

In late June of the 2009 season, states in the Northeast began to report detections of late blight on tomatoes and potatoes, caused by the oomycete *Phytophthora infestans*. Infections were soon found on seedling tomato plants being sold at retail stores. Once infections are established, *P. infestans* spores (sporangia) are produced by the millions. Under cloudy, rainy conditions wind may successfully spread sporangia as far as 40 miles. Weather conditions were favorable for disease development throughout much of the region in July, and the disease soon reached epidemic levels from Maine to Virginia.

In Wisconsin, the first case of late blight was not detected until July 29th, when a sample received by the UW Plant Disease Diagnostic Clinic was determined to be positive for *P. infestans*. This was the first confirmed case of late blight in Wisconsin since 2002. The sample was received from tomatoes in a home garden in Dane County. Following the first detection and the subsequent news coverage, reports of the disease began to be received frequently, mostly centered in Dane and Rock counties. Several commercial tomato growers



Figure 1. Tomato leaf with late blight infection. Photo: A. Barta

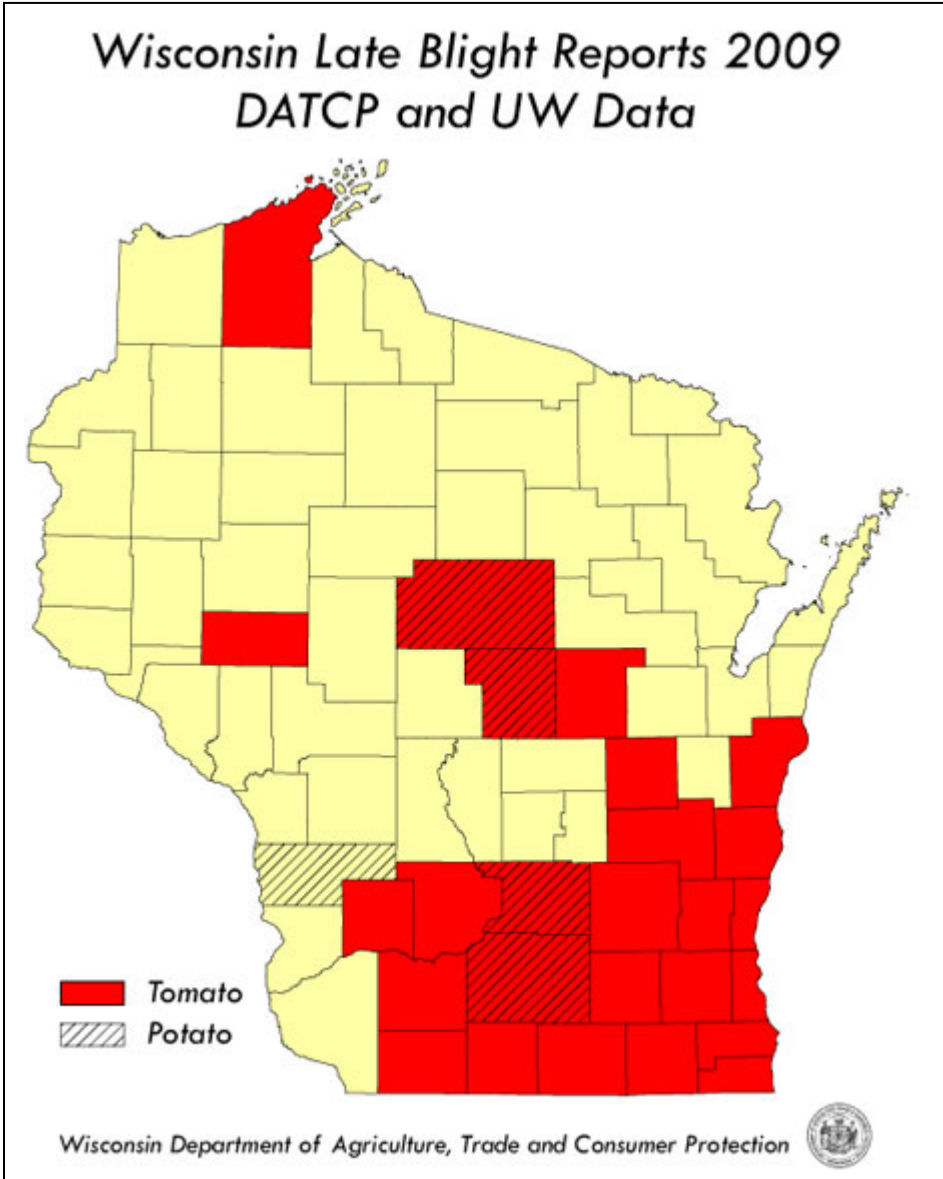
(Community-Supported-Agriculture operations) lost thousands of tomato plants to the disease. By mid-September, infected tomato plants had been confirmed in 19 Wisconsin counties, and diseased potato plants in four counties. Fortunately for the state's potato growers, protective measures were taken on much of the potato acreage, and many fields were sufficiently advanced to allow vine killing. The pathogen cannot continue to grow on dead vines, which prevents further infections. Tomato growers were hampered by the lack of effective control measures with suitable preharvest interval restrictions. When the weather turned dry and sunny in September, the rate of new infections slowed. The killing frosts that hit much of the state in the first week of October ended the epidemic.

Researchers determined that the pathogen strain involved in the 2009 epidemic is type US#14, mating type A2. This type is characterized as aggressive on potato and resistant to the fungicide metalaxyl. Since only the A2 mating type is believed to be present in Wisconsin, the organism is unable to produce sexually and form oospores, the thick-walled spore type that is able to persist in soil and overwinter in Wisconsin.

Growers of all types should make sure that diseased plant material is properly destroyed to ensure that the pathogen cannot survive this winter. Tomato plants should be chopped and plowed down, or allowed to freeze thoroughly before composting. Wisconsin Administrative Code ATCP 21.15(2) requires that potato cull piles be disposed of by May 20th of each year, and though infection on potatoes was a minor factor in the 2009 season, DATCP inspectors will

be vigilant about enforcing the cull pile rule in 2010. DATCP nursery inspectors will also be inspecting tomato seedlings at markets next spring for the presence of late blight symptoms.

More information on late blight in Wisconsin is available from the UW Vegetable Pathology website, <http://www.plantpath.wisc.edu/wivegdis/>.



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