

FACT SHEET: CHALLENGES OF PLASTIC POT RECYCLING

The process of preparing plastic pots for recycling is cumbersome, complicated, burdensome and cost-prohibitive. The current recycling technology for plastic pots is inadequate.

RECYCLING BY CONSUMERS AND LANDSCAPERS:

- Many recycling stamps on the pots are difficult to identify. Often the print is extremely small and its location may vary. It is, therefore, possible that pots with different resins could be mixed.
- There is limited access to recycling centers and collection costs are high.
- Used plastic containers are primarily disposed of in landfills.

PREPARING PLASTICS TO BE RECYCLED AT RECYCLING PLANTS:

- It is expensive and time-consuming to prepare the pots for recycling:
 - All contaminants, such as soil and pesticide residues, need to be removed. Pesticide residue lessens the value of plastic.
 - Insufficiently sanitized pots can lead to contaminated plant material and become a financial liability for growers. Thorough cleaning results in high collection and sanitation costs.

RECYCLING INDUSTRY:

- Most optical readers used at recycling facilities cannot identify black plastic pots, so they immediately end up in the landfill.
- Not all pots are alike. Many are composed of mixed resins. This complicates the collection and recycling processes. Different resins melt at different temperatures. Some may not melt at all and risk contaminating the batch and grinding processes.
- Ultraviolet light degradation reduces flexibility and breaks polymers apart rendering the pot unrecyclable.
- Plastics generally do not get recycled more than one or two times, because the polymers begin to break down. Recycled plastic is largely used in lower value products that in turn are not recyclable.



FACT SHEET:

PLASTIC POTS AND THE GREEN INDUSTRY: PRODUCTION, USE, DISPOSAL, AND ENVIRONMENTAL IMPACT

PLASTIC POT PRODUCTION

- The container crop industry used 1.66 billion pounds of plastic in 2009.
- Plastic pot production typically involves four types of resins:
 - high-density polyethylene (HDPE #2)
 - low-density polyethylene (LDPE#4)
 - polypropylene (PP #5)
 - high impact polystyrene (PS #6).
- Over 90% of plastics produced are derived from virgin fossil feedstocks.
- Plastic made from virgin feedstocks is cheaper, cleaner, and easier to obtain than recycled material.

HORTICULTURAL USE

- Most plants are sold in single-use, petroleum-based plastic pots.
- Plastic pots are the standard and most widely accepted type of container used in the horticultural and agricultural sectors of the green industry.
- The green industry is concerned about its reliance on plastic, but lacks dependable alternatives that meet specific performance requirements.
- Plastic's durability and low cost make it hard to replace.
- Many consumers now view the use of nonrenewable plastic products as an unsustainable practice.
- Research shows consumers are willing to pay an additional charge for recyclable, plantable and compostable pots vs. traditional plastic.
- The majority of growers and landscape service providers have little knowledge about biodegradable containers available on the market.

DISPOSAL

- Disposal options are limited. The existing recycling infrastructure is overwhelmed by the volume of used plastic.
- For plastic packaging and containers (which includes plastic pots), in 2018 it was estimated that 14.5 million tons were generated, of which only 1.98 million tons were recycled, and 10 million tons were landfilled.

- China and other Asian countries used to take and recycle North America's used plastics, but this ended in 2017, resulting in the loss of a large market for the material and a glut of used plastic in the US and Canada with nowhere to go.
- Plastics can only be recycled once or twice because the polymers break down in the recycling process.
- Recycling horticultural plastic pots is cumbersome, complicated, burdensome, and cost-prohibitive.
- 95% of plastic pots end up in landfills.

ENVIRONMENTAL IMPACT

- The initial processes of plastic production and distribution all result in emissions of greenhouse gases.
- Disposal by incineration releases greenhouse gases and pollutants into the air.
- Toxins associated with petroleum-derived materials have direct impacts on humans and other species.
- A single plastic item can take hundreds to thousands of years to decompose, degrading the natural systems around it by leakage of chemicals into soils and water.
- Plastic does not biodegrade, so nature cannot assimilate it back into the environment.
- According to data from the Environmental Protection Agency, recycled plastics account for far less environmental impact than their virgin counterparts.
- Alternatives to plastic containers are being explored:
 - Bioplastic – typically 20% petroleum content and compostable in industrial settings
 - Compostable – 100% biodegradable and compostable in either industrial or non-industrial settings
 - Plantable – no petroleum content; 100% biodegradable
- While there is potential for the adoption of alternative pots, they are not yet available at a scale or price which makes them competitive with plastic.

