Annexure 4. Seedling Resistance Test of AVT-I against pathotypes of brown rust (*Puccinia triticina*) at Shimla during 2015-16

S. No.	Variety/Line	PATHOTYPES																											Postulated genes
		11	12	12-2	12-3	12-5	12-7	12-8	77	77-1	77-2	77-5	77-7	77-8	77-9	77-10	77-12	77A-1	104-2	104-3	104B	106	104-4	107-1	108-1	162	162-2	162A	
I - Northern Hill Zone																													
1	HS623	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
2	HS622	R	R	R	R	R	R	R	R	S	R	S	S	R	R	R	R	R	R	M	R	R	S	R	R	R	R	R	*Lr*26+23+1+
3	VL1009	R	R	S	R	R	R	R	R	M	R	S	R	MS	S	S	NG	R	S	S	R	R	R	R	R	S	MS	R	*Lr*13+10+
4	HPW423	R	R	S	R	R	R	R	S	S	S	S	S	R	S	S	R	R	MR	R	S	R	S	R	R	R	R	R	*Lr*13+
5	HPW424	R	M	M	R	S	S	S	MS	S	M	S	S	MS	S	S	R	S	S	S	S	R	S	R	R	S	S	R	*Lr*13+2a
6	HS628	R	R	R	R	R	R	R	R	R	R	R	R	S	R	R	R	R	R	R	R	R	R	R	R	R	R	R	*Lr*19+
7	UP2954	R	R	R	R	R	R	R	R	S	M	MR	R	R	S	S	R	R	R	R	R	R	R	R	R	R	R	R	*Lr*13+10+
8	VL1008	R	R	R	R	R	MS	R	R	S	S	MS	R	R	S	S	R	MX	R	R	R	R	R	R	MR	S	R	R	*Lr*13+10+
9	VL1010	R	R	R	R	R	R	R	R	S	S	S	R	R	MS	MS	R	R	R	R	R	R	R	R	R	R	R	R	*Lr*13+10+1
10	HS625	R	R	R	S	R	R	R	S	S	S	S	S	R	S	S	R	R	R	R	R	R	R	R	R	R	R	R	*Lr*13+
11	HPW433	R	R	S	S	S	MS	S	S	S	R	S	R	S	S	S	R	S	S	S	S	R	S	R	R	S	S	S	*Lr*13+
12	HS627	R	R	S	R	S	S	R	S	MS	S	S	S	R	S	MS	R	R	S	S	S	R	S	R	R	S	R	R	*Lr*13+
13	HPW432	R	R	R	R	R	S	R	R	S	S	S	S	R	S	S	MX	R	R	R	R	R	R	R	R	S	R	NG	*Lr*13+10+
14	VL3010	R	R	S	R	R	MS	R	R	S	S	S	S	R	S	S	S	R	S	S	R	R	R	R	R	S	R	R	*Lr*13+10+
15	HS626	R	R	S	R	R	R	R	R	R	R	R	R	R	R	R	R	R	MS	M	S	R	S	R	R	R	R	R	*Lr*23+
16	VL3012	R	R	R	R	R	R	R	S	S	S	MS	S	R	S	MS	R	S	R	R	R	R	MS	R	R	R	S	R	*Lr*13+
17	UP2955	R	R	R	R	R	R	R	R	S	R	S	S	R	S	MS	R	R	R	R	R	R	R	R	R	M	S	R	*Lr*26+
18	VL3011	R	R	R	R	R	R	R	R	S	R	S	S	R	R	MR	R	R	R	R	R	R	S	R	R	R	R	R	*Lr*26+1+
II. NORTH WESTERN PLAIN ZONE																													
19	DBW172	R	R	R	R	M	R	R	M	S	R	M	R	R	R	M	R	R	R	R	R	R	R	R	R	R	S	R	*Lr*13+3+

S. No.	Variety/Line	PATHOTYPES																											Postulated genes
		11	12	12-2	12-3	12-5	12-7	12-8	77	77-1	77-2	77-5	77-7	77-8	77-9	77-10	77-12	77A-1	104-2	104-3	104B	106	104-4	107-1	108-1	162	162-2	162A	
						S			X			R				S													
20	DBW173	R	R	R	R	R	R	R	R	R	S	R	S	R	MS	MS	R	R	R	R	R	R	R	R	R	S	R	R	*Lr*26+10+3+
21	DBW179	R	R	S	R	R	R	R	R	S	S	S	R	R	S	S	MX	R	R	R	R	R	R	R	R	MS	R	R	*Lr*13+10+3+2a+
22	NW6046	R	R	S	R	S	S	R	R	S	S	S	S	R	S	S	R	R	MS	S	S	R	S	R	R	S	R	R	*Lr*13+3+
23	PBW725	R	R	MS	R	R	R	R	R	MS	S	S	R	S	S	S	R	R	R	R	R	R	R	R	R	MX	S	R	*Lr*13+10+
24	PBW737	R	R	S	R	S	S	R	S	R	S	S	S	R	S	S	R	R	MS	S	MS	R	S	R	R	S	R	R	*Lr*13+3+
25	UP2903	R	R	R	NG	NG	NG	R	S	MS	R	MX	MS	S	R	S	R	S	R	R	NG	R	NG	R	R	R	R	R	*Lr*13+
26	UP2907	R	R	R	R	R	S	NG	R	S	MS	S	R	R	S	MS	R	R	R	NG	R	R	R	R	R	R	NG	R	*Lr*23+10+2a+
27	WH1184	R	R	R	R	R	R	R	R	R	R	S	MS	R	S	R	R	R	R	R	R	R	S	R	R	R	R	R	*Lr*23+1+
III. NORTH EASTERN PLAIN ZONE																													
28	HD3184	R	R	R	R	R	R	R	R	S	R	S	R	R	S	S	R	R	MX	R	R	R	R	R	R	S	R	R	*Lr*13+3+
29	HI1612	R	R	S	R	S	S	R	R	R	R	R	R	R	R	R	R	R	S	S	S	R	S	R	R	R	R	R	*Lr*23+
30	WH1181	R	R	R	R	S	S	R	R	S	S	S	R	R	R	S	R	S	R	R	R	R	MS	R	R	R	S	R	*Lr*13+
IV. CENTRAL ZONE																													
31	HI8774(D)	S	S	S	MS	S	S	R	R	R	S	R	R	R	R	R	R	R	S	S	S	S	MS	R	R	S	R	R	-
32	PDW344(D)	R	R	R	R	S	R	R	R	R	S	R	R	R	R	R	R	R	R	R	R	R	S	R	R	S	R	S	*Lr*23+
V. PENINSULAR ZONE																													
33	AKAW4842	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
34	DBW168	R	R	R	S	S	S	MS	R	S	R	MS	S	R	MS	MS	R	R	R	R	R	R	R	R	R	S	S	R	*Lr*26+
35	GW477	R	R	S	R	R	R	R	R	MS	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	S	R	R	*Lr*13+10+
36	HI8777(D)	S	R	S	R	S	S	MS	R	R	S	R	R	R	R	R	NG	R	MS	S	R	S	MR	S	MR	S	S	S	-

S. No.	Variety/Line	PATHOTYPES																											Postulated genes
		11	**12**	**12-2**	**12-3**	**12-5**	**12-7**	**12-8**	**77**	**77-1**	**77-2**	**77-5**	**77-7**	**77-8**	**77-9**	**77-10**	**77-12**	**77A-1**	**104-2**	**104-3**	**104B**	**106**	**104-4**	**107-1**	**108-1**	**162**	**162-2**	**162A**	
37	KD1418(D)	R	M	R	R	S	S	R	R	MS	R	R	R	R	R	R	R	R	R	R	R	R	MS	R	R	S	R	R	*Lr*13+
38	MACS4028(D)	S	R	S	MS	S	S	S	S	S	S	S	MS	R	S	S	S	R	S	S	S	S	S	R	R	S	R	MS	-
39	MACS6660	R	R	R	R	S	S	R	R	R	R	MS	S	R	S	R	S	R	S	S	R	R	S	R	R	R	R	R	*Lr*26+23+
40	NIAW2495	R	R	S	R	S	S	R	MX	MS	MR	MS	S	R	S	S	S	S	R	R	MS	R	R	R	R	R	R	R	*Lr*13+
41	RKD283(D)	R	R	R	R	S	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	S	R	R	*Lr*23+
42	RKD292(D)	R	R	R	R	MS	NG	R	R	R	S	R	R	R	R	R	R	R	R	R	R	R	R	R	R	S	R	R	*Lr*23+
43	UAS375	S	R	R	R	S	S	R	S	S	S	S	S	R	S	S	R	R	R	R	R	R	R	R	R	NG	R	NG	-
44	UAS459(D)	S	S	S	R	S	S	R	R	R	S	R	R	R	S	R	R	R	S	S	MS	MS	MR	R	MR	S	R	R	-
VI. SPECIAL TRIAL (Dicoccum and Sailinity and Alkalinity)																													
45	DBW214	R	R	M	R	S	R	R	S	S	R	S	MS	MR	S	S	R	S	R	R	R	R	MS	R	R	R	S	R	*Lr*13+
46	DBW215	R	R	S	M	S	S	S	R	S	S	S	S	R	S	MS	S	S	S	S	S	R	MS	MS	R	S	S	R	*Lr*13+
47	DBW216	R	R	R	R	S	MX	R	S	S	R	S	S	R	S	MS	R	S	R	R	R	R	R	R	R	R	R	R	*Lr*13+3+
48	DBW217	R	R	MR	S	S	S	S	S	S	S	S	S	R	S	R	R	S	R	R	R	R	R	R	R	S	S	R	*Lr*13+
49	DDK1050	MS	R	S	R	S	R	R	R	R	MS	R	R	R	R	R	R	R	R	MS	R	S	R	R	MR	S	R	R	-
50	DDK1051	S	R	S	R	S	R	R	R	R	S	R	R	R	R	R	R	R	MS	R	R	S	R	R	MR	S	R	R	-
51	KA1427	R	R	R	R	R	R	R	S	S	R	R	S	R	S	R	R	R	S	S	R	R	MS	R	R	R	R	R	*Lr*13+1+
52	MACS5044	S	R	S	R	S	R	R	S	R	S	R	R	R	MR	R	R	R	S	S	R	S	MR	R	R	S	R	R	-
53	MACS5046	S	MS	S	R	S	S	R	R	R	S	S	R	R	MR	R	MS	R	S	MS	R	S	MR	R	R	S	R	R	-
54	NW6094	R	R	R	R	MS	R	R	R	R	R	MR	R	R	MS	R	R	R	R	R	R	R	R	R	R	R	R	R	*Lr*6+23+10+

S. No.	Variety/Line	PATHOTYPES																											Postulated genes
		11	12	12-2	12-3	12-5	12-7	12-8	77	77-1	77-2	77-5	77-7	77-8	77-9	77-10	77-12	77A-1	104-2	104-3	104B	106	104-4	107-1	108-1	162	162-2	162A	
55	WH1310	R	R	R	R	R	NG	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	NG	R	R	R
VII. SPECIAL TRIAL (TRITICALE)																													
56	TL3006	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
57	TL3007	R	R	S	MS	NG	S	R	S	MS	S	MS	MS	R	MS	R	R	R	MR	MS	MS	R	R	S	R	R	MS	R	*Lr*13+
58	TL3008	R	R	MS	R	R	S	R	R	R	R	R	R	R	R	R	R	R	MR	R	R	R	R	R	R	MS	R	R	*Lr*10+
59	TL3009	R	R	R	R	MS	S	R	R	R	MR	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	*Lr*23+
60	TL3010	R	R	R	R	NG	R	R	S	S	S	R	R	R	R	R	R	R	R	R	R	R	R	R	R	NG	R	R	-
VIII. SPECIAL TRIAL (MABB/NIL (KB) ENTRIES/Biofortification trial)																													
61	HPBW01	R	R	R	R	S	S	S	S	S	R	S	MS	R	S	S	R	S	R	R	R	R	R	R	R	R	S	R	*Lr*26+23+10+
62	HPBW02	R	R	R	R	MR	S	S	S	S	MR	S	S	R	S	S	R	R	R	R	R	R	R	R	R	R	R	R	*Lr*26+23+10+
63	HPPAU05	R	R	S	S	R	S	S	R	S	S	S	S	R	S	S	S	MR	S	S	S	R	MS	R	R	S	S	R	*Lr*13+
64	HPPAU08	R	R	R	R	S	R	R	R	R	MR	MR	R	R	R	R	R	R	R	R	R	R	R	R	R	R	MS	R	*Lr*23+2a+
65	HPPAU10	R	R	MS	R	MS	R	R	R	S	R	R	R	R	S	MS	R	S	R	R	S	R	MS	R	R	R	R	R	*Lr*13+
66	PBW760	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	S	R	R	R	R	R	*Lr*26+
IX. SPECIAL TRIAL (Very Late Sown)																													
67	DBW218	R	R	S	R	S	S	S	R	R	R	R	R	R	R	R	R	R	S	S	S	R	R	R	R	S	S	S	*Lr*13+
68	DBW219	R	R	R	R	R	R	R	R	S	MS	R	R	R	S	S	R	R	R	R	R	R	R	R	R	R	R	R	*Lr*13+1+
69	DBW220	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
70	HD3236	R	R	R	R	S	S	R	R	R	R	R	R	R	R	R	MS	R	S	S	R	R	S	R	R	R	R	R	*Lr*26+23+
71	HI1621	R	R	MS	R	S	S	R	S	S	S	S	S	S	S	S	R	S	MS	R	S	R	MS	R	R	R	MS	R	*Lr*13+
72	PBW756	R	NG	R	R	R	R	R	MX	S	S	MR	MS	R	R	R	R	MS	R	R	R	R	R	R	R	R	R	R	*Lr*13+10+
73	PBW757	R	R	R	R	MR	S	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	R	*Lr*23+

S. No.	Variety/Line	PATHOTYPES																											Postulated genes
		11	**12**	**12-2**	**12-3**	**12-5**	**12-7**	**12-8**	**77**	**77-1**	**77-2**	**77-5**	**77-7**	**77-8**	**77-9**	**77-10**	**77-12**	**77A-1**	**104-2**	**104-3**	**104B**	**106**	**104-4**	**107-1**	**108-1**	**162**	**162-2**	**162A**	
74	WH1215	R	R	R	R	R	R	R	R	R	S	MX	S	R	S	S	R	R	R	MS	R	R	MS	R	R	R	S	R	*Lr*23+1+2a+
75	WH1216	R	R	R	S	S	S	M	R	R	R	R	R	R	S	R	R	R	MS	S	R	R	MS	R	R	R	S	R	*Lr*26+
X. AVTs for Summer sown (VHA)																													
76	HS580	R	R	R	R	R	R	R	R	MS	R	S	S	R	S	R	R	R	R	R	R	R	R	R	R	R	R	R	*Lr*26+1+
77	HS590	R	R	R	S	S	MS	S	S	S	S	MS	S	MR	S	S	R	S	R	R	R	R	R	R	R	S	MS	R	*Lr*13+
78	VL3002	R	R	MS	R	S	R	R	S	S	S	S	R	S	S	S	R	MS	MR	S	R	R	MS	S	S	S	R	R	*Lr*13+
79	VL4001	R	R	R	R	S	S	R	R	S	R	MS	MS	R	R	MS	R	R	R	R	R	R	R	R	R	S	R	R	*Lr*26+10+
80	PBW621	R	R	R	M	R	S	S	R	S	S	S	S	S	S	S	MX	MS	R	R	R	R	R	R	R	S	S	S	*Lr*13+10+
81	HPW393	NG	NG	NG	NG	NG	NG	NG	NG	NG	NG	NG	NG	NG	NG	NG	NG	NG	NG	NG	NG	NG	NG	NG	NG	NG	NG	NG	-
82	HPW394	NG	NG	NG	NG	NG	NG	NG	NG	NG	NG	NG	NG	NG	NG	NG	NG	NG	NG	NG	NG	NG	NG	NG	NG	NG	NG	NG	-