

Year 1 of 3 Evaluation of Disease Forecasting
Northeast Regional Sustainable Agriculture
Research and Education Program

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Introduction-

Grape growers in Western New York are searching for alternatives to the present calendar-based system of fungicidal applications. Employing the weather system to spray only during post infection in the primary season, may result in one or two fewer spray applications per year. This would be a significant environmental advantage and reduce spray costs for the grape grower.

Method-

A Sensor Instruments Field Monitor was employed in a 2 acre Niagara vineyard test plot. Sprays will be timed according to the presence of infections of powdery mildew and black rot fungi and the occurrence of infection periods. A 13 acre Niagara vineyard control plot spray program will be based on a protective calendar system.

Results-

Weather data was downloaded daily via telephone lines and processed using the Sensor Grape software for powdery mildew (*Uncinula necator*) and black rot (*Guignardia bidwellii*) disease models. The first fungicide spray was applied to both the control and test plots on May 31st. See attached time line graph. A powdery mildew and black rot infection period occurred 14 days later prompting a pre-bloom spray on June 17th. Due to very wet conditions June 24th through the 30th, the first post bloom spray was applied July 2nd over both plots, even though the infection period was inside the 14 day spray protected window. The 2nd post bloom calendar timed spray was applied on July 17th to the control plot, the test plot received no fungicide treatment at this time. A 3rd post bloom spray was applied on July 27th after a powdery mildew infection period took place on the 26th. Scouting was conducted on June 18th, July 16th, August 17th, and September 29th. No significant levels of powdery mildew or black rot was located on either site.

1st Year Conclusion-

Weather conditions during the 1994 growing season were such that the 2nd post bloom fungicide application was eliminated on the test plot. A savings of approximately \$31.76 per acre. At the same time, no differences of disease pressure was detected between the test and control plots.

