

INSIGHTS INTO *DROSOPHILA-WOLBACHIA* INTERACTIONS: INNOVATIVE STRATEGIES FOR INSECT PEST MANAGEMENT

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Drosophilidae is a well-studied host family of *Wolbachia*, an obligatory intracellular and maternally inherited symbiont. *Wolbachia* infects many insect species and is capable of manipulating the reproductive properties of their insect hosts by inducing Parthenogenesis, Male-killing, Feminization and most commonly, Cytoplasmic Incompatibility (CI). We propose that the release of *Wolbachia*-infected males to promote incompatibility with female natural populations can enhance the efficacy of pest management of *Drosophila suzukii*, an emerging new pest of European and American fruit production. Here, we present the draft genome of a novel *Wolbachia* strain named "wSuzi" that was retrieved from the genome sequencing of its host *Drosophila suzukii*. The final assembly yielded approximately 1.35 Mbp in 110 contigs, with an average depth of coverage 60X. We found wSuzi in close relation with wRi strain infecting *D. simulans*. The two genomes displayed extensive similarity, however, several structural variations (InDels and genomic rearrangements) are able to discriminate between two strains. These findings may facilitate exploitation of *Wolbachia* mediated CI in *Drosophila-Wolbachia* associations. This, together with fitness measurements, and comparative genomic studies shall provide new insights on *Drosophila-Wolbachia* biology and practical outcomes for the management of this insect pest