives.

"It has to make sense for businesses," Butler said. "You want to do the right thing – I know all our businesses do – but it has to make sense for business." ©

Curt Kipp is the publications manager for the Oregon Association of Nurseries and the managing editor of Digger. He can be reached at ckipp@oan.org.

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