

2021

Purdue Extension Specialist Quarterly Highlight

October - December (Q4)

CORN TAR SPOT: Detecting, Monitoring, and Managing, Oh My!

Purdue's Plant Pest and Diagnostic Laboratory (PPDL) diagnosed the first U.S. case of corn tar spot in 2015. For 2018-2020, Indiana loss estimates were 60 million bushels (\$235 million); with a 240-million-bushel loss (\$895 million) in the U.S. **Darcy Telenko, Assistant Professor, Botany and Plant Pathology, Tom Creswell, Clinical Engagement Professor, and John Bonkowski, Plant Disease Diagnostician**, have been at the forefront of this emerging disease.

Since 2019, over 540 fields were scouted across Indiana's 92 counties, of these 78% were positive for tar spot. In addition, grant-supported PPDL diagnostic tests on 691 Indiana corn samples confirmed 43% with tar spot. These have resulted in tar spot being confirmed in 82 Indiana counties.



Images: Darcy Telenko

Telenko helped form and led a multi-state and international research collaborative working group, made up of 14-states and Canada, including Extension, research, USDA and industry professionals. Fungicide efficacy, timing, genetic resistance, and integrated management tools were evaluated in 51 Indiana field research trials since 2019. Disease monitoring continues annually at 7 sentinel corn plots located at Purdue Agricultural Centers (PACs) and the Agronomy Center for Research and Education (ACRE).

Telenko and the Crop Protection Network generated multistate outreach publications. End-of-season slides and resources shared new learning with Extension, industry partners, corn producers, certified crop advisors, and consultants.

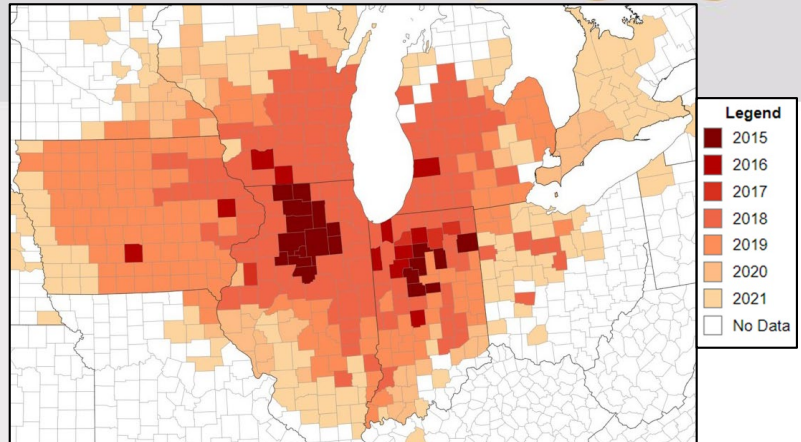


Figure: Distribution of tar spot, 2015 to 2021.

Source: <https://corn.ipmpipe.org/>

Telenko provided 150 presentations to 20,000 agribusiness personnel and farmers via field days and workshops, county meetings, industry-sponsored events, and conferences. Information was shared in 41 trade/media interviews with 440,000 citations 11 peer-reviewed manuscripts, 18 peer-reviewed tech reports, 35 Extension publications, and 50 tweets @DTelenko.

Several online maps and tools provide up-to-date information on tar spot activity and in-season tracking. Research shows that fungicide application before the disease becomes severe in the canopy may provide significant yield protection.

In completed post-presentation surveys (n=111), 62% reported they have changed disease management practices, including adding fungicide applications for tar spot, scouting, vigilance, and awareness. Adopted tools and practices include: identifying tar spot (71%), scouting regularly (61%), and monitoring annual disease maps (45%). As a result, 79% realized protected or increased yield on their farm, estimating up to 80 bushels per acre, with most reporting 1 to 20 bushels. Based on what they learned, 73% reported they will increase scouting, increase use of fungicides, and use tools such as Tar Spotter App, models, and efficacy tables next year.

Over 97% credited Purdue Extension in providing useful and valuable disease management information for their farms. Efforts contributed to new knowledge, tools, and practices to address tar spot, and continue to quickly and effectively distribute information and results for increased understanding of management options for corn growers.

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FNR "Ask an Expert" Connects Online Audiences to Resources

FNR Extension: Jay Beugly, Jarred Brooke, Nick Burgmeier, Barny Dunning, Diana Evans, Lenny Farlee, Jason Hoverman, Liz Jackson, Brian MacGowan, Patrick McGovern, Wendy Mayer, Charlotte Owings, Lindsey Purcell, Bee Redfield, Shelby Royal, Bob Rode, Kara Salazar, Mike Saunders, Amy Shambach, Rod Williams, Mitch Zischke. Frequent Entomology contributors: Elizabeth Barnes, Cliff Sadof.

While Covid caused limitations on travel and in-person events nationwide, across Indiana, many were spending more time in outdoor recreational activities, hiking, bird-watching, hunting and fishing, or managing natural resources properties. Adjusting to the pandemic, the FNR team created an innovative and team-oriented instruction approach through skill-building in video production with coordinated connection and cross-promotion of resources.

Forestry and Natural Resources (FNR) faculty, specialists, staff, and students, with invited partners across research and Extension, delivered 45-minute ***Ask an Expert*** Facebook Live programs for 35 weeks. Programs covered many FNR specialties: Animals & Insects (bats, bird, cicadas, coyotes, deer, fish, frogs, hellbenders, moles, pollinators, salamanders, snakes, toads, turtles, and wood pests); Plants & Ecosystems (invasive plant species, hardwood ecosystems, native grasses for wildlife, conservation tree planting, rainscaping, fall food plots, and selecting, planting and inspecting trees); and Management & Operations (prescribed fires, aquatic plant and pond management, and fish and wildlife management).

Using Zoom to Facebook Live allowed experts and host to participate remotely, yet stream seamlessly to Facebook. Facebook audience questions were relayed to experts via Zoom chat. Resources and websites could be posted in response in Facebook comments. YouTube recordings were shared via Twitter, Facebook, ***Got Nature? Blog***, and the ***FNR Extension website*** and newsletters.

Individual Facebook Live programs had 20–50 attendees. ***Ask an Expert*** programs had over 28,000 Facebook and YouTube views, from 255 to 3,760 each. Attendees posted "very good video" "wonderful presentation and resources!" "thank you so much for various resources" and "THANKYOU! Very good information!" Purdue Dendrology students used videos as study tools, and Herpetology students used salamander videos for their classes.



Ask an Expert

Two video series, *Woodland Management Moment* and *Wildlife Habitat Hint*, with 11,000 views, featured two specialists' work that grew from this team effort. **Lenny Farlee, Sustaining Hardwood Extension Specialist**, applied newly acquired skills to create 93 two-minute ***ID that Tree*** videos about native Indiana trees. "It was a learning experience, but it established a manageable and straightforward process for creating instruction via video and sharing it online." ***ID that Tree*** had 76,000 views on Facebook, Twitter and YouTube. **Jarred Brooke, Wildlife Extension Specialist**, presented ***Wildlife Habitat Hints: Prescribed Fire Techniques*** to share with land owners and students. The U.S. Forest Service translated this video series into Spanish and used it to ***train forest employees*** in indigenous communities of Latin America.

Borne out of necessity, built through collaboration, and bringing innovation to FNR programming, ***Ask an Expert*** advanced forestry and natural resources information delivery for virtual and online audience engagement.