

The “Three Rs,” *Reimagined*

When this column began back in January, sustainability was on the front page, front cover and in the lead stories of newspapers, magazines and evening news broadcasts across the country.

Early columns explored whether the exploding interest in sustainability was only a fad or a sign of permanent change.

Now, approaching a year later, it is clear that sustainability has grown, peaked and declined like a fad — yet it represents real, permanent change. While the news is moving farther back in the paper, sustainability has become embedded in our lives. Last spring, paying for reusable grocery bags seemed as unbelievable as a \$4 gallon of gas, but we have accepted both (and get excited when gas falls back to \$3.50!). Organic and locally grown food has transitioned from a luxury item to a health necessity for many people, and many of us are buying energy-efficient light bulbs as a matter of habit.

These changes in your consumers' buying habits are an issue optimally addressed in your own business. You know best whether your customers want an organic lawn care solution or would prefer to buy drought-tolerant plants. There are, however, other issues we can only address collectively, working together to secure solutions that benefit us all.



Recycling of common materials like water bottles has definitely gone mainstream, but is there a solution to reducing the number of plastic pot waste that goes into landfills?

As the consumer purchasing scene has heated up in the wake of the sustainability movement, so has the regulatory environment. These two catalysts are beginning to come together around the issue of container-grown plants. While we may be “the original green industry” — protecting farm land, promoting green spaces and selling natural carbon sequesterers and oxygenators — we produce a significant amount of plastic waste each year in the form of nursery and greenhouse pots.

This has not gone unnoticed by consumers or regulators like the EPA. Mass merchants, seeing the potential for PR problems, have also started rooting around for an easy solution, as have many growers and independent garden centers.

The American Nursery & Landscape Association (ANLA) has been exploring the challenge of reducing the volume of petroleum-based plastic pots in the waste stream for two years now. Through research, we have come to see the solution as a three-legged stool supported by reuse, recycling and re-engineering. The short answer, though, is that there is no silver bullet. The arsenal to address this issue will be a quiver with many arrows.

Reuse

The industry has long had a practice of collecting pots and reusing them as a practical method of saving money. However, with the wide range of sizes and the increase in brand-labeled pots, not to mention sanitation issues, widespread reuse of containers is an impractical solution for our industry. Pursuing this as a primary, national solution would likely place huge burdens on the supply chain in the form of expensive reverse logistics. In other words, getting those pots back from consumers to growers is not cheap, and someone will have to pay the cost. In our current economy, that is not likely to be the consumer.

In the long term, a move toward consistent manufacturing standards — pot sizes, finishes and materials — would make reuse a viable solution. While packaging is still seen as a significant horticultural and competitive advantage, this is unlikely to move forward quickly. ♦

Looking back on sustainability's progress in our industry in 2008 — and looking ahead to a future that combines reuse, recycling and re-engineering.

By Jonathan Bardzik

MANAGEMENT

sustainability
2008

Recycling

A year ago, ANLA's board of directors asked staff to begin exploring a national recycling solution for petroleum-based plastic pots. ANLA reached out to state-run, association-run, and private nursery and greenhouse recycling programs, in addition to talking with con-



There are a number of challenges involved in creating a national pot recycling program, one of which involves the resins in pots, which are stiffer than many traditional recycling programs accept.

tacts at the Environmental Protection Agency (EPA) and several container manufacturers. Two major challenges to a national program were quickly identified.

A framework of small firms. First, the recycling industry looks a lot like the nursery industry. There are a lot of small firms operating locally or regionally across the country. In fact, the largest recycling firm in the United States generated revenues of only \$20 million per year. Given this structure, it is impractical to cobble together a national recycling network. Local programs, however, such as those run by the Minnesota Nursery and Landscape Association and the Missouri Botanic Garden, are having a great impact in their regions.

Difficult materials. There are many different types of petroleum-based plastic resins (as noted by the little number in the triangle on the bottom of your water bottle). Most curbside recycling programs around the country accept only 1-, 2- and sometimes 3-type plastics. Those lighter resins are often found in soda, milk and detergent bottles. Nursery pots are often made using stiffer 5- and 6-type resins. It has also been suggested that certain materials added to the resins make it hard to separate the plastics back out for recycling.

This summer, our board of directors approved moving forward with a recommendation to the Horticultural Research Institute (HRI) to explore working with commercial petroleum-based-resin formulators, regarding reformulating resins and other materials. The goal would be producing nursery and greenhouse containers that would be accepted for curbside collection. While this is unlikely to work for all containers, it would represent one low-impact part of the solution.

Re-Engineering

This is perhaps the most exciting piece of the solution. Re-engineering means looking for alternatives to petroleum-based resins that are more easily recycled or even composted. It's an attractive option, but a re-engineering solution will not come quickly or easily. While pots manufactured from plant-based resins such as rice, corn and wheat have been promising and have a place within the market, current efforts have been prone to brittleness, cracking and expanding when wet — impractical if you are growing plants in trays. In addition, there are competing markets, such as ethanol production, for plant starch-based materials.

A year ago, HRI, the research arm of ANLA, entered into a cooperative research and

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development agreement with the United States Department of Agriculture's Agricultural Research Service (ARS). Funded by industry contributions, the collaboration has researched the development

of biodegradable plastics using the keratin protein in chicken feathers. With every processing plant producing 20,000 pounds of chicken feathers each hour, this represents a renewable resource that would

also address a significant waste problem currently confronting the poultry industry.

HRI's "chicken pot" project is moving toward commercialization. Working with four major pot



manufacturers as collaborators, two prototype commercial pots from a keratin copolymer have been produced. To address composting/biodegradability questions of the keratin resins, ARS has instituted research trials in concert with HRI.

Reuse, recycling and re-engineering: None of these, on their own, will serve to eliminate all the petroleum-based plastic waste produced by our industry. Even together, they are likely to be incomplete, but they will offer increasingly effective options to reduce our footprint in the landfill.

A Green Future

Sustainability will continue to impact your business in the coming year and into the future. In the classic model of any social movement, a lot of talk and discussion will transition to increased action. The need for quick answers will ease as experience grows. You will identify in your own business — your own market — which products allow you that 10 percent price increase while offering a perceived reduction in performance of only 10 percent, the sweet spot for green products and services. Our industry will work together through our associations to address those larger issues that we cannot address alone.

In the end, we *will* be more sustainable and more profitable, and the green industry will be a little more green. ■

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fig. 2

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fig. 3

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