#### Comprehensive Elderberry Workshop & Field Tour Saturday June 15, 2019 George Washington Carver Farm, Lincoln University Jefferson City, Missouri

Recent Elderberry Virus Issue – Update

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- Symptoms, at times, have not appeared until about mid-summer of each season.
- Symptoms have been observed to increase rapidly throughout production fields/nursery.
- Affected plants retained for observation have been observed to be non-symptomatic for a year or more and afterwards display symptoms again.

- First observed by MDA staff in the fall of 2015 in an elderberry production field/nursery. Symptoms have been observed at multiple locations in Missouri.
- Symptoms have been observed in various elderberry cultivars.
- Observations and information indicate that the virus-type symptoms have been associated with the movement of nursery stock.
- Numerous ELISA (Enzyme-Linked Immunosorbent Assay) virus tests have been run at the MDA Plant Pathology Laboratory in Jefferson City and at the commercial laboratory, Agdia Inc., with no conclusive positive results.

- Samples have been forwarded to Dr. Bob Martin USDA-ARS in Corvallis, Oregon beginning in 2016 for virus/virus-like entity identification. Dr. Martin is a research leader with the small fruit virology program. Dr. Martin and his lab are members of the National Clean Plant Network, Berry Clean Plant Center-USDA-ARS, Corvallis, Oregon.
- High Throughput Sequencing (HTS) and Polymerase chain reaction (PCR) molecular techniques are currently in progress to identify the virus/virus-like entities at Dr. Martin's lab. Viruses have been found and work is being done to identify all virus-like entities.



























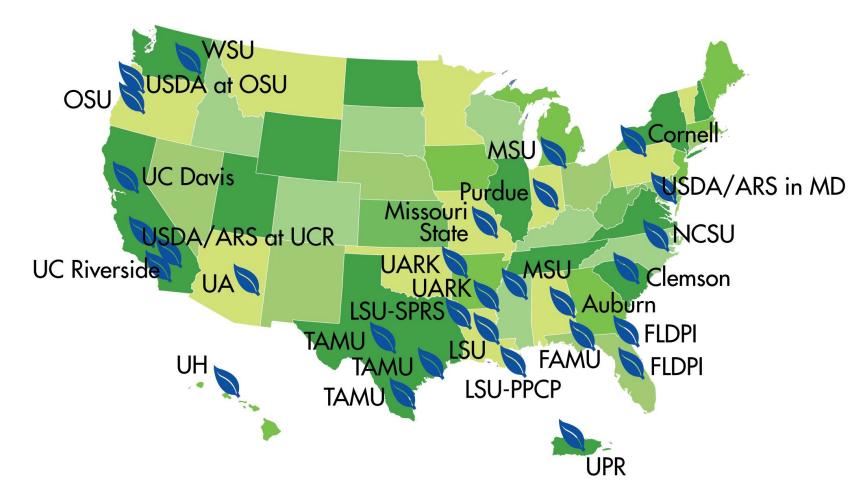




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