



cannabis

# Industry Insights Report

## Balancing Profits and Sustainability in Cannabis Cultivation: The Shift to Sustainable Containers in the Cannabis Industry

In an era marked by growing concerns about the environment, governments and consumers are increasingly demanding that businesses across all industries shift to more sustainable operations.

In the cannabis industry, there are two primary drivers in the shift to sustainability.

First, stricter environmental regulations around the use of plastics are emerging globally. Planning for compliance with future regulations isn't just about avoiding penalties. It represents a preemptive strategy to avoid future disruptions and prepare for new market realities.

For instance, as part of Canada's Cannabis Act, cultivators must adhere to a stringent environmental agenda, which includes directives on waste management and restrictions on plastic use.

Second, the market's pulse is changing, especially among millennials and Gen Z—two crucial demographics for the cannabis industry. With escalating demand for environmentally-friendly products, sustainability is becoming less an exercise in virtue signaling and more about an investment in brand reputation, customer retention, and market share expansion.

While transitioning towards more sustainable cultivation methods is vital for the future, it inevitably adds layers of complexity and cost. Such circumstances further escalate the challenges of an industry already grappling with market saturation, fluctuating prices, and a complicated legislative landscape.

Online searches for sustainable goods grew by **71%** over the past five years.

Source: [The Economist](#)

**67%** of companies have started using more sustainable materials, such as recycled materials.

Source: [Deloitte](#)

**57%** of consumers will change purchasing habits to reduce negative environmental impact.

Source: [IBM](#)

**50%** of CPG growth from 2013 to 2018 came from sustainability-marketed products.

Source: [NYU](#)

## This puts growers in the difficult position of balancing profitability and sustainability.

However, this challenging predicament also paves the way for ample opportunities in an emerging industry.

As the legal cannabis industry navigates through its early stages of growth, sustainability is no longer a flashy buzzword. Growers that proactively adopt more sustainable practices can position themselves as industry frontrunners and future-proof their operations.

To maximize these opportunities, growers need to focus on sustainability in key areas of their operations, including their choice of growing containers. These containers are a critical part of cannabis cultivation that directly affects plant health. Unfortunately, their composition—often plastic—also directly affects the environment.

Keeping the dual goal of profitability and sustainability in mind, we invite you to join us in a three-part exploration of growing containers and their role in the past, present, and future of cannabis cultivation.

Let's begin by reflecting on the past to extract lessons from pioneers across various industries who proved that profitability and sustainability are not mutually exclusive goals.

## Harvesting History: Lessons in Profitable Sustainability from Past Innovators

Innovation and adaptation are the core foundations for any industry aiming to thrive amidst evolving landscapes.

Consider the case of cannabis cultivation. The journey from primitive clay pots, through the plastic revolution of the 20th century, and onto the emergence of sustainable containers reveals a story of advancement in response to adversity. Each progression marks the innovative spirit of cannabis cultivators.

*Early 8000 BC*



**Earthen Pots:** Ancient civilizations used earthen pots to cultivate various crops, including cannabis. These pots provided a suitable environment for root growth and moisture retention.



**Clay and Ceramic Pots:** As civilizations advanced, so did cultivation practices. Clay and ceramic pots were developed, offering better durability and water drainage.



**Wooden Barrels:** In regions where wood was readily available, wooden barrels were used as containers for cannabis cultivation.



**Plastic Containers:** The invention of plastic revolutionized agriculture. Lightweight, durable, and inexpensive plastic pots became the go-to for cannabis cultivation.



**Smart Pots:** The fabric pot, or “smart pot,” was introduced. These containers, made from porous fabric, provided better aeration and helped prevent root circling.



**Air Pruning Pots:** The design of air pruning pots allowed air to prune the roots naturally when they reached the edge of the pot resulting in a healthier and more efficient root system.



**Sustainable Containers:** With a growing focus on sustainable cultivation practices, containers made from recycled materials and biodegradable materials have begun to grow in popularity.

*Present Day 2020s*

Though cannabis cultivation has existed for millennia, the legal cannabis industry is still in its infancy. This situation presents yet another challenge for growers. Currently, data on sustainability outcomes in the cannabis sector is sparse, and no standard exists for collecting or reporting on environmental performance.

However, this doesn't imply that planning for sustainability should wait.

Even though the cannabis industry lacks concrete data and benchmarks due to its emerging nature, growers can still learn valuable lessons from previous pioneers of profitable sustainability. Growers can use those lessons to innovate and plot the course for their own path to sustainability.



In anticipation of the 1997 Kyoto Protocol, Interface Inc. initiated a waste reduction plan in 1994 that led to **\$450 million** in waste savings.



Philips shifted to energy-efficient lighting before the EU's 2009 incandescent lamp ban, saving **\$1.8 billion**.



Unilever launched its Sustainable Living Brands in 2010. The line of **sustainable brands drove 75%** of Unilever's 2018 growth.



University of Oxford reviewed the academic literature of 200 studies on sustainability and corporate performance and found that **80%** of the studies identified a positive relationship between sustainability practices and investment performance.



Adidas pledged that, by 2025, **9 out of 10** articles will be made from sustainable materials.



**80%** of reviewed life sciences and medtech companies highlight environmental or sustainability efforts as a priority.



3M aimed to innovate through sustainability by creating the first viable, **sustainable alternative** to hydrofluorocarbons.

Let's transition our focus from the past to the present to understand the current state of cannabis growing containers. This will serve as our launch pad for our discussion on the future of sustainable cannabis cultivation.

# Growing Opportunities: The Current State of Cannabis Cultivation Containers

The affordability, durability, and resistance to fungal and bacterial growth have made plastic growing containers a mainstay in cannabis cultivation for decades, and they continue to be the go-to choice for most growers today. The three most common types of black resin containers in use today are blow mold, thermoform, and injection mold containers.

## BLOW MOLD GROWING CONTAINERS

Blow mold containers are a cost-effective and lightweight solution for growing both indoors and outdoors. Available in a wide range of sizes up to 65 gallons, they provide some strength and durability, however, their utility is limited. Blow mold containers are designed for one-time use only and are not compatible with automation.

COST	Low
DURABILITY	Low
REUSABILITY	Low
WEIGHT	Light
COMPATIBLE WITH AUTOMATION?	No
MADE FROM SUSTAINABLE MATERIALS?	No

### IDEAL FOR

- Indoor growing.
- Outdoor growing.
- Motherstock.



→ **BOTTOM LINE:** Though not compatible with automation, blow mold containers are a cost-effective, single-use solution available in sizes up to 65 gallons.

## THERMOFORM GROWING CONTAINERS

Thermoform containers provide more strength and durability than their blow mold counterparts and are reusable. Ideal for automation, thermoform containers have smooth sides and strong rims. Available with either side or bottom drainage, thermoform containers offer growers the flexibility to select a drainage system that best fits their operation.

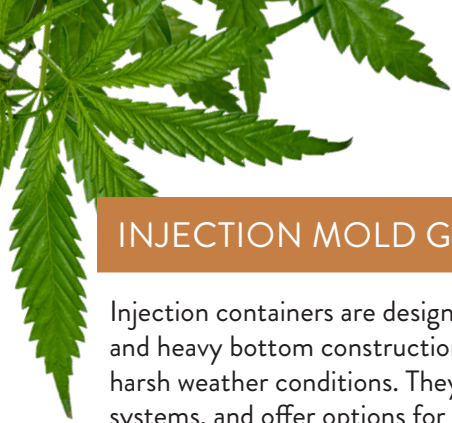
COST	Low-Medium
DURABILITY	Medium
REUSABILITY	Medium
WEIGHT	Mid-Range
COMPATIBLE WITH AUTOMATION?	Yes
MADE FROM SUSTAINABLE MATERIALS?	No

### IDEAL FOR

- Indoor and outdoor growing.
- Smaller plants in a greenhouse setting.
- Long-term growing operations or multiple harvest cycles.



→ **BOTTOM LINE:** Thermoform containers are an excellent choice for growers who need a reusable container that provides both moderate strength and compatibility with automation.



## INJECTION MOLD GROWING CONTAINERS

Injection containers are designed for durability and longevity. Manufactured with thick walls and heavy bottom construction, injection mold containers are reusable and able to withstand harsh weather conditions. They are automation-friendly, ideal for pot-filling and handling systems, and offer options for either side or bottom drainage.



<b>COST</b>	Medium-High	<b>IDEAL FOR</b>
<b>DURABILITY</b>	High	
<b>REUSABILITY</b>	High	
<b>WEIGHT</b>	Heavy	
<b>COMPATIBLE WITH AUTOMATION?</b>	Yes	
<b>MADE FROM SUSTAINABLE MATERIALS?</b>	No	

- Indoor, outdoor, and controlled environment cultivation.
- Operations that require easy-to-clean and reusable containers.

➔ **BOTTOM LINE: A highly durable, reusable, and automation-friendly growing container.**

Today, plastic containers dominate the landscape of cannabis cultivation.

However, we're fast approaching a crucial juncture where sustaining old habits is no longer a viable strategy. Making the shift to more sustainable practices isn't merely a marketing ploy—it's a strategic move with tangible financial benefits. Operational efficiencies can lower expenses over time while opening the doors to lucrative new market opportunities. Plus, it attracts the interest of progressive investors, looking to place their bets on businesses with foresight.

As we forge ahead, those growing containers that will define the future of cannabis cultivation will be those that meet the dual demands of facilitating plant growth and satisfying the increasing global appetite for sustainability.

Let's turn our gaze towards the future of growing containers and explore how proactive thought today can shape a prosperous and sustainable tomorrow for growers.

### What's Next?

"The growing media of the future must be available, affordable, and sustainable and meet both quality and environmental requirements from growers and society, respectively."

-Gruda, N. S. (2019). Increasing Sustainability of Growing Media Constituents and Stand-Alone Substrates in Soilless Culture Systems. University of Bonn.



# Planting the Seeds of Tomorrow: The Era of Sustainable Growing Containers

Demand for sustainable growing containers is on the rise—and the demand isn't confined to organic growers. Large-scale commercial growers are beginning to take note, motivated by breakthroughs in container manufacturing and technology.

The sustainable growing containers of the future aren't just 'green' alternatives to plastics; they're practical solutions that can deliver on diverse growing needs.

To illustrate this point, here are two types of sustainable growing containers—fiber and biobased—that are helping to shape the future of cannabis cultivation.

## Sustainable Fiber Growing Containers

Fiber containers are produced in a closed-loop water recycling facility with recycled newsprint and corrugated fibers. They allow moisture to move freely throughout the walls of the container for optimal drainage and healthy root systems by ensuring the entire plant can breathe – maintaining necessary oxygen levels while limiting root rot caused by overwatering.

While fiber containers gradually break down, they stay intact long enough to help develop a healthy root system. By either removing the bottom of the fiber container or simply allowing the roots to grow through safely and naturally, growers can directly plant the entire container into the ground or a larger container without causing root shock.

Two popular types of fiber containers are **EcoGrow®** and **FiberGrow®**.

### EcoGrow®

**EcoGrow® fiber growing containers are designed to enhance root development and degrade rapidly in soil, making them suitable for organic farming.**



### FiberGrow®

**FiberGrow® containers prioritize strength and durability, making them ideal for moist-soil applications and situations requiring durable pots.**



# Biobased Growing Containers

Made from sustainably sourced wood pulp, **BioPax®** growing containers are USDA BioPreferred® Certified and promote less waste without compromising on strength. Unlike traditional fiber containers, BioPax® containers fall under resin code #7 and are considered a renewable-resource-based bioplastic.

Though similar in appearance to recyclable plastics, biobased containers are intended for composting in industrial facilities or landfill disposal, where they will naturally degrade without leaving harmful microplastics or chemicals. This design mimics the resilience and versatility of traditional plastic containers while maintaining an environmentally friendly end-of-life outcome. Notably, BioPax biodegrades completely due to microorganism activity, with the significant advantage that it does not leave behind any microplastics in the process.



**Which sustainable growing container is right for your operation?**

[Click here to view the Product Comparison Chart](#) or scan the QR Code.



Considering the multitude of sustainable growing container options available today, there are abundant opportunities for growers to take proactive steps toward a greener future in cannabis cultivation.

But as we venture into an uncertain future, it's essential to remember that the journey toward sustainable cultivation is still unfolding. But being proactive in today's context can lay the groundwork for a smoother, more resilient transition in the future.

Let's explore a set of practical strategies that can help define your unique journey toward sustainability.

## **Monitor the evolving regulatory landscape and its potential impact on your operations.**

Policies are continuing to evolve and the regulatory landscape will require ongoing assessment. Start by familiarizing yourself with key regulations like Canada's Cannabis Act, Washington State's air pollution control guidelines, and California's CalCannabis Cultivation Licensing Program.

## **Consider a phased approach that gradually introduces sustainable containers.**

For growers who are hesitant to adopt sustainable growing containers into their operations, it's important to remember that such a shift doesn't occur overnight. It's a journey that requires strategy, thorough research, and adaptability. Instead, consider a phased approach, gradually introducing sustainable alternatives into your operations.

## **Stay ahead of sustainable container innovations.**

Research and monitor ongoing advancements in sustainable container technology and keep an eye on R&D efforts focused on developing affordable and durable alternatives to traditional containers. It has never been more important for the manufacturers of horticultural containers to provide growers with planter and pot choices and alternatives that are purposeful, on-trend, and mindful of our planet—and The HC Companies is doing just that.

HC is committed to becoming the sustainability leader through eco-efficient manufacturing, innovative product development, and responsible resourcing to create sustainable solutions to help improve our world.



Learn more about the future of sustainable cannabis cultivation by visiting  
The HC Companies at [Cannabis Conference 2023](#) | Booth #1031.

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