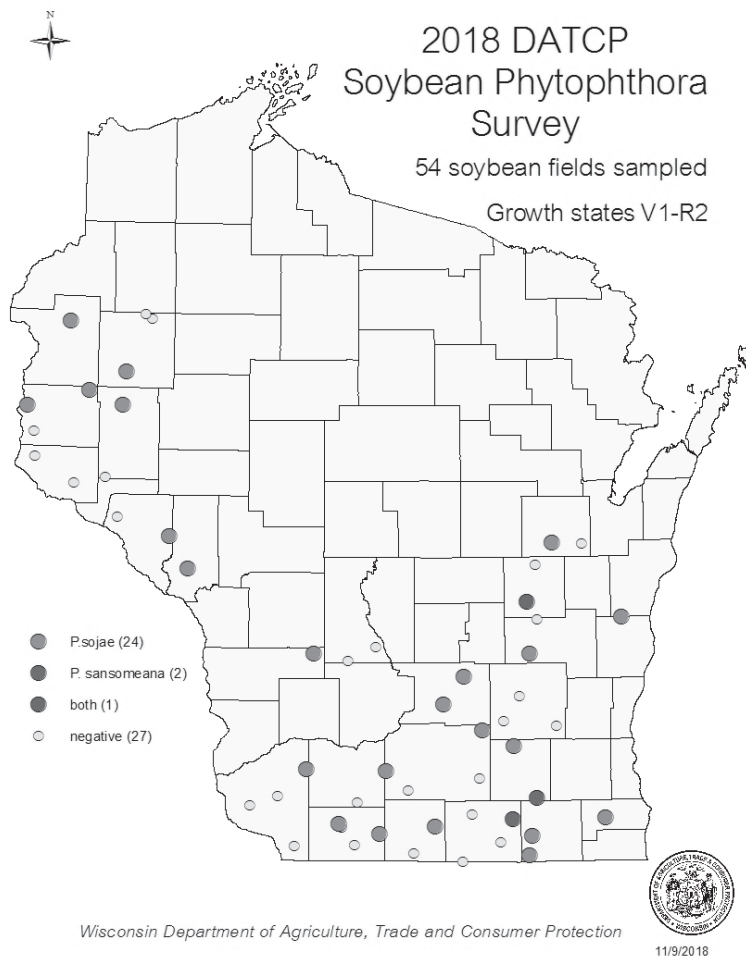


Plant Industry Bureau Laboratory (PIB lab) provides diagnostic services for DATCP pest and disease surveys and inspections. In 2018, the lab diagnosed 1,767 samples for plant diseases, nematodes and insect pests. These are the highlights from the 2018 season.

Soybean Seedling Rot Root -In 2018, DATCP surveyed 54 soybean fields from June 11 to July 6 for seedling root rot diseases. From each field, twenty seedlings were carefully dug up and submitted to the PIB Lab. Samples were tested for *Phytophthora sojae*, general *Phytophthora* species, and general *Pythium* species, using gene-based methods. Testing confirmed that 25 of 54 (46%) of fields were positive for *P. sojae*. This was an increase from the two previous years where in 2017, 24% of fields were found to have *P. sojae* and in 2016, 32% of fields were positive. The past decade of the survey has found *P. sojae* prevalence ranging from 13% in 2011 to 49% in 2014. *Pythium* was present in most fields (96%, 52 of 54) in 2018, the same as in 2017. In addition, another

Phytophthora species, *Phytophthora sansomeana*, was found in three fields. These fields were located in Jefferson, Rock and Winnebago counties. Since first finding *P. sansomeana* in Wisconsin in 2012, it has been documented in twelve counties: Calumet, Dane, Dodge, Dunn, Eau Claire, Green, Jefferson, Outagamie, Marathon, Rock, Sheboygan and Winnebago. This year both Rock and Winnebago were new additions to this list.

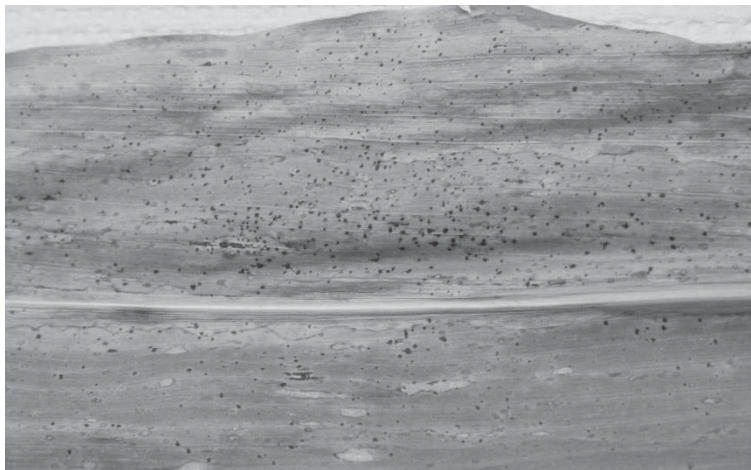
The increase in *Phytophthora* root rot is most likely due to excessively wet spring conditions in 2018.



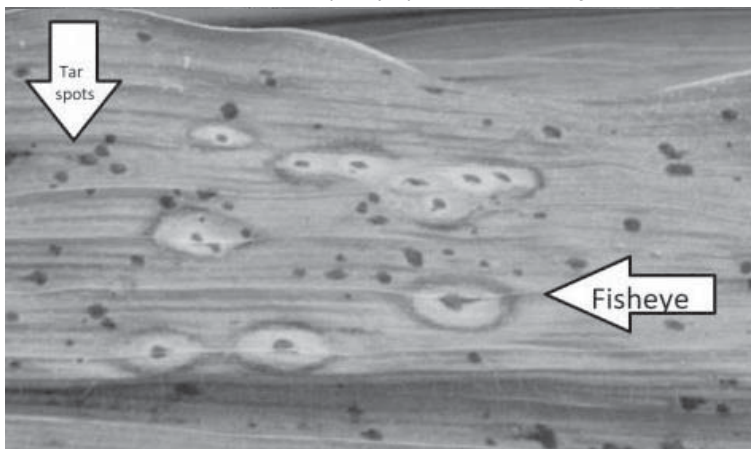
¹ Plant Industry Laboratory, DATCP, 2601 Agriculture Dr., Madison WI 53718, anette.phibbs@wisconsin.gov.

² Pest Survey Program, DATCP, 2811 Agriculture Dr., Madison WI 53718.

Tar spot of corn – Wisconsin and other Midwest states experienced a major outbreak of this disease in 2018. In Wisconsin, tar spot was first detected in Green and Iowa Counties in 2016. Appearing at low levels at the end of the season, tar spot was considered of no economic significance in 2016 and 2017. In Mexico, where tar spot has previously been reported to cause economic losses, the disease is described as a complex of the tar spot-causing-fungus *Phyllachora maydis* with two other fungi, *Coniothyrium phyllachorae* and *Monographella maydis*.



Tar spot symptoms on corn leaf. DATCP A. Phibbs



Two types of tar spot symptoms on a corn leaf.

Simple black spots on the left and fisheye lesions on the right. DATCP A. Phibbs

In 2018, UW Field Crops Pathology reported widespread findings in southeastern Wisconsin, warning of severe damage and early dry-down. UW and DATCP Pest Survey documented tar spot of corn in 33 counties of the southern half of the state in 2018. DATCP surveyed corn fields from Sept 25 to Oct 16, 2018 and found tar spot in 77 of 79 fields (97%). A subset of fields was sampled and 36 symptomatic corn leaves were submitted to PIB lab for testing. Examination at PIB lab confirmed the tar spot causing fungus *Phyllachora maydis* and showed that most corn leaves were also infected with a variety of other common corn leaf diseases, notably grey leaf spot (100%) and anthracnose (98%). The next most-frequently found fungal leaf diseases were northern corn leaf blight (44%) and northern corn leaf spot (31%).

Tar spot is named for the black shiny fruiting structures of the *Phyllachora* fungus dotting infected corn leaves. Infected leaves often display fisheye-like spots formed by tan colored halos surrounding the black spots. We observed a second fungus sporulating out of these fisheye lesions. Gene-based testing identified the second fungus as a *Coniothyrium* species with a *Paraphaeosphaeria* sp. sexual reproductive state. The other fungi reported to be associated with the disease in Mexico, *Monographella maydis*, was not observed in Wisconsin. More research is needed to understand the tar spot disease complex in the Midwest and to explain this sudden outbreak.

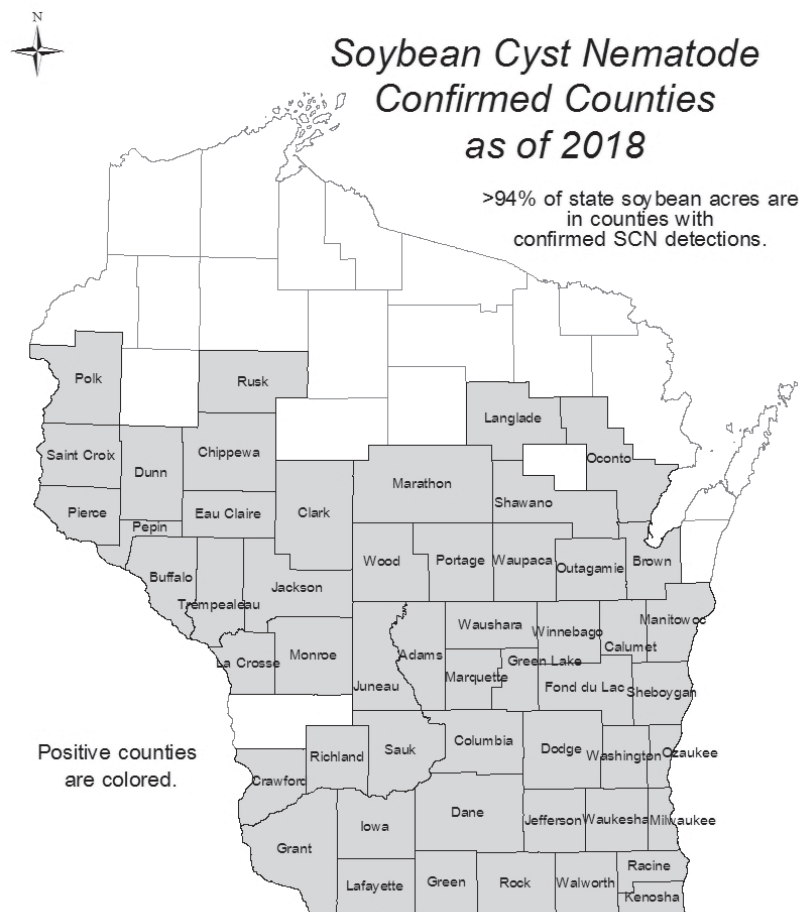
Traces of **Southern corn rust** (*Puccinia polysora*) were detected on three samples from fields in Walworth, Richland and Sauk counties in 2018. Southern rust is sometimes picked up at the end of the season after it moves up on strong winds from the southern part of the US.

Inspections and testing of **seed corn fields** showed neither **Goss's wilt** nor **Stewart's wilt** of corn in 2018. Goss's wilt was reported in 11.5% of inspected fields in 2017 and Stewart's wilt has not been found in Wisconsin since 2010.

Seed corn fields all tested negative for a new bacterial disease called **bacterial leaf streak** that is caused by the bacterium *Xanthomonas vasicola pv. vasculorum*. This disease was found for the first time in Wisconsin in Pierce Co. in September of 2018 by UW-Madison Plant Pathology. This find adds Wisconsin to the list of Midwest states where the disease has been confirmed. USDA confirmed first detections in the US in 2016 in CO, IL, IA, KS, MN, NE, OK, SD and TX.

Virus screening of corn continues to show no evidence of high plains virus (HPV), maize chlorotic mottle virus (MCMV) and sugarcane mosaic virus (SCMV)/maize dwarf virus (MDMV) and wheat streak mosaic virus (WSMV). HPV screening of small grains also came up negative.

Soybean cyst nematode *Heterodera glycines* has been found in more than 94% of Wisconsin's soybean acreage. The latest new county detections were Marathon Co. in 2013 and Langlade Co. in 2017. The map below shows all county detections since Racine Co. in 1981.



Combined DATCP and UW data

Wisconsin Department of Agriculture, Trade and Consumer Protection

AS 12/14/2018

