

Management of Apple Scab and Fire Blight Using Trunk Injection

Trunk injection offers an alternative approach for delivering plant-protective compounds directly into the vascular system of apple trees, potentially reducing pesticide drift, environmental exposure, and reliance on conventional foliar applications. This presentation will summarize research evaluating trunk injection for the management of two economically important apple diseases, apple scab, caused by *Venturia inaequalis*, and fire blight, caused by *Erwinia amylovora*. Studies investigated the disease control efficacy, systemic distribution, leaf and fruit residues, and persistence of injected fungicides, antibiotics, and other plant-protective compounds, as well as the influence of application timing and injection method on disease suppression. Results demonstrated that several injected compounds can move systemically within apple trees and provide disease suppression, although efficacy varies with the active ingredient, formulation, disease, injection timing, and tree physiology. Practical advantages and limitations of trunk injection, including treatment efficiency, residues, tree wounding, and feasibility for commercial orchard use, will be discussed. Collectively, this research illustrates both the potential and current limitations of trunk injection as a precision pesticide-delivery strategy for managing apple diseases.



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