

# Levity CropScience now helping Australian Berries

British scientists believe they've finally come up with a solution to strawberries' infuriatingly short shelf-life and rapid tendency to mould.

More than 3 tonnes of soft fruit – worth around £180 million – is needlessly thrown away by British consumers each year. Strawberries, the classic British summer fruit, enjoy a particularly poor reputation - yet a small team of dedicated crop scientists has found that by making a small change to the way they're grown, farmers may soon be able to offer berries with a longer shelf-life.

"Everyone will be familiar with the frustration of buying a punnet of ripe, silky red, luscious-looking supermarket strawberries, only to see them turning soft and mouldy within hours of purchase," says Dr David Marks, managing director of Levity Crop Science, a British 'agritech' company based in Lancashire.

"That mould has all to do with how the strawberry plant uses a key nutrient, calcium," he explains. "The plant needs calcium to build strong cell walls. It's the premature breakdown of these cell membranes that makes fruit go soft, at which point it rapidly succumbs to mould."

While fruit farmers have known about calcium's role for many years, researchers have struggled with a conundrum. Topping-up levels of calcium in the strawberry plant close to harvest doesn't result in corresponding improvements in fruit firmness, or any decrease in mould and other diseases.

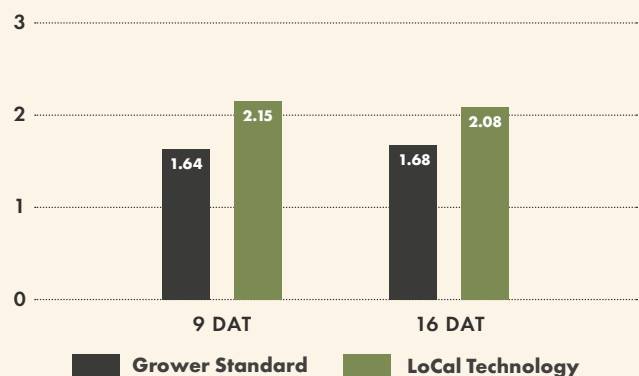
"So we decided to look a little closer at the way strawberries ripen," says Dr Marks. "Strawberries are often called out for not being a 'true' fruit, because they have seeds on the outside – and this non-conformance carries through in the way it ripens, too."

"Unlike other fruits – bananas and apples, for example – strawberries don't ripen in response to a gas, ethylene, produced by the plant. Instead, they have a gene that responds to a drop in levels of another plant hormone, called auxin. But as auxin is also involved in moving calcium around the plant, it seems that once the fruit starts to ripen, calcium can't be properly absorbed."

Undeterred, Dr Marks led his team to look at a group of naturally occurring compounds called calcium transport stimulants. These emulate auxins and had already been used successfully to prevent bitter pit, a disease of apples that's also related to calcium deficiency.

By developing their own specific calcium transport stimulant, the team was able to mix it with the standard calcium fertiliser already used by strawberry growers. The new product was put through its paces in a series of trials in 2016, tests which proved beyond doubt the effectiveness of the technology.

## STRAWBERRY DATA: ALBINA



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**Of the fruit from plants treated with the new stimulant, which we call LoCal, nearly two-thirds was of marketable quality, compared to less than half of the fruit from the plants treated with standard calcium. The quality of fruit in the field has a direct bearing on how long the berries last after picking, and thus how quickly they will mould, Dr Marks explains.**

**Our product, Albina is now used extensively around the world by soft fruit farmers, who are able to sell a greater proportion of their crop if it's been treated with Albina.**

Research by the non-profit group WRAP (Waste and Resources Action Programme) in 2017 found that strawberry crops worth £24 million were discarded without ever entering the food chain, predominantly because they failed to meet specification or quality requirements.

Dr Marks says farmers will also benefit from being able to apply lower rates of calcium. "Because Albina improves the plant's calcium efficiency, growers can reduce rate and frequency of application but get better results.

"We're looking to develop more technologies like this – decreasing food waste for consumers, increasing farmers' profitability, and reducing on-farm resource use."

**Levity has now joined forces with Prodoz International in 2021, after years of Australian trials, to bring the Levity range to Australian growers.**



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