Analysis of Maize, Nitrogen and Tillage experiment

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Contents

1 Phenotypic traits

1.1 Phenotypic data import

1.2 Table of means

Table 1: Treatment means with groups of DF

Treatment	Mean	groups
IR99784-255-78-2-3-1-2	133.0	a
IR12F578	127.0	ab
IR98785-10-1-1-3	127.0	ab
NR2170-150-5-3-2-1-1-1	126.0	ab
IR13F115	125.5	abc
NR2169-10-4-1-2-1-1-1-1	123.0	abcd
IR99739:2-1-1-2-1	121.0	bcde
NR2170-5-5-1-6-1-1-3-1	120.0	bcdef
NR2179-82-2-4-1-1-1-1	120.0	bcdef
Sabitri	119.5	bcdef
NR2168-65-1-1-1-1-1-1-1	118.5	bcdefg
IR15L1745	118.0	bcdefgh
NR2181-139-1-3-1-1-1-1	118.0	bcdefgh

NR2181-160-4-1-2-1-1-1-1	118.0	bcdefgh
Radha-13	118.0	bcdefgh
NR2158-13-1-2-4-5	117.5	bcdefgh
NR2181-465-1-1-1-1-1-1-1	117.5	bcdefgh
IR102774-31-21-2-4-7	117.0	bcdefgh
IR98853-3-6-1-3-2	117.0	bcdefghi
NR2182-22-1-3-1-1-1	117.0	bcdefghi
Mansuli	116.0	bcdefghi
NR2169-10-1-1-6-2-1-3-1	116.0	bcdefghij
NR2182-58-1-3-1-1-1	116.0	bcdefghijk
NR2170-82-2-4-1-1-1-1	115.5	cdefghijk
IR 106529-20-40-3-2-B	115.0	cdefghijk
IR15D1031	115.0	defghijk
NR2175-66-2-3-1-1	114.5	defghijk
Pant-1	111.5	efghijk
IR103587-23-2-1-B	111.0	efghijkl
IR15L1735	109.0	fghijklm
NR2182-33-3-2-1-1-1	108.5	ghijklmn
NR2168-44-2-1-1-1-2-1-1	108.3	hijklmn
Anmol Mansuli	107.0	hijklmn
IR10281-10-227-1-2-9	106.0	ijklmn
IR16D1058	105.0	jklmn
NR2157-144-1-3-1-1	105.0	klmn
Pant-2	100.5	lmno
IR102885-31-11-4-11	99.0	mno
IR13F402	99.0	no
IR102885-2-74-17-2-3	98.5	no
IR13F228	98.0	no
HHZ3-SAL13-4-SAL1	92.0	o
IR95784-21-1-1-2	92.0	o

Table 2: Treatment means with groups of DM

Treatment	Mean	groups
IR99784-255-78-2-3-1-2	160	a
IR12F578	158	ab
NR2157-144-1-3-1-1	158	ab
IR98785-10-1-1-3	157	ab
NR2169-10-4-1-2-1-1-1-1	156	ab
IR13F115	156	abc
NR2181-160-4-1-2-1-1-1-1	154	abcd
IR15L1745	154	abcde
NR2170-150-5-3-2-1-1-1	153	abcdef

Sabitri	152	abcdef
NR2181-465-1-1-1-1-1-1-1	152	abcdef
NR2158-13-1-2-4-5	152	abcdef
IR15D1031	151	abcdef
IR98853-3-6-1-3-2	151	abcdef
Radha-13	151	abcdef
IR99739:2-1-1-2-1	150	abcdefg
NR2168-65-1-1-1-1-1-1-1	150	abcdefg
NR2170-5-5-1-6-1-1-3-1	150	abcdefg
NR2175-66-2-3-1-1	150	abcdefg
NR2179-82-2-4-1-1-1-1	150	abcdefg
IR 106529-20-40-3-2-B	149	abcdefg
IR102774-31-21-2-4-7	149	abcdefg
Mansuli	149	abcdefgh
NR2169-10-1-1-6-2-1-3-1	149	abcdefgh
NR2182-22-1-3-1-1-1	149	abcdefgh
NR2182-58-1-3-1-1-1	149	abcdefgh
NR2170-82-2-4-1-1-1-1	148	abcdefghi
NR2181-139-1-3-1-1-1-1	148	abcdefghi
IR103587-23-2-1-B	147	abcdefghi
Pant-1	146	abcdefghij
IR15L1735	145	bcdefghij
NR2168-44-2-1-1-1-2-1-1	141	cdefghij
NR2182-33-3-2-1-1-1	141	cdefghij
Anmol Mansuli	140	defghijk
IR10281-10-227-1-2-9	139	efghijk
IR16D1058	138	fghijkl
Pant-2	136	ghijkl
IR102885-31-11-4-11	134	hijkl
IR13F402	134	hijkl
IR102885-2-74-17-2-3	133	ijkl
IR13F228	132	jkl
IR95784-21-1-1-2	125	kl
HHZ3-SAL13-4-SAL1	124	l

Table 3: Treatment means with groups of pH

Treatment	Mean	groups
Mansuli	130.2	a
IR15D1031	125.6	ab
IR16D1058	123.6	abc
NR2182-33-3-2-1-1-1	122.0	abcd
IR10281-10-227-1-2-9	121.6	abcde

NR2182-22-1-3-1-1-1	110.2	abcdef
IR 106529-20-40-3-2-B	108.6	bcdefg
IR99739:2-1-1-2-1	107.4	bcdefgh
Pant-2	107.2	bcdefghi
IR15L1745	106.8	cdefghi
Sabitri	106.6	cdefghi
Radha-13	105.2	cdefghi
NR2175-66-2-3-1-1	104.8	cdefghi
IR12F578	104.6	cdefghi
IR98785-10-1-1-3	104.4	defghi
NR2181-465-1-1-1-1-1-1-1	104.2	defghi
Pant-1	103.8	defghi
IR13F115	103.5	defghi
NR2181-160-4-1-2-1-1-1-1	103.5	defghi
NR2182-58-1-3-1-1-1	103.2	efghi
NR2170-82-2-4-1-1-1-1	103.1	efghi
IR102774-31-21-2-4-7	103.0	fghi
IR103587-23-2-1-B	102.8	fghi
NR2181-139-1-3-1-1-1-1	102.2	fghi
IR99784-255-78-2-3-1-2	101.2	fghi
NR2179-82-2-4-1-1-1-1	100.6	fghi
IR13F402	99.4	fghi
NR2170-150-5-3-2-1-1-1	99.3	fghi
NR2168-65-1-1-1-1-1-1-1	98.8	fghi
IR98853-3-6-1-3-2	98.2	fghi
NR2169-10-1-1-6-2-1-3-1	98.2	fghi
IR102885-31-11-4-11	95.5	fghi
NR2169-10-4-1-2-1-1-1-1	95.4	fghi
NR2168-44-2-1-1-1-2-1-1	95.3	fghi
IR102885-2-74-17-2-3	94.8	fghi
NR2158-13-1-2-4-5	94.5	fghi
Anmol Mansuli	93.6	fghi
IR13F228	93.4	fghi
NR2157-144-1-3-1-1	92.3	fghi
IR95784-21-1-1-2	92.0	fghi
NR2170-5-5-1-6-1-1-3-1	89.4	ghi
HHZ3-SAL13-4-SAL1	88.3	hi
IR15L1735	86.8	i

Table 4: Treatment means with groups of PL

Treatment	Mean	groups
IR98853-3-6-1-3-2	32.0	a

IR15L1745	31.4	a
Radha-13	30.6	ab
IR16D1058	30.2	abc
NR2181-465-1-1-1-1-1-1-1	29.6	abcd
Pant-1	29.2	abcde
Sabitri	29.0	abcde
NR2168-44-2-1-1-1-2-1-1	28.1	abcde
NR2181-160-4-1-2-1-1-1-1	28.1	abcdef
Anmol Mansuli	27.8	abcdef
NR2169-10-1-1-6-2-1-3-1	27.4	abcdef
IR10281-10-227-1-2-9	27.2	abcdef
IR13F402	27.2	abcdef
Pant-2	27.1	abcdef
NR2169-10-4-1-2-1-1-1-1	27.0	abcdef
NR2170-150-5-3-2-1-1-1	26.9	abcdef
IR102774-31-21-2-4-7	26.8	abcdef
IR99784-255-78-2-3-1-2	26.6	abcdef
IR13F228	26.4	abcdef
NR2181-139-1-3-1-1-1-1	25.8	abcdef
IR102885-31-11-4-11	25.7	abcdef
NR2170-5-5-1-6-1-1-3-1	25.6	abcdef
NR2170-82-2-4-1-1-1-1	25.6	abcdef
IR 106529-20-40-3-2-B	25.4	abcdef
IR102885-2-74-17-2-3	25.4	abcdef
IR15L1735	25.4	bcdef
NR2182-58-1-3-1-1-1	25.3	bcdef
IR15D1031	25.2	bcdef
NR2175-66-2-3-1-1	25.1	bcdef
HHZ3-SAL13-4-SAL1	25.0	bcdef
NR2179-82-2-4-1-1-1-1	25.0	bcdef
NR2168-65-1-1-1-1-1-1-1	24.9	bcdef
IR103587-23-2-1-B	24.6	bcdef
NR2182-33-3-2-1-1-1	24.4	bcdef
IR98785-10-1-1-3	24.2	bcdef
Mansuli	24.0	bcdef
IR12F578	23.9	bcdef
NR2158-13-1-2-4-5	23.7	cdef
IR99739:2-1-1-2-1	23.6	def
IR95784-21-1-1-2	23.4	def
NR2182-22-1-3-1-1-1	23.2	ef
IR13F115	22.8	ef
NR2157-144-1-3-1-1	21.6	f

Table 5: Treatment means with groups of Tiller

Treatment	Mean	groups
Radha-13	395	a
NR2182-58-1-3-1-1-1	347	ab
NR2168-44-2-1-1-1-2-1-1	332	ab
IR12F578	326	ab
NR2169-10-4-1-2-1-1-1-1	324	ab
NR2179-82-2-4-1-1-1-1	324	ab
IR98785-10-1-1-3	320	ab
IR99784-255-78-2-3-1-2	317	ab
NR2170-82-2-4-1-1-1-1	316	ab
NR2181-465-1-1-1-1-1-1-1	307	ab
NR2168-65-1-1-1-1-1-1-1	306	ab
IR102885-2-74-17-2-3	301	ab
Pant-1	298	ab
NR2170-5-5-1-6-1-1-3-1	292	ab
NR2182-33-3-2-1-1-1	286	ab
NR2181-139-1-3-1-1-1-1	285	ab
IR13F228	282	ab
NR2170-150-5-3-2-1-1-1	278	ab
NR2158-13-1-2-4-5	268	ab
Mansuli	267	ab
NR2181-160-4-1-2-1-1-1-1	267	ab
NR2175-66-2-3-1-1	260	ab
IR10281-10-227-1-2-9	254	ab
IR102885-31-11-4-11	249	ab
NR2182-22-1-3-1-1-1	246	ab
IR 106529-20-40-3-2-B	245	ab
IR102774-31-21-2-4-7	245	ab
NR2169-10-1-1-6-2-1-3-1	243	ab
Sabitri	242	ab
NR2157-144-1-3-1-1	234	ab
IR103587-23-2-1-B	229	ab
Anmol Mansuli	224	ab
IR15L1745	220	ab
IR98853-3-6-1-3-2	220	ab
IR13F115	216	ab
IR16D1058	214	ab
Pant-2	212	b
IR15D1031	211	b
IR13F402	207	b
IR99739:2-1-1-2-1	203	b

IR95784-21-1-1-2	197	b
IR15L1735	187	b
HHZ3-SAL13-4-SAL1	180	b

Table 6: Treatment means with groups of GY/HA

Treatment	Mean	groups
NR2170-82-2-4-1-1-1-1	6.09	a
NR2182-58-1-3-1-1-1	5.68	ab
NR2158-13-1-2-4-5	5.39	abc
NR2181-160-4-1-2-1-1-1-1	5.35	abc
NR2157-144-1-3-1-1	5.32	abc
HHZ3-SAL13-4-SAL1	5.32	abc
NR2181-465-1-1-1-1-1-1-1	5.29	abcd
IR13F115	5.26	abcde
NR2168-65-1-1-1-1-1-1-1	5.10	abcdef
NR2175-66-2-3-1-1	4.89	abcdef
NR2168-44-2-1-1-1-2-1-1	4.89	abcdefg
IR102885-31-11-4-11	4.82	abcdefg
NR2182-22-1-3-1-1-1	4.76	abcdefg
NR2182-33-3-2-1-1-1	4.71	abcdefgh
IR98853-3-6-1-3-2	4.61	abcdefgh
Pant-1	4.43	abcdefghi
IR103587-23-2-1-B	4.35	abcdefghi
IR15L1745	4.31	bcdefghi
IR102774-31-21-2-4-7	4.26	bcdefghi
NR2170-150-5-3-2-1-1-1	4.13	bcdefghi
IR10281-10-227-1-2-9	4.12	bcdefghi
IR13F228	4.03	bcdefghij
Mansuli	3.87	cdefghij
NR2169-10-4-1-2-1-1-1-1	3.85	cdefghij
Sabitri	3.83	cdefghij
IR102885-2-74-17-2-3	3.78	cdefghij
Anmol Mansuli	3.76	cdefghij
IR 106529-20-40-3-2-B	3.53	dfghij
Pant-2	3.52	efghij
IR95784-21-1-1-2	3.51	fghij
Radha-13	3.47	fghij
IR99739:2-1-1-2-1	3.43	fghij
IR15L1735	3.38	fghijk
IR13F402	3.34	fghijk
NR2179-82-2-4-1-1-1-1	3.24	ghijk
IR12F578	3.22	ghijk

IR15D1031	3.14	ghijk
NR2170-5-5-1-6-1-1-3-1	2.97	hijk
IR16D1058	2.73	ijk
NR2169-10-1-1-6-2-1-3-1	2.28	jkl
IR99784-255-78-2-3-1-2	1.67	kl
IR98785-10-1-1-3	1.12	l
NR2181-139-1-3-1-1-1-1	0.96	l

Table 7: Treatment means with groups of TW

Treatment	Mean	groups
IR16D1058	27.5	a
Pant-2	26.8	ab
IR13F228	25.5	abc
NR2170-150-5-3-2-1-1-1	25.0	abcd
IR13F402	24.6	abcde
NR2168-44-2-1-1-1-2-1-1	24.1	abcdef
HHZ3-SAL13-4-SAL1	24.1	abcdef
Pant-1	23.8	abcdef
IR99739:2-1-1-2-1	23.8	abcdef
IR103587-23-2-1-B	23.5	abcdef
IR102885-31-11-4-11	23.5	abcdef
NR2158-13-1-2-4-5	23.0	abcdefg
NR2168-65-1-1-1-1-1-1	22.9	abcdefg
Anmol Mansuli	22.8	abcdefg
IR95784-21-1-1-2	22.1	abcdefgh
IR102885-2-74-17-2-3	21.9	abcdefgh
IR99784-255-78-2-3-1-2	21.9	abcdefgh
NR2170-5-5-1-6-1-1-3-1	21.9	abcdefgh
NR2170-82-2-4-1-1-1-1	21.9	abcdefgh
NR2181-139-1-3-1-1-1-1	21.2	abcdefgh
Mansuli	21.1	abcdefgh
Sabitri	21.1	abcdefgh
NR2182-58-1-3-1-1-1	21.1	abcdefgh
IR13F115	21.0	abcdefgh
IR15D1031	20.5	bcdefgh
NR2157-144-1-3-1-1	20.4	bcdefgh
NR2181-160-4-1-2-1-1-1-1	20.2	bcdefgh
NR2169-10-1-1-6-2-1-3-1	19.9	bcdefgh
NR2179-82-2-4-1-1-1-1	19.8	cdefgh
NR2181-465-1-1-1-1-1-1-1	19.5	cdefgh
IR102774-31-21-2-4-7	19.4	cdefgh
IR12F578	18.9	defgh

IR98853-3-6-1-3-2	18.7	defgh
NR2169-10-4-1-2-1-1-1-1	18.6	efgh
Radha-13	18.6	efgh
NR2182-22-1-3-1-1-1	18.4	efgh
IR98785-10-1-1-3	17.7	fgh
IR15L1745	17.7	fgh
NR2182-33-3-2-1-1-1	17.4	fgh
IR 106529-20-40-3-2-B	17.2	fgh
IR15L1735	16.4	gh
NR2175-66-2-3-1-1	15.6	h
IR10281-10-227-1-2-9	15.6	h

Table 8: Treatment means with groups of sterility

Treatment	Mean	groups
NR2181-139-1-3-1-1-1-1	94.70	a
IR98785-10-1-1-3	63.16	b
NR2170-150-5-3-2-1-1-1	39.42	c
IR99784-255-78-2-3-1-2	38.66	cd
IR99739:2-1-1-2-1	35.46	cde
IR102885-2-74-17-2-3	27.57	cdef
NR2168-44-2-1-1-1-2-1-1	27.22	cdefg
IR12F578	26.92	cdefgh
NR2169-10-1-1-6-2-1-3-1	26.39	cdefghi
IR13F115	25.89	cdefghij
IR 106529-20-40-3-2-B	25.00	cdefghijk
NR2170-5-5-1-6-1-1-3-1	25.00	defghijk
Radha-13	22.31	defghijkl
NR2168-65-1-1-1-1-1-1-1	21.10	efghijkl
Pant-2	20.78	efghijkl
NR2179-82-2-4-1-1-1-1	20.72	efghijkl
IR13F402	20.00	efghijkl
IR15L1745	18.75	fghijkl
Pant-1	18.08	fghijkl
Anmol Mansuli	17.94	fghijkl
NR2182-22-1-3-1-1-1	17.17	fghijkl
NR2169-10-4-1-2-1-1-1-1	17.13	fghijkl
IR102774-31-21-2-4-7	17.13	fghijkl
NR2181-465-1-1-1-1-1-1-1	16.50	fghijkl
Sabitri	16.30	fghijkl
IR13F228	15.12	fghijkl
IR103587-23-2-1-B	14.68	fghijkl
HHZ3-SAL13-4-SAL1	14.59	fghijkl

NR2170-82-2-4-1-1-1-1	14.51	fghijkl
NR2181-160-4-1-2-1-1-1-1	14.43	fghijkl
NR2182-58-1-3-1-1-1	13.78	fghijkl
IR102885-31-11-4-11	13.08	ghijkl
IR15D1031	13.02	ghijkl
IR16D1058	12.84	ghijkl
Mansuli	12.74	ghijkl
IR98853-3-6-1-3-2	12.69	ghijkl
NR2158-13-1-2-4-5	11.52	hijkl
IR10281-10-227-1-2-9	11.28	ijkl
NR2175-66-2-3-1-1	10.62	ijkl
NR2157-144-1-3-1-1	10.60	jkl
IR15L1735	9.09	kl
NR2182-33-3-2-1-1-1	8.90	kl
IR95784-21-1-1-2	8.19	l

Table 9: Treatment means with groups of grain/spike

Treatment	Mean	groups
IR15L1735	220.0	a
NR2157-144-1-3-1-1	191.4	ab
IR13F115	171.2	abc
Mansuli	167.8	abc
NR2175-66-2-3-1-1	160.0	bcd
Radha-13	158.4	bcd
IR15D1031	158.3	bcd
IR95784-21-1-1-2	154.8	bcd
NR2158-13-1-2-4-5	153.2	bcde
Pant-1	152.1	bcde
IR 106529-20-40-3-2-B	150.0	bcde
IR102774-31-21-2-4-7	150.0	bcde
IR98853-3-6-1-3-2	148.6	bcde
NR2181-465-1-1-1-1-1-1-1	148.2	bcdef
IR12F578	148.1	bcdef
NR2182-22-1-3-1-1-1	147.5	bcdefg
NR2182-58-1-3-1-1-1	141.4	bcdefgh
NR2179-82-2-4-1-1-1-1	140.0	bcdefgh
HHZ3-SAL13-4-SAL1	136.1	bcdefghi
Sabitri	134.2	cdefghi
NR2181-160-4-1-2-1-1-1-1	131.9	cdefghi
IR15L1745	130.0	cdefghi
NR2182-33-3-2-1-1-1	129.3	cdefghi
NR2170-82-2-4-1-1-1-1	128.4	cdefghi

NR2169-10-1-1-6-2-1-3-1	125.5	cdefghi
IR103587-23-2-1-B	125.0	cdefghi
IR16D1058	124.2	cdefghi
Pant-2	123.8	cdefghi
NR2168-44-2-1-1-1-2-1-1	121.7	cdefghij
NR2169-10-4-1-2-1-1-1-1	119.2	cdefghij
IR10281-10-227-1-2-9	118.0	cdefghij
NR2168-65-1-1-1-1-1-1-1	117.5	cdefghij
IR99739:2-1-1-2-1	116.5	cdefghij
Anmol Mansuli	109.8	defghij
IR102885-31-11-4-11	97.6	efghij
IR13F228	93.2	fghij
IR98785-10-1-1-3	91.0	ghij
NR2170-5-5-1-6-1-1-3-1	90.0	hij
IR102885-2-74-17-2-3	87.5	hij
NR2170-150-5-3-2-1-1-1	87.0	hij
IR99784-255-78-2-3-1-2	82.5	ij
IR13F402	66.0	j
NR2181-139-1-3-1-1-1-1	8.4	k

Table 10: Treatment means with groups of BM

Treatment	Mean	groups
IR15L1745	22.3	a
NR2182-33-3-2-1-1-1	20.6	ab
IR13F115	20.1	abc
NR2175-66-2-3-1-1	19.6	abc
Anmol Mansuli	19.5	abc
Pant-1	18.9	abc
IR98853-3-6-1-3-2	18.6	abc
IR 106529-20-40-3-2-B	18.6	abcd
IR103587-23-2-1-B	18.5	abcd
NR2181-465-1-1-1-1-1-1-1	18.3	abcd
Radha-13	18.2	abcd
NR2168-44-2-1-1-1-2-1-1	18.2	abcd
IR12F578	18.1	abcd
Mansuli	18.0	abcd
IR102885-2-74-17-2-3	17.9	abcde
NR2181-160-4-1-2-1-1-1-1	17.9	abcdef
IR10281-10-227-1-2-9	17.9	abcdef
Sabitri	17.7	abcdef
IR16D1058	17.6	abcdef
NR2181-139-1-3-1-1-1-1	17.6	abcdef

NR2169-10-4-1-2-1-1-1-1	17.4	abcdef
NR2170-150-5-3-2-1-1-1	17.2	abcdef
NR2158-13-1-2-4-5	17.1	abcdef
NR2170-5-5-1-6-1-1-3-1	16.9	abcdef
IR15D1031	16.8	bcdefg
IR102885-31-11-4-11	16.8	bcdefg
IR99739:2-1-1-2-1	16.4	bcdefg
IR98785-10-1-1-3	16.2	bcdefg
IR99784-255-78-2-3-1-2	16.2	bcdefg
IR13F228	16.0	bcdefg
IR102774-31-21-2-4-7	15.9	bcdefg
NR2168-65-1-1-1-1-1-1	15.7	bcdefg
IR15L1735	15.5	bcdefg
NR2170-82-2-4-1-1-1-1	15.0	bcdefg
NR2182-58-1-3-1-1-1	15.0	cdefg
NR2157-144-1-3-1-1	14.9	cdefg
NR2169-10-1-1-6-2-1-3-1	14.3	cdefg
NR2182-22-1-3-1-1-1	14.2	cdefg
IR13F402	12.9	defg
NR2179-82-2-4-1-1-1-1	12.9	defg
IR95784-21-1-1-2	12.2	efg
HHZ3-SAL13-4-SAL1	12.2	fg
Pant-2	11.0	g

Table 11: Treatment means with groups of HI

Treatment	Mean	groups
HHZ3-SAL13-4-SAL1	44.16	a
NR2170-82-2-4-1-1-1-1	40.50	ab
NR2182-58-1-3-1-1-1	38.46	abc
NR2157-144-1-3-1-1	35.82	abcd
NR2182-22-1-3-1-1-1	34.12	bcde
NR2168-65-1-1-1-1-1-1	32.51	bcdef
Pant-2	32.15	bcdef
NR2158-13-1-2-4-5	31.29	bcdefg
NR2181-160-4-1-2-1-1-1	29.69	cdefgh
NR2181-465-1-1-1-1-1-1	28.90	defghi
IR102885-31-11-4-11	28.77	defghij
IR95784-21-1-1-2	28.74	defghijk
NR2168-44-2-1-1-1-2-1-1	27.53	defghijkl
IR102774-31-21-2-4-7	26.78	defghijklm
IR13F115	26.11	defghijklm
IR13F402	25.98	efghijklm

NR2175-66-2-3-1-1	25.42	efghijklm
NR2179-82-2-4-1-1-1-1	25.17	efghijklmn
IR13F228	25.14	efghijklmn
IR98853-3-6-1-3-2	24.74	efghijklmn
Pant-1	24.40	fghijklmn
NR2170-150-5-3-2-1-1-1	23.76	fghijklmn
IR103587-23-2-1-B	23.54	fghijklmn
IR10281-10-227-1-2-9	23.07	fghijklmn
NR2182-33-3-2-1-1-1	22.89	fghijklmn
NR2169-10-4-1-2-1-1-1-1	22.02	ghijklmn
IR15L1735	21.76	ghijklmn
Sabitri	21.67	ghijklmn
Mansuli	21.43	hijklmn
IR102885-2-74-17-2-3	21.12	hijklmn
IR99739:2-1-1-2-1	20.96	hijklmn
IR15L1745	19.32	ijlmno
Anmol Mansuli	19.28	ijlmno
Radha-13	19.09	jlmno
IR 106529-20-40-3-2-B	18.98	klmno
IR15D1031	18.63	lmno
IR12F578	17.75	lmno
NR2170-5-5-1-6-1-1-3-1	17.55	mno
NR2169-10-1-1-6-2-1-3-1	15.96	nop
IR16D1058	15.44	nop
IR99784-255-78-2-3-1-2	10.29	opq
IR98785-10-1-1-3	6.91	pq
NR2181-139-1-3-1-1-1-1	5.45	q

Table 12: Treatment means with groups of DF

Treatment	Mean	groups
IR 14D 198	95.7	a
GSR 310	92.0	b
Radha-4	90.7	bc
IR 14L 363	89.7	bcd
1R 93810-2-1-1-1	89.3	cde
IR08L181	89.0	cde
IR 103587-22-2-3-B	88.7	cde
HHZ6-DT1-L11-L11	88.3	cdef
IR 14L 145	88.3	cdef
IR 14L 160	87.7	defg
IR95809-25-1-1-1	87.7	defgh
HHZ25-DT9-Y1-Y1	87.3	defgh

IR 14L 572	87.0	efgh
IR 96279-33-3-1-2	87.0	efgh
IR 14L 576	86.7	efgh
IR86515-19-1-2-1-1-1-1	85.7	fghi
Hardinath-3	85.3	ghi
IR 14L 158	85.3	hi
IR 103575-76-1-2-B	83.3	ij
IR 98846-2-1-4-3	83.3	ij
IR 103575-76-1-1-B	82.3	j
IR 15L 1717	82.0	j

Table 13: Treatment means with groups of DM

Treatment	Mean	groups
IR 14D 198	125	a
IR 14L 363	124	ab
GSR 310	122	abc
Radha-4	122	abc
IR 14L 160	122	bcd
1R 93810-2-1-1-1	121	bcd
IR 103587-22-2-3-B	120	cd
IR 14L 145	120	cde
HHZ6-DT1-L11-L11	120	cde
IR08L181	120	cde
IR95809-25-1-1-1	120	cde
IR 14L 572	119	cde
IR 96279-33-3-1-2	119	cde
HHZ25-DT9-Y1-Y1	119	de
IR86515-19-1-2-1-1-1-1	117	ef
IR 103575-76-1-1-B	116	fg
IR 14L 576	115	fg
Hardinath-3	115	fg
IR 14L 158	114	fg
IR 103575-76-1-2-B	114	fg
IR 15L 1717	113	g
IR 98846-2-1-4-3	113	g

Table 14: Treatment means with groups of pH

Treatment	Mean	groups
Hardinath-3	124	a
IR 14L 363	122	ab

IR 103575-76-1-1-B	118	abc
IR08L181	117	bcd
IR 14L 158	116	cde
IR 14L 160	116	cde
IR 14D 198	114	cdef
IR 14L 572	114	cdefg
1R 93810-2-1-1-1	113	cdefg
IR 96279-33-3-1-2	113	cdefg
IR95809-25-1-1-1	113	cdefgh
Radha-4	112	defghi
IR 103587-22-2-3-B	111	efghij
HHZ25-DT9-Y1-Y1	110	fghij
IR 15L 1717	110	fghij
IR 103575-76-1-2-B	109	fghij
IR 14L 145	109	ghijk
IR 14L 576	107	hijkl
GSR 310	106	ijkl
IR86515-19-1-2-1-1-1-1	106	jkl
HHZ6-DT1-L11-L11	103	kl
IR 98846-2-1-4-3	102	l

Table 15: Treatment means with groups of PL

Treatment	Mean	groups
IR 14L 572	36.5	a
IR95809-25-1-1-1	28.9	b
IR 96279-33-3-1-2	28.3	b
IR 103575-76-1-2-B	28.1	b
IR 14L 160	28.1	b
Hardinath-3	27.4	b
IR 103575-76-1-1-B	27.0	b
IR 14L 363	26.9	b
IR 14L 158	26.8	b
IR 98846-2-1-4-3	26.8	b
IR 14L 576	26.5	b
IR 103587-22-2-3-B	26.4	b
IR86515-19-1-2-1-1-1-1	26.3	b
IR 14L 145	26.2	b
IR 14D 198	26.1	b
1R 93810-2-1-1-1	25.8	b
IR08L181	25.5	b
HHZ25-DT9-Y1-Y1	25.3	b
GSR 310	25.0	b

Treatment		
HHZ6-DT1-L11-L11	24.8	b
Radha-4	24.4	b
IR 15L 1717	24.4	b

Table 16: Treatment means with groups of Tiller

Treatment	Mean	groups
IR 14D 198	315	a
IR 96279-33-3-1-2	269	ab
HHZ25-DT9-Y1-Y1	266	ab
Radha-4	265	abc
IR 103575-76-1-1-B	263	bc
IR 98846-2-1-4-3	262	bc
IR 14L 572	260	bc
GSR 310	249	bcd
IR 14L 158	246	bcd
IR 14L 160	246	bcd
IR 15L 1717	233	bcd
1R 93810-2-1-1-1	232	bcd
Hardinath-3	232	bcd
IR 14L 145	231	bcd
IR 14L 363	227	bcd
IR95809-25-1-1-1	227	bcd
IR 103575-76-1-2-B	224	bcd
IR86515-19-1-2-1-1-1-1	222	bcd
IR 14L 576	222	bcd
IR08L181	221	bcd
HHZ6-DT1-L11-L11	211	cd
IR 103587-22-2-3-B	204	d

Table 17: Treatment means with groups of GY/HA

Treatment	Mean	groups
HHZ6-DT1-L11-L11	6.79	a
Radha-4	6.50	ab
Hardinath-3	6.36	abc
IR95809-25-1-1-1	6.27	abc
IR 14L 572	6.20	abc
IR 15L 1717	6.17	abc
IR86515-19-1-2-1-1-1-1	6.05	abcd
IR08L181	6.05	abcd
IR 14L 160	5.98	bcd

HHZ25-DT9-Y1-Y1	5.97	bcd
GSR 310	5.95	bcd
IR 103587-22-2-3-B	5.88	bcde
IR 96279-33-3-1-2	5.71	cdef
IR 14L 363	5.67	cdef
IR 14L 576	5.65	cdef
IR 14L 145	5.58	cdef
IR 98846-2-1-4-3	5.42	def
IR 14L 158	5.41	def
IR 14D 198	5.33	def
IR 103575-76-1-1-B	5.17	ef
IR 103575-76-1-2-B	5.17	f
1R 93810-2-1-1-1	5.03	f

Table 18: Treatment means with groups of TW

Treatment	Mean	groups
IR 15L 1717	24.3	a
IR 96279-33-3-1-2	24.1	a
IR 14L 363	23.9	ab
IR 14L 572	23.9	ab
Radha-4	23.5	ab
1R 93810-2-1-1-1	23.2	abc
Hardinath-3	23.0	abc
IR 14L 145	22.5	abcd
IR 14L 158	22.2	abcde
IR08L181	21.9	abcdef
IR 14L 576	21.6	abcdefg
IR 14D 198	21.1	abcdefg
IR 14L 160	21.1	abcdefg
IR 103587-22-2-3-B	20.8	abcdefg
IR 98846-2-1-4-3	19.8	bcdefg
IR 103575-76-1-2-B	19.7	bcdefg
IR95809-25-1-1-1	18.9	cdefg
IR 103575-76-1-1-B	18.9	cdefg
IR86515-19-1-2-1-1-1-1	18.2	defg
HHZ6-DT1-L11-L11	18.0	efg
HHZ25-DT9-Y1-Y1	17.3	fg
GSR 310	17.0	g

Table 19: Treatment means with groups of sterility

Treatment	Mean	groups
Hardinath-3	26.67	a
IR 103587-22-2-3-B	20.49	ab
IR 96279-33-3-1-2	20.45	abc
IR 14L 158	20.32	abc
IR 14L 145	19.76	abcd
IR95809-25-1-1-1	19.09	abcd
IR 103575-76-1-1-B	18.86	abcd
IR 14L 572	18.62	abcd
IR86515-19-1-2-1-1-1-1	18.16	abcd
IR 14L 363	17.36	abcd
1R 93810-2-1-1-1	16.59	abcd
IR 14L 576	15.83	abcd
IR 14L 160	15.56	abcd
IR 103575-76-1-2-B	14.70	bcd
HHZ25-DT9-Y1-Y1	14.04	bcd
IR 98846-2-1-4-3	13.41	bcd
Radha-4	13.07	bcd
HHZ6-DT1-L11-L11	12.94	bcd
IR 15L 1717	11.34	bcd
GSR 310	10.69	bcd
IR 14D 198	10.55	cd
IR08L181	8.87	d

Table 20: Treatment means with groups of grain/spike

Treatment	Mean	groups
IR86515-19-1-2-1-1-1-1	181.7	a
GSR 310	179.1	ab
HHZ6-DT1-L11-L11	175.5	ab
HHZ25-DT9-Y1-Y1	167.4	abc
IR 14L 363	166.9	abc
IR 103587-22-2-3-B	160.1	abcd
IR08L181	154.9	abcde
IR95809-25-1-1-1	154.7	abcdef
IR 15L 1717	142.1	bcdefg
IR 14L 158	141.1	bcdefg
IR 103575-76-1-2-B	138.9	cdefgh
Hardinath-3	138.7	cdefgh
IR 14L 572	135.6	cdefgh
IR 14L 576	130.2	cdefghi
IR 14L 160	128.9	cdefghi
IR 98846-2-1-4-3	120.4	dfghi

IR 103575-76-1-1-B	120.1	efghi
IR 14L 145	115.7	fghi
Radha-4	108.2	ghi
IR 14D 198	105.6	ghi
IR 96279-33-3-1-2	100.0	hi
1R 93810-2-1-1-1	94.2	i

Table 21: Treatment means with groups of BM

Treatment	Mean	groups
IR 14L 145	24.3	a
IR 14L 160	23.5	ab
IR 103575-76-1-1-B	23.1	abc
HHZ25-DT9-Y1-Y1	23.1	abc
IR 14L 158	23.1	abc
Hardinath-3	22.8	abc
GSR 310	22.5	abc
IR08L181	22.5	abcd
IR 14L 576	22.4	abcd
IR95809-25-1-1-1	22.4	abcd
Radha-4	22.3	abcd
IR 103575-76-1-2-B	21.8	abcd
IR 14L 572	21.7	abcd
IR 14D 198	21.7	abcd
IR 98846-2-1-4-3	21.6	abcd
IR 15L 1717	21.5	abcd
1R 93810-2-1-1-1	21.5	abcd
HHZ6-DT1-L11-L11	21.2	abcd
IR 14L 363	20.8	bcd
IR 96279-33-3-1-2	20.6	bcd
IR86515-19-1-2-1-1-1-1	19.9	cd
IR 103587-22-2-3-B	18.9	d

Table 22: Treatment means with groups of dryM

Treatment	Mean	groups
IR 14L 145	12.15	a
IR 14L 160	11.75	ab
IR 103575-76-1-1-B	11.55	abc
HHZ25-DT9-Y1-Y1	11.55	abc
IR 14L 158	11.54	abc
Hardinath-3	11.42	abc

GSR 310	11.26	abc
IR08L181	11.24	abcd
IR 14L 576	11.21	abcd
IR95809-25-1-1-1	11.21	abcd
Radha-4	11.17	abcd
IR 103575-76-1-2-B	10.91	abcd
IR 14L 572	10.87	abcd
IR 14D 198	10.86	abcd
IR 98846-2-1-4-3	10.82	abcd
IR 15L 1717	10.76	abcd
1R 93810-2-1-1-1	10.73	abcd
HHZ6-DT1-L11-L11	10.62	abcd
IR 14L 363	10.39	bcd
IR 96279-33-3-1-2	10.28	bcd
IR86515-19-1-2-1-1-1-1	9.93	cd
IR 103587-22-2-3-B	9.45	d

Table 23: Treatment means with groups of HI

Treatment	Mean	groups
HHZ6-DT1-L11-L11	64.1	a
IR 103587-22-2-3-B	62.5	ab
IR86515-19-1-2-1-1-1-1	61.1	abc
Radha-4	58.2	abcd
IR 14L 572	57.7	abcd
IR 15L 1717	57.2	abcd
Hardinath-3	56.5	abcd
IR95809-25-1-1-1	56.0	abcde
IR 96279-33-3-1-2	55.8	abcde
IR 14L 363	55.1	bcde
IR08L181	54.4	bcdef
GSR 310	53.0	cdefg
HHZ25-DT9-Y1-Y1	51.7	defg
IR 14L 160	51.1	defg
IR 14L 576	50.4	defg
IR 98846-2-1-4-3	50.1	defg
IR 14D 198	49.3	defg
IR 103575-76-1-2-B	47.4	efg
IR 14L 158	47.0	fg
1R 93810-2-1-1-1	46.8	fg
IR 14L 145	46.1	fg
IR 103575-76-1-1-B	45.2	g

2 Agroclimatic variables

2.1 Calculations

1. Growing degree days (GDD)

$$GDD = \frac{T_{max} + T_{min}}{2} - T_b$$

Where,

T_b = Base temperature = $100°C$ for summer crops T_b = Base temperature = $80°C$ for winter crops

2. Helio-thermal unit (HTU)

$$HTU = GDD \times Duration\ of\ sunshine\ hours$$

3. Heat use efficiency (HUE)

$$HUE = \frac{Biomass\ yield\ (kg\ ha^{-1})}{GDD}$$

4. Helio-thermal unit use efficiency (HTUE)

$$HTUE = \frac{Biomass\ yield\ (kg\ ha^{-1})}{HTU}$$

5. Radiation use efficiency (RUE)

$$RUE = \frac{Biomass\ yield\ (kg\ ha^{-1})}{Radiation\ hours}$$

Notably, GDD can be calculated at both the heading and maturity periods.

2.1.1 Climate data import

2.1.2 Climate data filter

2.1.3 Climatic and phenotypic indices derived

2.2 Table of means

Table 24: Treatment means with groups of GDD DF

Treatment	Mean	groups
IR 14D 198	2013	a
GSR 310	1943	b

Radha-4	1918	bc
IR 14L 363	1899	bcd
1R 93810-2-1-1-1	1893	cde
IR08L181	1886	cde
IR 103587-22-2-3-B	1880	cde
HHZ6-DT1-L11-L11	1874	cdef
IR 14L 145	1873	cdef
IR 14L 160	1860	def
IR95809-25-1-1-1	1860	defg
HHZ25-DT9-Y1-Y1	1854	defg
IR 14L 572	1847	efg
IR 96279-33-3-1-2	1847	efg
IR 14L 576	1841	efg
IR86515-19-1-2-1-1-1-1	1821	fgh
IR 14L 158	1814	gh
Hardinath-3	1814	gh
IR 98846-2-1-4-3	1776	hi
IR 103575-76-1-2-B	1775	hi
IR 103575-76-1-1-B	1756	i
IR 15L 1717	1749	i

Table 25: Treatment means with groups of GDD DM

Treatment	Mean	groups
IR 14D 198	2540	a
IR 14L 363	2518	ab
GSR 310	2491	abc
Radha-4	2491	abc
IR 14L 160	2486	bcd
1R 93810-2-1-1-1	2475	bcd
IR 103587-22-2-3-B	2463	cd
IR 14L 145	2458	cde
HHZ6-DT1-L11-L11	2452	cde
IR95809-25-1-1-1	2452	cde
IR08L181	2452	cde
IR 14L 572	2440	cde
IR 96279-33-3-1-2	2440	cde
HHZ25-DT9-Y1-Y1	2435	de
IR86515-19-1-2-1-1-1-1	2406	ef
IR 103575-76-1-1-B	2383	fg
IR 14L 576	2377	fg
Hardinath-3	2371	fg
IR 14L 158	2359	fg

Treatment		
IR 103575-76-1-2-B	2353	fg
IR 15L 1717	2341	g
IR 98846-2-1-4-3	2335	g

Table 26: Treatment means with groups of Sunshine hrs DF

Treatment	Mean	groups
1R 93810-2-1-1-1	7.64	a
IR 103587-22-2-3-B	7.63	ab
HHZ6-DT1-L11-L11	7.63	ab
Radha-4	7.62	abc
IR 14L 160	7.62	abcd
IR95809-25-1-1-1	7.62	abcd
IR 14L 363	7.62	abcde
HHZ25-DT9-Y1-Y1	7.62	abcdef
IR 96279-33-3-1-2	7.61	abcdef
GSR 310	7.61	bcdef
IR 14L 572	7.61	bcdef
IR 14L 145	7.61	bcdef
IR 14L 576	7.60	bcdefg
IR08L181	7.60	bcdefgh
Hardinath-3	7.60	cdefgh
IR 14D 198	7.59	cdefgh
IR86515-19-1-2-1-1-1-1	7.59	defgh
IR 98846-2-1-4-3	7.59	efgh
IR 14L 158	7.59	fgh
IR 103575-76-1-1-B	7.58	gh
IR 15L 1717	7.57	h
IR 103575-76-1-2-B	7.57	h

Table 27: Treatment means with groups of Sunshine hrs DM

Treatment	Mean	groups
IR 14D 198	7.84	a
IR 14L 363	7.83	ab
GSR 310	7.82	abc
Radha-4	7.82	abc
IR 14L 160	7.81	bcd
1R 93810-2-1-1-1	7.81	bcd
IR 103587-22-2-3-B	7.81	bcd
IR 14L 145	7.80	cd
HHZ6-DT1-L11-L11	7.80	cde

IR95809-25-1-1-1	7.80	cde
IR08L181	7.80	cde
IR 14L 572	7.79	cde
IR 96279-33-3-1-2	7.79	cde
HHZ25-DT9-Y1-Y1	7.79	de
IR86515-19-1-2-1-1-1-1	7.78	ef
IR 103575-76-1-1-B	7.77	fg
IR 14L 576	7.76	fg
Hardinath-3	7.76	fg
IR 14L 158	7.76	fg
IR 103575-76-1-2-B	7.75	g
IR 15L 1717	7.75	g
IR 98846-2-1-4-3	7.75	g

Table 28: Treatment means with groups of HTU DF

Treatment	Mean	groups
IR 14D 198	15284	a
GSR 310	14793	b
Radha-4	14627	bc
IR 14L 363	14465	bcd
1R 93810-2-1-1-1	14464	bcde
IR 103587-22-2-3-B	14347	cdef
IR08L181	14335	cdef
HHZ6-DT1-L11-L11	14295	cdef
IR 14L 145	14251	cdef
IR 14L 160	14178	defg
IR95809-25-1-1-1	14178	defgh
HHZ25-DT9-Y1-Y1	14120	defghi
IR 96279-33-3-1-2	14066	efghij
IR 14L 572	14061	fghij
IR 14L 576	13999	fghij
IR86515-19-1-2-1-1-1-1	13828	gij
Hardinath-3	13784	hjk
IR 14L 158	13766	jk
IR 98846-2-1-4-3	13475	kl
IR 103575-76-1-2-B	13443	kl
IR 103575-76-1-1-B	13302	l
IR 15L 1717	13251	l

Table 29: Treatment means with groups of HTU DM

Treatment	Mean	groups
IR 14D 198	19904	a
IR 14L 363	19708	ab
GSR 310	19475	abc
Radha-4	19470	abc
IR 14L 160	19423	bcd
1R 93810-2-1-1-1	19331	bcd
IR 103587-22-2-3-B	19230	cd
IR 14L 145	19177	cde
HHZ6-DT1-L11-L11	19125	cde
IR95809-25-1-1-1	19125	cde
IR08L181	19116	cde
IR 14L 572	19022	cde
IR 96279-33-3-1-2	19021	cde
HHZ25-DT9-Y1-Y1	18969	de
IR86515-19-1-2-1-1-1-1	18712	ef
IR 103575-76-1-1-B	18503	fg
IR 14L 576	18451	fg
Hardinath-3	18399	fg
IR 14L 158	18298	fg
IR 103575-76-1-2-B	18245	fg
IR 15L 1717	18143	g
IR 98846-2-1-4-3	18085	g

Table 30: Treatment means with groups of HUI

Treatment	Mean	groups
HHZ6-DT1-L11-L11	0	a
Hardinath-3	0	ab
IR 15L 1717	0	abc
Radha-4	0	abcd
IR95809-25-1-1-1	0	abcde
IR 14L 572	0	abcde
IR86515-19-1-2-1-1-1-1	0	abcdef
IR08L181	0	abcdef
HHZ25-DT9-Y1-Y1	0	bcdef
IR 14L 160	0	bcdefg
GSR 310	0	cdefg
IR 103587-22-2-3-B	0	cdefg
IR 14L 576	0	cdefgh
IR 96279-33-3-1-2	0	defgh
IR 98846-2-1-4-3	0	defgh
IR 14L 158	0	defgh

IR 14L 145	0	defgh
IR 14L 363	0	efgh
IR 103575-76-1-2-B	0	fgh
IR 103575-76-1-1-B	0	fgh
IR 14D 198	0	gh
1R 93810-2-1-1-1	0	h

Table 31: Treatment means with groups of HTUE

Treatment	Mean	groups
HHZ6-DT1-L11-L11	0	a
Hardinath-3	0	ab
IR 15L 1717	0	abc
Radha-4	0	abcd
IR95809-25-1-1-1	0	abcde
IR 14L 572	0	abcde
IR86515-19-1-2-1-1-1-1	0	abcdef
IR08L181	0	abcdef
HHZ25-DT9-Y1-Y1	0	bcdef
IR 14L 160	0	bcdefg
IR 14L 576	0	bcdefg
IR 103587-22-2-3-B	0	bcdefg
GSR 310	0	cdefg
IR 96279-33-3-1-2	0	defgh
IR 98846-2-1-4-3	0	defgh
IR 14L 158	0	defgh
IR 14L 145	0	defgh
IR 14L 363	0	efgh
IR 103575-76-1-2-B	0	efgh
IR 103575-76-1-1-B	0	fgh
IR 14D 198	0	gh
1R 93810-2-1-1-1	0	h

Table 32: Treatment means with groups of RUE

Treatment	Mean	groups
HHZ6-DT1-L11-L11	0.87	a
Radha-4	0.83	ab
Hardinath-3	0.82	abc
IR95809-25-1-1-1	0.80	abcd
IR 15L 1717	0.80	abcd
IR 14L 572	0.80	abcde

IR86515-19-1-2-1-1-1-1	0.78	abcdef
IR08L181	0.78	abcdef
HHZ25-DT9-Y1-Y1	0.77	bcdef
IR 14L 160	0.77	bcdefg
GSR 310	0.76	bcdefg
IR 103587-22-2-3-B	0.75	bcdefg
IR 96279-33-3-1-2	0.73	bcdefgh
IR 14L 576	0.73	cdefgh
IR 14L 363	0.72	cdefgh
IR 14L 145	0.72	defgh
IR 98846-2-1-4-3	0.70	efgh
IR 14L 158	0.70	fgh
IR 14D 198	0.68	fgh
IR 103575-76-1-2-B	0.67	gh
IR 103575-76-1-1-B	0.67	gh
1R 93810-2-1-1-1	0.64	h

Table 33: Treatment means with groups of GDD DF

Treatment	Mean	groups
IR99784-255-78-2-3-1-2	2612	a
IR12F578	2515	ab
IR98785-10-1-1-3	2514	ab
NR2170-150-5-3-2-1-1-1	2498	ab
IR13F115	2490	abc
NR2169-10-4-1-2-1-1-1-1	2450	abc
IR99739:2-1-1-2-1	2417	bcd
NR2170-5-5-1-6-1-1-3-1	2401	bcde
NR2179-82-2-4-1-1-1-1	2401	bcde
Sabitri	2392	bcde
NR2168-65-1-1-1-1-1-1-1	2377	bcdef
IR15L1745	2368	bcdefg
NR2181-139-1-3-1-1-1-1	2368	bcdefg
NR2181-160-4-1-2-1-1-1-1	2368	bcdefg
Radha-13	2368	bcdefg
NR2158-13-1-2-4-5	2360	bcdefgh
NR2181-465-1-1-1-1-1-1-1	2360	bcdefgh
NR2182-22-1-3-1-1-1	2352	bcdefgh
IR102774-31-21-2-4-7	2352	bcdefgh
IR98853-3-6-1-3-2	2352	bcdefgh
NR2169-10-1-1-6-2-1-3-1	2336	bcdefghi
Mansuli	2336	bcdefghi
NR2182-58-1-3-1-1-1	2336	bcdefghi

NR2170-82-2-4-1-1-1-1	2328	cdefghij
IR 106529-20-40-3-2-B	2320	cdefghij
IR15D1031	2320	cdefghij
NR2175-66-2-3-1-1	2312	cdefghij
Pant-1	2260	defghij
IR103587-23-2-1-B	2253	defghij
IR15L1735	2218	efghijk
NR2182-33-3-2-1-1-1	2209	fghijkl
NR2168-44-2-1-1-1-2-1-1	2204	ghijkl
Anmol Mansuli	2183	hijklm
IR10281-10-227-1-2-9	2165	ijklm
IR16D1058	2147	jklm
NR2157-144-1-3-1-1	2147	jklm
Pant-2	2064	klmn
IR102885-31-11-4-11	2036	lmn
IR13F402	2036	lmn
IR102885-2-74-17-2-3	2027	lmn
IR13F228	2018	mn
HHZ3-SAL13-4-SAL1	1908	n
IR95784-21-1-1-2	1908	n

Table 34: Treatment means with groups of GDD DM

Treatment	Mean	groups
IR99784-255-78-2-3-1-2	2990	a
IR12F578	2956	ab
IR98785-10-1-1-3	2950	ab
NR2157-144-1-3-1-1	2947	ab
NR2169-10-4-1-2-1-1-1-1	2937	ab
IR13F115	2932	abc
NR2181-160-4-1-2-1-1-1-1	2917	abcd
IR15L1745	2911	abcde
NR2170-150-5-3-2-1-1-1	2899	abcdef
Sabitri	2893	abcdef
NR2181-465-1-1-1-1-1-1-1	2887	abcdefg
NR2158-13-1-2-4-5	2882	abcdefg
IR15D1031	2875	abcdefg
IR98853-3-6-1-3-2	2875	abcdefg
Radha-13	2875	abcdefg
IR99739:2-1-1-2-1	2864	abcdefg
NR2168-65-1-1-1-1-1-1-1	2864	abcdefg
NR2170-5-5-1-6-1-1-3-1	2864	abcdefg
NR2179-82-2-4-1-1-1-1	2864	abcdefg

NR2175-66-2-3-1-1	2863	abcdefg
IR 106529-20-40-3-2-B	2851	abcdefg
IR102774-31-21-2-4-7	2851	abcdefg
NR2169-10-1-1-6-2-1-3-1	2851	abcdefg
NR2182-58-1-3-1-1-1	2851	abcdefg
Mansuli	2851	abcdefgh
NR2182-22-1-3-1-1-1	2849	abcdefgh
NR2181-139-1-3-1-1-1-1	2838	abcdefgh
NR2170-82-2-4-1-1-1-1	2837	abcdefgh
IR103587-23-2-1-B	2823	abcdefgh
Pant-1	2809	abcdefghi
IR15L1735	2794	bcdefghij
NR2168-44-2-1-1-1-2-1-1	2742	cdefghijk
NR2182-33-3-2-1-1-1	2737	cefghijk
Anmol Mansuli	2723	defghijk
IR10281-10-227-1-2-9	2710	fghijk
IR16D1058	2695	ghijk
Pant-2	2655	hijkl
IR102885-31-11-4-11	2639	ijkl
IR13F402	2630	ijkl
IR102885-2-74-17-2-3	2612	jkl
IR13F228	2595	kl
IR95784-21-1-1-2	2484	l
HHZ3-SAL13-4-SAL1	2475	l

Table 35: Treatment means with groups of Sunshine hrs DF

Treatment	Mean	groups
IR99784-255-78-2-3-1-2	7.79	a
IR98785-10-1-1-3	7.76	ab
IR12F578	7.76	ab
NR2170-150-5-3-2-1-1-1	7.76	ab
IR13F115	7.75	ab
NR2169-10-4-1-2-1-1-1-1	7.74	abc
IR99739:2-1-1-2-1	7.73	abc
NR2170-5-5-1-6-1-1-3-1	7.72	abc
NR2179-82-2-4-1-1-1-1	7.72	abc
Sabitri	7.72	abc
NR2168-65-1-1-1-1-1-1-1	7.71	abcd
IR15L1745	7.71	abcde
NR2181-139-1-3-1-1-1-1	7.71	abcdef
NR2181-160-4-1-2-1-1-1-1	7.71	abcdef
Radha-13	7.71	abcdef

NR2158-13-1-2-4-5	7.71	bcdefg
NR2181-465-1-1-1-1-1-1-1	7.71	bcdefgh
IR102774-31-21-2-4-7	7.70	bcdefgh
IR98853-3-6-1-3-2	7.70	bcdefgh
NR2182-22-1-3-1-1-1	7.70	bcdefgh
NR2169-10-1-1-6-2-1-3-1	7.69	bcdefghi
Mansuli	7.69	bcdefghi
NR2182-58-1-3-1-1-1	7.69	bcdefghi
NR2170-82-2-4-1-1-1-1	7.69	bcdefghi
IR 106529-20-40-3-2-B	7.68	bcdefghi
IR15D1031	7.68	bcdefghij
NR2175-66-2-3-1-1	7.68	bcdefghijk
IR103587-23-2-1-B	7.65	cdefghijk
Pant-1	7.65	cdefghijk
IR15L1735	7.63	dfghijk
NR2182-33-3-2-1-1-1	7.63	dghijk
NR2168-44-2-1-1-1-2-1-1	7.63	ehijk
Anmol Mansuli	7.61	ijkl
IR10281-10-227-1-2-9	7.60	jklm
IR16D1058	7.60	klmn
NR2157-144-1-3-1-1	7.60	klmno
Pant-2	7.54	lmnop
IR13F402	7.52	mop
IR102885-31-11-4-11	7.52	nop
IR102885-2-74-17-2-3	7.51	p
HHZ3-SAL13-4-SAL1	7.51	p
IR95784-21-1-1-2	7.51	p
IR13F228	7.50	p

Table 36: Treatment means with groups of Sunshine hrs DM

Treatment	Mean	groups
NR2182-33-3-2-1-1-1	7.81	a
Anmol Mansuli	7.80	ab
NR2168-44-2-1-1-1-2-1-1	7.80	ab
IR10281-10-227-1-2-9	7.80	ab
IR15L1735	7.80	ab
IR16D1058	7.80	ab
IR102885-31-11-4-11	7.80	ab
Pant-1	7.80	ab
Pant-2	7.80	ab
IR13F402	7.79	ab
IR103587-23-2-1-B	7.79	ab

IR102885-2-74-17-2-3	7.79	ab
NR2170-82-2-4-1-1-1-1	7.79	ab
NR2181-139-1-3-1-1-1-1	7.79	ab
IR13F228	7.79	ab
IR 106529-20-40-3-2-B	7.79	ab
IR102774-31-21-2-4-7	7.79	ab
NR2169-10-1-1-6-2-1-3-1	7.79	ab
NR2182-58-1-3-1-1-1	7.79	ab
NR2182-22-1-3-1-1-1	7.79	ab
Mansuli	7.79	ab
IR99739:2-1-1-2-1	7.78	ab
NR2168-65-1-1-1-1-1-1-1	7.78	ab
NR2170-5-5-1-6-1-1-3-1	7.78	ab
NR2179-82-2-4-1-1-1-1	7.78	ab
NR2175-66-2-3-1-1	7.78	ab
IR15D1031	7.78	ab
IR98853-3-6-1-3-2	7.78	ab
Radha-13	7.78	ab
NR2158-13-1-2-4-5	7.78	ab
NR2181-465-1-1-1-1-1-1-1	7.77	ab
Sabitri	7.77	ab
NR2170-150-5-3-2-1-1-1	7.77	ab
IR15L1745	7.76	ab
NR2181-160-4-1-2-1-1-1-1	7.76	ab
IR13F115	7.76	ab
NR2169-10-4-1-2-1-1-1-1	7.75	ab
IR95784-21-1-1-2	7.75	ab
HHZ3-SAL13-4-SAL1	7.75	ab
IR98785-10-1-1-3	7.75	ab
IR12F578	7.74	ab
IR99784-255-78-2-3-1-2	7.73	ab
NR2157-144-1-3-1-1	7.73	b

Table 37: Treatment means with groups of HTU DF

Treatment	Mean	groups
IR99784-255-78-2-3-1-2	20353	a
IR12F578	19519	ab
IR98785-10-1-1-3	19513	ab
NR2170-150-5-3-2-1-1-1	19380	abc
IR13F115	19305	abcd
NR2169-10-4-1-2-1-1-1-1	18965	abcd
IR99739:2-1-1-2-1	18687	bcde

NR2170-5-5-1-6-1-1-3-1	18543	bcde
NR2179-82-2-4-1-1-1-1	18543	bcde
Sabitri	18471	bcdef
NR2168-65-1-1-1-1-1-1-1	18332	bcdefg
IR15L1745	18262	bcdefgh
NR2181-139-1-3-1-1-1-1	18262	bcdefgh
NR2181-160-4-1-2-1-1-1-1	18262	bcdefgh
Radha-13	18262	bcdefgh
NR2158-13-1-2-4-5	18188	bcdefghi
NR2181-465-1-1-1-1-1-1	18188	bcdefghij
IR102774-31-21-2-4-7	18122	bcdefghij
IR98853-3-6-1-3-2	18122	bcdefghij
NR2182-22-1-3-1-1-1	18120	bcdefghij
NR2169-10-1-1-6-2-1-3-1	17978	bcdefghijk
Mansuli	17974	bcdefghijk
NR2182-58-1-3-1-1-1	17974	bcdefghijk
NR2170-82-2-4-1-1-1-1	17904	bdefghijkl
IR 106529-20-40-3-2-B	17825	cdefghijklm
IR15D1031	17825	defghijklm
NR2175-66-2-3-1-1	17754	defghijklm
Pant-1	17297	efghijklm
IR103587-23-2-1-B	17243	efghijklm
IR15L1735	16920	fghijklmn
NR2182-33-3-2-1-1-1	16851	ghijklmno
NR2168-44-2-1-1-1-2-1-1	16816	hjklmnop
Anmol Mansuli	16617	ijklmnopq
IR10281-10-227-1-2-9	16458	klmnopq
IR16D1058	16317	lmnopq
NR2157-144-1-3-1-1	16317	mnopq
Pant-2	15561	nopqr
IR13F402	15307	opqr
IR102885-31-11-4-11	15305	opqr
IR102885-2-74-17-2-3	15220	pqr
IR13F228	15133	qr
HHZ3-SAL13-4-SAL1	14321	r
IR95784-21-1-1-2	14321	r

Table 38: Treatment means with groups of HTU DM

Treatment	Mean	groups
IR99784-255-78-2-3-1-2	23118	a
IR12F578	22894	ab
IR98785-10-1-1-3	22850	ab

NR2169-10-4-1-2-1-1-1-1	22761	ab
NR2157-144-1-3-1-1	22753	ab
IR13F115	22743	ab
NR2181-160-4-1-2-1-1-1-1	22634	abc
IR15L1745	22595	abcd
NR2170-150-5-3-2-1-1-1	22520	abcde
Sabitri	22482	abcde
NR2181-465-1-1-1-1-1-1-1	22446	abcde
NR2158-13-1-2-4-5	22408	abcdef
IR15D1031	22368	abcdef
IR98853-3-6-1-3-2	22368	abcdef
Radha-13	22368	abcdef
IR99739:2-1-1-2-1	22292	abcdef
NR2168-65-1-1-1-1-1-1-1	22292	abcdefg
NR2170-5-5-1-6-1-1-3-1	22292	abcdefg
NR2179-82-2-4-1-1-1-1	22292	abcdefg
NR2175-66-2-3-1-1	22286	abcdefg
IR 106529-20-40-3-2-B	22203	abcdefg
IR102774-31-21-2-4-7	22203	abcdefg
NR2169-10-1-1-6-2-1-3-1	22203	abcdefg
NR2182-58-1-3-1-1-1	22203	abcdefg
Mansuli	22197	abcdefg
NR2182-22-1-3-1-1-1	22183	abcdefg
NR2181-139-1-3-1-1-1-1	22103	abcdefg
NR2170-82-2-4-1-1-1-1	22101	abcdefg
IR103587-23-2-1-B	21998	abcdefg
Pant-1	21896	abcdefg
IR15L1735	21797	bcdefgh
NR2168-44-2-1-1-1-2-1-1	21397	cdefghi
NR2182-33-3-2-1-1-1	21362	defghi
Anmol Mansuli	21251	efghi
IR10281-10-227-1-2-9	21143	fghi
IR16D1058	21022	ghi
Pant-2	20695	hi
IR102885-31-11-4-11	20571	hi
IR13F402	20500	i
IR102885-2-74-17-2-3	20353	ij
IR13F228	20211	ij
IR95784-21-1-1-2	19243	j
HHZ3-SAL13-4-SAL1	19174	j

Table 39: Treatment means with groups of HUI

Treatment	Mean	groups
NR2170-82-2-4-1-1-1-1	0	a
HHZ3-SAL13-4-SAL1	0	a
NR2182-58-1-3-1-1-1	0	ab
NR2158-13-1-2-4-5	0	abc
NR2181-465-1-1-1-1-1-1-1	0	abcd
NR2181-160-4-1-2-1-1-1-1	0	abcd
IR102885-31-11-4-11	0	abcde
IR13F115	0	abcde
NR2157-144-1-3-1-1	0	abcdef
NR2168-44-2-1-1-1-2-1-1	0	abcdefg
NR2168-65-1-1-1-1-1-1-1	0	abcdefg
NR2182-33-3-2-1-1-1	0	abcdefgh
NR2175-66-2-3-1-1	0	abcdefghi
NR2182-22-1-3-1-1-1	0	abcdefghij
IR98853-3-6-1-3-2	0	abcdefghijk
Pant-1	0	abcdefghijkl
IR13F228	0	abcdefghijkl
IR103587-23-2-1-B	0	abcdefghijkl
IR10281-10-227-1-2-9	0	abcdefghijkl
IR102774-31-21-2-4-7	0	bcdefghijkl
IR15L1745	0	bcdefghijkl
IR102885-2-74-17-2-3	0	bcdefghijkl
NR2170-150-5-3-2-1-1-1	0	bcdefghijkl
IR95784-21-1-1-2	0	bcdefghijklm
Anmol Mansuli	0	bcdefghijklm
Mansuli	0	cdefghijklm
Pant-2	0	cdefghijklm
Sabitri	0	cdefghijklm
NR2169-10-4-1-2-1-1-1-1	0	cdefghijklm
IR13F402	0	cdefghijklm
IR 106529-20-40-3-2-B	0	defghijklm
IR15L1735	0	dfghijklm
Radha-13	0	efghijklm
IR99739:2-1-1-2-1	0	ghijklm
NR2179-82-2-4-1-1-1-1	0	hjklmn
IR15D1031	0	hjklmn
IR12F578	0	ijklmn
NR2170-5-5-1-6-1-1-3-1	0	klmn
IR16D1058	0	lmn
NR2169-10-1-1-6-2-1-3-1	0	mno
IR99784-255-78-2-3-1-2	0	no
IR98785-10-1-1-3	0	o

NR2181-139-1-3-1-1-1-1	0	o

Table 40: Treatment means with groups of HTUE

Treatment	Mean	groups
HHZ3-SAL13-4-SAL1	0	a
NR2170-82-2-4-1-1-1-1	0	ab
NR2182-58-1-3-1-1-1	0	abc
NR2158-13-1-2-4-5	0	abcd
NR2181-160-4-1-2-1-1-1-1	0	abcde
NR2181-465-1-1-1-1-1-1-1	0	abcde
IR102885-31-11-4-11	0	abcdef
NR2157-144-1-3-1-1	0	abcdefg
IR13F115	0	abcdefgh
NR2168-65-1-1-1-1-1-1-1	0	abcdefghi
NR2168-44-2-1-1-1-2-1-1	0	abcdefghi
NR2182-33-3-2-1-1-1	0	abcdefghij
NR2175-66-2-3-1-1	0	abcdefghij
NR2182-22-1-3-1-1-1	0	abcdefghij
IR98853-3-6-1-3-2	0	abcdefghijk
Pant-1	0	abcdefghijkl
IR13F228	0	abcdefghijkl
IR103587-23-2-1-B	0	bcdefghijkl
IR10281-10-227-1-2-9	0	cdefghijkl
IR102774-31-21-2-4-7	0	cdefghijkl
IR15L1745	0	cdefghijkl
IR102885-2-74-17-2-3	0	cdefghijkl
NR2170-150-5-3-2-1-1-1	0	cdefghijkl
IR95784-21-1-1-2	0	cdefghijkl
Anmol Mansuli	0	cdefghijklm
Mansuli	0	defghijklm
Sabitri	0	defghijklm
Pant-2	0	defghijklm
NR2169-10-4-1-2-1-1-1-1	0	defghijklm
IR13F402	0	defghijklm
IR 106529-20-40-3-2-B	0	efghijklm
Radha-13	0	fghijklm
IR15L1735	0	gijklm
IR99739:2-1-1-2-1	0	hijklm
NR2179-82-2-4-1-1-1-1	0	jklmn
IR12F578	0	jklmn
IR15D1031	0	jklmn
NR2170-5-5-1-6-1-1-3-1	0	klmn

IR16D1058	0	lmn
NR2169-10-1-1-6-2-1-3-1	0	mno
IR99784-255-78-2-3-1-2	0	no
IR98785-10-1-1-3	0	o
NR2181-139-1-3-1-1-1-1	0	o

Table 41: Treatment means with groups of RUE

Treatment	Mean	groups
NR2170-82-2-4-1-1-1-1	0.78	a
NR2182-58-1-3-1-1-1	0.73	ab
NR2158-13-1-2-4-5	0.69	abc
NR2157-144-1-3-1-1	0.69	abc
NR2181-160-4-1-2-1-1-1-1	0.69	abc
HHZ3-SAL13-4-SAL1	0.69	abc
NR2181-465-1-1-1-1-1-1-1	0.68	abcd
IR13F115	0.68	abcde
NR2168-65-1-1-1-1-1-1-1	0.66	abcdef
NR2175-66-2-3-1-1	0.63	abcdef
NR2168-44-2-1-1-1-2-1-1	0.63	abcdefg
IR102885-31-11-4-11	0.62	abcdefg
NR2182-22-1-3-1-1-1	0.61	abcdefg
NR2182-33-3-2-1-1-1	0.60	abcdefgh
IR98853-3-6-1-3-2	0.59	abcdefgh
Pant-1	0.57	abcdefghi
IR103587-23-2-1-B	0.56	abcdefghi
IR15L1745	0.55	abcdefghi
IR102774-31-21-2-4-7	0.55	bcdefghi
NR2170-150-5-3-2-1-1-1	0.53	bcdefghi
IR10281-10-227-1-2-9	0.53	bcdefghi
IR13F228	0.52	bcdefghij
Mansuli	0.50	cdefghij
NR2169-10-4-1-2-1-1-1-1	0.50	cdefghij
Sabitri	0.49	cdefghij
IR102885-2-74-17-2-3	0.49	cdefghij
Anmol Mansuli	0.48	cdefghij
IR 106529-20-40-3-2-B	0.45	dfghij
IR95784-21-1-1-2	0.45	dfghij
Pant-2	0.45	efghij
Radha-13	0.45	fghij
IR99739:2-1-1-2-1	0.44	fghij
IR15L1735	0.43	fghijk
IR13F402	0.43	fghijk

NR2179-82-2-4-1-1-1-1	0.42	ghijk
IR12F578	0.42	ghijk
IR15D1031	0.40	ghijk
NR2170-5-5-1-6-1-1-3-1	0.38	hijk
IR16D1058	0.35	ijk
NR2169-10-1-1-6-2-1-3-1	0.29	jkl
IR99784-255-78-2-3-1-2	0.22	kl
IR98785-10-1-1-3	0.14	l
NR2181-139-1-3-1-1-1-1	0.12	l

2.3   Correlation matrix of numeric variables

Table 42: Pearson correlation coefficients of normal season phenotypic and agroclimatic traits

	DF	DM	pH	PL	Tier	GYHA	TW	stty	grke	BM	HI	GDDF	GDDM	SuDF	SuDM	HTDF	HTDM	HUI	HTUE
DF																			
DM	0.85****																		
pH	0.20	0.17																	
PL	0.00	-0.09	0.12																
Tiller	0.26*	0.19	0.05	0.14															
GY/HA	-0.21	-0.03	-0.08	-0.03	0.03														
TW	-0.32**	-0.40***	-0.18	0.06	-0.04	0.01													
sterility	0.38**	0.19	-0.13	-0.04	0.11	-0.58****	0.06												
grain/spike	-0.03	0.22	0.17	-0.10	-0.11	0.49****	-0.30*	-0.64****											
BM	0.33**	0.35**	0.20	0.08	0.07	0.10	-0.33**	0.06	0.01										
HI	-0.40***	-0.27*	-0.19	-0.09	-0.04	0.83****	0.20	-0.54****	0.42***	-0.46***									
GDD_DF	1.00****	0.86****	0.21	0.01	0.27*	-0.20	-0.33**	0.37**	-0.02	0.34**	-0.39**								
GDD_DM	0.87****	1.00****	0.19	-0.07	0.21	-0.03	-0.40***	0.19	0.22	0.36**	-0.27*	0.87****							
Sunshine_hrs_DF	0.98****	0.85****	0.23	0.02	0.26*	-0.14	-0.36**	0.33**	0.05	0.33**	-0.34**	0.98****	0.87****						
Sunshine_hrs_DM	-0.26*	-0.51****	0.17	0.29*	0.15	0.02	0.17	-0.09	-0.18	0.02	0.01	-0.25*	-0.45***	-0.25*					
HTU_DF	1.00****	0.86****	0.21	0.01	0.27*	-0.19	-0.33**	0.37**	-0.01	0.33**	-0.39**	1.00****	0.87****	0.99****	-0.25*				
HTU_DM	0.88****	0.99****	0.21	-0.05	0.23	-0.03	-0.40***	0.19	0.21	0.38**	-0.28*	0.88****	1.00****	0.88****	-0.39**	0.88****			
HUI	-0.34**	-0.20	-0.12	-0.02	-0.01	0.98****	0.08	-0.59****	0.44***	0.03	0.86****	-0.33**	-0.20	-0.28*	0.08	-0.33**	-0.20		
HTUE	-0.34**	-0.20	-0.12	-0.03	-0.01	0.98****	0.08	-0.59****	0.44***	0.03	0.86****	-0.33**	-0.20	-0.28*	0.07	-0.33**	-0.20	1.00****	
RUE	-0.20	-0.03	-0.08	-0.04	0.02	1.00****	0.01	-0.58****	0.49****	0.10	0.83****	-0.19	-0.03	-0.14	0.01	-0.19	-0.03	0.98****	0.98****

Note:
p < .0001: **** ; p < .001: *** ; p < .01: ** ; p < .05: *

Table 43: Pearson correlation coefficients of early season phenotypic and agroclimatic traits

	DF	DM	pH	PL	Tier	GYHA	TW	stty	grke	BM	dryM	HI	GDDF	GDDM	SuDF	SuDM	HTDF	HTDM	HUI	HTUE
DF																				
DM	0.87****																			
pH	0.08	0.17																		
PL	-0.19	-0.10	0.16																	
Tiller	0.23	0.16	0.07	-0.08																
GY/HA	0.12	0.11	-0.03	-0.02	-0.02															
TW	0.08	0.06	0.32**	0.08	-0.04	-0.06														
sterility	-0.32**	-0.19	0.25*	0.42***	-0.21	-0.10	0.07													
grain/spike	-0.06	-0.04	-0.13	-0.16	-0.20	0.33**	-0.30*	-0.24*												
BM	0.09	0.01	0.13	-0.14	0.28*	0.21	0.06	-0.06	0.01											
dryM	0.09	0.01	0.13	-0.14	0.28*	0.21	0.06	-0.06	0.01	1.00****										
HI	0.02	0.09	-0.10	0.12	-0.26*	0.64****	-0.09	-0.02	0.28*	-0.61****	-0.61****	0.02								
GDD_DF	1.00****	0.87****	0.08	-0.19	0.23	0.12	0.08	-0.32**	-0.06	0.09	0.09	0.02								
GDD_DM	0.87****	1.00****	0.16	-0.10	0.15	0.12	0.06	-0.18	-0.03	0.01	0.01	0.09	0.87****							
Sunshine_hrs_DF	0.44***	0.50****	-0.02	-0.05	0.00	0.36**	0.00	-0.03	0.07	-0.02	-0.02	0.30*	0.45***	0.51****						
Sunshine_hrs_DM	0.86****	1.00****	0.14	-0.11	0.14	0.13	0.05	-0.18	-0.03	0.01	0.01	0.10	0.86****	1.00****	0.54****					
HTU_DF	1.00****	0.88****	0.08	-0.19	0.22	0.15	0.07	-0.31*	-0.05	0.09	0.09	0.05	1.00****	0.88****	0.51****	0.87****				
HTU_DM	0.87****	1.00****	0.16	-0.10	0.15	0.12	0.06	-0.18	-0.04	0.01	0.01	0.09	0.87****	1.00****	0.51****	1.00****	0.88****			
HUI	-0.10	-0.14	-0.07	0.01	-0.05	0.97****	-0.07	-0.05	0.33**	0.21	0.21	0.61****	-0.09	-0.13	0.22	-0.12	-0.07	-0.13		
HTUE	-0.13	-0.17	-0.07	0.01	-0.06	0.96****	-0.07	-0.05	0.33**	0.21	0.21	0.61****	-0.12	-0.17	0.20	-0.16	-0.10	-0.17	1.00****	
RUE	0.09	0.08	-0.04	-0.02	-0.02	1.00****	-0.06	-0.09	0.33**	0.22	0.22	0.64****	0.09	0.08	0.34**	0.09	0.12	0.08	0.98****	0.97****

Note:
$p < .0001$: **** ; $p < .001$: *** ; $p < .01$: ** ; $p < .05$: *