Tree Fruit Diseases

Fire Blight Predictive Model

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A predictive model for fire blight was further refined in 1993 under weather conditions that caused widespread infection.

Most blossom infection is triggered by rain showers in the low humidity conditions prevalent on the eastern side of the Cascade Mountains of the Pacific Northwest. Temperatures for the four days preceding each rainfall were monitored and the total degree hours over 15.5°C (60°F), with ever-increasing reduction of values between 31°C (88°F) and 40.5°C (105°F), were totaled.

Blossom infection occurred under very high pathogen pressure when total degree hours for the four days preceding each rain event exceeded 160 C or 300 F degree hours.

The great majority of infections occurred in orchards when total four-day degree hours exceeded 275 C or 500 F degree hours.

As thresholds were strongly correlated to the local pathogen pressure, the model was altered to include multiple suggested action thresholds, with descriptions of orchard conditions related to potential fire blight risk.

The model will be provided for trial to any interested individual.