

Appendix A Information of total reads, resequencing data quality and sequence variation of *wt* and *sst*

Samples ID	Raw Base (bp)	High-quality Rate (%)	Clean Base (bp)	Q20 (%)	Q30 (%)	Total SNP	Non-synonymous mutant SNP	Non-synonymous mutant gene
<i>wt</i>	12,031,932,000	92.87	11,174,292,181	96.22	89.57	3,743,446	-	-
<i>sst</i>	12,445,690,200	92.44	11,504,945,249	96.05	89.26	5,524,936	83,118	15,396

Note: Q20, Sequencing base quality values, when base quality is 20, sequencing error rate is 1%. Q30, Sequencing base quality values, when base quality is 30, sequencing error rate is 0.1%.

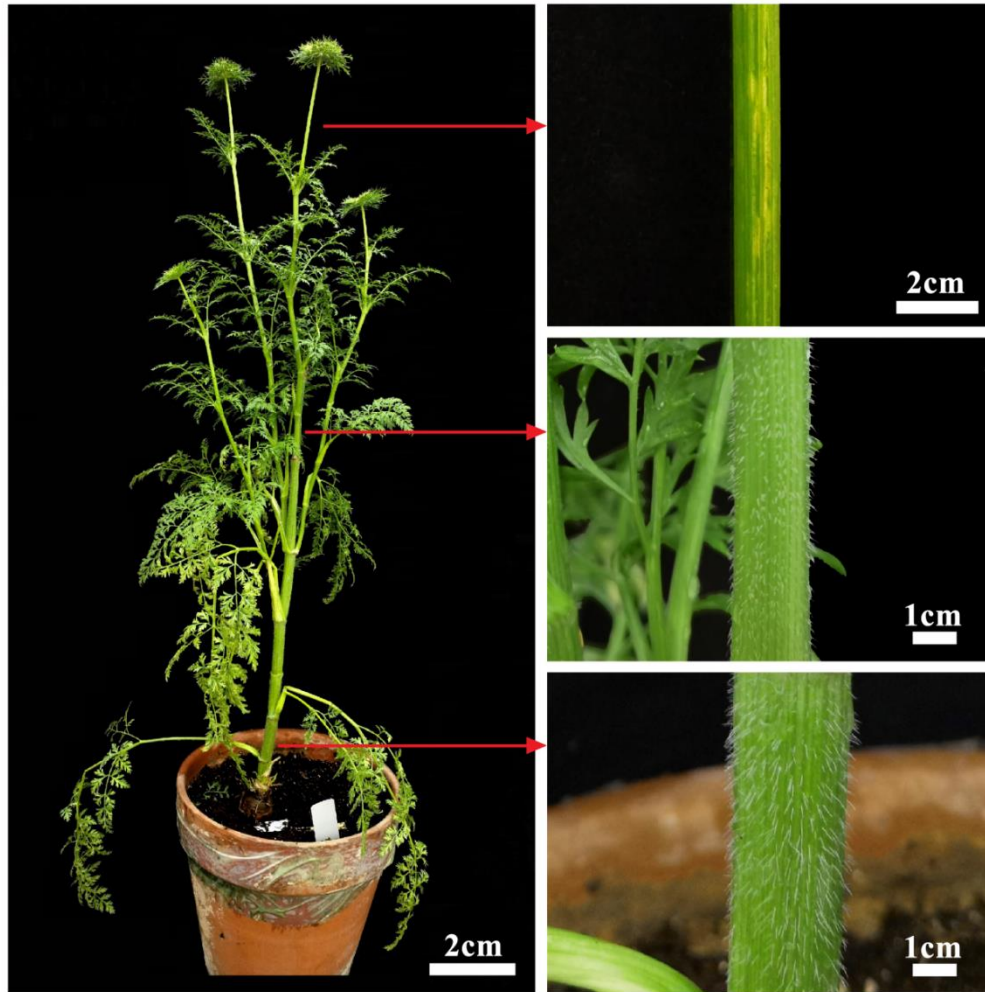
Appendix B Statistics of transcriptome sequencing quality of *wt* and *sst*

Samples ID	Raw Base (bp)	High-quality Rate (%)	Clean Base (bp)	Q20 (%)	Q30 (%)
<i>wt-1</i>	6,804,622,500	89.15	6,066,790,800	98.42	95.08
<i>wt-2</i>	8,044,070,400	89.87	7,229,653,200	98.36	95.15
<i>wt-3</i>	7,237,835,100	88.65	6,416,356,500	98.48	95.35
<i>sst-1</i>	6,881,112,300	92.78	6,384,721,200	97.65	93.62
<i>sst-2</i>	7,001,723,100	92.87	6,502,633,800	97.69	93.66
<i>sst-3</i>	7,342,463,100	93.01	6,829,782,300	97.75	93.84

Note: '-1,-2,-3' represent three replicates.

Appendix C qRT-PCR primer sequences of 24 genes

Gene ID	Forward primer	Reverse primer
DCAR_013728	GTGAAAAGAGGGCCGTGGAG	GAGAGAGCGCCAGTTACCAT
DCAR_025383	CGACCTCGTTTGTGGAGCTA	AGACTTCTTAGTCCGCCCCA
DCAR_001079	AGCCTCCTGGGAAACAAGTG	GAGGCCACGGCTAATGAGTT
DCAR_000774	GGAAGAGCTCCTTGCTGTGA	CGCTTAAGGCCAGTGCCAT
DCAR_010791	GATGACGAATCCCAGGCCAA	GTGGGAGATCATGGGTCGTG
DCAR_007570	CAAATTCACAAGCCGAGCCC	ATCTCCTTCCTCCACGTCCA
DCAR_023855	ACTCTGAGCTTTCATCCACA	GGCATTAGTGGTTCTCCTCTTTG
DCAR_026741	TCGCCTTCGTGGGTTTATGT	GCCCCACCATTAGTCATCCC
DCAR_023643	AACCCATATCATCTCCGCCTTCT	TGGCACATAAACCCACGAC
DCAR_007252	AGAGGTGCAGGGACGTTATC	CTGGAGCCAAGCTCAAAATGC
DCAR_019860	GGGCATCAAAACGCTCACAA	CCCGAAGCGAAGCGATGATA
DCAR_002048	GCGGAATTGTCTGCTATGGA	TCAGCAATACTACGCGGATG
DCAR_013566	AACAGGGAGTTCAATGGGGA	GTTTACACCTCCCACTCCAC
DCAR_006303	ATGCTAGACTTGGCCGTTGT	AGATCGGGTCGGATTGATGAC
DCAR_009356	TCCGATTTGTGGCGGGTGT	ATGCGATTGAGTTCATCTTTCA
DCAR_016230	TAGGGCTGGAGATAACGGAG	CCACCACTCTCAACCTTCTG
DCAR_024202	CCAGAAATAAGAGGGCCGTG	CCTGTCTCTGTCTCGACCTT
DCAR_027352	GGAGACTGGATGCTTGTTGG	GTTTCTGCGTGCAGGTCT
DCAR_024963	TCGTCGCAGTCTTTACTTGG	CTGAGACCCCGAAATCATCG
DCAR_008270	CCCAATCGTCTCCAACTGT	CCCTCGCCTTCTCCTTATCT
DCAR_023331	TGTACCGCTTATCAATGCCC	TGCCCCACATTGCTAAAAT
DCAR_015554	AATGGAATGGTCCACAAACAAGG	ATTCTCCATCCTTTGGCGGG
DCAR_016774	CAAACATGTAGAGGATGAAGTGAA	TGGTGGGACACAGCTAGAAC
DCAR_022888	TGGTTGTTTGTTCGACCCTT	TGCCTCGTGCATTTCTATC



Appendix D The hairless upper part of the primary stem of one carrot germplasm is attacked by thripids, but the hairy middle and lower parts are not.

Appendix E Mutation information of 42 carrot trichome related genes based on genome resequencing

Gene ID	Mutation (wt→sst/location)	Protein (wt→sst)
DCAR_028314	C→T/ 8974188	Asp→Asn
DCAR_030168	G→C/21695538	Gly→Ala
DCAR_013728	G→T/27894314; A→T/27894518; G→T/27894750; T→G/ 27894757; G→A/27894769	Arg→Ser; Leu→Phe; Glu→Gln; Ile→Ser; Gly→Glu
DCAR_001079	A→T/10216838	Ile→Asn
DCAR_000774	A→C/2781659; G→A/2781682; G→T/2781688	Gln→Pro; Ala→Thr; Ala→Ser
DCAR_010791	C→G/28668531; C→G/28668623; T→A/28668654; G→T/28668660; T→C/28668709	His→Asp; Ile→Met; Ser→Thr; Asp→Tyr; Leu→Ser
DCAR_019110	C→T/36388624; C→T/36388721	Pro→Ser; Ala→Val
DCAR_020809	A→C/28119629; T→C/28120277; A→G/28120304; T→G/28120305; G→T/28120429; A→G/28120460	Met→Leu; Ser→Pro; Ile→Val; Ile→Ser; Glu→Asp; Ile→Val
DCAR_002739	C→T/32457140; A→T/32457142; G→C/32460266; T→A/32460285	Met→Ile; Leu→Ile; Ser→Cys; Ser→Cys
DCAR_007570	G→A/35418973; T→A/35419646; T→C/35419793; T→C/35420346; G→A/35420348; G→C/35423514; G→T/35423856	Ala→Val; Asp→Val; Gln→Arg; Ile→Val; Ala→Val; Leu→Val; Pro→His
DCAR_023855	A→T/6195336; A→C/6195447; C→G/6195499; T→A/6195581; T→G/6195738; C→T/6199696; C→G/6199697	Asp→Glu; Asp→Glu; Gly→Ala; Thr→Ser; Glu→Asp; Gly→Glu; Gly→Arg
DCAR_026823	T→C/28373409	Asn→Asp
DCAR_026741	G→C/29188959; A→G/29188961; A→G/29188970; G→T/29189025; G→A/29189036; G→A/29189045; G→T/29189066; T→C/29189067; G→T/29189079; A→G/29189297; C→A/29189439	Arg→Thr; Asn→Asp; Ser→Gly; Gly→Val; Gly→Arg; Ala→Thr; Val→Phe; Val→Ala; Gly→Val; Thr→Ala; Pro→Gln
DCAR_030172	C→T/21745472	Met→Ile

DCAR_017039	C→G/10811168; T→G/10811212; G→C/10811312; T→C/10811351	Pro→Ala; His→Gln; Ala→Pro; *→Gln
DCAR_023643	G→A/3590072	Ser→Asn
DCAR_007252	G→T/32745046	Pro→Thr
DCAR_012630	T→C/49538713; G→C/49538740; T→C/49538761; G→C/49538801; C→G/49538860; T→A/49539179	Asn→Ser; Thr→Ser; Asn→Ser; Pro→Ala; Gly→Ala; Ser→Cys
DCAR_019860	A→C/36211895; G→C/36212116; G→C/36212137; T→A/36212171; G→T/36212205; C→T/36212272	Glu→Asp; Gly→Ala; Ser→Thr; Ser→Arg; Ala→Ser; Thr→Ile
DCAR_018549	C→T/31050092; C→T/31050503	Val→Ile; Ala→Thr
DCAR_013822	C→T/27091569; A→C/27091860	Arg→Gln; Met→Arg
DCAR_017200	A→C/12782449; G→T/12782790	Val→Gly; Asp→Glu
DCAR_030153	G→C/21556052; T→C/21556409; A→G/21556543; G→T/21556576; T→A/21556640; C→T/21556655; T→G/21556727; T→C/21556814; C→A/21556919; G→C/21556930; C→A/21557062; T→C/21557183; T→C/21557195; G→T/21557260; C→A/21557262; A→G/21557281; G→C/21557288; C→A/21557293; A→G/21557296; C→A/21557302; T→C/21557315; T→C/21557368; T→C/21557420; T→G/21557441; A→G/21557449	His→Asp; Ile→Val; Leu→Pro; Thr→Lys; Ser→Cys; Ala→Thr; Lys→Gln; Ile→Val; Ala→Ser; Thr→Ser; Arg→Leu; Thr→Ala; Ile→Val; Thr→Lys; Lys→Asn; Phe→Ser; Leu→Val; Cys→Phe; Phe→Ser; Cys→Phe; Ile→Val; Asn→Ser; Ile→Val; Lys→Gln; Leu→Pro
DCAR_000360	G→T/533	Ala→Ser
DCAR_022888	G→A/4247243	Ser→Asn
DCAR_004202	T→A/ 45626714	Leu→Phe
DCAR_008592	G→A/43367301	Ala→Thr
DCAR_020237	C→T/33116025	Asp→Asn
DCAR_007553	A→T/35256092	Val→Glu
DCAR_017032	G→T/10727870; C→T/10727965; A→G/10727968; G→T/10730133; C→A/10730162; A→T/10730165; T→C/10730173; A→T/10730206	His→Asn; Gly→Glu; Ile→Thr; His→Gln; Ala→Ser; Phe→Ile; Asn→Ser; Phe→Tyr
DCAR_027352	T→C/23922423; T→G/23922778; T→A/23922811	Lys→Arg; Glu→Asp; Gln→His
DCAR_021321	T→C/24063593; G→A/24063658	Thr→Ala; Thr→Ile

DCAR_007988	T→C/38693801; C→G/38693818; C→T/38693851; A→T/38694283; C→A/38694368	Val→Ala; Pro→Ala; Leu→Phe; Arg→Trp; Thr→Asn
DCAR_018826	C→G/33607369; C→G/33608498; T→C/33608531; A→G/33609532; T→C/33609577; T→G/33610488; A→G/33612191; A→T/33612245; C→A/33612280	Ala→Gly; Ala→Gly; Leu→Pro; Glu→Gly; Val→Ala; Ile→Met; His→Arg; Tyr→Phe; His→Asn
DCAR_008270	G→T/40802606; T→C/40802624	Ser→Ile; Leu→Pro
DCAR_024963	G→A/ 21411514; G→T/21412000; C→T/21413042	Ala→Thr; Ala→Ser; Pro→Leu
DCAR_018460	A→G/30279825	Asn→Ser
DCAR_016774	T→G/7512739	Asn→Thr
DCAR_023948	G→A/ 7301437	Ala→Thr
DCAR_032136	T→A/18421	Ile→Phe
DCAR_009951	C→G/12974191;G→A/12974402; C→A/12974874; A→C/12975014;G→A/12975080	Asp→Glu; Gly→Ser; Ala→Glu; Asn→His; Ala→Thr
DCAR_022448	T→A/12250152; C→T/12250158; A→G/12250193; C→T/12250200; C→G/12250202; G→T/12250213; G→A/12250362; T→C/12250392; A→G/12250785; A→T/12250796; C→G/12250801; A→C/12250804; G→C/12250807; C→G/12250820; G→C/12250834; T→G/12250839; T→A/12250844; C→A/12250847; T→C/12251067; C→A/12251091	Thr→Ser; Ala→Thr; Val→Ala; Gly→Ser; Ser→Thr; Asp→Glu; Pro→Ser; Met→Val; Ile→Thr; His→Glu; Asp→His; Ser→Ala; Arg→Gly; Leu→Phe; Gln→Glu; Gln→Pro; Gln→His; Glu→Asp; Asn→Ser; Gly→Val
