

Supplementary data 1. Means of the panicle-related traits of 40 rice varieties in ambient condition.

E ¹	Variety	Abb ^{**}	NS ²	NR	NPr	NSP	NSPr	NSr	NSS	NSSr	S/P	RPP	RPS	RP	HP
	Cheongdam	CD	179.5	49.5	13.7	74.8	5.5	35.8	104.7	2.9	2.6	93.8	92.4	93.0	94.3
	Chucheong	CC	112.7	29.8	9.2	52.8	5.8	20.7	59.8	2.9	2.3	97.5	93.5	95.3	94.0
	Daepyong	DP	183.3	48.3	12.8	72.7	5.7	35.5	110.7	3.1	2.8	96.4	95.4	95.8	94.0
	Daerip1	DR1	102.0	26.3	9.0	53.0	5.9	17.3	49.0	2.8	1.9	96.9	93.9	95.4	73.1
	Daeya	DY	112.8	27.3	10.3	61.7	6.0	17.0	51.2	3.0	1.6	96.3	95.5	95.9	89.8
	Dongan	DA	129.7	33.7	10.3	59.5	5.8	23.3	70.2	3.0	2.3	97.8	96.1	96.8	95.2
	Dongjin	DJ	120.2	31.2	10.5	61.0	5.8	20.7	59.2	2.9	2.0	96.7	96.5	96.6	91.2
	Dongjin1	DJ1	175.5	45.2	12.0	68.5	5.7	33.2	107.0	3.2	2.8	97.8	91.4	93.9	87.6
	Gangbaeg	GB	157.5	40.8	11.2	65.5	5.9	29.7	92.0	3.1	2.7	94.4	90.6	92.2	93.9
	Geumo1	GO1	164.7	43.3	12.2	68.7	5.6	31.2	96.0	3.1	2.6	98.5	92.7	95.1	92.1
	Geumo3	GO3	129.5	32.5	9.3	52.8	5.7	23.2	76.7	3.3	2.5	95.3	95.7	95.5	94.7
	Hanmaeum	HM	139.2	36.7	12.0	72.3	6.0	24.7	66.8	2.7	2.1	96.3	92.2	94.3	80.6
	Hopum	HP	173.7	46.2	11.5	67.7	5.9	34.7	106.0	3.1	3.0	96.6	94.9	95.6	88.7
<i>j</i>	Hwaan	HA	156.8	41.8	11.3	63.0	5.6	30.5	93.8	3.1	2.7	97.7	90.5	93.4	92.3
	Hwajung	HJ	125.0	32.2	10.2	59.3	5.8	22.0	65.7	3.0	2.2	96.9	95.1	95.9	88.2
	Hwanam	HN	159.0	40.0	11.0	64.3	5.9	29.0	94.7	3.3	2.6	94.7	87.9	90.6	95.3
	Hwangeumnuri	HG	178.2	46.7	12.8	76.0	5.9	33.8	102.2	3.0	2.6	96.7	93.3	94.8	93.6
	Hwaseong	HS	119.3	30.0	10.2	59.8	5.9	19.8	59.5	3.0	2.0	96.1	96.9	96.5	93.2
	Hwayeong	HY	127.5	33.2	10.5	59.8	5.7	22.7	67.7	3.0	2.2	95.6	95.7	95.7	95.3
	Jangan	JG	169.2	44.7	13.2	76.0	5.8	31.5	93.2	2.9	2.4	96.1	91.5	93.8	87.4
	Jinbu	JB	126.8	30.8	10.0	58.5	5.9	20.8	68.3	3.3	2.1	98.6	97.4	97.9	67.3
	Manchu	MC	162.5	41.3	13.0	77.0	5.9	28.3	85.5	3.0	2.2	97.1	96.0	96.5	96.5
	Manpung	MP	132.3	33.8	12.8	73.5	5.7	21.0	58.8	2.8	1.6	96.3	90.3	93.5	95.0
	Odae1	OD1	175.2	47.0	12.5	71.2	5.7	34.5	104.0	3.0	2.8	98.8	96.0	97.1	94.3
	Onnuri	ON	166.7	44.7	11.8	66.8	5.6	32.8	99.8	3.0	2.8	95.2	96.8	96.2	93.1
	Sura	SR	123.0	32.2	10.8	61.3	5.7	21.3	61.7	2.9	2.0	96.3	93.8	95.0	96.0
	Taeseong	TS	125.3	32.3	10.3	58.0	5.6	22.0	67.3	3.1	2.1	96.1	96.3	96.2	86.5
	Anda	AD	203.8	51.8	11.7	66.5	5.7	40.2	137.3	3.4	3.4	91.2	87.2	88.5	68.5
	Areum	AR	173.7	52.5	10.3	49.0	4.7	42.2	124.7	3.0	4.1	90.1	84.6	86.2	75.6
	Dasan	DS	175.5	44.5	11.0	59.8	5.4	33.5	115.7	3.4	3.0	91.1	88.7	89.5	66.4
	Dasan1	DS1	205.5	56.0	12.2	60.5	5.0	43.8	145.0	3.3	3.6	95.6	96.1	95.9	62.1
	Hanareum	HAR	186.3	46.5	12.2	67.7	5.5	34.3	118.7	3.5	2.8	92.8	91.5	91.9	77.1
	Jangseong	JS	160.2	38.5	10.3	61.0	5.9	28.2	99.2	3.5	2.7	92.0	90.1	90.9	79.8
<i>T</i>	Keunseom	KS	205.5	54.7	12.0	61.7	5.1	42.7	143.8	3.4	3.6	96.1	89.0	91.2	75.6
	Namcheon	NC	180.5	44.5	11.0	62.2	5.6	33.5	118.3	3.5	3.0	90.9	91.5	91.3	90.9
	Nampung	NP	216.7	58.7	11.2	59.2	5.3	47.5	157.5	3.3	4.2	91.3	90.8	90.9	83.1
	Nongan	NA	201.3	48.3	14.7	78.0	5.3	33.7	123.3	3.7	2.3	91.2	95.0	93.5	87.4
	Taebaeg	TB	148.5	35.8	10.5	61.2	5.8	25.3	87.3	3.4	2.4	91.4	92.1	91.8	73.3
	Yongju	YJ	200.3	49.8	11.0	60.3	5.5	38.8	140.0	3.6	3.5	86.4	87.1	86.9	88.9
	Yongmoon	YM	196.3	47.2	11.3	60.3	5.3	35.8	136.0	3.8	3.2	92.5	93.6	93.3	84.6

¹E stands for ecotypes; *j* for *japonica* and *T* for Tongil-type, respectively.

²Abb stands for abbreviations of the variety names used in Table 1, Fig. 1, Fig. 2, and Supplementary data 2.

³See the Abbreviations.

Supplementary data 2. Means of the panicle-related traits of 40 rice varieties in high temperature condition.

E [*]	Variety	NS ^z	NR	NPr	NSP	NSPr	NSr	NSS	NSSr	S/P	RPP	RPS	RP	HP
	CD	185.0	51.2	13.7	74.7	5.5	37.5	110.3	2.9	2.7	94.0	87.4	90.0	78.6
	CC	112.3	29.2	8.5	50.2	5.9	20.7	62.2	3.0	2.4	96.7	90.6	93.4	85.2
	DP	222.0	56.5	12.8	76.5	6.0	43.7	145.5	3.3	3.4	94.5	89.1	90.9	73.7
	DR1	114.0	29.5	9.7	57.2	5.9	19.8	56.8	2.9	2.1	88.4	86.8	87.5	68.6
	DY	111.0	27.0	9.8	59.2	6.0	17.2	51.8	3.0	1.8	96.0	88.9	92.7	86.0
	DA	126.7	33.3	9.2	53.3	5.8	24.2	73.3	3.0	2.6	93.8	88.2	90.6	86.0
	DJ	130.0	33.0	10.5	63.2	6.0	22.5	66.8	3.0	2.2	94.2	91.3	92.8	87.1
	DJ1	216.5	56.7	13.3	74.0	5.6	43.3	142.5	3.3	3.2	95.9	86.9	90.1	69.2
	GB	154.5	40.5	11.7	67.0	5.7	28.8	87.5	3.0	2.5	95.1	91.8	93.2	82.5
	GO1	172.8	45.5	12.5	72.0	5.8	33.0	100.8	3.0	2.7	93.9	84.0	87.9	70.5
	GO3	141.2	39.5	9.8	53.7	5.5	29.7	87.5	3.0	3.0	96.0	96.4	96.2	84.7
	HM	146.3	38.3	12.5	76.5	6.1	25.8	69.8	2.7	2.1	94.0	86.6	90.4	66.8
	HP	169.2	42.7	11.3	66.7	5.9	31.3	102.5	3.2	2.8	92.4	90.9	91.5	68.4
<i>j</i>	HA	162.2	43.0	11.2	61.3	5.5	31.8	100.8	3.2	2.9	97.1	92.1	94.0	81.0
	HJ	140.5	36.2	9.7	56.5	5.8	26.5	84.0	3.2	2.8	90.6	82.8	85.8	76.9
	HN	166.2	41.5	11.0	64.8	5.9	30.5	101.3	3.3	2.8	90.6	88.2	89.1	79.7
	HG	165.7	42.5	13.8	83.2	6.0	28.7	82.5	2.9	2.1	95.3	91.1	93.1	82.5
	HS	117.3	30.5	9.3	54.0	5.8	21.2	63.3	3.0	2.3	94.1	94.0	94.0	77.9
	HY	126.5	31.8	9.7	57.0	5.9	22.2	69.5	3.1	2.3	94.0	93.5	93.7	78.9
	JG	171.0	44.8	12.7	73.8	5.8	32.2	97.2	3.0	2.6	96.4	91.2	93.6	65.6
	JB	129.5	31.0	10.2	59.8	5.9	20.8	69.7	3.3	2.0	98.3	99.0	98.6	65.9
	MC	161.2	42.2	13.5	79.2	5.9	28.7	82.0	2.9	2.1	98.1	95.1	96.6	85.3
	MP	136.8	35.7	12.5	71.7	5.7	23.2	65.2	2.8	1.9	96.4	89.7	93.3	76.8
	OD1	181.2	48.5	13.0	73.7	5.7	35.5	107.5	3.0	2.7	97.0	98.1	97.6	77.5
	ON	170.8	46.3	12.0	67.8	5.7	34.3	103.0	3.0	2.9	91.4	85.1	87.6	80.5
	SR	125.8	33.7	11.3	62.0	5.5	22.3	63.8	2.9	2.0	95.8	92.3	94.0	76.5
	TS	128.8	32.8	10.2	59.7	5.9	22.7	69.2	3.1	2.2	96.4	96.4	96.4	62.2
	AD	236.7	56.8	13.3	75.7	5.7	43.5	161.0	3.7	3.3	81.8	69.7	73.7	67.2
	AR	180.0	55.2	10.2	45.8	4.5	45.0	134.2	3.0	4.4	82.2	81.9	82.0	50.2
	DS	185.3	46.7	12.2	69.2	5.7	34.5	116.2	3.4	2.8	71.4	73.6	72.7	72.3
	DS1	257.5	67.3	12.3	61.8	5.0	55.0	195.7	3.6	4.5	86.9	77.1	79.5	68.3
	HAR	183.8	46.5	12.2	69.7	5.7	34.3	114.2	3.3	2.8	87.5	82.5	84.3	73.7
	JS	185.5	44.5	11.0	67.0	6.1	33.5	118.5	3.5	3.1	75.0	70.8	72.5	75.3
<i>T</i>	KS	187.0	48.0	11.2	60.2	5.4	36.8	126.8	3.4	3.3	88.1	82.1	84.1	62.8
	NC	195.0	50.8	11.2	62.7	5.6	39.7	132.3	3.3	3.6	83.9	80.5	81.5	84.1
	NP	241.5	62.3	11.2	59.5	5.3	51.2	182.0	3.5	4.6	90.2	85.6	86.7	76.6
	NA	218.8	51.2	16.2	88.2	5.5	35.0	130.7	3.7	2.2	93.5	84.0	87.7	77.1
	TB	153.8	37.3	10.7	61.8	5.8	26.7	92.0	3.4	2.5	93.3	90.9	91.9	61.8
	YJ	225.2	57.3	11.5	64.2	5.6	45.8	161.0	3.5	4.0	83.8	77.4	79.2	86.4
	YM	246.7	60.2	11.7	65.0	5.6	48.5	181.7	3.7	4.2	90.1	83.5	85.2	79.1

^{*}E stands for ecotypes; *j* for *japonica* and *T* for Tongil-type, respectively.

^zSee the Abbreviations.