

## Onions

### Environmental Modeling & Disease Forecasting

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Early detection of pest problems is a key element of an integrated pest management program (*Table XXV-1*). The onset and spread of diseases, insects, and weeds are closely linked to weather patterns. By closely monitoring weather information and forecasts, a pest problem may be predicted and dealt with in a timely and efficient manner. Rather than spraying on a weekly or monthly basis (regardless of the pest pressure), applications should be made only when there is an actual problem and when it is economically and biologically feasible to do so.

*In Colorado*—Automated electronic weather stations are located in the major onion production areas in the state and are part of the larger Colorado Agricultural Meteorological Network (COAGMET); selected stations from onion areas in northern, southern and western Colorado are also referred to as ONIONET. The weather stations are equipped with sensors to measure a variety of parameters including air and soil temperature, humidity (vapor pressure deficit), rainfall, and solar radiation. The stations also contain a cellular telephone and modem that enable weather data to be transferred to the main computer network at Colorado State University in Fort Collins. These weather stations are an important part of the Integrated Pest Management program and its application to the needs of onion growers.

*Table XXV-1. IPM Action Based Onion Fungicide Schedule.*

<b>Disease</b>	<b>Occurrence/Protection Period</b>	<b>Pesticide Spectrum*</b>	<b>Spray Interval (Days)</b>
Bacterial Problems	vegetative-late bulbing	copper-based bactericides*	7-14
Purple Blotch	mid to late bulbing	chlorothalonil, mancozeb, iprodione*	7-14
Downy Mildew	mid to late bulbing	copper-based bactericides, chlorothalonil, mancozeb, metalaxyl mixtures*	7-14
Botrytis Neck Rot	late bulbing	chlorothalonil, mancozeb, iprodione*	7-14

*\*Note most specific and effective pesticide chemistry for this disease and its pathogen; rotate with other fungicides if available for economics and to minimize the selection of*

*pathogen strains resistant to a particular chemistry.*

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Categories: Onion, Diseases, Environmental, Disease Forecasting

Date: 04/01/2007