

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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