

Supplementary Materials:

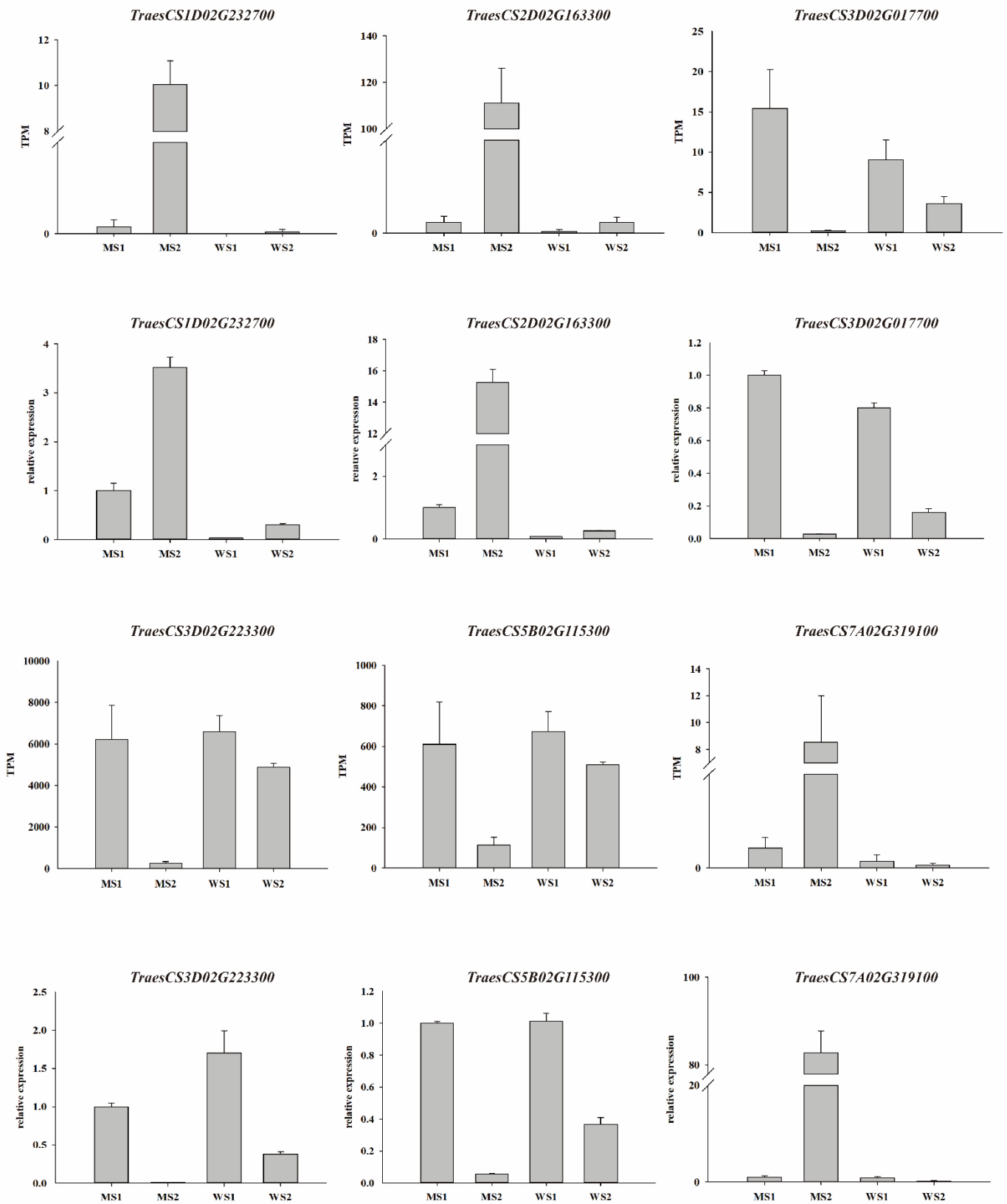


Figure S1. Some important differentially expressed genes verified using qRT-PCR. The error bars represent the SD of the means (n=3).

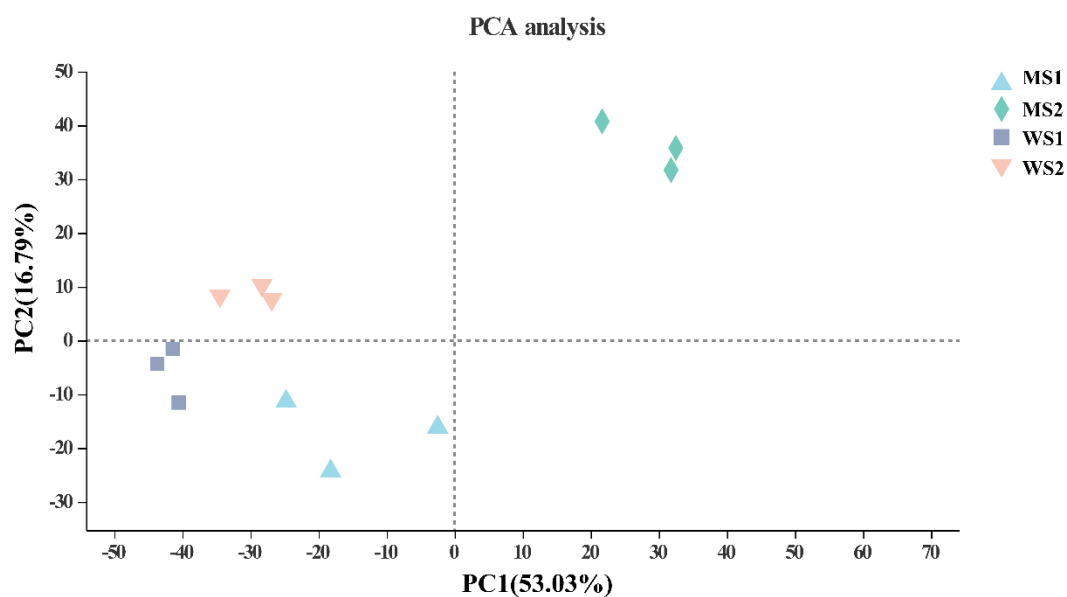


Figure S2. PCA of the different samples

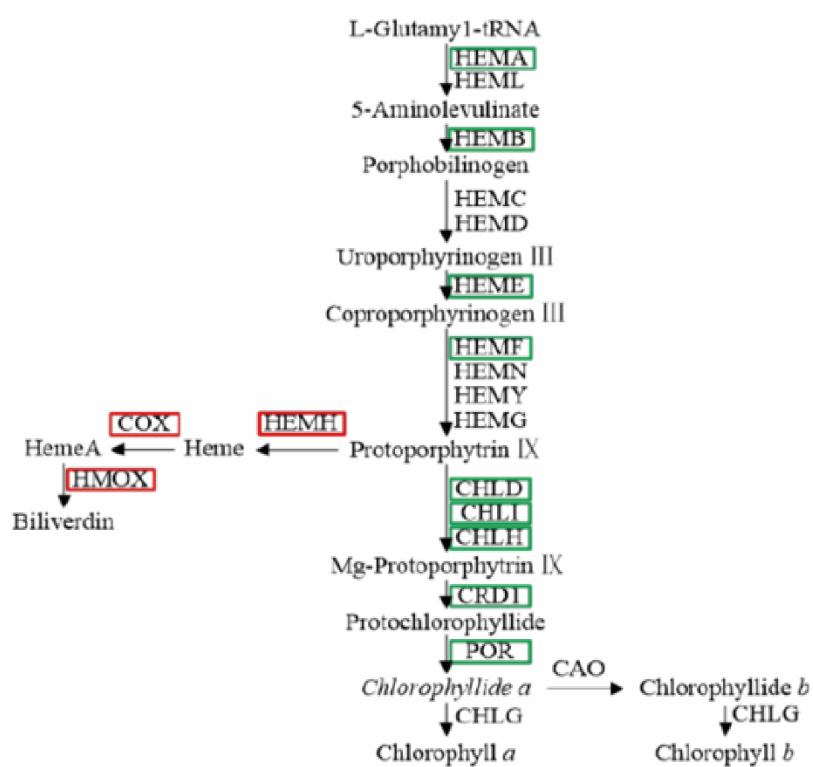


Figure S3. chlorophyll metabolic pathway of common wheat (Green indicates down-regulated expression and red indicates up-regulated expression). RNA-seq was done in the flag leaf of Common wheat variety Jinmai 39 and leave samples were collected at 0 d, 26 d and 30 d after flowering (unpublished data)

Table S1 Quality and Mapping reads of RNA-Seq

Sample	Raw Reads_count	Clean Reads_count	Q30 (%)	GC (%)	Total reads	Total mapped	Uniquely mapped	Multiple mapped
M1	91547686	90012704	94.67	53.42	90012704	84523691(93.9%)	78373864(87.07%)	6149827(6.83%)
M2	89131316	87706630	94.57	53.07	87706630	77898047(88.82%)	68579815(78.19%)	9318232(10.62%)
M3	81887406	80316034	94.84	53.63	80316034	76142421(94.8%)	70661264(87.98%)	5481157(6.82%)
M4	111664866	110585930	94.53	54.24	110585930	103756753(93.82%)	97320367(88.0%)	6436386(5.82%)
M5	90985480	88694184	94.85	50.79	88694184	81847536(92.28%)	76924741(86.73%)	4922795(5.55%)
M6	84213886	83136932	95	51.84	83136932	77722570(93.49%)	73162384(88.0%)	4560186(5.49%)
W1	85454918	83822848	94.74	53.75	83822848	79645106(95.02%)	73911660(88.18%)	5733446(6.84%)
W2	86248568	84807488	95.11	53.29	84807488	79414453(93.64%)	73418187(86.57%)	5996266(7.07%)
W3	90636228	89005610	94.67	53.54	89005610	82107718(92.25%)	74980439(84.24%)	7127279(8.01%)
W4	85008150	84155078	94.97	54.58	84155078	79602497(94.59%)	73609274(87.47%)	5993223(7.12%)
W5	92551164	91625676	95.1	54.38	91625676	86616629(94.53%)	79597507(86.87%)	7019122(7.66%)
W6	84262204	83292476	94.57	54.88	83292476	78440381(94.17%)	72709815(87.29%)	5730566(6.88%)

Table S2 List of Chlorophyll-related DEGs identified in WT and *GSm*

Gene_id	MS1	MS2	WS1	WS2	Ko name
<i>TraesCS1A02G057200</i>	40.71	4.04	45.97	51.37	hema
<i>TraesCS1A02G173100</i>	48.46	19.61	56.63	34.23	hema
<i>TraesCS1B02G075200</i>	33.76	3.97	41.11	52.03	hema
<i>TraesCS1B02G191200</i>	111.40	44.28	120.50	127.11	hema
<i>TraesCS1D02G058300</i>	31.38	3.85	33.71	39.24	hema
<i>TraesCS1D02G165600</i>	76.10	27.37	82.64	65.11	hema
<i>TraesCS6B02G136500</i>	0.33	0.35	0.31	1.08	hemb
<i>TraesCS4B02G302400</i>	7.37	5.84	9.87	10.78	hemd
<i>TraesCS4B02G168300</i>	38.55	29.50	37.00	27.55	heme
<i>TraesCS2A02G426900</i>	27.95	26.98	33.64	59.12	hemf
<i>TraesCS2B02G447300</i>	18.21	19.32	25.19	55.18	hemf
<i>TraesCS2D02G425000</i>	32.57	21.08	38.13	77.17	hemf
<i>TraesCS6A02G213400</i>	4.76	2.00	5.98	3.41	hemf
<i>TraesCS6B02G243500</i>	10.35	2.36	9.64	15.16	hemf
<i>TraesCS6D02G196100</i>	6.65	1.50	7.71	9.63	hemf
<i>TraesCS7B02G234200</i>	1.68	0.16	1.94	2.31	hemf
<i>TraesCS2A02G347900</i>	1.02	4.29	1.25	2.73	hemy
<i>TraesCS2D02G346200</i>	2.01	5.63	1.98	2.34	hemy
<i>TraesCS5A02G045700</i>	9.43	14.99	14.07	27.88	hemy
<i>TraesCS5B02G049800</i>	5.69	9.80	9.28	18.14	hemy
<i>TraesCS5D02G055700</i>	10.66	13.30	17.01	25.37	hemy
<i>TraesCS2A02G134000</i>	35.67	6.21	40.43	73.49	chlh
<i>TraesCS2B02G157600</i>	36.56	12.67	43.00	76.70	chlh
<i>TraesCS2D02G136200</i>	27.14	8.65	35.64	55.62	chlh
<i>TraesCS5A02G466100</i>	27.12	19.05	32.93	39.05	chld
<i>TraesCS5B02G477800</i>	5.92	4.16	7.47	10.49	chld
<i>TraesCS5D02G478900</i>	14.77	9.81	17.37	27.07	chld
<i>TraesCS7A02G480700</i>	68.32	51.07	67.04	116.59	chll
<i>TraesCS7B02G382800</i>	68.35	47.55	67.39	101.85	chll
<i>TraesCS7D02G467500</i>	79.41	60.19	73.39	133.27	chll
<i>TraesCS4A02G420600</i>	24.42	18.22	46.15	46.22	chlm

<i>TraesCS7A02G068500</i>	39.30	26.21	62.58	56.90	chlm
<i>TraesCS7D02G062900</i>	28.20	21.34	50.20	61.69	chlm
<i>TraesCS3A02G191700</i>	337.91	87.87	357.79	574.65	acsf
<i>TraesCS3B02G219700</i>	217.15	58.59	220.98	404.89	acsf
<i>TraesCS3D02G194300</i>	222.23	49.75	242.81	456.82	acsf
<i>TraesCS4A02G140700</i>	12.36	5.97	19.03	14.12	dvr
<i>TraesCS6A02G403800</i>	20.23	13.06	26.37	36.69	dvr
<i>TraesCS6B02G447700</i>	36.88	19.33	44.41	42.20	dvr
<i>TraesCS6D02G387300</i>	15.51	8.47	23.39	23.43	dvr
<i>TraesCS1A02G171000</i>	85.11	45.41	126.29	163.23	por
<i>TraesCS1B02G186300</i>	183.58	68.23	255.10	300.11	por
<i>TraesCS1D02G168700</i>	84.84	43.47	138.42	181.23	por
<i>TraesCS2A02G590600</i>	0.59	0.01	1.14	1.95	por
<i>TraesCS2B02G593000</i>	0.43	0.00	0.40	0.22	por
<i>TraesCS2D02G563600</i>	4.82	0.00	2.95	16.41	por
<i>TraesCS3A02G506200</i>	27.62	6.85	34.56	78.10	cao
<i>TraesCS3B02G574300</i>	23.59	4.78	29.78	68.41	cao
<i>TraesCS3D02G514100</i>	22.82	6.56	31.27	89.61	cao
<i>TraesCS1A02G224700</i>	29.46	41.43	45.20	65.68	chlg
<i>TraesCS1B02G237700</i>	42.88	58.52	59.70	75.55	chlg
<i>TraesCS1D02G226100</i>	23.11	37.38	35.39	54.62	chlg
<i>TraesCS4A02G411000</i>	14.14	48.78	11.93	14.18	pao /acd1
<i>TraesCS4B02G311100</i>	33.09	67.99	24.75	27.21	pao /acd2
<i>TraesCS4D02G309000</i>	29.99	71.34	28.46	26.79	pao /acd3
<i>TraesCS3A02G151900</i>	25.35	27.56	38.21	39.04	NOL, NYC1
<i>TraesCS3B02G179100</i>	28.93	32.65	44.29	38.29	NOL, NYC2
<i>TraesCS3D02G159800</i>	53.94	74.43	67.15	66.35	NOL, NYC3
<i>TraesCS4A02G299400</i>	5.63	23.45	7.22	11.53	NOL, NYC4
<i>TraesCS4D02G012100</i>	6.08	35.91	8.09	12.21	NOL, NYC5
<i>TraesCS6B02G357800</i>	6.07	34.33	6.95	10.09	NOL, NYC6

Table S3 List of carotenoid synthesis related DEGs identified in WT and *GSm*

Gene_id	MS1	MS2	WS1	WS2	KO_name
<i>TraesCS5A02G033700</i>	19.23	12.73	32.54	32.65	Z-ISO
<i>TraesCS1A02G071700</i>	11.39	8.30	12.37	13.89	crtISO
<i>TraesCS1D02G074300</i>	4.81	3.53	4.73	4.61	crtISO
<i>TraesCS3A02G208800</i>	7.43	2.93	10.53	14.57	crtE
<i>TraesCS3B02G239100</i>	6.99	2.20	8.24	14.97	crtE
<i>TraesCS3D02G211700</i>	10.63	4.29	16.00	18.07	crtE
<i>TraesCS6A02G171200</i>	21.43	6.50	21.42	23.84	CrtL-b
<i>TraesCS6D02G377900</i>	44.12	27.40	78.71	36.11	LUT5
<i>TraesCS1D02G210200</i>	35.59	32.96	46.54	83.12	LUT1
<i>TraesCS2A02G280500</i>	36.85	14.74	47.87	22.84	VDE
<i>TraesCS2B02G297800</i>	47.46	23.58	56.30	35.82	VDE
<i>TraesCS2D02G279300</i>	35.59	19.10	44.22	28.01	VDE

Table S4 List of photosynthesis related DEGs identified in WT and *GSm*

Gene_id	MS1	MS2	WS1	WS2	KO_name
<i>TraesCS7A02G227100</i>	1293.96	102.48	1466.26	2119.12	LHCA1
<i>TraesCS7B02G192500</i>	924.69	81.95	1121.82	1661.67	LHCA1
<i>TraesCS7D02G227300</i>	1082.61	76.25	1318.31	1571.81	LHCA1
<i>TraesCS2A02G187200</i>	1794.38	183.34	2213.54	2857.69	LHCA2
<i>TraesCS2B02G220100</i>	1676.32	136.99	1952.99	2647.84	LHCA2
<i>TraesCS2D02G200700</i>	1551.23	81.63	1862.88	1929.55	LHCA2
<i>TraesCS5A02G213000</i>	116.21	63.55	169.86	158.73	LHCA2
<i>TraesCS5B02G210800</i>	72.06	21.76	87.57	125.32	LHCA2
<i>TraesCS5D02G219100</i>	73.87	36.70	112.82	134.78	LHCA2
<i>TraesCS6A02G159800</i>	620.83	65.88	809.40	1225.28	LHCA3
<i>TraesCS6B02G191500</i>	744.79	78.10	868.94	1267.66	LHCA3
<i>TraesCS6D02G152700</i>	868.93	75.77	1039.59	1538.34	LHCA3
<i>TraesCS5A02G229300</i>	546.03	36.40	713.22	1544.59	LHCA4
<i>TraesCS5B02G227900</i>	708.83	51.74	914.67	1624.98	LHCA4
<i>TraesCS5D02G238300</i>	779.54	62.42	1029.45	1904.87	LHCA4

<i>TraesCS6A02G319700</i>	84.17	25.14	117.50	84.59	LHCA5
<i>TraesCS6B02G350500</i>	74.65	29.21	90.42	72.77	LHCA5
<i>TraesCS6D02G299200</i>	104.33	35.00	128.13	118.17	LHCA5
<i>TraesCS1A02G306600</i>	2.01	0.10	1.98	19.53	LHCB1
<i>TraesCS1A02G403300</i>	461.23	10.83	608.68	1876.75	LHCB1
<i>TraesCS1A02G403800</i>	4.41	0.12	6.31	12.71	LHCB1
<i>TraesCS1B02G317500</i>	4.90	0.02	5.12	30.62	LHCB1
<i>TraesCS1B02G388200</i>	30.66	0.43	26.31	77.18	LHCB1
<i>TraesCS1B02G388300</i>	1.30	0.03	0.50	5.83	LHCB1
<i>TraesCS1B02G388400</i>	7.48	0.00	5.98	24.43	LHCB1
<i>TraesCS1B02G388500</i>	1.02	0.00	0.40	2.15	LHCB1
<i>TraesCS1B02G432700</i>	738.15	24.39	1122.95	2800.04	LHCB1
<i>TraesCS1B02G433300</i>	9.92	0.13	14.32	37.81	LHCB1
<i>TraesCS1D02G306200</i>	1.86	0.01	2.48	14.87	LHCB1
<i>TraesCS1D02G374900</i>	1.35	0.06	1.29	20.36	LHCB1
<i>TraesCS1D02G375000</i>	12.18	0.08	11.76	30.72	LHCB1
<i>TraesCS1D02G375100</i>	19.88	1.01	25.48	125.72	LHCB1
<i>TraesCS1D02G411300</i>	564.89	17.00	733.76	1621.80	LHCB1
<i>TraesCS1D02G411600</i>	4.06	0.01	7.46	19.03	LHCB1
<i>TraesCS5A02G350600</i>	921.71	33.28	799.98	1919.83	LHCB1
<i>TraesCS5A02G454200</i>	22.41	0.04	16.12	28.83	LHCB1
<i>TraesCS5A02G454300</i>	8.39	0.14	6.19	10.40	LHCB1
<i>TraesCS5B02G353200</i>	1375.10	45.20	1711.63	2644.61	LHCB1
<i>TraesCS5B02G462800</i>	0.37	0.00	0.31	0.74	LHCB1
<i>TraesCS5B02G463000</i>	7.89	0.00	5.85	27.17	LHCB1
<i>TraesCS5B02G463100</i>	68.33	0.03	65.24	231.55	LHCB1
<i>TraesCS5D02G357600</i>	831.62	17.20	718.30	1496.39	LHCB1
<i>TraesCS5D02G464700</i>	59.75	0.17	63.39	228.70	LHCB1
<i>TraesCS5D02G464800</i>	19.99	0.01	31.40	69.61	LHCB1
<i>TraesCS5D02G464900</i>	3.50	0.00	2.76	6.34	LHCB1
<i>TraesCS6A02G093700</i>	0.16	0.00	0.16	0.20	LHCB1
<i>TraesCS6A02G094200</i>	17.44	0.06	24.95	61.27	LHCB1
<i>TraesCS6A02G094300</i>	19.10	0.05	23.66	38.51	LHCB1

<i>TraesCS6A02G094400</i>	0.21	0.00	0.39	0.15	LHCB1
<i>TraesCS6A02G094600</i>	4.13	0.00	6.45	12.11	LHCB1
<i>TraesCS6B02G122600</i>	1.29	0.03	2.59	3.73	LHCB1
<i>TraesCS6D02G088800</i>	0.82	0.00	0.68	0.55	LHCB1
<i>TraesCS7A02G238400</i>	3.78	0.18	3.29	17.58	LHCB1
<i>TraesCS7A02G276400</i>	905.93	3.87	1012.44	790.79	LHCB1
<i>TraesCS7B02G103300</i>	0.13	0.00	0.21	0.65	LHCB1
<i>TraesCS7B02G103400</i>	5.23	0.26	6.83	29.12	LHCB1
<i>TraesCS7D02G276300</i>	482.41	3.67	603.91	707.16	LHCB1
<i>TraesCSU02G086800</i>	5.79	0.00	11.94	10.92	LHCB1
<i>TraesCSU02G167700</i>	45.66	0.53	60.24	194.25	LHCB1
<i>TraesCSU02G250000</i>	1.88	0.02	2.79	8.32	LHCB1
<i>TraesCS5A02G322500</i>	711.02	10.33	752.13	750.21	LHCB2
<i>TraesCS5B02G322900</i>	154.15	2.44	175.63	184.05	LHCB2
<i>TraesCS5D02G329200</i>	1049.96	9.03	1278.11	993.71	LHCB2
<i>TraesCS1B02G451100</i>	317.21	14.17	347.86	713.50	LHCB3
<i>TraesCS1B02G451200</i>	102.70	3.30	54.90	99.91	LHCB3
<i>TraesCS1D02G428200</i>	396.37	21.62	396.68	907.13	LHCB3
<i>TraesCS2A02G204800</i>	198.63	8.15	220.35	258.71	LHCB3
<i>TraesCS2A02G206200</i>	1133.81	60.96	1465.33	1769.44	LHCB4
<i>TraesCS2B02G233400</i>	762.90	38.13	977.92	1101.55	LHCB4
<i>TraesCS2D02G209900</i>	956.51	51.31	1228.85	1678.34	LHCB4
<i>TraesCS4A02G226900</i>	1238.10	48.27	1463.41	1463.39	LHCB5
<i>TraesCS4B02G089500</i>	1216.75	45.08	1501.33	1572.97	LHCB5
<i>TraesCS4D02G086400</i>	1066.18	57.81	1355.81	1500.13	LHCB5
<i>TraesCS2A02G342600</i>	478.70	21.38	571.60	570.64	LHCB6
<i>TraesCS2B02G340300</i>	535.07	32.77	624.41	718.55	LHCB6
<i>TraesCS2D02G320900</i>	450.35	27.11	497.71	604.52	LHCB6
<i>TraesCS5B02G175000</i>	16.88	15.66	22.87	17.72	LHCB7

Table S5 List of enzyme activity-related DEGs identified in WT and *GSm*

Group	Gene_id	TPM				KO_name
		MS1	MS2	WS1	WS2	
Superoxide dismutase	<i>TraesCS2A02G121200</i>	173.59	364.35	94.25	111.28	SOD1
	<i>TraesCS2D02G123300</i>	153.27	251.15	105.86	102.15	SOD1
	<i>TraesCS4A02G065800</i>	48.08	32.84	52.79	64.51	SOD1
	<i>TraesCS4B02G243200</i>	71.01	76.14	93.24	118.59	SOD1
	<i>TraesCS4D02G242800</i>	31.74	21.51	30.23	41.25	SOD1
	<i>TraesCS7A02G292100</i>	48.82	34.37	58.62	83.73	SOD1
	<i>TraesCS7B02G197300</i>	44.26	55.62	52.10	84.77	SOD1
	<i>TraesCS7D02G290700</i>	61.30	54.88	67.05	94.29	SOD1
	<i>TraesCS2A02G537100</i>	46.14	38.93	43.25	24.10	SOD2
	<i>TraesCS2B02G567600</i>	9.00	13.25	5.47	9.10	SOD2
	<i>TraesCS2D02G538300</i>	60.43	73.14	62.83	39.19	SOD2
	<i>TraesCS4A02G390300</i>	3.97	14.72	6.86	11.01	SOD2
	<i>TraesCS4A02G434000</i>	4.50	7.76	5.56	9.10	SOD2
	<i>TraesCS7A02G048600</i>	4.21	6.43	4.95	6.78	SOD2
	<i>TraesCS7A02G090400</i>	9.92	18.11	19.92	24.73	SOD2
	<i>TraesCS7D02G043000</i>	10.96	31.84	13.93	26.17	SOD2
	<i>TraesCS7D02G086400</i>	12.22	28.12	21.59	31.61	SOD2
Catalase	<i>TraesCS4B02G325800</i>	491.64	359.75	527.76	396.66	katE, CAT, catB, srpA
	<i>TraesCS4D02G322700</i>	348.77	260.92	381.72	283.34	katE, CAT, catB, srpA
	<i>TraesCS5A02G498000</i>	272.65	232.45	344.57	244.90	katE, CAT, catB, srpA
	<i>TraesCS6A02G041700</i>	3.56	234.12	3.87	6.69	katE, CAT, catB, srpA
	<i>TraesCS6B02G056800</i>	0.11	14.20	0.28	0.59	katE, CAT, catB, srpA
	<i>TraesCS6B02G330700</i>	14.36	25.85	9.64	12.60	-----
	<i>TraesCS6D02G048300</i>	4.68	115.62	4.92	13.00	katE, CAT, catB, srpA
	<i>TraesCS7A02G549800</i>	11.58	116.59	10.23	46.10	katE, CAT, catB, srpA
	<i>TraesCS7A02G549900</i>	0.74	6.55	0.38	3.76	katE, CAT, catB, srpA
	<i>TraesCS7B02G473400</i>	3.58	16.07	2.69	5.95	katE, CAT, catB, srpA
	<i>TraesCSU02G105300</i>	16.78	98.39	13.81	36.82	katE, CAT, catB, srpA

	<i>TraesCS2A02G582000</i>	7.05	1.32	0.26	0.88	-----
	<i>TraesCS2A02G582100</i>	12.46	3.73	15.89	14.03	gpx, btuE, bsaA
	<i>TraesCS2A02G582200</i>	12.58	2.55	12.11	7.07	gpx, btuE, bsaA
	<i>TraesCS2B02G429100</i>	19.81	46.42	12.52	16.89	gpx, btuE, bsaA
	<i>TraesCS2B02G604800</i>	31.97	9.73	37.87	13.61	gpx, btuE, bsaA
	<i>TraesCS2B02G604900</i>	26.81	7.21	29.72	8.53	gpx, btuE, bsaA
	<i>TraesCS2B02G605000</i>	5.73	2.06	0.29	1.27	-----
	<i>TraesCS2D02G407700</i>	21.38	51.72	18.38	15.81	gpx, btuE, bsaA
	<i>TraesCS2D02G598000</i>	7.81	5.05	10.44	6.59	gpx, btuE, bsaA
	<i>TraesCS2D02G598100</i>	3.38	3.70	5.04	0.31	gpx, btuE, bsaA
	<i>TraesCS2D02G598200</i>	3.74	1.66	0.10	0.68	-----
	<i>TraesCS4A02G142000</i>	40.08	90.41	31.78	58.33	gpx, btuE, bsaA
	<i>TraesCS4A02G269600</i>	24.23	51.41	10.10	20.96	GST, gst
	<i>TraesCS4A02G269800</i>	45.71	34.08	20.61	18.93	GST, gst
	<i>TraesCS4B02G044300</i>	48.70	85.29	18.17	36.03	GST, gst
	<i>TraesCS4B02G044500</i>	22.02	12.53	2.20	6.02	GST, gst
Glutathione S-transferases	<i>TraesCS4B02G152800</i>	35.98	93.22	31.91	49.00	gpx, btuE, bsaA
	<i>TraesCS4D02G042000</i>	41.43	49.48	7.92	21.93	GST, gst
	<i>TraesCS4D02G162000</i>	42.14	92.35	37.40	60.35	gpx, btuE, bsaA
	<i>TraesCS6A02G246400</i>	59.66	68.55	76.67	52.41	gpx, btuE, bsaA
	<i>TraesCS6B02G278100</i>	16.91	21.83	17.03	8.35	gpx, btuE, bsaA
	<i>TraesCS6D02G228800</i>	29.52	34.02	38.95	19.15	gpx, btuE, bsaA
	<i>TraesCS7A02G150500</i>	141.08	100.64	307.06	381.00	gpx, btuE, bsaA
	<i>TraesCS7B02G054400</i>	27.95	18.08	51.26	97.35	gpx, btuE, bsaA
	<i>TraesCS7D02G152400</i>	113.24	61.33	245.38	262.12	gpx, btuE, bsaA
	<i>TraesCS1A02G077700</i>	1.92	10.01	1.69	1.31	E1.11.1.7
	<i>TraesCS1A02G108400</i>	0.65	4.21	0.23	1.38	E1.11.1.7
	<i>TraesCS1B02G095800</i>	1.40	8.39	0.85	2.50	E1.11.1.7
	<i>TraesCS1D02G096400</i>	0.98	6.11	0.12	1.01	E1.11.1.7
	<i>TraesCS1D02G174200</i>	5.53	14.31	7.33	9.83	E1.11.1.7
	<i>TraesCS2A02G263500</i>	53.48	83.64	71.36	55.28	E1.11.1.7
	<i>TraesCS2A02G333500</i>	2.01	17.69	2.35	0.69	E1.11.1.7

Peroxidase	<i>TraesCS2A02G571300</i>	2.37	12.73	1.68	7.06	E1.11.1.7
	<i>TraesCS2B02G278500</i>	21.85	19.37	27.87	23.79	E1.11.1.7
	<i>TraesCS2B02G346800</i>	1.74	10.90	1.45	0.43	E1.11.1.7
	<i>TraesCS2B02G613400</i>	5.65	9.28	5.78	6.98	E1.11.1.7
	<i>TraesCS2B02G614100</i>	0.10	18.47	0.00	0.00	E1.11.1.7
	<i>TraesCS2D02G260300</i>	31.65	12.33	43.01	12.83	E1.11.1.7
	<i>TraesCS2D02G327700</i>	1.59	5.17	2.09	0.95	E1.11.1.7
	<i>TraesCS2D02G583000</i>	4.25	25.55	2.41	13.40	E1.11.1.7
	<i>TraesCS2D02G583200</i>	0.50	1.75	0.01	0.60	E1.11.1.7
	<i>TraesCS3A02G183500</i>	25.23	26.10	35.76	29.28	-----
	<i>TraesCS3A02G185900</i>	6.04	110.10	4.84	0.86	E1.11.1.7
	<i>TraesCS3A02G297100</i>	0.11	0.96	0.00	0.03	E1.11.1.7
	<i>TraesCS3A02G297200</i>	0.22	18.85	0.19	0.29	E1.11.1.7
	<i>TraesCS3A02G325100</i>	1.72	13.47	1.99	0.55	E1.11.1.7
	<i>TraesCS3B02G213200</i>	1.03	5.60	1.69	2.66	-----
	<i>TraesCS3B02G215500</i>	4.59	50.73	8.12	0.85	E1.11.1.7
	<i>TraesCS3B02G354000</i>	0.63	6.13	0.50	0.18	E1.11.1.7
	<i>TraesCS3B02G578600</i>	0.03	5.08	0.00	0.01	E1.11.1.7
	<i>TraesCS3D02G187600</i>	13.97	12.72	16.18	15.23	-----
	<i>TraesCS3D02G189900</i>	2.31	86.67	1.35	0.16	E1.11.1.7
	<i>TraesCS3D02G305300</i>	0.06	2.23	0.11	0.11	E1.11.1.7
	<i>TraesCS3D02G318500</i>	1.59	12.68	0.89	0.44	E1.11.1.7
	<i>TraesCS3D02G518200</i>	0.23	5.43	0.00	0.13	E1.11.1.7
	<i>TraesCS4A02G196300</i>	0.00	6.59	0.00	0.01	E1.11.1.7
	<i>TraesCS4A02G196400</i>	0.03	6.63	0.00	0.00	E1.11.1.7
	<i>TraesCS4D02G342600</i>	0.57	5.34	1.45	0.08	E1.11.1.7
	<i>TraesCS5A02G249200</i>	5.26	6.07	6.32	4.63	E1.11.1.7
	<i>TraesCS5A02G288200</i>	0.57	14.80	0.73	0.55	E1.11.1.7
	<i>TraesCS5A02G400500</i>	0.75	15.09	0.03	0.04	E1.11.1.7
	<i>TraesCS5B02G246900</i>	8.54	10.67	4.57	3.76	E1.11.1.7
	<i>TraesCS5B02G405300</i>	0.13	17.63	0.00	0.10	E1.11.1.7

<i>TraesCS5D02G256400</i>	5.95	5.49	6.12	4.33	E1.11.1.7
<i>TraesCS5D02G410500</i>	0.16	12.83	0.04	0.14	E1.11.1.7
<i>TraesCS6A02G118300</i>	5.50	6.22	3.03	2.77	E1.11.1.7
<i>TraesCS6B02G146500</i>	2.78	10.21	2.10	1.53	E1.11.1.7
<i>TraesCS6D02G108400</i>	5.10	20.40	4.93	3.45	E1.11.1.7
<i>TraesCS7A02G250500</i>	14.72	14.48	25.03	38.57	E1.11.1.11
<i>TraesCS7A02G319100</i>	0.21	8.52	0.07	0.03	E1.11.1.7
<i>TraesCS7A02G339600</i>	1.45	16.43	0.26	0.64	E1.11.1.7
<i>TraesCS7A02G428200</i>	4.46	9.82	6.10	1.76	E1.11.1.7
<i>TraesCS7B02G099800</i>	2.38	10.57	1.40	1.91	-----
<i>TraesCS7B02G140600</i>	15.08	20.70	30.30	23.55	E1.11.1.11
<i>TraesCS7B02G328400</i>	2.05	20.18	2.28	1.43	E1.11.1.7
<i>TraesCS7D02G212900</i>	2.65	13.07	1.87	2.38	E1.11.1.7
<i>TraesCS7D02G249200</i>	17.94	18.19	32.03	40.81	E1.11.1.11
<i>TraesCS7D02G347300</i>	0.69	3.80	0.13	0.58	E1.11.1.7
<i>TraesCS7D02G420500</i>	2.79	75.08	4.11	2.20	E1.11.1.7

Table S6 List of cytokinin and gibberellin-related DEGs identified in WT and *GSm*

Group	Gene_id	TPM			
		MS1	MS2	WS1	WS2
	<i>TraesCS1B02G137600</i>	1.40	0.12	2.07	0.31
	<i>TraesCS1B02G176000</i>	0.29	0.95	0.14	0.58
	<i>TraesCS1B02G323900</i>	0.00	0.06	0.00	0.00
	<i>TraesCS2A02G265700</i>	2.72	5.16	3.49	2.61
	<i>TraesCS2B02G150300</i>	0.52	1.25	0.15	0.39
CK	<i>TraesCS2D02G407200</i>	0.15	2.08	0.64	0.79
	<i>TraesCS2D02G407300</i>	4.73	9.19	6.52	8.99
	<i>TraesCS3A02G109500</i>	0.00	0.04	0.00	0.00
	<i>TraesCS3A02G311100</i>	0.30	0.08	0.00	0.05
	<i>TraesCS3B02G128700</i>	0.00	0.02	0.00	0.02
	<i>TraesCS3B02G344600</i>	1.29	1.79	0.99	0.63

GA	<i>TraesCS3D02G127100</i>	1.41	4.64	0.38	1.09
	<i>TraesCS3D02G263000</i>	0.71	0.73	0.44	0.08
	<i>TraesCS3D02G310200</i>	1.50	0.42	0.25	0.25
	<i>TraesCS4A02G345200</i>	0.87	1.25	1.29	1.59
	<i>TraesCS5A02G444500</i>	1.46	0.47	2.20	0.14
	<i>TraesCS5B02G528800</i>	1.26	0.74	1.01	0.79
	<i>TraesCS7A02G536900</i>	3.34	2.00	7.04	17.86
	<i>TraesCS7A02G560300</i>	0.53	0.74	0.54	0.96
	<i>TraesCS7B02G075300</i>	0.17	0.01	0.16	0.02
	<i>TraesCS7B02G455000</i>	2.93	2.99	4.48	7.47
	<i>TraesCS7D02G171100</i>	0.21	0.02	0.09	0.07
	<i>TraesCS7D02G171200</i>	0.23	0.02	0.18	0.09
	<i>TraesCS7D02G190600</i>	2.07	23.94	6.94	0.57
	<i>TraesCS2A02G027800</i>	0.02	0.00	0.02	0.19
	<i>TraesCS2A02G425500</i>	2.28	13.74	4.03	11.05
	<i>TraesCS2B02G396000</i>	0.04	0.15	0.03	0.00
	<i>TraesCS2B02G445300</i>	15.62	6.11	29.58	19.02
	<i>TraesCS2B02G445500</i>	0.01	0.01	0.01	0.20
	<i>TraesCS2B02G445600</i>	0.01	0.09	0.02	0.31
	<i>TraesCS2B02G445900</i>	1.33	0.01	2.31	0.39
	<i>TraesCS2D02G423500</i>	72.63	0.93	113.47	56.12
	<i>TraesCS3A02G086100</i>	0.10	0.00	0.04	0.00
	<i>TraesCS3A02G294000</i>	0.17	2.69	0.11	0.01
	<i>TraesCS3B02G328700</i>	0.07	2.64	0.04	0.00
	<i>TraesCS3D02G124500</i>	0.01	0.17	0.03	0.00
	<i>TraesCS3D02G293800</i>	0.02	1.04	0.02	0.00
	<i>TraesCS4A02G460100</i>	4.13	0.11	6.09	3.84
	<i>TraesCS4B02G376200</i>	1.30	6.22	0.65	0.87
	<i>TraesCS5A02G064200</i>	1.12	0.30	1.98	1.99
	<i>TraesCS5B02G068500</i>	0.46	0.19	0.36	1.13
	<i>TraesCS7A02G029600</i>	0.74	0.22	1.01	0.16

<i>TraesCS7A02G362300</i>	0.78	1.12	2.35	12.60
<i>TraesCS7A02G552700</i>	0.19	0.08	0.17	0.03
<i>TraesCS7B02G476400</i>	0.15	0.05	0.11	0.04
<i>TraesCS7D02G026000</i>	4.70	0.20	7.71	4.72
<i>TraesCS7D02G539200</i>	0.60	0.70	1.07	0.91
<i>TraesCSU02G008700</i>	0.03	0.01	0.06	0.48
<i>TraesCSU02G008900</i>	0.01	0.02	0.04	0.30
<i>TraesCSU02G009100</i>	0.71	0.99	0.14	0.61

Table S7 Primers for quantitative real-time polymerase chain reaction

Gene_id	Forward primer	Reverse primer
<i>TraesCS1D02G232700</i>	CCCAGGGTCGTGGATGACTT	GCCTGGTACTTGTCCCGGTAGA
<i>TraesCS2D02G163300</i>	CTTCTACCTTGTTTCAGCAATGGC	ACTTCTTCTTGCGCTTGGTCAC
<i>TraesCS3D02G017700</i>	TCACCAAGATGGACAAGGCG	ATGCGTGGCAGGAGAAGTGAC
<i>TraesCS3D02G223300</i>	CGAAAAGGAGGCAGTGAACGT	ACTGGAAAACAACGAGTACGCAC
<i>TraesCS5B02G115300</i>	AGGCCACGCTCAACCTCAATG	GCCGTCGCTGGTGTACTTTCC
<i>TraesCS7A02G319100</i>	CTGCTTCGTACAGGGATGCG	CGGTCAGCGTGTCGGTGT