INVESTIGATION OF TOM-CAST, STAKING, AND MULCH FOR MANAGING TOMATO DISEASES

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ABSTRACT

The objective of one experiment conducted in 1997 was to compare two versions of TOM-CAST, a weather-based disease forecasting system, to a weekly spray program for managing early blight in fresh-market tomatoes. Bravo Ultrex and Bravo C/M were used. All three spray programs were started after 38 disease severity values (DSVs) had accumulated from transplanting, which was 1 month before symptoms of foliar diseases were seen and the first harvest. Timing of subsequent sprays was as follows: for TOM-CAST 15 DSV, fungicide was applied after 15 DSVs had accumulated or after 2 wks or if rain was forecast and either of these conditions were almost met; for TOM-CAST 25 DSV, fungicide was applied after 25 DSVs had accumulated or after 3 wks when early blight symptoms had not been seen or after 2 wks when disease was present or if rain was forecast and any of the previous conditions were almost met. Powdery mildew became quite severe in nontreated plots and was more important than early blight in the fungicide-treated plots. All three fungicide programs controlled powdery mildew well on the upper surface of leaves but only moderately on lower leaf surfaces. This indicates the need for a systemic fungicide to manage powdery mildew. TOM-CAST 15 DSV, with 7 sprays, was as effective as the weekly spray program, with 12 sprays, for controlling both diseases. Early blight was significantly more severe with TOM-CAST 25 DSV (5 sprays) than with the weekly program.

This experiment has documented that with TOM-CAST 15 DSV foliar diseases in staked fresh-market tomatoes can be effectively controlled while maintaining yield with substantially fewer fungicide applications than a weekly spray program. A grower applying Bravo Ultrex at 1.5 to 2.75 lb/A according to TOM-CAST 15 DSV in 1997 would have made 5 less spray applications thereby saving $141.50/A and using 12.5 lb/A less fungicide over a weekly spray program.

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