Identification of a Locus of Sex Determination in *Fraxinus pennsylvanica*

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Green ash (*Fraxinus pennsylvanica*) is dioecious, with distinct male and female individuals. At present, the mechanisms of dioecy in green ash and other species in the *Melioides* section of *Fraxinus* are unknown, and trees cannot be sexed until after they first flower. Current efforts to breed green ash with enhanced resistance to the invasive emerald ash borer (EAB; *Agrilus planipennis*) would be improved by finding molecular markers linked to sex determination, allowing researchers to sex trees at the seedling stage. Over 200 samples were collected from ash species in section *Melioides* from 5 states in their native range and from a Forest Service breeding program. An initial double-digest genotyping-by-sequencing (ddGBS) experiment yielded no SNPs in linkage disequilibrium with the sex-determining region, but it did yield a region of interest more likely to be sequenced in female samples along chromosome 8. Whole genome sequence (WGS) data of a subset of these samples was analyzed with two different bioinformatic approaches. Both testing for differential read coverage and presence of unique k-mers identified the same region of Chromosome 8. Annotation of nearby genes provides candidates for further study. Though the exact mechanism of sex determination is still under study, we have a putative genomic location determining sex in green ash, which can be used for marker design and testing in a breeding program.

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