A Lighter Touch

Summary of Project Final Report

Field testing of biofungicides for brown rot control in summerfruit orchards

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Executive summary:

Brown rot, caused by *Monilinia fructicola*, is one of the most significant diseases affecting stonefruit production, causing both blossom blight and fruit rot. Management currently relies on multiple applications of synthetic fungicides; however, increasing concerns regarding fungicide resistance, regulatory pressures, and the need for more sustainable crop protection options have driven the search for effective biological alternatives.

This A Lighter Touch (ALT) and Summerfruit NZ project evaluated the efficacy of selected registered biofungicides for controlling brown rot in a commercial 'Golden Queen' peach orchard in Hawke's Bay during the 2025–26 season (pre-harvest application targeting fruit rot). The field trial represented the final stage of a multi-year screening programme that progressed from laboratory and detached-tissue assays to potted tree studies and finally to commercial orchard testing.

The project aimed to identify lower-impact alternatives that could contribute to more sustainable disease management programmes.

Key findings:

- Selected biofungicides were evaluated for late-season brown rot control in a commercial Hawke's Bay peach orchard. The trial validated findings from previous laboratory, detached tissue and potted tree studies, providing confidence in the screening approach used to identify promising products.

- All four biofungicides reduced brown rot incidence compared with the untreated control, with some providing statistically significant reductions at harvest.
- Biofungicides showed potential to support integrated disease management and fungicide resistance management, although, they did not achieve the same level of control as the standard synthetic fungicide programme under commercial conditions.

- Disease pressure and weather conditions influenced treatment performance, highlighting the importance of application timing and programme design. Future work should focus on refining biofungicide use within spray programmes and evaluating performance across a wider range of seasonal conditions and disease pressures.

- A moderate infection event shortly before harvest may have contributed to the reduced efficacy observed, indicating that late-season infection represented an important challenge for biofungicide treatments.



Figure 1. (L) Detached 'Golden Queen' peach shoots with flowers treated and then challenge inoculated with *M. fructicola*. Flowers are enclosed in chambers to maintain high humidity. (R) 'Golden Queen' peach fruit treated and then challenge-inoculated in a puncture wound a suspension of *M. fructicola*. (*from* Parry et al. 2025).

- Practical insights included:
    - Biofungicides may provide growers with additional disease management tools that support fungicide resistance management through the use of alternative modes of action.
    - Products already registered and used in other New Zealand horticultural sectors may have the greatest potential for grower adoption.

- It is important to continue the development of integrated disease management approaches that combine biofungicides with existing disease control strategies and resistance management programmes.

- The work provides a pathway for incorporating lower-impact disease management tools into New Zealand summerfruit production systems.

A more detailed final report is available to growers whose industry bodies are A Lighter Touch programme partners. If you would like the full report, please contact your industry body.