



Progress Through Sharing:

February 2019 - iPiPE News



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Reporting Back From iPMx5

iPMx5, the fifth annual iPiPE participant mixer, took place at the Park Alumni Center in Raleigh, North Carolina on February 5 and 6. Here we'll share a few of 2018's successes and highlight several challenges iPiPE is addressing looking forward.

One of the most ambitious goals of iPiPE is to create a culture of sharing pest observation data to improve pest management, reduce environmental impacts and improve farm profitability. Last year held many successes. In 2018 alone, iPiPE participants shared 261,094 observations, including over 2,000 observations of pollinator insects. In addition, 28 Crop-Pest Program Coordinators made an estimated 300 presentations to almost 10,000 stakeholders and 93 Extension publications were available to over 75,000 stakeholders. The iPiPE platform and associated databases moved to the cloud, opening new opportunities for improved modeling. Over the past four years, 80 student interns have participated in the

program.

iPMx5 also addressed upcoming challenges, such as continuing to bring about cultural change to achieve more consistent observation-sharing. Another priority will be using market research to inform the strategic plan for the future of iPiPE beyond the five-year NIFA grant. The development of a new focus group to improve IT platforms was discussed as well.



Group photo from IPMx5
Image credit: Annalisa Ariatti

Growing North Dakotan Sunflowers Among Coevolved Pests

North Dakota is the leading sunflower producer in the U.S with approximately 800,000 to 1,000,000 acres planted annually. Sunflowers are among the few crops native to North America that are grown on a commercial scale. They were domesticated and cultivated by indigenous people of the southwest and midsouth, who used the seeds for flour and oil. As a result, several local insect and pathogen pests coevolved with sunflowers and are responsible for higher levels of crop damage than is common for other crops grown in North Dakota. The number of pathogens and insect pests capable of causing major crop damage pose challenges to conducting IPM in sunflowers, from differentiating between 20+ diseases to interpreting threshold data for multiple insects.

The pests and diseases threatening North Dakota sunflower production include charcoal rot (*Macropomina phaseolina*), downy mildew (*Plasmopara halstedii*), phoma (*Phoma macdonaldii*), phomopsis (*Diaporthe* spp.), rust (*Puccinia helianthi*), sclerotinia rots (wilt, stem and head) (*Sclerotinia sclerotiorum*), verticillium wilt (*Verticillium dahliae*), banded sunflower moth (*Cochylis hospes*), sunflower moth (*Homoeosoma electellum*), red sunflower seed weevil (*Smicronyx fulvus*), sunflower seed maggot (*Neotephritis finalis*) and sunflower midge (*Contarinia schulzi*).

By directly engaging stakeholders and growers in pest scouting and monitoring, this Crop-Pest Program (CPP) was a reliable source for pest distribution information and economic population levels. It provided up-to-date pest management information, prevented and mitigated crop loss and provided improved tools for sunflower education and Extension efforts.

Southeast Cotton Crop-Pest Program Fights an Emerging Disease

In 2018, the southeastern U.S. produced an estimated 5.6 million bales of cotton, or 30 percent of the U.S. upland crop of cotton. An emerging challenge for growers is target spot, a disease caused by the fungal pathogen *Corynespora cassiicola*. Target spot has only recently become a threat to cotton, but is an established disease in soybean, sesame, tomato, cucumber and container-grown ornamental crops. Little is known about how *C. cassiicola* spread to cotton crops, where it came from initially, or how likely it is to affect cotton yield from year to year. While the initial report of target spot on cotton was in southwest Georgia, it has now been reported in Alabama, Arkansas, Florida, Georgia, Louisiana, Mississippi, North Carolina, South Carolina, Tennessee and Virginia.

Yield losses have a potential to be as high as 400 lbs. of lint per acre. More data about target spot distribution across eastern U.S. cotton acreage and disease onset are needed to understand disease development and potential impact on yield. Consistently effective IPM practices (such as canopy management and fungicide application) are limited due to a dearth of epidemiological information on target spot disease. Furthermore, there are no highly resistant cotton varieties.

The Southeast Cotton CPP aims to contribute to a better understanding of target spot among producers and investigate potential impacts of growing practices on pathogen development and disease onset. This educational and research work is the prerequisite for more consistently effective

IPM practices for target spot management. This process will also help identify other problematic foliar diseases and generate distribution and risk data to inform growers on their management.

In 2017, bacterial blight was commonly misidentified as target spot, so the CPP focused on educating growers on correctly identifying both bacterial blight and target spot. In 2018, the CPP Coordinator, Dr. Heather Kelly, distributed a cotton IPM survey that collected information from 36 participants that self-identified as managing or influencing 46% of all cotton acreage in Tennessee. In general, the results found that 86% of growers surveyed deploy some type of control strategy for pest management and 89% regularly scout throughout the season for pest problems. Dr. Kelly said, *“It was nice to see that our IPM efforts were not going to waste in Tennessee. Almost 90% of cotton acreage in Tennessee are being managed with great IPM practices ...the program didn’t turn out the way we initially set out, to gain further insight into target spot. As it turns out we didn’t see as much target spot as we thought we would, but we saw more bacterial blight and other target spot ‘look-a-like’ diseases. It ended up being a great educational opportunity on correct disease identification and how that has a huge impact on management strategies.”*



Symptoms of *Corynespora cassiicola*
Image credit: Wikimedia Commons

The iPiPE participant page has a new address, <https://share.ipipe.org/>.

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