

Table S2. Final disease severity and response for stem rust and yellow, area under disease progress curve, ranking of KSRON genotypes based on grain yield production along with susceptible checks.

Stem Rust Severity																			Yellow Rust Severity																			Grain yield (t ha ⁻¹)
Genotype	Rank	OS	MS	OS	Mean	±	se	Response	AUDPC _Sr	OS	MS	OS	Mean	±	se	Response	AUDPC _Yr																					
		2019	2019	2020						2019	2019	2020																										
KSRON 1	91	76.67	56.67	25.00	52.78	±	3.56	S	542.78	8.33	10.00	23.33	13.89	±	2.30	M	131.06	6.36																				
KSRON 2	137	15.00	11.67	6.67	11.11	±	1.80	M	110.67	0.33	5.00	8.33	4.56	±	2.12	MR	39.28	5.68																				
KSRON 3	122	5.00	5.00	2.00	4.00	±	1.00	MS	38.22	7.33	3.33	11.67	7.44	±	2.68	MR	69.22	5.96																				
KSRON 4	2	30.00	23.33	15.00	22.78	±	1.90	MS	194.39	0.33	11.67	11.67	7.89	±	2.49	MR	73.89	8.74																				
KSRON 5	46	40.00	50.00	28.33	39.44	±	2.12	MSS	342.78	0.00	1.67	6.67	2.78	±	2.18	MR	22.56	7.13																				
KSRON 6	24	31.67	13.33	8.33	17.78	±	3.14	M	180.06	8.33	13.33	18.33	13.33	±	1.68	M	125.22	7.66																				
KSRON 7	156	60.00	30.00	10.00	33.33	±	3.99	S	371.39	3.67	5.00	16.67	8.44	±	2.22	MR	96.83	5.38																				
KSRON 8	113	23.33	16.67	3.67	14.56	±	2.85	M	129.33	3.67	3.67	8.33	5.22	±	1.40	MR	32.67	6.11																				
KSRON 9	93	16.67	21.67	6.67	15.00	±	2.58	MSS	142.11	0.00	5.00	6.67	3.89	±	2.11	MR	30.33	6.33																				
KSRON 10	60	46.67	43.33	30.00	40.00	±	1.94	MS	378.89	0.33	1.67	5.33	2.44	±	2.24	MR	26.06	6.79																				
KSRON 11	22	33.33	36.67	10.00	26.67	±	2.74	MSS	253.56	5.00	5.00	13.33	7.78	±	1.58	MR	64.56	7.72																				
KSRON 12	32	31.67	36.67	10.00	26.11	±	3.16	MSS	233.67	1.00	5.00	10.00	5.33	±	2.52	MR	45.50	7.46																				
KSRON 13	15	23.33	21.67	6.67	17.22	±	2.70	M	144.89	0.00	5.00	3.67	2.89	±	1.48	MR	26.44	7.99																				
KSRON 14	84	16.67	13.33	5.00	11.67	±	2.43	RMR	113.50	2.00	5.00	10.00	5.67	±	1.89	MR	56.78	6.47																				
KSRON 15	69	28.33	21.67	6.67	18.89	±	2.80	M	193.61	0.67	2.00	6.67	3.11	±	1.91	MR	17.50	6.67																				
KSRON 16	96	35.00	40.00	10.00	28.33	±	3.29	MSS	316.72	2.00	5.00	18.33	8.44	±	3.18	M	86.72	6.32																				
KSRON 17	19	33.33	15.00	3.67	17.33	±	3.37	MR	172.28	0.33	0.00	3.67	1.33	±	1.84	MR	12.83	7.78																				
KSRON 18	164	23.33	13.33	5.00	13.89	±	2.40	MR	136.78	6.67	13.33	16.67	12.22	±	1.77	M	121.72	4.98																				
KSRON 19	61	30.00	11.67	5.00	15.56	±	2.87	M	158.67	18.33	10.00	16.67	15.00	±	1.44	M	121.72	6.74																				
KSRON 20	145	50.00	13.33	8.33	23.89	±	4.21	M	249.44	8.33	10.00	15.00	11.11	±	1.64	M	106.17	5.58																				
KSRON 21	73	56.67	33.33	13.33	34.44	±	3.98	S	393.61	2.00	0.00	10.00	4.00	±	2.69	MR	36.17	6.64																				
KSRON 22	82	20.00	36.67	5.00	20.56	±	3.28	MSS	188.50	0.33	0.00	3.67	1.33	±	1.84	MR	5.83	6.54																				
KSRON 23	107	40.00	26.67	16.67	27.78	±	2.65	M	280.00	0.33	5.00	6.67	4.00	±	1.60	MR	27.61	6.17																				
KSRON 24	1	26.67	23.33	10.00	20.00	±	2.17	M	214.39	0.33	0.33	3.67	1.44	±	1.72	MR	6.61	9.27																				
KSRON 25	79	33.33	30.00	5.00	22.78	±	2.87	RMR	265.56	0.33	1.67	5.00	2.33	±	1.67	MR	17.11	6.58																				
KSRON 26	68	33.33	18.33	5.00	18.89	±	3.89	M	218.89	10.00	8.33	8.67	9.00	±	2.27	MS	61.83	6.67																				
KSRON 27	76	25.00	18.33	3.67	15.67	±	2.95	M	139.61	4.00	8.33	20.00	10.78	±	2.48	M	103.06	6.62																				
KSRON 28	90	10.00	6.67	5.00	7.22	±	1.35	M	60.56	21.67	6.67	16.67	15.00	±	2.04	M	110.06	6.38																				
KSRON 29	70	21.67	15.00	5.00	13.89	±	2.30	RMR	128.50	6.67	8.33	11.67	8.89	±	1.40	MR	71.17	6.67																				
KSRON 30	53	60.00	15.00	8.33	27.78	±	5.33	S	306.94	16.67	13.33	20.00	16.67	±	1.62	MR	154.00	6.96																				
KSRON 31	16	30.00	16.67	5.00	17.22	±	2.70	MSS	170.67	0.33	6.67	6.67	4.56	±	1.77	MR	47.83	7.96																				

Table S2. Cont...,

Genotype	Rank	Stem Rust Severity			Mean	±	se	Response	AUDPC _Sr	Yellow Rust Severity			Mean	±	se	Response	AUDPC _Yr	Grain yield (t ha ⁻¹)
		OS 2019	MS 2019	OS 2020						OS 2019	MS 2019	OS 2020						
KSRON 32	13	60.00	46.67	33.33	46.67	±	1.94	S	503.61	0.00	3.33	5.33	2.89	±	2.09	M	37.72	8.08
KSRON 33	17	30.00	30.00	13.33	24.44	±	2.23	MSS	226.11	0.67	5.00	5.00	3.56	±	1.16	M	35.78	7.86
KSRON 34	111	50.00	26.67	6.67	27.78	±	3.86	M	276.50	3.33	6.67	16.67	8.89	±	2.18	MR	75.83	6.12
KSRON 35	59	53.33	40.00	8.33	33.89	±	3.79	S	338.67	1.67	5.00	10.00	5.56	±	1.66	MR	49.00	6.81
KSRON 36	131	8.33	6.67	5.00	6.67	±	0.97	M	58.17	8.33	10.00	15.00	11.11	±	1.25	M	97.61	5.75
KSRON 37	81	43.33	26.67	6.67	25.56	±	3.41	MSS	235.89	0.33	1.67	6.67	2.89	±	2.09	MR	31.50	6.57
KSRON 38	45	26.67	26.67	5.00	19.44	±	3.65	M	178.06	1.67	6.67	11.67	6.67	±	1.94	MR	60.67	7.20
KSRON 39	126	46.67	21.67	11.67	26.67	±	3.25	M	239.56	2.00	5.00	8.33	5.11	±	1.86	MR	33.06	5.92
KSRON 40	14	15.00	10.00	5.00	10.00	±	1.58	RMR	102.78	0.33	8.33	13.33	7.33	±	2.23	M	82.44	8.05
KSRON 41	119	40.00	26.67	10.00	25.56	±	2.86	M	233.67	0.00	5.00	5.00	3.33	±	1.37	MR	18.67	5.99
KSRON 42	112	36.67	21.67	5.00	21.11	±	3.34	M	215.39	1.67	3.33	13.33	6.11	±	3.75	MR	35.00	6.11
KSRON 43	146	53.33	30.00	8.33	30.56	±	3.90	S	303.56	3.67	3.33	5.00	4.00	±	1.60	MR	31.89	5.58
KSRON 44	40	40.00	13.33	6.67	20.00	±	3.62	M	230.00	11.67	8.33	15.00	11.67	±	1.64	MR	104.61	7.29
KSRON 45	55	25.00	15.00	3.67	14.56	±	3.93	MR	132.33	6.67	3.33	8.33	6.11	±	2.63	MR	50.17	6.87
KSRON 46	127	33.33	26.67	5.00	21.67	±	2.89	M	189.39	2.00	1.67	5.00	2.89	±	1.48	M	14.00	5.91
KSRON 47	63	43.33	26.67	15.00	28.33	±	2.74	M	282.50	2.00	8.33	16.67	9.00	±	2.42	MR	94.89	6.73
KSRON 48	11	30.00	8.33	5.00	14.44	±	4.08	M	179.67	6.67	15.00	26.67	16.11	±	2.55	M	165.67	8.11
KSRON 49	29	23.33	10.00	5.00	12.78	±	2.53	RMR	128.44	11.67	15.00	26.67	17.78	±	1.79	M	177.33	7.53
KSRON 50	33	46.67	30.00	16.67	31.11	±	2.60	MSS	274.17	0.33	8.33	15.00	7.89	±	2.32	M	63.78	7.42
KSRON 51	57	30.00	16.67	5.00	17.22	±	3.36	MSS	163.22	3.33	6.67	16.67	8.89	±	2.18	MS	71.56	6.84
KSRON 52	6	13.33	13.33	5.00	10.56	±	1.80	M	99.00	3.33	6.67	8.33	6.11	±	1.97	M	57.17	8.26
KSRON 53	8	21.67	8.33	5.00	11.67	±	3.27	MR	127.89	0.33	6.67	10.00	5.67	±	2.16	M	45.11	8.24
KSRON 54	99	20.00	13.33	5.00	12.78	±	2.43	M	112.22	13.33	13.33	16.67	14.44	±	0.79	M	115.50	6.26
KSRON 55	77	66.67	40.00	10.00	38.89	±	4.26	S	406.94	5.00	10.00	15.00	10.00	±	1.37	M	102.67	6.60
KSRON 56	38	25.00	23.33	6.67	18.33	±	2.68	MSS	167.94	3.33	5.00	6.67	5.00	±	1.12	MR	42.00	7.33
KSRON 57	101	16.67	13.33	5.00	11.67	±	2.43	MSS	104.33	3.67	5.00	16.67	8.44	±	2.22	M	91.00	6.22
KSRON 58	161	16.67	18.33	5.00	13.33	±	2.98	MSS	124.94	0.33	8.33	10.00	6.22	±	1.89	MR	31.50	5.16
KSRON 59	36	50.00	46.67	21.67	39.44	±	2.77	S	384.17	6.67	8.33	10.00	8.33	±	0.87	MS	70.39	7.35
KSRON 60	97	46.67	33.33	8.33	29.44	±	3.49	M	290.28	13.33	8.33	16.67	12.78	±	1.87	MS	115.11	6.30

Table S2. Cont...,

Genotype	Rank	Stem Rust Severity			Mean	±	se	Response	AUDPC _Sr	Yellow Rust Severity			Mean	±	se	Response	AUDPC _Yr	Grain yield (t ha ⁻¹)
		OS 2019	MS 2019	OS 2020						OS 2019	MS 2019	OS 2020						
KSRON 61	87	36.67	36.67	5.00	26.11	±	3.20	M	273.72	3.33	11.67	15.00	10.00	±	1.94	MR	90.22	6.43
KSRON 62	165	20.00	18.33	5.00	14.44	±	1.91	MS	144.61	10.00	5.00	13.33	9.44	±	2.07	MS	70.39	4.95
KSRON 63	153	43.33	33.33	20.00	32.22	±	2.99	MSS	330.56	8.33	10.00	6.67	8.33	±	0.87	MR	71.94	5.43
KSRON 64	129	23.33	20.00	8.33	17.22	±	2.56	M	168.33	0.67	3.67	11.67	5.33	±	2.28	M	51.72	5.84
KSRON 65	78	60.00	26.67	13.33	33.33	±	3.80	S	349.17	11.67	18.33	30.00	20.00	±	2.17	M	177.33	6.58
KSRON 66	20	36.67	43.33	10.00	30.00	±	3.51	MSS	304.44	5.00	18.33	15.00	12.78	±	2.53	MS	117.44	7.77
KSRON 67	154	21.67	13.33	6.67	13.89	±	2.20	MR	140.33	0.00	15.00	15.00	10.00	±	2.62	MS	87.89	5.40
KSRON 68	160	76.67	40.00	8.33	41.67	±	4.74	S	481.50	23.33	13.33	15.00	17.22	±	1.49	M	140.39	5.28
KSRON 69	170	66.67	50.00	16.67	44.44	±	3.43	S	511.39	5.00	5.00	8.33	6.11	±	1.97	M	50.94	4.59
KSRON 70	139	60.00	53.33	15.00	42.78	±	3.65	S	431.67	2.00	6.67	15.00	7.89	±	2.15	M	52.50	5.65
KSRON 71	120	33.33	53.33	11.67	32.78	±	3.39	MSS	356.22	0.00	5.00	6.67	3.89	±	1.69	MR	33.44	5.97
KSRON 72	169	60.00	53.33	20.00	44.44	±	3.19	S	428.89	2.00	5.00	10.00	5.67	±	2.16	MR	44.33	4.61
KSRON 73	83	40.00	50.00	13.33	34.44	±	3.31	MSS	363.17	3.33	3.33	8.33	5.00	±	1.94	MS	51.72	6.52
KSRON 74	144	46.67	10.00	5.00	20.56	±	4.95	S	233.50	3.33	5.00	11.67	6.67	±	1.68	M	58.72	5.58
KSRON 75	52	56.67	33.33	13.33	34.44	±	3.50	M	381.67	11.67	20.00	28.33	20.00	±	2.30	M	213.89	6.98
KSRON 76	58	96.67	50.00	36.67	61.11	±	3.64	S	673.33	23.33	15.00	26.67	21.67	±	2.58	MS	184.72	6.83
KSRON 77	135	23.33	6.67	6.67	12.22	±	2.59	M	148.11	18.33	11.67	21.67	17.22	±	1.61	M	165.28	5.71
KSRON 78	7	16.67	6.67	5.00	9.44	±	1.90	RMR	100.00	5.33	5.33	20.00	10.22	±	2.50	M	107.72	8.25
KSRON 79	71	10.00	30.00	2.33	14.11	±	4.03	MSS	126.61	1.67	3.33	6.67	3.89	±	1.69	M	34.22	6.65
KSRON 80	5	20.00	18.33	8.33	15.56	±	2.32	M	144.44	0.00	3.33	5.00	2.78	±	1.58	M	18.67	8.43
KSRON 81	128	28.33	25.00	8.33	20.56	±	3.42	MSS	195.06	23.33	13.33	20.00	18.89	±	1.26	M	176.94	5.87
KSRON 82	171	86.67	18.33	15.00	40.00	±	5.71	S	471.94	13.33	11.67	10.00	11.67	±	1.79	M	99.17	4.26
KSRON 83	23	56.67	40.00	11.67	36.11	±	3.81	S	363.06	0.00	0.00	5.00	1.67	±	1.94	MR	17.50	7.70
KSRON 84	98	13.33	10.00	5.00	9.44	±	1.51	M	89.44	13.33	8.33	16.67	12.78	±	1.42	M	112.00	6.29
KSRON 85	155	25.00	16.67	5.00	15.56	±	2.87	M	149.72	10.00	6.67	18.33	11.67	±	1.64	M	108.11	5.39
KSRON 86	136	30.00	20.00	5.00	18.33	±	2.80	M	179.83	18.33	16.67	26.67	20.56	±	1.69	M	194.44	5.69
KSRON 87	88	60.00	63.33	15.00	46.11	±	3.71	S	482.78	0.00	5.00	6.67	3.89	±	1.69	MR	41.22	6.42
KSRON 88	159	36.67	33.33	5.00	25.00	±	3.43	MSS	253.33	0.00	1.67	6.67	2.78	±	2.18	MR	19.44	5.28
KSRON 89	37	20.00	11.67	5.00	12.22	±	3.13	M	122.00	0.00	8.33	10.00	6.11	±	2.21	MR	54.83	7.35
KSRON 90	51	46.67	21.67	8.33	25.56	±	3.75	MSS	269.22	0.67	3.33	5.00	3.00	±	1.38	MR	33.44	7.00
KSRON 91	130	30.00	6.67	8.33	15.00	±	3.71	M	161.33	3.67	3.33	13.33	6.78	±	2.09	MR	71.56	5.77

Table S2. Cont...,

Genotype	Rank	Stem Rust Severity				Mean	±	se	Response	AUDPC _Sr	Yellow Rust Severity				Mean	±	se	Response	AUDPC _Yr	Grain yield (t ha ⁻¹)
		OS	MS	OS	OS															
		2019	2019	2020	2020															
KSRON 92	123	26.67	33.33	10.00	23.33	±	3.11	MSS	226.22	6.67	15.00	23.33	15.00	±	2.04	M	162.17	5.94		
KSRON 93	26	26.67	28.33	5.00	20.00	±	3.62	MSS	205.72	0.00	0.00	8.33	2.78	±	3.04	MR	35.78	7.59		
KSRON 94	67	26.67	40.00	5.00	23.89	±	3.50	MSS	202.00	1.67	2.00	5.00	2.89	±	1.48	MS	21.00	6.69		
KSRON 95	142	56.67	23.33	5.00	28.33	±	4.53	M	299.00	21.67	15.00	16.67	17.78	±	1.47	MS	155.56	5.61		
KSRON 96	28	28.33	26.67	5.00	20.00	±	3.16	M	211.50	0.00	0.00	5.00	1.67	±	1.94	MR	7.00	7.55		
KSRON 97	133	53.33	40.00	3.67	32.33	±	4.33	MSS	297.50	0.33	5.00	16.67	7.33	±	2.90	M	84.39	5.72		
KSRON 98	158	18.33	40.00	8.33	22.22	±	3.05	M	206.28	1.67	2.00	11.67	5.11	±	2.67	M	53.67	5.36		
KSRON 99	9	26.67	30.00	5.00	20.56	±	3.09	M	206.67	0.00	2.00	11.67	4.56	±	2.94	M	45.11	8.21		
KSRON 100	106	31.67	46.67	5.00	27.78	±	3.77	MSS	272.11	0.67	1.67	10.00	4.11	±	2.61	M	31.89	6.19		
KSRON 101	115	36.67	50.00	10.00	32.22	±	3.53	MSS	340.61	0.00	3.33	11.67	5.00	±	2.74	MR	36.94	6.07		
KSRON 102	108	36.67	26.67	6.67	23.33	±	3.55	MSS	221.61	5.00	6.67	18.33	10.00	±	2.09	M	98.78	6.16		
KSRON 103	103	40.00	36.67	10.00	28.89	±	3.04	M	323.72	1.67	3.33	13.33	6.11	±	2.82	MR	60.67	6.20		
KSRON 104	25	56.67	20.00	10.00	28.89	±	4.21	S	269.83	3.33	3.67	15.00	7.33	±	2.23	MR	73.89	7.60		
KSRON 105	54	13.33	15.00	6.67	11.67	±	1.94	M	114.39	6.67	3.33	16.67	8.89	±	2.18	MR	73.11	6.91		
KSRON 106	80	13.33	10.00	5.00	9.44	±	1.51	M	121.94	5.00	3.33	16.67	8.33	±	2.60	M	85.17	6.58		
KSRON 107	10	30.00	30.00	11.67	23.89	±	2.39	MSS	208.44	1.67	5.00	8.33	5.00	±	1.94	M	43.17	8.18		
KSRON 108	65	18.33	15.00	8.33	13.89	±	1.47	M	131.94	2.00	3.33	20.00	8.44	±	3.06	M	99.94	6.70		
KSRON 109	3	43.33	43.33	11.67	32.78	±	3.00	MSS	329.17	0.00	3.33	10.00	4.44	±	2.50	MR	38.89	8.63		
KSRON 110	147	33.33	26.67	5.00	21.67	±	2.89	M	238.89	5.00	1.67	10.00	5.56	±	1.97	MR	38.89	5.55		
KSRON 111	30	21.67	11.67	3.67	12.33	±	3.39	M	114.61	5.33	10.00	8.33	7.89	±	1.20	M	76.61	7.47		
KSRON 112	134	56.67	33.33	5.00	31.67	±	5.24	S	340.39	0.33	1.67	5.00	2.33	±	1.67	MR	12.44	5.72		
KSRON 113	157	36.67	46.67	10.00	31.11	±	3.03	MSS	311.50	2.00	5.00	13.33	6.78	±	2.09	MR	63.39	5.37		
KSRON 114	86	26.67	33.33	6.67	22.22	±	3.75	MSS	211.78	0.33	0.00	3.67	1.33	±	1.84	MR	8.56	6.43		
KSRON 115	49	43.33	26.67	8.33	26.11	±	3.27	S	273.72	7.00	6.67	16.67	10.11	±	2.44	MR	99.94	7.08		
KSRON 116	12	33.33	25.00	5.00	21.11	±	3.16	MSS	224.17	0.00	1.67	6.67	2.78	±	2.18	MR	19.83	8.08		
KSRON 117	21	33.33	10.00	5.00	16.11	±	4.48	M	185.83	0.33	5.00	5.00	3.44	±	1.27	RMR	33.83	7.73		
KSRON 118	132	60.00	40.00	30.00	43.33	±	2.63	S	410.83	3.33	6.67	8.33	6.11	±	1.35	MR	54.83	5.75		
KSRON 119	85	50.00	23.33	8.33	27.22	±	4.04	S	235.28	0.33	2.00	5.00	2.44	±	1.57	MR	9.72	6.43		
KSRON 120	44	70.00	53.33	36.67	53.33	±	2.17	S	589.83	0.33	11.67	11.67	7.89	±	2.32	MS	70.78	7.23		
KSRON 121	152	15.00	20.00	5.00	13.33	±	2.56	MS	108.56	5.00	6.67	11.67	7.78	±	1.82	M	68.06	5.46		
KSRON 122	114	33.33	36.67	7.00	25.67	±	3.14	MSS	234.06	5.33	10.00	21.67	12.33	±	2.43	M	125.22	6.10		

Table S2. Cont...,

Genotype	Rank	Stem Rust Severity				Mean	±	se	Response	AUDPC _Sr	Yellow Rust Severity				Mean	±	se	Response	AUDPC _Yr	Grain yield (t ha ⁻¹)
		OS 2019	MS 2019	OS 2020							OS 2019	MS 2019	OS 2020							
KSRON 123	151	16.67	26.67	6.67	16.67	±	3.41	M	152.44	3.67	6.67	11.67	7.33	±	1.56	M	73.50	5.46		
KSRON 124	66	25.00	33.33	8.33	22.22	±	2.66	MSS	185.11	1.67	3.33	10.00	5.00	±	1.94	M	52.50	6.69		
KSRON 125	31	56.67	53.33	33.33	47.78	±	2.37	S	488.61	1.67	5.00	10.00	5.56	±	1.97	MR	49.39	7.46		
KSRON 126	102	11.67	8.33	5.00	8.33	±	1.73	M	70.50	0.33	0.00	3.67	1.33	±	1.84	MS	16.33	6.21		
KSRON 127	27	40.00	53.33	43.33	45.56	±	2.47	S	437.50	1.67	1.67	3.67	2.33	±	1.67	M	19.44	7.57		
KSRON 128	141	23.33	18.33	5.00	15.56	±	3.26	MSS	146.83	3.33	5.00	15.00	7.78	±	2.39	MR	74.28	5.62		
KSRON 129	35	15.00	16.67	5.00	12.22	±	1.91	MR	122.00	0.33	0.00	2.33	0.89	±	1.71	MR	4.67	7.36		
KSRON 130	162	30.00	30.00	6.67	22.22	±	2.71	MSS	198.61	5.33	5.00	15.00	8.44	±	2.05	MR	78.17	5.10		
KSRON 131	163	46.67	50.00	20.00	38.89	±	2.56	M	390.83	0.33	5.00	5.00	3.44	±	1.85	MS	19.06	4.99		
KSRON 132	138	56.67	20.00	5.00	27.22	±	4.62	S	281.89	5.00	13.33	18.33	12.22	±	1.77	MR	136.50	5.65		
KSRON 133	168	60.00	36.67	13.33	36.67	±	3.69	S	367.22	13.33	6.67	15.00	11.67	±	1.46	M	91.78	4.76		
KSRON 134	62	33.33	15.00	5.00	17.78	±	3.51	M	178.67	23.33	21.67	26.67	23.89	±	1.90	M	210.39	6.73		
KSRON 135	39	46.67	53.33	33.33	44.44	±	2.00	MSS	459.44	0.67	5.00	6.67	4.11	±	1.51	M	31.11	7.30		
KSRON 136	74	10.00	23.33	5.00	12.78	±	2.43	MSS	135.22	20.00	18.33	23.33	20.56	±	1.40	M	190.56	6.64		
KSRON 137	42	40.00	20.00	5.00	21.67	±	3.60	MR	253.33	0.33	5.00	10.00	5.11	±	2.16	MR	49.39	7.24		
KSRON 138	150	66.67	50.00	8.33	41.67	±	4.42	S	435.56	3.33	11.67	13.33	9.44	±	1.71	MS	81.67	5.51		
KSRON 139	116	60.00	16.67	5.00	27.22	±	4.94	M	312.61	10.00	15.00	30.00	18.33	±	2.48	M	177.33	6.06		
KSRON 140	172	66.67	50.00	16.67	44.44	±	3.45	MSS	483.61	10.00	3.67	18.33	10.67	±	2.43	M	104.61	3.80		
KSRON 141	125	36.67	33.33	5.00	25.00	±	3.12	MSS	298.17	0.00	0.00	3.33	1.11	±	2.09	MR	7.78	5.93		
KSRON 142	110	5.00	5.00	2.00	4.00	±	1.00	MR	44.22	0.00	1.67	5.00	2.22	±	1.77	MS	7.78	6.15		
KSRON 143	92	50.00	63.33	15.00	42.78	±	3.36	S	422.50	0.33	5.00	10.00	5.11	±	2.16	MR	46.67	6.35		
KSRON 144	18	16.67	10.00	5.00	10.56	±	1.95	MR	116.56	3.67	13.33	20.00	12.33	±	2.09	M	128.33	7.79		
KSRON 145	48	21.67	13.33	6.67	13.89	±	2.10	MR	140.89	2.00	3.67	15.00	6.89	±	2.61	M	67.28	7.09		
KSRON 146	50	50.00	21.67	18.33	30.00	±	3.39	S	299.00	4.00	5.00	18.33	9.11	±	2.50	M	104.61	7.02		
KSRON 147	166	93.33	60.00	46.67	66.67	±	2.67	S	717.22	2.33	8.33	11.67	7.44	±	1.96	M	71.56	4.92		
KSRON 148	89	50.00	36.67	10.00	32.22	±	3.53	MSS	301.39	8.33	11.67	16.67	12.22	±	1.62	M	122.50	6.41		
KSRON 149	167	50.00	33.33	26.67	36.67	±	2.02	M	375.83	10.00	8.33	18.33	12.22	±	1.62	M	106.94	4.84		
KSRON 150	34	15.00	31.67	5.00	17.22	±	4.22	MSS	193.06	0.00	1.67	6.67	2.78	±	2.18	MR	27.22	7.41		
KSRON 151	149	40.00	43.33	10.00	31.11	±	3.03	MSS	331.67	0.00	5.00	5.00	3.33	±	1.37	M	28.78	5.53		

Table S2. Cont...,

Genotype	Rank	Stem Rust Severity			Mean	±	se	Response	AUDPC _Sr	Yellow Rust Severity			Mean	±	se	Response	AUDPC _Yr	Grain yield (t ha ⁻¹)
		OS 2019	MS 2019	OS 2020						OS 2019	MS 2019	OS 2020						
KSRON 152	75	21.67	21.67	6.67	16.67	±	2.29	MS	159.39	2.00	6.67	10.00	6.22	±	1.89	MR	65.33	6.62
KSRON 153	121	15.00	26.67	5.00	15.56	±	2.72	MSS	135.89	5.00	1.67	6.67	4.44	±	1.43	MR	26.44	5.96
KSRON 154	56	33.33	15.00	6.67	18.33	±	2.92	M	186.61	10.00	8.33	11.67	10.00	±	1.58	M	90.61	6.87
KSRON 155	118	10.00	6.67	5.00	7.22	±	1.35	RMR	67.00	3.33	3.33	15.00	7.22	±	2.30	M	71.94	6.00
KSRON 156	72	36.67	40.00	10.00	28.89	±	2.86	MSS	288.89	21.67	10.00	13.33	15.00	±	1.71	MS	108.11	6.64
KSRON 157	109	36.67	46.67	8.33	30.56	±	3.34	MSS	316.61	0.00	3.33	5.00	2.78	±	1.58	MR	12.06	6.16
KSRON 158	140	63.33	66.67	43.33	57.78	±	1.71	S	607.78	10.00	10.00	18.33	12.78	±	1.23	M	104.61	5.62
KSRON 159	47	53.33	53.33	30.00	45.56	±	1.83	MSS	443.89	0.00	0.00	5.00	1.67	±	1.94	M	21.39	7.13
KSRON 160	43	53.33	26.67	6.67	28.89	±	3.86	MSS	290.83	2.00	6.67	10.00	6.22	±	1.89	MR	55.61	7.23
KSRON 161	148	40.00	10.00	5.00	18.33	±	4.48	M	205.11	26.67	23.33	26.67	25.56	±	1.74	M	248.89	5.54
KSRON 162	4	30.00	28.33	13.33	23.89	±	2.33	M	212.33	13.33	16.67	30.00	20.00	±	1.85	M	187.06	8.50
KSRON 163	124	36.67	30.00	10.00	25.56	±	3.18	MSS	257.61	15.00	16.67	25.00	18.89	±	1.80	M	171.50	5.94
KSRON 164	105	50.00	60.00	18.33	42.78	±	3.36	S	420.39	1.67	5.00	6.67	4.44	±	1.85	MS	21.78	6.19
KSRON 165	64	26.67	23.33	5.00	18.33	±	3.03	M	189.94	2.00	0.00	10.00	4.00	±	2.69	MR	19.83	6.70
KSRON 166	100	23.33	26.67	5.00	18.33	±	3.45	M	173.00	0.33	0.00	2.33	0.89	±	1.71	MS	7.39	6.23
KSRON 167	173	16.67	5.00	3.67	8.44	±	2.94	M	85.78	3.33	1.67	1.67	2.22	±	2.44	M	14.00	3.61
KSRON 168	143	40.00	36.67	6.67	27.78	±	3.22	MSS	296.78	3.67	2.00	13.33	6.33	±	2.29	MR	57.17	5.59
KSRON 169	117	11.67	20.00	5.00	12.22	±	3.29	M	126.22	0.33	6.67	5.00	4.00	±	1.60	MR	36.17	6.04
KSRON 170	94	33.33	33.33	21.67	29.44	±	2.93	M	345.83	2.00	5.00	2.00	3.00	±	1.38	MR	18.67	6.33
KSRON 171	41	13.33	36.67	5.00	18.33	±	3.50	M	177.22	1.67	2.00	8.33	4.00	±	2.03	MR	29.94	7.27
KSRON 172	95	6.67	5.00	5.00	5.56	±	0.71	R	56.89	3.67	1.67	5.00	3.44	±	1.85	M	35.39	6.32
KSRON 173	104	33.33	40.00	18.33	30.56	±	2.33	M	284.94	0.00	0.00	5.00	1.67	±	1.94	MR	13.22	6.20
*CAKUC	175	100.00	73.33	100.00	91.11	±	1.92	S	1156.11	8.67	30.00	33.33	24.00	±	2.54	M	282.72	1.76
*ROBIN	174	100.00	100.00	90.00	96.67	±	1.02	S	1265.00	6.67	5.00	13.00	8.22	±	1.90	M	91.39	2.82
Tukey					18.47				206.43				7.96				71.05	3.11
MSD (0.05)																		

OS = offseason, MS = main season, se = standard error, AUDPC_Sr and AUDPC_Yr = Area under disease progress curve for stem rust and yellow rust, genotype ranking based on mean grain yield production, * = Susceptible checks. MSD = minimum significance difference. Disease severity was assessed using 0-100% modified Cobb scale (Peterson, 1948) following host response to stem rust where R-Resistant, RMR-Resistant to moderately resistant, MR-Moderately resistant, M-Moderately resistant to moderately susceptible, MS-Moderately susceptible, MSS-Moderately susceptible and S-Susceptible.