

686 Supplementary Table 1 Hypothesized genotypes (phenotypes) at sexual function loci for parents and progeny for *Fragaria × ananassa*
 687 subsp. *cuneifolia* map crosses. In both crosses the male function has two alleles: *A* – dominant male sterility, *a* – recessive male
 688 fertility; whereas the female function locus houses two alleles: *G* – dominant female fertility, *g*– recessive female sterility. A) Sex
 689 function alleles segregate from the maternal parent (MP12), while the paternal parent is homozygous recessive for both sex function
 690 loci (that is, on LG VI.A. B) Male function segregates only in the maternal parent (WREN7), while the female function segregates in
 691 both maternal (WREN7) and paternal (MP10) parents (that is, on homeologous LG VI.B) and at two separate loci. At the second
 692 locus, the paternal parent contributes an allele (-) that reduces fruit set relative to wild type (+), as inferred from QTL. In addition a
 693 third locus is hypothesized to explain the negative effect of homoeo-QTL from the paternal parent (MP10). Gametes are represented
 694 with and without recombination between the sexual function loci. Recombination in the maternal and paternal parents results in
 695 gametes with allelic combinations that differ from the parental genotype in both crosses, except (WREN2) which is homozygous
 696 recessive for both sex loci.

697 1A. MP12×WREN2

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Parental Genotypes		Gametes (non-recombinant)		Progeny fertility		Progeny phenotype	Gametes (recombinant)		Progeny fertility		Progeny phenotype
Maternal	Paternal	Maternal	Paternal	Female	Male		Maternal	Paternal	Female	Male	
<i>AG</i> <i>ag</i>	<i>ag</i> <i>ag</i>	<i>AG</i>	<i>ag</i>	yes	no	Female	<i>Ag</i>	<i>ag</i>	yes	no	Female*
		<i>ag</i>	<i>ag</i>	no	yes	Male	<i>aG</i>	<i>ag</i>	no	yes	Hermaphrodite*

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700 1B. WREN7×MP10

<i>AG</i> <i>ag</i>	<i>aG</i> <i>ag</i>	<i>AG</i>	<i>aG</i>	yes	no	Female	<i>Ag</i>	<i>aG</i>	yes	no	Female*
+	+	+	+				+	-			
		<i>ag</i>	<i>ag</i>	no	yes	Male	<i>aG</i>	<i>ag</i>	no	yes	Hermaphrodite
		+	-				+	+			
		<i>AG</i>	<i>ag</i>	yes	no	Female	<i>Ag</i>	<i>ag</i>	yes	no	Female*
		+	-				+	+			
		<i>ag</i>	<i>aG</i>	no	yes	Hermaphrodite*	<i>aG</i>	<i>aG</i>	no	yes	Hermaphrodite*
		+	+				+	-			

701 Progeny phenotype highlighted in bold indicate high fruiting phenotypes while those in asterisks indicates a low fruiting phenotypes.