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CONTROL OF STACKBURN DISEASE OF RICE

The Stackburn disease of rice caused by *Trichoconis (Alternaria)padwickii* was first described by Godfrey (1916). Padwick and Gangully (1945> reported this disease from India. Eventhough it was considered as a minor disease in the past, after the introduction and spread of high yielding varieties severe crop losses have often been observed due to this disease. Surya narayana *et al.* (1967) reported that under favourable conditions the percentage of infected seeds may be quite high. Abicheeran and Sam Raj (1966) observed mycelia of the fungus in the embryoes of infected seeds and proved that the disease is internally seed borne.

No satisfactory control of this disease is so far known. Hence a field experiment was laid out at the Rice Research Station, Mancompu during 1975—'76 and 1976—'77 punja seasons. Details of seed and foliar treatments are given in Table 1., seeds were dibbled after treating for 30 minutes in the fungicidal solution. Foliar sprays were given on 45, 60 and 75 Disease incidence was scored in sheath and grain two weeks before harvest of the crop, as per the Standard Evaluation System of IRR1. Grain yield was also recorded (Table 1.)

All the seed and foliar treatments have reduced the sheath and grain infection compared to untreated control. Among seed treatments, aureofunginsol has given better control of sheath infection than hot water or vitavax. However the per cent efficiency in 'controlling grain infection was not so pronounced in any of the seed treatments. Among foliar treatments hinosan, kitazin and benlate have given better control of sheath and grain infection than others. As in the case of seed treatments, the effect of fungictdal sprays was also more pronounced in controlling sheath than grain infection.

Agarwal aud Thirumalachar (1966) obtained significant stripe disease control by treating barley seeds with 25 ppm aureofungin. Nene (1971) reported that Vitavax is specific against basidiomycetes and is not quite effective against several members of fungi imperfecti. The findings of the present investigation are in full agreement with the results reported.

The efficiency of fungicides belonging to organophosphorous group (Hinosan, Kitazin) in controlling important rice diseases has been reported by several workers in the past (Muneera, 1973, Mathai and Varadarajan Nair. 1976). Delp *et al*, (1967) and Nene (1971) have emphasized the use of benlate as foliar sprays against rice blast.

Table 1 (a) Effect of major (seed) treatments.

Treatments	Disease incidence Average score for 2 years		Yield in kgs per ha. Average for 2 years
	Sheath infection	Grain infection	
Aureofungin sol (soaked 1kg seed in 1g/litre water for 12 hours)	4.1 (37)	4.0 (10)	4282
Hot water Presoaked 1 kg seed for 12 hours and dipped in water at S2°C for 15 minutes)	4.8 (17)	4:2 (5}	4274
Vitavax (soaked 1kg seed in 1g/ litre water for 12 hours)	5.0(12)	5.3 (—18)	471S
Control (soaked 1 kg seed in water for 12 hours)	5.6 —	4.4 -–	4698
(b) Effect of minor (Foliar) treatments.			
Hinosan (1ml/litre water/plot)	3.4(41)	4.0(13)	4460
Kitazin (Iml/litre water/plot)	4.7(17)	4.0 (13)	4517
Difolatan (1g/litre water/plot)	5.1 (8)	4.1(10)	4568
Cuman-L (2g/litre water/plot)	5.0 (10)	4.2 (7)	44f6
Aureofungin-sol (100mg/litre water/plot)	5.1 (8)	4.2 (7)	4520
Benlate (0.5g/litre water/plot)	4.9 (12)	4.0 (13)	4370
Control (f litre water/plot)	5.5 –	4,5 —	4527

Figures in peranthesis denote the per cent efficiency over control.

The results of the present investigation indicate the superiority of hinosan, Kitazin and benlate over other foliar fungicides in controlling stack-burn disease. Though the treatments are effective to some extent, none of the above has given an economic control (Table 1 .).

The fact that better control of sheath than grain infection was achieved indicates that spraying beyond 75 Days may be required to combat the disease in the later stages of crop growth.

സംഗ്രഹം

നെല്ലിനെ ബാധിക്കുന്ന സ്റ്റാക്ക്ബേൺ രോഗത്തിന്റെ നിവാരണത്തിനായി വിവിധകുമിൾനാശിനികളും വിത്തിൽ പുരട്ടിയും, ചെടികളിൽ തളിച്ചും പരീക്ഷിച്ചു. വിത്തിൽ പുരട്ടുന്നവയിൽ ഓറിയോഫംഗിൻ എന്ന മരുന്നും, തളിക്കുന്നവയിൽ ഹിനോസാൻ, കിറാസിൻ, ബൻലേറ്റ് എന്നിവയും പ്രയോജനപ്രദമായികണ്ടു.

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Rice Research Station,
Mancompu, Alleppy
Kerala State.

K. M. RAJAN
P. **VARADARAJAN** NAIR

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