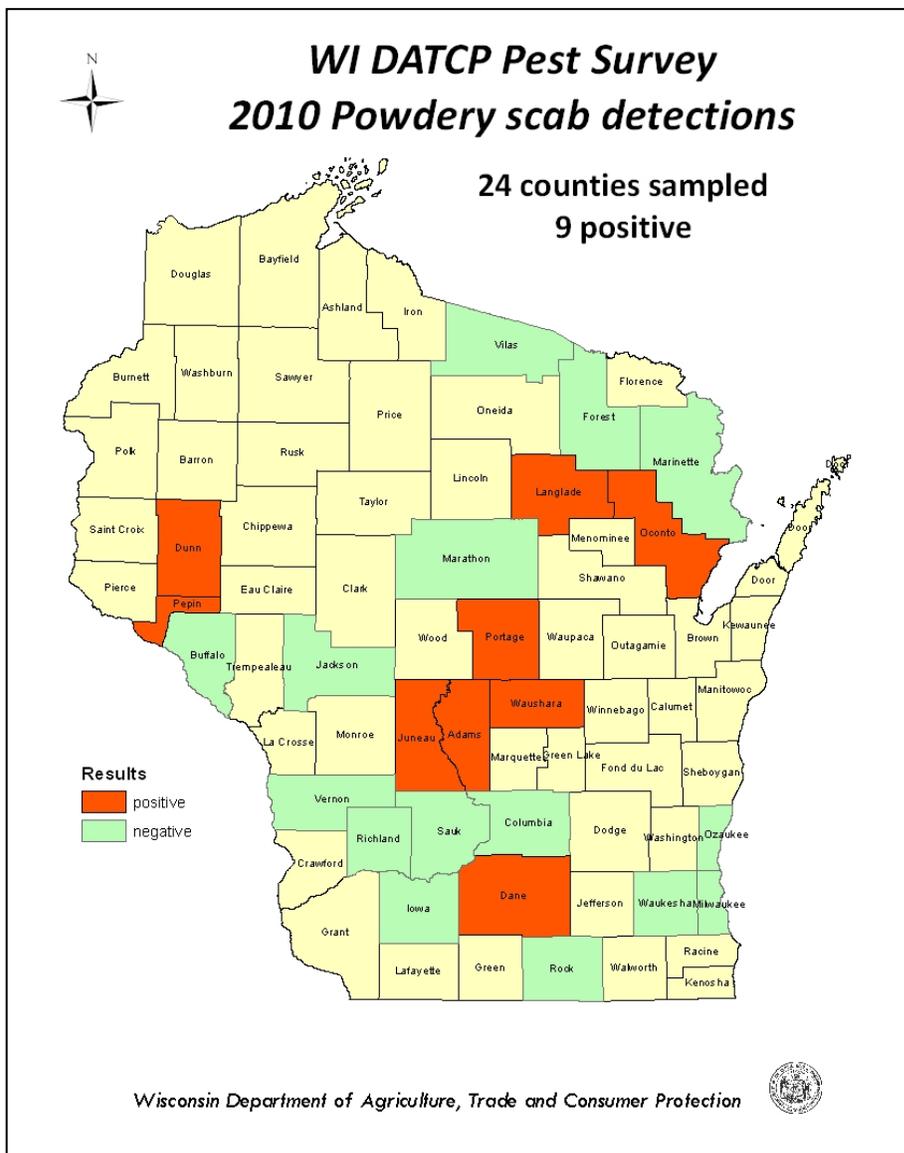


Wisconsin Pest Survey Report

2009 & 2010 POWDERY SCAB SURVEY

<http://pestsurvey.wi.gov/>

Three hundred and thirty-eight Wisconsin potato fields were surveyed for powdery scab in 2009 and 2010. This potato disease causes scab-like blemishes on tuber skin and was first documented in Wisconsin in 2002. Powdery scab of potatoes is caused by a slime fungus (Plasmodiophorales) *Spongospora subterranea* f. sp. *subterranea*. This slime fungus can also transmit the potato mop top virus (PMTV). Either pathogen can affect overall tuber quality, storability and marketability. Seed potatoes are subject to phytosanitary regulations that define tolerance limits for internal and external tuber necrosis caused by viruses.



Powdery scab has been reported from most potato growing states and countries, where it can have a significant impact on potato production during cool and wet conditions. A cold, wet spring and colder than normal summer temperatures created perfect growing conditions for powdery scab in Wisconsin in 2009. Following up on reports of powdery scab, the DATCP Pest Survey decided to test

tubers state-wide to assess the distribution of this disease for Wisconsin growers.

Tuber symptoms of powdery scab can easily be confused with the more-commonly found common scab. Definitive diagnosis requires examination of skin lesion by microscope or further laboratory testing. From March 2009 to December of 2010, DATCP's Plant Industry Laboratory tested over 300 samples consisting of eight tubers each, utilizing a molecular technique (Polymerase chain reaction, PCR) considered the most sensitive detection method available. This test can detect the presence of the powdery scab organism at any life stage and even in tubers that do not show skin blemishes.

An increasing number of fields tested positive for the pathogen in 2009 but fewer potatoes were infected in 2010 when conditions returned to a more normal range for Wisconsin. In fact the number of fields testing positive dropped dramatically. Even farms whose fields were infected with powdery scab experienced less disease incidence when warmer and drier conditions prevailed during crucial tuber development periods. In 2010, the survey was expanded to add new counties and producers, including more fresh vegetable market and organic producers.

Harvest Year (updated)	2009	2010
Total Number Of Samples Tested for Powdery Scab	223	115
Percent Of Samples Testing Positive	19%	3%
Number Of Growers Participating	32	37
Number Of Counties Surveyed	14	24*

*cumulative

Since 2002 potato tubers and soil samples from nine counties have tested positive for Powdery scab (Adams, Dane, Dunn, Oconto, Juneau, Langlade, Pepin, Portage, and Waushara). Potato varieties from in-state and out-of-state sources which tested positive for powdery scab: Atlantic, Bannock, Burbank, MegaChip, Molly, Norkotah, Ranger Russet, (Dark) Red Norland, Russian Banana, Shepody and Silverton.

Despite a spike in the number of infected fields in 2009, the majority of fields should still be considered free of powdery scab.

For more information about powdery scab disease of potatoes, please see the fact sheet on this website.

Reference: Qu et.al. (Plant Pathology (2001) 50: 420-426).

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