Table: Seedling response of AVT lines against the pathotypes of *Puccinia graminis* f. sp. *tritici* (wheat black rust) during 2022-23 at ICAR-IIWBR, RS, Shimla

S.	Variety/line											Path	otype											Sr-genes
No.		11	11A	14	15-1	21	21 A-2	24 A	34-1	40 A	40-1	40-2	40-3	42 B	117 A	117A-1	117-1	2-211	117-3	117-6	122	184	295	
1.	HS691	S	S	MR	S	R	R	R	R	MR	R	MS	S	MS	R	R	R	S	R	R	R	R	R	_*
2.	HS692	MR	MR	R	S	R	R	R	R	R	R	MR	S	R	R	R	R	R	R	R	R	R	R	_*
3.	VL3028	R	R	R	MS	R	R	R	R	R	MS	S	MS	R	R	R	R	R	R	R	R	R	R	Sr30+5+11+
4.	HPW484	MS	S	R	S	R	R	R	R	R	S	R	S	MR	R	R	R	R	R	R	R	R	R	Sr30+5+11+
5.	VL907(C)	R	R	R	MS	R	R	R	R	R	R	R	MR	R	R	R	R	R	R	R	R	R	R	_*
6.	VL892(C)	MS	R	R	MS	R	R	R	R	R	R	R	MS	R	R	R	R	R	R	R	S	R	R	Sr30+11+
7.	HPW349(C)	MR	MR	R	S	R	R	R	R	R	MR	R	MS	R	R	R	R	R	R	R	R	R	R	Sr7b+2+
8.	HS562(C)	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	Sr8a+9b+11+
9.	VL2041(I)(C)	MR	R	R	R	R	R	R	R	R	S	R	S	R	R	R	R	R	R	R	R	R	R	Sr30+5+11+
10.	PBW887	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R
11.	PBW889	S	R	R	MR	R	R	R	R	R	R	R	MR	R	R	R	R	R	R	R	R	R	R	Sr30+5+
12.	HD3386	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R*
13.	HD3470	R	MR	R	MR	R	R	R	R	R	R	R	MR	R	R	R	R	R	R	R	R	R	R	Sr5+13+7b+
14.	HI1668	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	Sr31+
15.	DBW386	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R
16.	UP3102	MR	S	R	S	R	R	R	R	R	R	MR	S	MR	R	R	R	R	R	R	R	R	R	Sr5+9b+7b+
17.	HD3428	S	S	R	MS	R	R	R	R	R	R	S	S	MS	R	R	R	MS	MS	R	R	R	R	Sr13+7b+
18.	PBW893	MR	R	R	MR	R	R	R	R	R	R	R	MR	R	R	R	R	MR	R	R	R	R	R	Sr13+7b+
19.	K2108	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	Sr31+
20.	HD3059(C)	R	R	R	R	R	R	R	R	R	R	R	MR	R	R	R	R	R	R	R	R	R	R	Sr11+2+
21.	DBW173(C)	MS	MS	R	S	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	Sr30+2+*
22.	PBW771(C)	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R*
	(- /	R	R	R		R	R			R	R	R		R	R			R	R	R			R	Sr11+
23.	JKW261(C) WH1402	MS	R	R	R R	R	R	R R	R R	R	R	R	R MR	R	R	R R	R R	R	R	R	R R	R R	R	Sr11+ Sr30+5+*
	WH1311	R	R	R	MS	R	R	R	R	R	R	R	SR	R	R	R	R	R	R	R	R	R	R	Sr30+5+
25.			R	R		R		R		R				R	R	NG								
26.	UP3111	S			NG		R		R		R	R	MS				NG	R	MR	R	R	R	R	Sr13+9b+11+
27.	PBW899	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R
28.	PBW644(C)	MR	R	R	S	R	R	R	R	R	R	R	S	MR	R	R	R	R	R	R	R	R	R	Sr11+2+
29.	DBW296(C)	R	R	R	R	R	R	R	R	R	R	R	MS	R	R	R	R	R	R	R	R	R	R	Sr13+7b+
30.	HD3369(I)(C)	R	R	R	R	R	R	R	R	R	R	R	MS	R	R	R	R	R	R	R	R	R	R	Sr13+
31.	HI1653(I)(C)	R	R	R	S	R	R	R	R	MR	R	R	S	R	R	R	R	R	R	R	R	R	R	Sr7b+
32.	HI1654(I)(C)	S	R	R	MS	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	<i>Sr13</i> +
33.	HD3388	MR	R	R	S	R	R	R	R	R	S	R	S	R	R	R	R	R	R	R	R	R	R	Sr13+7b+
34.	HD3471	S	S	R	S	R	R	R	R	MR	S	S	S	S	MR	R	R	S	MS	R	R	R	R	Sr7b+
35.	HD3249(C)	S	S	R	S	R	R	R	MR	R	S	R	S	S	R	R	R	R	S	R	R	R	NG	Sr7b+2+*
36.	HD3086(C)	R	R	R	MR	R	R	R	R	R	R	MS	S	MS	R	R	R	R	R	R	R	R	R	<i>Sr7b</i> +2+
37.	HD2967(C)	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	Sr8a+11+2+
38.	DBW222(C)	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R*
39.	PBW826(I)(C)	R	R	R	R	R	R	R	R	R	R	MS	MS	R	R	R	R	R	R	R	R	R	R	Sr30+8a+2+
40.	DBW398	MR	S	R	MS	R	R	R	R	R	R	S	MS	R	R	R	R	MR	R	R	R	R	R	Sr9b+7b+
41.	HI1612(C)	S	R	R	R	R	R	R	R	R	R	R	MR	R	NG	R	R	S	NG	R	R	R	R	<i>Sr7b</i> +2+

42.	K1317(C)	MR	S	R	S	R	R	R	R	R	S	R	R	R	R	R	R	MR	R	R	R	R	R	_*
43.	HD3171(C)	R	MR	R	MR	R	R	R	R	R	R	R	MS	R	R	R	R	R	R	R	R	R	R	Sr11+7b+2+
44.	HD3293(C)	S	R	R	S	R	R	R	R	R	R	R	MR	R	R	R	R	R	MR	R	R	R	R	Sr13+2+
45.	DBW252(C)	S	MR	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	MS	R	R	Sr8a+5+11+2+
46.	NWS2194	S	S	R	R	R	R	R	R	R	MS	R	R	R	R	R	R	R	R	R	R	R	R	Sr30+11+
47.	HI1669	R	R	R	R	R	R	R	R	R	MS	R	R	R	R	R	R	R	R	R	R	R	R	Sr8b+9e+
48.	HI1670	MR	R	R	S	R	R	R	R	MR	R	R	MS	R	R	R	R	R	R	R	R	R	R	Sr9b+7b+
49.	GW547	MR	R	R	MR	R	R	R	R	R	R	R	MS	R	R	R	R	R	R	MR	R	R	R	Sr30+*
50.	GW513(C)	MR	S	R	MS	R	R	R	R	R	R	R	MR	MR	R	R	R	MR	R	R	R	MR	R	_*
51.	HI1636 (C)	R	R	R	R	R	R	R	R	R	R	R	MR	R	R	R	R	R	R	R	R	R	R	Sr24+2+
52.	HI1650(I)(C)	R	R	R	R	R	R	R	R	R	R	R	S	R	R	R	R	R	R	R	R	R	R	_*
53.	MACS6768(I)(C)	MR	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	_*
54.	HI1674	MR	MS	R	R	R	R	R	R	R	R	R	R	R	R	R	R	MR	R	R	R	R	R	Sr9b+7b+2+
55.	AKAW5104	S	R	R	MS	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	MR	R	R	Sr13+8b+7b+
56.	HD2932(C)	MR	MS	R	R	R	R	MS	R	MR	R	R	MR	S	R	R	R	R	R	R	R	R	R	Sr11+
57.	MP4010(C)	MR	R	R	MS	R	R	R	R	R	R	R	MR	R	R	R	R	R	R	R	R	R	R	_*
58.	HI1634(C)	R	R	R	S	R	R	R	R	R	MR	R	S	R	R	R	R	R	R	R	R	R	R	_*
59.	CG1029(C)	R	R	NG	R	R	R	R	R	R	R	R	S	R	R	R	R	R	MS	MS	R	R	R	_*
60.	DBW359	R	R	R	R	R	R	R	R	R	R	R	R	S	R	R	R	MR	R	R	R	R	R	Sr9b+7b+
61.	DBW441	MS	S	R	S	R	R	R	R	R	R	R	MR	R	R	R	R	R	R	R	R	R	R	Sr13+9b+7b+
62.	DBW442	R	R	R	R	R	R	R	R	R	R	R	MS	R	R	R	R	R	R	R	R	R	R	Sr5+30+
63.	CG1040	R	R	R	R	R	R	NG	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R
64.	MP3288(C)	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	Sr24+
65.	DBW110(C)	R	R	R	S	R	R	R	R	R	R	R	MS	R	R	R	R	R	R	R	R	R	R	_*
66.	CG1036(I)(C)	MS	S	R	S	R	R	R	R	R	R	MR	MS	MS	R	MR	R	R	R	R	MR	R	R	<i>Sr7b</i> +2+
67.	HI1655(I)(C)	MR	R	R	S	R	R	R	R	R	R	R	MR	S	R	R	R	MR	R	R	R	R	R	_*
68.	UAS3020	S	R	R	MS	R	R	R	R	R	R	R	R	R	R	R	R	R	MR	R	R	R	R	Sr13+9b+7b+
69.	UAS3021	S	S	R	MS	R	R	R	R	R	MR	R	S	MR	R	R	R	MS	R	R	R	R	R	Sr13+7b+
70.	MACS6811	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	Sr31+
71.	MACS6809	MS	S	R	R	R	MS	R	R	R	R	S	S	R	R	R	R	S	MS	R	S	R	R	Sr13+9b+7b+
72.	NIAW4183	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R
73.	NIAW4153	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	<i>Sr31</i> +
74.	AKAW5314	R	R	R	R	R	R	R	R	R	MR	R	S	R	R	R	R	R	R	R	R	R	R	Sr5+30+
75.	AKAW5100	R	R	R	R	R	R	R	R	R	R	R	MR	R	R	R	R	R	R	R	R	R	R	Sr5+30+
76.	MP1378	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R*
77.	MP1386	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	Sr31+
78.	DBW443	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	<i>Sr31</i> +
79.	DBW444	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R
80.	HD3469	R	R	NG	R	R	R	R	R	R	R	MR	R	R	R	R	R	R	R	R	R	R	R	Sr5+30+
81.	NWS2222	R	R	R	MR	R	R	R	R	R	R	R	MS	R	R	R	R	R	R	R	R	R	R	Sr30+
82.	PWU15	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R
83.	WH1306	R	R	R	MS	R	R	R	R	R	R	R	MS	R	R	R	R	R	R	R	R	R	R	Sr5+30+
84.	PBW891	MR	R	R	S	R	R	R	R	S	R	MR	MR	R	R	R	R	R	R	R	MR	R	R	<i>Sr9b+7b+</i>
85.	HI8841(d)	R	R	R	S	R	R	R	R	R	R	MR	S	R	R	R	R	R	R	R	R	R	R	<i>Sr9e+7b+</i>
86.	UP3083	R	R	R	MS	R	R	R	R	R	MS	R	R	R	R	R	R	R	R	R	R	R	R	-
87.	MACS3949(d)(C)	R	R	R	R	R	R	R	R	R	MR	R	R	R	R	R	R	R	R	R	R	R	R	<i>Sr7b</i> +2+
88.	HI8826(d)(I)(C)	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R*
89.	MACS4100(d)(I)(C)	R	R	R	R	R	R	R	R	R	R	R	S	R	R	R	R	R	R	R	R	R	R	-
90.	MACS6222 (C)	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	<i>Sr24</i> +R
91.	HI1672	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	Sr31+

92.	HI1673	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R
93.	HI1675	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R
94.	DBW394	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R
95.	DBW395	R	R	R	S	R	R	R	R	MR	R	MR	MR	R	R	R	R	R	R	R	R	R	R	Sr8b+9e+7b+
96.	MACS6814	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R
97.	MACS6805	S	R	R	R	R	R	R	R	S	R	R	R	MR	R	R	R	R	MR	R	S	R	R	Sr9b+11+7b+
98.	NIAW4114	MS	R	R	MS	R	R	R	R	R	R	R	MS	R	R	R	R	R	MR	R	R	R	R	Sr9b+11+7b+
99.	NIAW4120	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R
100.	UAS3022	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R
101.	UAS3023	S	R	R	MS	R	R	R	R	R	R	R	MS	R	R	R	R	R	R	R	R	R	R	Sr13+11+7b+
102	MP3557	S	R	R	R	R	R	R	R	R	R	R	MR	R	R	R	R	R	MS	R	R	R	R	Sr13+11+9b+
103.	MP3556	MR	R	R	S	R	R	MR	R	R	R	R	MS	R	R	R	R	R	R	R	R	R	R	Sr13+11+7b+
104.	PBW897	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R
105.	MP1388	R	S	R	S	R	R	R	R	R	R	R	MS	R	R	R	R	R	MR	R	R	R	R	Sr13+9b+7b+
106.	GW542	R	R	R	R	MR	R	R	R	MR	R	R	MS	R	R	R	R	R	R	R	R	R	R	Sr7b+
107.	GW538	MR	R	R	S	R	R	R	R	MR	MR	R	S	R	R	R	R	R	R	R	R	R	R	Sr9b+7b+
108.	WH1310	R	R	R	R	R	R	R	R	MR	R	R	MR	R	R	R	R	R	R	R	R	R	R	<i>Sr7b</i> +2+
109.	LOK79	MS	R	R	MR	R	R	R	R	R	R	R	MS	R	R	R	R	R	R	R	R	R	R	Sr9b+7b+
110.	RAJ4083(C)	R	R	R	MS	R	R	R	R	R	R	R	S	R	R	R	R	R	R	R	R	R	R	Sr11+
111.	HD3090(C)	S	S	R	S	R	R	MS	R	MR	MS	MS	MS	MS	MR	MS	R	MR	MS	MS	MS	R	MR	_*
112.	HI1633(C)	S	R	R	MR	R	R	R	R	R	R	R	S	R	R	R	R	R	R	R	MR	R	R	_*
113.	UAS478(d)	S	S	R	S	R	R	R	R	R	MS	R	R	R	R	R	R	R	R	R	R	R	R	<i>Sr7b</i> +2+
114.	UAS481(d)	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R
115.	HI1665	MS	R	R	S	R	R	R	R	R	R	R	MS	R	R	R	R	R	R	R	R	R	R	R*
116.	HI8840(d)	S	R	R	R	R	R	R	R	R	R	R	MS	R	R	R	R	R	S	R	R	R	MS	Sr13+7b+
117.	DBW397	MS	R	R	MS	R	R	R	R	MR	R	R	MS	R	R	R	R	R	MS	R	R	R	R	Sr13+9b+7b+
118.	DDW61(d)	MR	MR	R	S	R	R	R	R	R	R	MS	S	R	R	R	R	R	R	R	S	R	MS	Sr9b+7b+
119.	NIAW4028	MR	R	R	S	R	R	R	R	S	MR	R	S	R	R	R	R	R	R	R	R	R	MR	Sr5+30+2+
120.	HI1605(C)	R	R	R	S	R	R	R	R	R	R	R	S	R	R	R	R	R	R	R	R	R	R	Sr11+
121.	NIAW3170(C)	MS	R	R	S	R	R	R	R	R	R	R	MR	R	R	R	R	R	R	R	R	R	R	<i>Sr8a</i> +2+
122.	UAS446(d)(C)	R	R	R	S	R	R	R	R	R	R	R	R	R	R	R	R	R	R	MS	R	R	MR	Sr11+2+
123.	NIDW1149(d)(C)	R	R	R	S	R	R	R	R	R	R	R	S	R	R	R	R	R	R	R	R	R	R	Sr11+2+
124.	DBW380	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R
125.	DBW370(I)(C)	S	S	R	MR	R	MR	R	R	R	R	R	S	R	R	R	R	R	R	R	R	R	R	Sr7b+
126.	DBW371(I)(C)	R	R	R	S	R	R	R	S	S	MR	R	MR	R	R	MR	R	R	R	R	R	R	R	<i>Sr8a</i> +2+
127.	DBW372(I)(C)	S	S	R	S	R	R	R	R	R	R	R	MS	R	R	R	R	R	R	MR	R	R	R	Sr28+
128.	PBW872(I)(C)	S	R	R	S	R	R	R	R	R	R	R	S	R	R	R	R	R	MR	R	R	R	R	_*
129.	DBW377	R	R	R	R	R	R	R	R	R	R	R	S	R	R	R	R	R	R	R	R	R	R	R
130.	CG1044	R	S	R	R	R	R	R	R	MR	R	R	R	R	R	R	R	R	R	R	R	R	R	<i>Sr9b+7b+</i>
131.	GW543	S	S	R	R	R	R	R	R	R	MS	R	MS	MS	R	R	R	R	R	R	R	R	R	Sr7b+
132.	DBW187(C)	S	S	R	MS	R	R	R	R	R	S	S	MR	R	R	R	R	R	R	R	R	R	R	Sr5+11+
133.	DBW303(C)	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R
134.	GW322(C)	R	R	R	S	R	R	R	R	R	S	S	MR	R	R	R	R	R	R	R	R	R	R	Sr11+2+
* Diffe	rent seed lot to that of previ	ious crop	ping sea	ison, -: C	dene not	postulat	ed, R: re	sistant to	all path	otypes														