

## **Screening and Testing for Trait Segregation for Anthracnose Susceptibility in Southern Highbush Blueberry Cultivars**

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Blueberries are an important commercial crop in the US, with over 550 million pounds produced in 2014. Florida has become an important supplier of blueberries for the fresh market, particularly during the period from March to May. The success of Florida growers is due in large part to the development of southern highbush blueberry (SHB) cultivars that need significantly less chilling hours for fruit production than typical temperate cultivars. These SHB cultivars and the mild subtropical winter climate allow growers to harvest when the price point is high. However, the humid summer conditions that also occur with the subtropical climate often result in high disease incidence and severity. For example, anthracnose, caused by the *Colletotrichum* fungal pathogen, is a disease typically associated with postharvest fruit rots, but can also produce stem lesions and dieback in susceptible cultivars. This disease has recently been reported on two cultivars ('Flicker' and 'Scintilla') grown primarily in central Florida, and the degree of susceptibility of other cultivars is currently unknown. The objectives of this research are to screen blueberry cultivars commercially grown in Florida for susceptibility to anthracnose, develop a small scale laboratory assay utilizing detached stems that can be used to rapidly screen advanced selections in the breeding program, and inoculate seedling populations with a known susceptible parent to identify segregation of the susceptibility trait. Future work will identify molecular markers associated with susceptibility to allow for identification and selection of parents that are not susceptible to anthracnose stem dieback. The screening for anthracnose susceptibility will be performed using a spray inoculation of a virulent *Colletotrichum* isolate onto both whole plants and detached stems, followed by measurement of incidence and severity of disease over time. Uninoculated control plants will be utilized to account for any latent infection present in the plant material. Testing for segregation of the anthracnose susceptibility trait will be accomplished by inoculating multiple populations, and then observing them to identify any anthracnose symptoms. These populations were developed using 'Flicker' or 'Scintilla' (known to be susceptible) as a parent, along with assumed resistant parents.