Small fruit virus research in Arkansas

Yellow vein disease (YVD) has been one of the major problems for blackberry production in the Southeast United States in the last 7-9 years. Growers are losing thousands of dollars from reduced production, bad fruit quality and the need to replant every 5-7 years because of declining productivity due to YVD. Through WERA-20 we have formed a consortium between Arkansas, the Carolinas, Mississippi and Oregon to study this disease and in the last few years we identified more than 10 viruses in plants showing typical disease symptoms. Symptoms are similar across states but virus species differ, with Blackberry yellow vein associated virus and Blackberry virus Y being the most common viruses in Arkansas whereas in the Carolinas Blackberry yellow vein associated virus, Blackberry chlorotic ringspot virus and Tobacco ringspot virus are more common. Through a Specialty Crops Research Initiative grant we plan to study the virus epidemiology and prepare a scheme that will eliminate or minimize the impact of the disease. Another collaboration catalyzed by WERA-20 interactions is that of the characterization of small fruit infecting ilarviruses (Arkansas, South Carolina and Oregon).

The virology program at the University of Arkansas also works with blueberry disease. There has been a noticeable decline of blueberry in several farms across Arkansas. Sixteen farms dispersed across the state were assayed for eight viruses. The results of this survey indicated that the decline is not caused by any or the combination of any of these eight viruses given that there were only few positives for Tobacco ringspot virus, Blueberry shoestring virus and Blueberry fruit drop associated virus. In addition to these three viruses there were two farms that had several plants that showed typical mosaic symptoms. This is the first time the disease has been observed in Arkansas and we have started characterization of the agents in a WERA-20 formed collaboration with Michigan and Oregon.