



## Fine Mapping and Candidate Gene Discovery for the Resistance to Angular Leaf Spot in Cultivated Octoploid Strawberry (*Fragaria ×ananassa* Duch.)

JIN-HEE KIM, VANCE M. WHITAKER, AND SEONGHEE LEE\*

Gulf Coast Research and Education Center, University of Florida, IFAS, Wimauma, FL

### Abstract

Strawberry is one of the economically important fruit crops worldwide. Angular leaf spot (ALS) caused by *Xanthomonas fragariae* is the only bacterial disease in strawberry and is problematic in Florida strawberry production. Developing ALS-resistant cultivars is important as all commercial varieties are susceptible to ALS. In the previous study, a major quantitative trait locus (QTL) conferring resistance to ALS, *FaRXfl*, was identified, but the genomic region and genetic mechanisms for ALS resistance have not been characterized. We recently identified candidate genes for *FaRXfl* by fine mapping and transcriptome analysis. For defining the *FaRXfl* locus, seven newly developed molecular markers were used to genotype three populations (n = 663). The *FaRXfl* region was delimited to a 330-kb interval on chromosome 6-2 in the 'Camarosa' reference genome. To identify candidate genes for *FaRXfl*, RNA sequencing was performed with five resistant or susceptible genotypes. We identified one candidate gene that is located within the genomic region of *FaRXfl*. This information will facilitate developing functional DNA markers and elucidating the genetic mechanism of *FaRXfl* controlling resistance to ALS in cultivated octoploid strawberry.

The abstract was presented at the 2021 FSHS Annual Meeting.

\*Corresponding author. Email: Seonghee105@ufl.edu