



Case Study

Anova Solutions

Anova Solutions Pty Limited is a small research and development company that was launched in 1999 and ventures to develop and license innovative technologies for the nursery industry. Mal Hunter, Chairman of the Board of Anova Solutions, explained that the company's name has Latin roots, as 'A' translates to 'out of' and 'nova' translates to 'new'. **"Out of new (knowledge) comes solutions; ANOVA is also the acronym for Analysis of Variance, an important mathematical procedure in analysing and making sense of experimental data, which is the bread and butter of how my company operates in conducting research work,"** Hunter said. Hunter was inspired to reinvent the common plastic plant pot when his colleague at university was conducting research on plant growth and encountered difficulty collecting data due to considerable root escape. His inspiration materialized into

the ANOVApot®, a groundbreaking pot that improves gardening in pots by containing roots while controlling water.

Anova Solutions has been a part of the Smart Approved WaterMark scheme since 2009, and the ANOVApot® was granted the Smart Approved WaterMark Product of the Year Award in 2010 for its unique design. Smart WaterMark's Independent Expert Panel was greatly impressed by the inventive pot and its ability to not only save water, but also its proficiency in preventing the waste of fertiliser and run-off from pots. Hunter expressed his belief that acquiring independent credibility on the performance of the pot in the nursery industry would be greatly beneficial to the company. **"The independent support by the Panel of the Smart Approved WaterMark, in its certification of the ANOVApot®, adds to the credibility of our claims on the pot's water saving attributes,"** Hunter said.



Products Approved by Smart WaterMark



ANOVApot®

The ANOVApot® is an innovative plant pot that creatively solves the issue of root escape, which occurs when a plant's roots grow through the drainage holes at the bottom of the pot into the underlying material. The roots may attach themselves to the material underneath the pot and consequently become dependent on it for a supplementary supply of water and nutrients. Before sale, these overgrown roots must be removed from the bottom of the pot, which wastes time and energy, disturbs the plant, creates the potential for pathogen build-up and leads to mat breakdown.

The inventive design of the ANOVApot® resolves these issues by disposing of the commonly used side holes in conventional pots and instead, includes a raised collar that guards a centrally located plastic grille.

This design inhibits root escape because the roots of most plants grow outwards from the centre, reach the pot wall and extend downwards. The roots then circle the bottom of the pot with limited ability to grow upwards over the raised collar and then back down out of the pot. By inhibiting root escape, the ANOVApot® reduces detailing time per pot by up to 70% compared to standard commercially available pots. In addition, the design of the centrally raised, mesh covered hole promotes slower drainage, ultimately saving water by enabling the roots to obtain more utility out of the water already in the pot and thus reducing water waste through overwatering. Since the start of sales in 2006 to 2016, 13.9 million pots of 5 different sizes have been sold mainly to the Australian Nursery industry.

Twinpot Water Management System

The Twinpot Water Management System is a configuration of two identical ANOVApots® assembled into a single unit, with one pot nesting in the other. In this configuration, the lower pot stores drainage water available to the upper pot through flow via capillary tape that connects the two. The system promotes plant growth by as much as 45% due to its continuous access to water stored in the lower pot as well as healthier root systems and less root escape. In addition, irrigation waste is diminished with almost complete water retention and an expected 30% reduction in nutrient loss.

Water Savings

In a hand watering retention test in three nurseries with 9 plant species, the ANOVApot® retained 34%, 29%, and 68% more water than did a traditional bottom hole pot for the three nurseries respectively. Additionally, two and three times as much water (90%, 87%, 116%) was retained when this pot was used in the Twinpot configuration.



Spotlight

Mal Hunter,
Chief Scientific Officer

Mal Hunter invented the ANOVApot®, runs the company and has developed value added systems incorporating the pot, which conserve water and promote more efficient research. While water is often the first key ingredient that becomes limiting in pot plant culture, the need is mostly met by overwatering and wastage. Mal believes the development of a pot like ANOVApot® that greatly increases water use efficiency must be a step in the right direction.