Research Article
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SCREENING OF PROMISING RICE GENOTYPES AND VARIETIES AGAINST PANICLE MITE, *STENEOTARSONEMUS SPINKI*

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ABSTRACT

Rice panicle mite, *Steneotarsonemus spinki* Smiley (Acari: Tarsonemidae) infests leaf mid rib, flag leaf sheath and causes brown discolouration its infestation on panicle causes chaffy grains and discolouration of filled or ill-filled grains leading to yield losses ranging from 4 -27%. Studies were conducted at rice section, ARI, Rajendranagar by selecting 172 elite rice genotypes / varieties during *kharif* 2015 and twenty popular varieties during *kharif* 2015 & 2016 to screen and identify resistance sources against panicle mite. Based on these studies, 16 resistant rice genotypes and three rice varieties *viz.,* Sabita, Karimnagar Samba (JGL 3844) and RNR 15038 were identified against panicle mite, which were having good panicle exertion. They can be incorporated in breeding programmes as potential donors in evolving panicle mite resistant varieties.

Key Words: Rice, *Oryza sativa*, Panicle mite, *Steneotarsonemus spinki*, Screening, Resistance

Rice (*Oryza sativa* L.), a staple food of more than half of the world population, is grown in a wide range of environments. India is number one in area with approximately 43.5 million hectares of rice and ranks second in production with approximately 89.1 million tonnes but the productivity of 2048 kg ha$^{>1}$ is far below the world's average productivity of 4300 kg ha$^{>1}$ (CMIE, Annual report 2010). Among different species of mites associated with rice, the sheath mite or panicle mite, *Steneotarsonemus spinki,* Smiley is most important as it is posing threat to rice production in Telangana and Andhra Pradesh, particularly during high temperatures and low rainfall situations, inflicting yield losses ranging from 4.9 to 23.7 per cent. Ou *et al.,* (1977) found that panicle mite was responsible for 20% of crop damage to Japonica varieties in Taiwan.

Mite infestation initially starts as dark black to brown patches on the leaf mid rib followed by leaf sheath. Mite feeds by remaining in between leaf sheath and stem causing brown discolouration. Subsequently, infestation extends to panicles leading to discoloured filled or ill filled grains or chaffy panicles. It also causes grain discolouration in association with several fungi, particularly sheath rot. Field surveys conducted in coastal Orissa revealed that rice varieties, particularly Karuna, Pankaj, Jaya, Krishna, CRM-25 and Gourav were infested by *S.spinki* (Rao and Prakash, 1992). Twenty three villages of East and West Godavari districts of Andhra Pradesh, covering 21 per cent of rice growing area comprising varieties MTU 1001, MTU 2067, MTU 2077, MTU 7029, BPT 5204 and PLA 1000 were found affected by panicle mite (Rao *et al.,* 2000).

Though several acaricides are available in the market that are very effective against panicle mite, host plant resistance is the better option, because of its cost effectiveness and durability. Although few indica types exhibited lower grain sterility, no known sources of high level of host plant resistance are available (Lakshmi *et al.,* 2008). Meager studies conducted revealed differential response across varieties to rice panicle mite infestation (Rao and Prakash 2006 & Karmakar, 2008).

The promising genotypes against panicle mite may be used in future breeding programme to develop varieties with less grain discoloration. The present study was contemplated to evolve screening methodology, screen and identify panicle mite resistant rice genotypes / varieties.

MATERIAL AND METHODS

During *kharif* 2009, severe natural incidence of panicle mite was noticed at research farm of rice section, ARI. As there was no standard evaluation system evolved already for panicle mite, using the opportunity the following screening methodology / scoring procedure was developed at Rice Section,

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ARI, Rajendranagar, to evaluate rice cultures against panicle mite. Further, as it is very difficult to count mite populations under field conditions, the scoring based on these three damage symptoms caused due to panicle mite will aid in assessing whether particular genotype is resistant or susceptible. Using this methodology Suresh *et al.,* 2012 identified few promising rice genotypes against panicle mite.

About, 172 advanced rice genotypes of PJTAU from different rice research centres and few cultures/ varieties identified to be promising against other rice pests like BPH and stem borer (Table 2) during 2014 were evaluated for resistance to panicle mite during *kharif* 2015. Further, using this scale, studies were conducted during *kharif* 2015 and 2016 selecting twenty (20) popular rice varieties (Table 4) to identify sources of resistance, if any.

The nursery was raised at Rice Section, Agricultural Research Institute, Rajendranagar, Hyderabad. Each entry was planted in the main field in two rows of 10 hills each (20 plants/entry) with checks before and after 10 entries, at a spacing of 20 × 15 cm. Irrigation, fertilizers and inter cultivation operations were taken up at regular intervals. The observations were recorded after check entries showed >70% grain discolouration. Data was recorded from 10 hills out of 20 hills of each entry.

Total no. of leaves and leaves with panicle mite symptoms on leaf mid rib / hill was recorded for 10 hills/entry at random, which was converted to percentages and score was given as above. The length of damage symptom on leaf sheath was measured / hill and accordingly score was given. For third scale, per cent grain discoloured was assessed using visual observation of panicles / hill. Based on these three (3) scores on leaf mid rib, leaf sheath and grain discolouration the entries were categorized as highly susceptible, moderately susceptible, susceptible, moderately resistant or resistant as mentioned below.

Table 1. Composite scale for screening against rice panicle mite developed at rice section, ARI, Rajendranagar

Based on the damage symptom of panicle mite on leaf midrib		**2nd scale is b ased on the damage symptom on leaf sheath below boot leaf**		**3rd scale is based on grain discolouration (GD)**	
No incidence	0	No symptoms	0	No grain discolouration	0
0.1-1.0%	1	Upto 1cm	1	< 5% GD	1
1.1-5.0%	3	1.1-3cm	3	5.1-10%	3
5.1-25.0%	5	3.1-6cm	5	10.1-30%	5
25.1-50%	7	6.1-8cm	7	30.1-50%	7
50.1-100%	9	> 8cm	9	50.1-100%	9

HS: Highly Susceptible	All three scores between 7-9	9 9 9 or 7 9 9, 7 7 9 or 7 7 7etc.,
S: Susceptible	two scores between 7-9 and one between 5	7 7 5 or 9 9 5 or 3 9 9 or 7 95 or 5 5 9 etc.,
MS: Moderately Susceptible	One/Two scores between 7-9 and one/two scores between 0-5	9 3 9 or 9 3 7 or 9 3 5 or 7 37 or 7 3 5 or 5 7 5 or 5 5 5or 3 9 3 or 9 1 9 or 9 1 5 or 1 7 7 etc.,
MR: Moderately Resistant	All three scores 3 or at least two scores 3/5 and one score 5 or two scores 5 and one score 1/3	3 3 3 or 3 5 5 or 3 3 5 or 1 75 or 5 1 5 etc.,
R: Resistant	Two scores 3, one score 1 or 0	3 3 1 or 3 3 0 or 1 1 0 or 1 13 or 0 1 0 etc.,

RESULTS AND DISCUSSION

Perusal of screening data of 172 rice genotypes / varieties revealed that 20 rice cultures were highly susceptible, 29 were susceptible while 74 were moderately susceptible. Only 30 and 16 entries exhibited moderate resistance to resistance reaction (Table 2 & 3), which means about 9.88 per cent of cultures offered desirable level of resistance to panicle mite, *Steneotarsonemus spinki*. Even though there was variation in mite infestation it was found that none of the genotypes/varieties were free from mite incidence. Similar to the observations, Prakash *et al.* (1988) reported that none of the varieties was free from mite infestation. The panicle mite incidence was observed to be relatively more in early duration cultures compared to late duration cultures.

The most promising genotypes were JGL 24307, JGL 24344, JGL 24497, JGL 27052, JGL 27103,

IET 24146, IET 23355, Sabita, RNR 8860-5, RNR 8860-1, RNR 8860-2, RNR 8860-3, RNR 8860-

4, RNR 8860-11, RNR 8860-15, CRR 689-84-3. Out of these, Sabita is the only variety and rest all are rice genotypes. Among them, RNR 8860-1 and its sister cultures developed by crossing MTU 1071 X BPT 5204 has shown strong resistance. Since BPT 5204 has been reported (Rao *et al.,* 2000) susceptible probably MTU 1071 might have contributed to resistance against panicle mite.

Among 20 rice varieties / cultures screened during *kharif* 2015 for panicle mite, three varieties *viz.,* JGL 3844, WGL 32100 and RNR 15038 were resistant, while five were found to be moderately resistant (Table 4). Out of 20 rice varieties/ cultures screened during *kharif* 2016 for panicle mite, two varieties *viz.,* JGL 3844 and RNR 15038 were resistant, while three others viz., MTU 1010, JGL 1798 and RNR 17497 were moderately resistant.

The panicle mite incidence was found to be relatively very low in rice cultures with well exerted panicles (> 2-4cm exertion) *i.e.* JGL 3844 and RNR 15038 compared to varieties with poor exertion or incompletely exerted panicles. Suresh *et al.* (2012) reported that 8 cultures *viz.,* RNR 898, RNR 9038, RNR 8913, RNR 8860, RNR 2458, Godavari Isukalu, NSN 21184 and NSN 34949 were moderately resistant, while none of the cultures were found to be completely resistant. Though none of the tested cultivars were resistant against sheath mite damage, the rice cultivars MTU-7029 and IR-64 were tolerant and IR-20 and IET-4094 were susceptible in West Bengal (Karmakar, 2008).

Scented varieties harboured more number of mites than the non-scented varieties in Cuttack region of Orissa (Ghosh *et al*., 1996). Rao and Prakash (2006) studied the varietal reaction of 22 commonly grown rice varieties, Ramaboita was the most resistant and Tapaswini was most susceptible followed by scented varieties Kalajoha, Taraodi basmati, Pusa Basmati-1 and Basmati-370 and Vanaprabha, Heera, Annada and Vandana were tolerant at Cuttack, Orissa.

It was noticed in the present study that varieties either maturing early or having good panicle exertion recorded less grain discoluration even though mite damage symptoms were observed, indicating escaping mechanism rather than any kind of genetic, biochemical factor responsible for resistance. On the contrary, varieties with poor panicle exertion registered higher per cent grain discolouration and were found either susceptible or moderately susceptible. This might be due to the availability of more feeding time for the mite population to remain in between leaf sheath and favourable microclimate for fungal growth.

However, further in-depth studies are needed to identify genetic sources or biochemical basis for resistance. Till then the resistant cultures identified to offer resistance to panicle mite with good yield potential can be advanced apart from using varieties *viz.,* Sabita, JGL 3844 (Karimnagar Samba) and RNR 15038 in the crossing programmes to evolve panicle mite resistant varieties.

Table 2. Reaction of different rice genotypes and varieties against rice panicle mite during, *Kharif* 2015

S. No	Designation	Parentage	PM			Damage Grading
			LM	LSH	GD	
1	JGL 20644	MTU 1010 X JGL 11118	-	-	-	*
2	JGL 21814	JGL 13595 x JGL 11470	3	3	7	MS
3	JGL 21815	JGL 13595 x JGL 11470	5	5	7	MS
4	JGL 21831	JGL 13595 x JGL 11470	5	3	3	MR
5	JGL 21870	MTU 1010 x JGL 11727	5	5	7	MS
6	JGL 23182	JGL 4147 x HMT Sona	5	3	5	MR
7	JGL 24267	MTU 1001 x JGL 3844	3	7	7	MS
8	JGL 24296	MTU 1010 x NLR 34449	9	9	9	HS
9	JGL 24303	MTU 1010 x NLR 34449	3	9	5	S
10	JGL 24307	MTU 1010 x NLR 34449	**1**	**3**	**3**	**R**
11	JGL 24309	MTU 1010 x NLR 34449	3	5	5	MR
12	JGL 24312	MTU 1010 x NLR 34449	5	9	7	S
13	JGL 24315	MTU 1010 x NLR 34449	9	9	9	HS
14	JGL 24330	MTU 1010 x NLR 34449	5	7	7	S
15	JGL 24332	MTU 1010 x NLR 34449	3	3	3	MR
16	JGL 24344	HPR 2143 x JGL 3855	**1**	**1**	**3**	**R**
17	JGL 24423	MTU 1010 x NLR 34449 //MTU 1010	9	9	9	HS
18	JGL 24438	BPT 5204 x JGL 11118	-	-	-	*
19	JGL 24480	JGL 17004 x NLR 3042	3	7	9	MS
20	JGL 24493	JGL 17004 x NLR 3042	3	7	5	MS
21	JGL 24495	JGL 17004 x NLR 3042	5	7	9	S
22	JGL 24497	JGL 17004 x NLR 3042	**3**	**3**	**3**	**R**
23	JGL 24498	JGL 17004 x NLR 3042	5	5	7	MS
24	JGL 24502	JGL 17004 x NLR 3042	5	5	5	MS
25	JGL 24509	JGL 17204 x VD 62	5	7	7	S
26	JGL 24513	JGL 17204 x VD 62	7	7	9	HS
27	JGL 24520	JGL 11118 x VD 82	5	7	9	S
28	JGL 24527	JGL 11727 x VD 82	7	7	9	HS
29	JGL 24548	JGL 3844 x VD 62	5	7	9	S
30	JGL 25153	JGL 17653 x RP 2421	5	7	9	S
31	JGL 25154	JGL 17653 x RP 2421	9	9	9	HS
32	JGL 26772	BPT 5204 x (JGL 18047 xBadrakali)	9	9	9	HS
33	JGL 26838	JGL 11118 x IR 83222-85	9	9	9	HS
34	JGL 26901	MTU 1010 x IET 19600	3	5	3	MR
35	JGL 26902	JMS 12-1	9	9	9	HS
36	JGL 26941	MTU 1010 x IR 83222-85	9	9	9	HS
37	JGL 26949	JGL 18047 x Badrakali	5	7	9	S
38	JGL 26951	JGL 18047 x Badrakali	3	9	7	S
39	JGL 26953	JGL 18047 x Badrakali	9	9	9	HS
40	JGL 26956	JGL 18047 x Badrakali	3	5	9	MS

S. No	Designation	Parentage	PM			Damage Grading
			LM	LSH	GD	
41	JGL 26959	JGL 18047 x Badrakali	3	5	9	MS
42	JGL 26960	JGL 18047 x Badrakali	3	5	5	MR
43	JGL 26961	JGL 18047 x Badrakali	3	5	5	MR
44	JGL 26962	JGL 18047 x Badrakali	3	5	5	MR
45	JGL 26965	JGL 18047 x Badrakali	3	9	7	MS
46	JGL 26967	JGL 18047 x Badrakali	3	5	7	MS
47	JGL 26972	JGL 18047 x Badrakali	3	5	9	MS
48	JGL 26973	JGL 18047 x Badrakali	3	5	9	S
49	JGL 26979	JGL 18047 x Badrakali	5	7	5	MS
50	JGL 26984	JGL 18071 x Badrakali	3	5	3	MR
51	JGL 26989	JGL 18071 x Badrakali	3	7	3	MS
52	JGL 26991	JGL 18071 x Badrakali	3	7	5	MS
53	JGL 26997	JGL 18071 x Badrakali	3	7	9	S
54	JGL 27002	JGL 18071 x Badrakali	5	7	9	S
55	JGL 27006	JGL 18071 x Badrakali	7	7	9	HS
56	JGL 27015	JGL 11727 x JGL 17004	7	7	9	HS
57	JGL 27020	JGL 11727 x JGL 17004	5	7	7	S
58	JGL 27021	JGL 11727 x JGL 17004	5	7	9	S
59	JGL 27033	JGL 11470 x Himalaya 741	9	9	9	HS
60	JGL 27036	JGL 11470 x Himalaya 741	5	7	9	S
61	JGL 27038	JGL 11470 x Himalaya 741	5	7	3	MS
62	JGL 27045	JGL 11470 x Himalaya 741	3	5	7	MS
63	JGL 27051	JGL 11470 x BPT 5204	3	5	7	MS
64	JGL 27052	JGL 11470 x BPT 5204	**3**	**3**	**0**	**R**
65	JGL 27053	JGL 11470 x BPT 5204	3	5	7	MS
66	JGL 27056	JGL 11470 x BPT 5204	3	5	7	MS
67	JGL 27058	JGL 11470 x BPT 5204	3	5	7	MS
68	JGL 27063	JGL 11470 x BPT 5204	3	5	7	MS
69	JGL 27071	JGL 11470 x BPT 5204	3	5	7	MS
70	JGL 27072	JGL 11470 x BPT 5204	3	5	7	MS
71	JGL 27075	JGL 11470 x BPT 5204	3	5	7	MS
72	JGL 27097	JGL 3844 x BPT 5204	3	5	7	MS
73	JGL 27099	JGL 3844 x BPT 5204	3	5	7	MS
74	JGL 27101	JGL 3844 x BPT 5204	3	9	9	S
75	JGL 27102	JGL 3844 x BPT 5204	3	5	7	MS
76	JGL 27103	JGL 3844 x BPT 5204	**3**	**3**	**3**	**R**
77	JGL 27107	JGL 3844 x BPT 5204	3	5	3	MR
78	JGL 27109	JGL 3844 x BPT 5204	3	5	5	MR
79	JGL 27112	JGL 11118 x RNR 2465	3	5	5	MR
80	JGL 27117	JGL 11118 x RNR 2465	3	5	5	MR
81	JGL 27122	JGL 17653 x RP 2421	3	5	5	MR
82	JGL 27124	JGL 17653 x RP 2421	3	5	5	MR
83	JGL 27130	JGL 18065 x VD 82	3	5	5	MR

S. No	Designation	Parentage	PM			Damage Grading
			LM	LSH	GD	
84	JGL 27131	JGL 18065 x VD 82	3	5	5	MR
85	JGL 27133	JGL 18065 x VD 82	3	5	5	MR
86	JGL 27141	JGL 15185 x HPR 2143	5	9	7	S
87	JGL 27142	JGL 15185 x HPR 2143	5	9	7	S
88	JGL 27143	JGL 15185 x HPR 2143	5	9	7	S
89	JGL 27347	JGL11470 x GP 275	3	5	9	MS
90	JGL 27353	JGL11470 x GP 275	9	9	9	HS
91	JGL 27356	JGL11470 x GP 275	9	9	9	HS
92	JGL 27361	JGL11470 x GP 275	3	5	5	MR
93	JGL 27371	JGL11470 x GP 275	3	5	5	MR
94	JGL 27391	JGL11470 x GP 275	3	5	7	MS
95	JGL 1798		5	5	7	MS
96	JGL 3844		5	5	7	MS
97	JGL 3855		5	9	9	S
98	JGL 11470		3	7	5	MS
99	JGL 11118		3	7	5	MS
100	JGL 18047		3	7	5	MS
101	JGL 19621		3	7	5	MS
102	JGL 20171		3	7	5	MS
103	JGLH1		3	7	5	MS
104	JGLH2		3	7	5	MS
105	JGLH3		3	7	5	MS
106	JGLH4		3	7	5	MS
107	JGLH5		3	7	5	MS
108	JGLH6		3	7	5	MS
109	JGLH7		3	7	5	MS
110	JGLH8		3	7	5	MS
111	JGLH9		3	7	5	MS
112	JGLH10		3	7	5	MS
113	KPS3219		3	7	9	MS
114	KPS3247		3	7	9	MS
115	KPS2874		3	7	9	MS
116	KPS2920		3	7	9	MS
117	KNM604		3	5	3	MR
118	KNM626		3	5	9	MS
119	KNM773		3	5	9	MS
		Old cultures (2014-15)				
120	KNM736		1	1	9	MS
121#	MRST DRR 1	CR 1898-32-69-CN 12-2	1	1	9	MS
122#	GSR 234	DSN 94-2013	1	1	5	MS
123#	PHS 93	Bhobu Kangbu	3	7	9	MS
124	IET 24143	MEPH-114	7	7	9	S
125	IET 24578	Pusa 1592/Pusa1612	7	7	9	S

S. No	Designation	Parentage	PM			Damage Grading
			LM	LSH	GD	
126	IET 23203	CRM 2203-2/Dubraj	7	7	9	S
127#	IET 24146	NK 16520	**3**	**3**	**3**	**R**
128		Pusa Sugandh 5	3	5	7	MS
129	IET 23052	Gayatri/Sudhir//Varshadhan	3	5	7	MS
130	IET 23356	IR 78877-208-B-1-1/IR 78878-53-2-2-2	3	5	7	MS
131	IET 23081	BPT 5204 / BPT4358	9	9	9	HS
132	IET 22994	CR 661-236-2-1/Swarna	5	5	5	MS
133	IET 24132	MARSHAL 135	5	5	7	MS
134	IET 23355	IR 78877-208-B-1-1/IR 78878-53-2-2-2	**1**	**1**	**3**	**R**
135	IET 24122	XRA-27936	9	7	9	HS
136		NDR 359	5	9	9	S
137	Improved Pusa RH 103	Pusa 21A X PRR 202	3	5	3	MR
138	Improved Pusa RH 102	Pusa 21A X PRR 201	9	9	9	HS
139	IET 23463	Mahamaya/NSN 9	9	7	9	HS
140#		Sabita	**1**	**3**	**3**	**R**
141	IET 23227	IR 72981-92-1-1-2-2 / UPR 199-1	1	3	5	MR
142	IET 24081	HRI 181	1	3	7	MS
		MRST RNR OLD CULTURES 2014				
143	168/ RNR8860-5	MTU 1071 X BPT 5204	**1**	**3**	**3**	**R**
144	170/ RNR8860-7	MTU 1071 X BPT 5204	3	5	9	MS
145	164/ RNR8860-1	MTU 1071 X BPT 5204	**1**	**3**	**3**	**R**
146	165/ RNR8860-2	MTU 1071 X BPT 5204	**1**	**3**	**3**	**R**
147	166/ RNR8860-3	MTU 1071 X BPT 5204	**1**	**3**	**3**	**R**
148	169/ RNR8860-6	MTU 1071 X BPT 5204	**1**	**3**	**3**	**R**
149	160	HHZ 5 SAL 10-DT 1 – DT 1(GSR 28)	-	-	-	*
150	167/RNR8860-4	MTU 1071 X BPT 5204	**1**	**1**	**3**	**R**
151	161	HHZ 5 SAL 10-DT 2 – DT1 (GSR 29)	3	3	7	MS
152	174/RNR8860-11	MTU 1071 X BPT 5204	**1**	**3**	**3**	**R**
153	178/RNR8860-15	MTU 1071 X BPT 5204	**1**	**3**	**3**	**R**
154	180/RNR8842-2	MTU 1071 X BPT 5204 ?	3	3	9	MS
155	1/RNR 20933	Sagar Samba X BM 71	1	5	1	MR
156	13/RNR 20977	RNR 2458 X MTU 1075	1	5	5	MR
157	22/RNR 21026	MTU 1071 X RNR 2458	1	3	9	MS
158	24/RNR 21037	MTU 1071 X RNR 2458	3	7	9	MS
159	38/RNR 21122	Pusa 1121 X BM 71	1	5	7	MR
160	94/RNR 21299	RNR 2465 X MTU 1010	3	7	9	MS
161	113/DSN82/2013	GSR 221	3	9	9	S
162	121/DSN94/2013	GSR 234	3	7	9	MS
163	144/NSN 1-140/13	MAULS 11	1	7	3	MR

S. No	Designation	Parentage	PM			Damage Grading
			LM	LSH	GD	
164	154/NSN 2-526/13	CRR 611-8-3-1	3	5	5	MR
165	132/NSN 1-38/13	RP 5212-41-4-3-1-1-1-B	1	7	3	MR
166	146/NSN 2-235/13	RNR 15048	3	9	9	MS
167	149/NSN 2-449/13	CRR 689-84-3	**1**	**3**	**3**	**R**
168	IET 23737	BPT 5204/KMP-150	3	5	9	MS
		(NSN2/226-2013)				
169	IET 23088	NSN 1 -1 (Kharif 2014)	9	9	9	HS
170	IET 23081	NSN 1 -2(Kharif 2014)	3	7	7	MS
171	IET 23081	NSN 1 -2-1 (Kharif 2014)	1	3	7	MR
172	IET 23081	NSN 1 -2-2 (Kharif 2014)	5	7	9	S

* NG: No germination

Table 3. Gist of reaction of rice genotypes / varieties screened against panicle mite, *kharif* 2015

Damage Grading	No. of rice genotypes / varieties showing
HS	20
S	29
MS	74
MR	30
R	16
NG*	3

Table 4. Screening of rice cultures against panicle mite, S*tenotarsonemus spinki*

S.No	Variety	Panicle mite damage score						Damage Rating		Length of panicle exertion from boot leaf	
		Leaf midrib		Leaf Sheath		Grain Dis-colouration					
		2015	2016	2015	2016	2015	2016	2015	2016	2015	2016
1	BPT 5204	3	3	5	5	9	7	MS	MS	No exertion	No exertion
2	Jaisriram	3	3	9	5	7	9	S	MS	Poor/No exertion	0-2cm
3	MTU 1001	1	1	9	5	9	7	MS	MS	No exertion	0-2cm
4	MTU 1010	1	5	7	3	5	3	MR	MR	2-5cm	3-5cm
5	JGL 1798	3	3	7	5	7	5	MS	MR	No exertion	No exertion
6	JGL 384	1	3	5	7	9	9	MS	MS	No exertion	No exertion
7	JGL 3844	3	1	1	1	1	3	R	R	3-6cm	3-4cm
8	JGL 3855	1	5	7	7	9	9	MS	MS	2cm	No exertion
9	WGL 32100	1	3	3	7	5	3	R	MS	0-2cm	0-2cm
10	WGL 14	3	3	5	9	7	7	MS	MS	No exertion	No exertion
11	Sheethal	1	3	5	5	7	7	MR	MS	0-1cm	0-1cm
12	Siddhi	1	5	7	7	9	7	MS	S	No exertion	No exertion
13	Tellahamsa	1	3	7	9	3	5	MR	MS	3-4cm	2-3cm
14	RNR 15048	1	1	7	7	7	9	MS	MS	4-6cm	1-3cm
15	KNM 118	1	5	9	7	7	9	MS	S	0-1cm	0-2cm
16	Sumathi	1	5	7	9	5	9	MR	S	No exertion	0-1cm
17	RNR 15038	1	1	3	1	3	3	R	R	2-3cm	2-4cm
18	RNR17497	1	3	5	5	3	5	MR	MR	2-6cm	2-3cm
19	RNR 19397	1	3	5	7	7	3	MS	MS	0-4cm	2-4cm
20	RNR19399	3	3	7	5	7	3	MS	MR	0-4cm	1-2cm

CONCLUSION

The screening methodology developed at rice section, Rajendranagar will be useful for quick screening against rice panicle mite under field conditions, The screening studies during *kharif* 2015 with 172 rice genotypes and varieties resulted in identification of 16 resistant genotypes and one variety (Sabita). The varieties JGL 3844 and RNR 15038 were found to offer resistance during two seasons (*kharif* 2015 & 2016) study with twenty popular varieties. Particularly, varieties with good panicle exertion (>2-4cm) registered less grain discolouration due to panicle mite. They can be potential donors in evolving panicle mite resistant varieties.

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