

**Annexure 2: Adult plant response of AVT 1st year material against wheat rusts under field conditions (artificial inoculations) during 2014-15**

Sr. No.	Variety	RUST RESPONSE (HIGHEST SCORE AND ACI)								Postulated Gene				
		Stem rust		Lear rust				Stripe Rust						
		HS	ACI	South		North		HS	ACI	HS	ACI	Sr	Lr	Yr
				HS	ACI	HS	ACI							
I. NORTHERN HILL ZONE														
1	HPW 393	80S	33.4	15S	4.6	5MS	0.5	60S	20.8	Sr11+	Lr1+10+23+	Yr2+		
2	HPW 394	10S	4.6	20S	3.8	10S	1.9	40S	6.1	Sr11+	Lr1+13+10+	-		
3	HPW 413	40S	14.7	60S	14.6	20S	5.5	20S	6.3	Sr7b+	Lr10+23+	Yr 2+		
4	HPW 421	20S	7.8	40S	14.9	20S	8.8	40S	7.4	Sr5+8a+11+	Lr23+	Yr 2+		
5	HPW 422	10MS	1.6	30S	8.7	20S	3.6	40S	7.6	Sr11+	Lr23+	Yr 2+		
6	HS 580	20MR	1.4	30S	9.8	10S	1.8	40S	9.2	Sr5+31+	Lr1+26+	Yr 9+A+		
7	HS 583	30MS	14.0	10S	2.5	TMS	0.1	40S	9.3	Sr2+9b+11+	Lr10+13+	Yr 2+		
8	HS 590	40S	10.0	20MS	3.4	5S	1.1	60S	10.3	Sr2+7b+	Lr13+	-		
9	HS 596	10S	2.5	20S	5.9	5S	0.7	60S	7.5	Sr11+	Lr23+	R		
10	HS 597	30S	8.8	20S	8.6	10S	1.9	20S	3.6	Sr2+11+	Lr13+	-		
11	HS 598	40MS	11.0	30MS	7.5	10S	1.3	40S	19.4	Sr2+30+	Lr2a+13+	Yr A+		
12	HS 599	10S	5.1	20S	5.3	5S	0.6	20S	2.1	Sr2+31+	Lr10+26+	Yr9+A+		
13	HS 600	40S	10.6	10S	2.2	10MR	0.6	40S	6.6	Sr2+7b+	Lr1+13+23+	YrA+		
14	HS 601	20S	7.3	40S	16.7	10S	2.5	20S	7.3	Sr5+7b+	Lr13+	Yr2+		
15	UP 2917	20S	4.2	5S	0.9	10S	1.3	60S	27.0	Sr2+31+	Lr10+26+	Yr9+A+		
16	UP 2918	20MR	2.9	20S	6.6	5S	0.7	60S	18.2	Sr2+31+	Lr1+23+26+	Yr9+		
17	VL 1005	10MS	1.5	20S	5.9	0	0.0	60S	20.9	Sr2+31+	Lr1+23+26+	Yr9+A+		
18	VL 1006	20S	8.3	40S	12.9	20S	3.6	40S	6.0	Sr2+11+	Lr10+13+23+	-		
19	VL 1007	30MR	4.6	30S	14.9	20S	4.2	60S	11.8	Sr2+31+	Lr26+	Yr9+A+		
20	VL 3002	20MR	1.4	20S	8.1	0	0.0	10S	2.6	Sr2+R+	Lr10+13+	R		
20. A	INFECTOR	100S	71.4	100S	78.6	100S	70.0	100S	83.0	-	-	-		
21	VL 3007	20MR	1.9	20S	7.1	20S	2.5	60S	9.4	Sr2+31+	Lr1+26+	Yr9+A+		
22	VL 3008	10MS	1.2	TS	0.2	20S	2.8	40S	8.6	Sr31+	Lr26+	Yr9+A+		
23	VL 3009	40S	11.7	20S	8.3	5MR	0.3	40S	10.8	Sr30+	Lr2b+13+	YrA+		
24	VL 4001	20MR	1.2	15MS	1.7	10S	1.3	60S	15.0	Sr2+31+	Lr10+26+	Yr9+		
II. NORTH WESTERN PLAIN ZONE														
25	DBW 147	10S	2.7	5S	0.7	5S	1.3	40S	12.4	Sr2+30+	-	YrA+		
26	DBW 148	60S	24.3	40S	13.2	5S	1.1	40S	15.3	Sr2+7b+	Lr10+23+	Yr2+		
27	DBW 150	40MS	7.9	5S	1.5	5MS	0.5	60S	22.9	Sr2+7b+	Lr1+10+23+	Yr2+		
28	DDW 31	10S	5.4	5S	1.9	TR	0.0	60S	10.0	Sr2+11+	Lr13+23+	-		
29	DDW 32	40S	14.9	20MS	4.9	5MR	0.3	60S*	6.1	Sr2+7b+	Lr23+	R		
30	HD 3159	20S	6.4	20S	8.0	10S	1.3	40S	11.8	Sr5+11+13+	Lr13+	Yr2+		
31	HD 3165	40MS	11.1	10S	4.0	10S	1.3	40S	9.3	Sr2+7b+	Lr13+	Yr2+		

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Sr. No.	Variety	RUST RESPONSE (HIGHEST SCORE AND ACI)								Postulated Gene				
		Stem rust		Lear rust				Stripe Rust						
		HS	ACI	South		North		HS	ACI	HS	ACI	Sr	Lr	Yr
				HS	ACI	HS	ACI							
32	HD 3174	30MS	11.7	15MS	3.5	5S	1.2	60S	11.5	Sr2+7b+	Lr13+	Yr2+		
33	HI 1604	15S	7.3	30S	14.1	5MS	1.0	20S	7.3	Sr11+	Lr1+23+	Yr2+		
34	HI 1605	20S	3.9	20S	5.9	15S	1.9	40S	11.8	Sr5+11+	Lr13+	Yr2+		
35	HUW 688	40S	11.9	15MS	3.9	5MS	0.5	80S	20.0	Sr5+11+	-	R		
36	K 1312	10MS	3.7	10S	2.9	5S	0.6	40S	7.1	Sr5+11+	Lr10+13+	Yr2+		
37	K 1313	5MS	1.7	10MS	2.1	10MS	1.0	60S	23.8	Sr2+5+30+	Lr13+	YrA+		
38	K 1314	40MR	6.0	5S	1.8	20S	3.1	20S	6.6	Sr2+5+7b+	Lr13+	YrA+		
39	MACS 3949	30MS	7.8	20MR	2.3	0	0.0	40S*	4.8	Sr2+7b+	R	Yr2+		
40	MACS 4024	20MR	2.9	5MR	0.3	0	0.0	40S*	4.0	Sr2+11+	R	-		
40. A	INFECTOR	100S	75.7	100S	80.0	100S	65.0	100S	84.0	-	-	-		
41	NW 6024	-	-	-	-	-	-	-	-	-	-	-		
42	PBW 707	10S	5.0	40S	19.9	20S	8.8	20S	3.5	Sr9b+11+	Lr13+	Yr2+		
43	PBW 709	20MS	5.0	20S	6.1	0	0.0	40S	8.5	Sr9b+11+	Lr10+13+23+	R		
44	PBW 716	20S	8.9	20MR	2.6	5MS	0.5	80S	28.6	Sr2+7b+	Lr10+13+23+	YrA+		
45	PBW 718	10S	5.7	10MS	1.6	0	0.0	20S	4.0	Sr9e+	Lr13+	Yr2+		
46	PBW 719	20MS	2.6	10S	1.4	5MS	0.5	60S	18.8	Sr31+	Lr23+26+	Yr9+A+		
47	UP 2883	10MS	1.9	20S	7.9	5S	1.2	80S	24.0	Sr11+	Lr13+	R		
48	WH 1179	30MS	10.0	40S	19.9	20S	6.4	40S	20.0	Sr7b+	Lr10+13+	Yr2+		
III. NORTH EASTERN PLAIN ZONE														
49	HD 3171	20S	6.0	10S	5.3	20S	3.6	40S	12.4	Sr7b+	Lr10+13+	R		
50	K 1317	10MS	1.7	20S	7.7	40S	6.3	60S	19.9	Sr2+31+	Lr1+26+	Yr9+A+		
IV. CENTRAL ZONE														
51	CG 1015	10S	6.1	40S	14.5	20S	6.9	80S	43.6	Sr2+5+7b+	Lr13+23+	-		
52	GW 463	40MR	5.5	20S	5.0	10MS	1.1	80S	43.0	Sr2+11+	Lr1+23+	-		
53	HI 8759 (d)	20MR	1.6	5S	1.5	5S	0.7	60S	7.7	Sr2+11+	Lr23+	-		
V. PENINSULAR ZONE														
54	GW 1315 (d)	10S	2.7	20MR	2.2	20S	3.8	100S	78.0	Sr7b+11+	Lr13+	-		
55	HD 3164	10S	4.7	5S	1.3	20S	3.5	60S	25.2	Sr7b+	Lr13+	YrA+		
56	HI 8765 (d)	40MR	3.1	5S	1.9	5MS	0.5	40S	4.9	Sr9b+11+	Lr23+	Yr2+		
57	JWS 712	30MS	7.4	10MS	2.0	5S	0.6	60S	27.4	Sr2+24+	Lr24+	Yr2+		
58	K 1315	10S	5.4	5S	1.3	0	0.0	60S	27.1	Sr2+7b+13+	Lr1+23+	Yr2+		
59	MACS 3970 (d)	30S	8.2	20MS	4.6	TS	0.2	40S	7.1	Sr7b+	Lr13+	-		
60	MACS 3972 (d)	20S	3.3	10MS	2.3	20S	3.5	40S	6.5	Sr2+11+12+	Lr13+	R		
60. A	INFECTOR	100S	71.4	100S	78.6	100S	60.0	100S	82.0	-	-	-		

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Sr. No.	Variety	RUST RESPONSE (HIGHEST SCORE AND ACI)								Postulated Gene				
		Stem rust		Lear rust				Stripe Rust						
		HS	ACI	South		North		HS	ACI	HS	ACI	Sr	Lr	Yr
				HS	ACI	HS	ACI							
61	MACS 4020 (d)	10S	3.0	20MR	4.6	10S	2.4	40S	13.7	Sr2+11+12+	-	-		
62	PBW 721	60S	12.9	5S	1.3	10S	1.3	20S	6.5	Sr5+9e+11+	Lr13+	-		
63	UAS 360	15MS	4.0	20S	11.5	20S	3.0	80S	32.0	Sr30+	Lr2a+13+	Yr2+		
64	UAS 361	20MS	5.9	40S	14.6	5S	0.9	80S	43.0	Sr2+31+	Lr1+23+26+	Yr9+A+		
65	UAS 453 (d)	20S	6.4	5S	2.2	20S	2.5	40S*	4.0	Sr2+7b+9e+	Lr13+	Yr2+		
66	UAS 455 (d)	20S	5.4	5S	2.3	10S	1.8	40S*	4.5	Sr2+7b+9e+	Lr13+	-		
VI. SPECIAL TRIAL (Dicoccum and Sailinity and Alkalinity)														
67	DBW 181	40MS	7.7	20MS	2.9	20S	3.1	40S	9.0	Sr2+7b+9e+	Lr13+	Yr2+		
68	DBW 182	20MR	2.1	10MR	1.0	10S	1.3	60S	16.2	Sr2+5+11+13+	Lr10+13+	R		
69	DBW 183	20S	5.0	20S	7.3	5MS	0.6	40S	13.4	Sr2+8a+	Lr13+	-		
70	DBW 184	10MS	4.0	20S	9.4	50S	11.8	10S	1.6	Sr2+7b+11+	-	Yr2+		
71	DBW 185	10S	3.3	60S	22.7	20S	6.3	40S	16.2	Sr2+5+7b+	Lr10+13+	Yr2+		
72	DDK 1048	30MS	5.0	5S	1.3	5S	0.6	40S	25.0	Sr7b+	-	-		
73	DDK 1049	10S	2.1	10MR	0.6	0	0.0	60S	27.3	Sr7b+	-	-		
74	KRL 350	10MR	1.7	TS	0.2	0	0.0	40S	11.2	Sr2+7b+11+	Lr1+23+	Yr2+		
75	KRL 351	40MR	5.0	10MS	2.7	5MS	0.5	40S	14.5	Sr5+9e+	Lr10+13+	-		
76	MACS 5041	10S	2.7	5MS	1.1	0	0.0	100S	43.0	Sr2+7b+15+	Lr20+	-		
77	MACS 5043	10S	2.6	20MR	1.2	0	0.0	80S	39.2	Sr7b+11+	-	Yr2+		
78	WH 1309	30MR	7.7	10S	2.1	10S	1.9	60S	14.7	Sr2+5+7b+9b+	Lr10+13+	Yr2+		
VII. SPECIAL TRIAL (TRITICALE)														
79	TL 3001	10S	2.8	10S	1.7	0	0.0	20S	2.9	Sr2+	Lr13+	Yr2+		
80	TL 3002	TS	0.2	5S	0.7	10MS	1.0	40S*	4.2	Sr2+31+	Lr1+26+	Yr9+		
80. A	INFECTOR	100S	75.7	100S	75.7	100S	63.8	100S	85.0	-	-	-		
81	TL 3003	TR	0.1	0.0	0.0	0	0.0	20S	2.2	Sr2+31+	Lr1+26+	Yr9+		
82	TL 3004	5S	1.5	5S	1.0	0	0.0	20S	2.2	Sr2+5+	Lr13+	Yr2+		
83	TL 3005	5S	0.9	5MR	0.5	0	0.0	20S	2.4	Sr2+5+7b+	Lr13+	Yr2+		
VIII. SPECIAL TRIAL (MABB/NIL (KB) ENTRIES)														
84	DWR-NIL-01	30MR	3.6	40S	19.7	50S	12.4	80S	43.4	Sr31+	Lr23+26+	Yr9+		
85	DWR-NIL-02	5MR	0.4	40S	14.6	5MR	0.4	60S	30.5	Sr31+	Lr26+	Yr9+		
86	HD 3209	30MR	3.9	15MS	3.7	5S	0.6	60S	44.2	Sr2+11+25+	Lr19+	Yr2+		
87	KB 2012-13	40MR	8.0	40S	14.3	5S	0.6	80S	38.8	Sr2+5+11+	Lr10+23+	Yr2+		
IX. SPECIAL TRIAL (Wheat Biofortification)														
88	HPBW 01	10MS	3.7	30S	5.1	5MR	0.3	40S	10.5	Sr2+31+	Lr10+23+26+	Yr9+		
89	HPBW 02	15S	5.3	30S	7.0	0	0.0	40S	9.6	Sr2+31+	Lr10+23+26+	Yr9+		

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Sr. No.	Variety	RUST RESPONSE (HIGHEST SCORE AND ACI)								Postulated Gene		
		Stem rust		Lear rust				Stripe Rust				
				South		North						
		HS	ACI	HS	ACI	HS	ACI	HS	ACI	<i>Sr</i>	<i>Lr</i>	<i>Yr</i>
90	HPBW 05	40MR	4.9	30MS	6.5	10MS	1.6	40S	11.9	<i>Sr2+5+8a+</i>	<i>Lr13+</i>	<i>Yr2+</i>
91	HPBW 07	10S	3.4	40S	12.9	60S	21.3	20S	3.3	<i>Sr7b+11+</i>	<i>Lr13+</i>	<i>R</i>
92	HPBW 08	30MR	5.8	15MS	2.4	0	0.0	40S	8.7	<i>Sr2+9e+11+</i>	<i>R</i>	-
93	HPBW 09	20MR	1.7	TR	0.1	0	0.0	40S*	5.4	<i>Sr2+5+</i>	<i>R</i>	<i>R</i>
94	HUW 695	15S	4.6	20S	5.1	0	0.0	40S	9.4	<i>Sr2+5+11+13+</i>	<i>Lr10+23+</i>	<i>R</i>
95	HUW 711	30S	12.3	30X	8.7	5MS	0.5	40S	12.0	<i>Sr2+5+11+13+</i>	<i>Lr23+</i>	<i>Yr2+</i>
96	HUW 712	40MR	8.6	30S	8.7	0	0.0	40S	9.4	<i>Sr2+11+13+</i>	<i>Lr13+</i>	<i>Yr2+</i>
97	MACS 6507	5MS	2.4	30S	13.1	TR	0.0	60S	20.0	<i>Sr2+5+11+</i>	<i>Lr13+</i>	<i>Yr2+</i>
98	WB 1	15MS	3.8	20S	4.6	0	0.0	40S	8.5	<i>Sr2+7b+</i>	<i>Lr13+</i>	<i>Yr2+</i>
99	WB 2	15MS	3.6	20S	4.3	5MS	0.5	40S	10.5	<i>Sr2+7b+</i>	<i>Lr13+</i>	<i>Yr2+</i>
100	WB 5	10MS	2.3	15MS	2.3	5MS	0.5	40S	7.5	<i>Sr2+31+</i>	<i>Lr1+26+</i>	<i>Yr9+</i>
100. A	INFECTOR	100S	72.9	100S	71.4	100S	70.0	100S	83.0	-	-	-