Air Tray Technologies – A Simple Redesign with Transformational Impact

Excess moisture in the root zone—commonly referred to as “wet feet”—remains one of the most persistent and costly challenges in horticultural production. Caused by circling roots that restrict airflow and drainage, it leads to slower plant growth, increased disease pressure, and widespread reliance on synthetic fungicides.

Despite decades of innovation, most conventional container systems continue to allow this issue to persist.

Air Tray Technologies, patented by The Blackmore Company through multiple domestic and international patents (with additional patents pending), provide a simple yet transformative solution.

By redesigning the container to introduce engineered air spaces around the root zone, Air Tray prevents root circling and enables natural air root pruning. This process stimulates the development of dense, fibrous root systems while maintaining optimal airflow and drainage—effectively eliminating the conditions that cause “wet feet.”

The simplicity of this approach is its greatest strength. Without adding complexity, energy requirements, or costly inputs, Air Tray fundamentally improves plant growth at its source.

By eliminating excess moisture at the root zone, growers can produce the same or higher-quality plants using significantly less growing media—up to **10× less in certain applications**—while maintaining or improving plant performance. This enables higher production density, reduces material inputs, and lowers overall production costs.

> *“With Air Tray Technologies we are reducing our plastic use and finding up to 50% cost savings” Clay Pederson Agromillora*

8ct 100x160mm Air Tray vs 3.5 liter plastic pot

Improved airflow and drainage also reduce disease pressure, allowing growers to significantly decrease their reliance on fungicides and other chemical treatments. The result is a more **sustainable**, resilient, and environmentally responsible production system.

Air Tray Technologies are inherently **scalable** and accessible. Their low-cost, passive design requires no additional infrastructure, making them easy to implement across a wide range of operations—from small nurseries to large-scale commercial growers.

Rather than adding layers of complexity, Air Tray simplifies horticulture by addressing the root cause of multiple production challenges through a single design innovation. This represents a fundamental shift—from managing symptoms such as disease, excess moisture, and inefficiency—to eliminating them at the source.

Supply Chain Savings

Air Tray® Technologies deliver **measurable** efficiencies across the entire supply chain:

- **Supply & Freight:** Reduced inputs and higher plant density improve shipping efficiency
- **Labour & Production:** Automation-friendly design increases throughput and reduces handling
- **Soil & Sustainability:** Up to **50% less substrate** reduces both cost and environmental impact
- **Retail Value:** Paper-based sleeves improve logistics and eliminate single-use plastic

Total Estimated Supply Chain Savings: Over $24,000

- Soil reduction: **$16,000**
- Plastic replacement: **$6,000**
- Internal freight & handling: **$1,300**
- Labour efficiency: **$750**

Based on 100,000 pot/cells of the 8ct 100x160mm Air Tray compared to traditional 3.5-liter pots.

Grower Testimonial) https://youtu.be/HWTG-BbyRbU)

Future-Ready Sustainability

Looking ahead, the horticultural industry faces increasing regulatory pressure—particularly around single-use plastics, which are expected to be restricted or heavily taxed in the near future. Air Tray Technologies position growers ahead of this shift.

Complementing the system, Blackmore's patent-pending retail solution—**Plant-It-Friendly® Sleeves**—replaces traditional plastic pots with recyclable, paper-based retail packaging. This innovation extends sustainability beyond production into retail, eliminating plastic waste while enhancing presentation and efficiency.

Air Tray Technologies has allowed us to sustainably grow our native plants in Air Trays and ship them to retail with a great root system in a non-plastic container, Mark Sellew Prides Corner Farms

Conclusion

Air Tray Technologies demonstrate how a simple redesign can deliver a **scalable**, **sustainable**, and **measurable** solution to long-standing horticultural challenges.

By addressing root-level inefficiencies and eliminating excess moisture, The Blackmore Company has created a system that improves plant performance, reduces environmental impact, and delivers clear economic value.

Together, these innovations set a new standard for efficient, low-impact plant production—proving that the future of horticulture lies in solutions that are not only more sustainable, but fundamentally more efficient and profitable.

AirTray Technologies - How It Works (2) | Videos & Movies on Vimeo