

## RESISTANCE OF SOME RICE VARIETIES TO 'UDBATTA' DISEASE IN WYNAD

Udbatta disease incited by *Ephelis oryzae* Sydow (*Balansia oryzae-sativae* Hashioka) has been prevalent in Wynad tract of Kerala state (974 m above msl) since a long time causing appreciable yield loss in rice. Reports on the method of screening of rice varieties for resistance to 'Udbatta' (Mohanty, 1976) and the susceptibility of high yielding varieties to this disease (Govindu, 1969) are available. In order to find out the varietal reaction of long duration local varieties and short and medium duration high yielding varieties, an experiment was initiated at the Horticultural Research Station, Ambalavayal, as part of the research project on 'Udbatta' disease during 1978 and 1979 and the findings are reported here.

The method adopted by Mohanty (1976) was followed for the artificial inoculation of the varieties under study. During the first crop season of 1978, 50 g each of disease free seeds of 24 varieties of rice were taken and these were divided into two lots of 25 g each. In one lot 2.5 ml of spore suspension ( $1.6 \times 10^7$  spores/ml) was used as a slurry and in the other lot, 2.5 ml sterile water was used to serve as control. Ten seedlings each of inoculated and uninoculated lots of each variety were planted in singles at a spacing of 20 x 20 cm and in pots on 23-8-78 with 3 plants/pot (singles). Observations on the incidence of disease infection in plants and earheads were recorded at flowering stage. The scale adopted by Mohanty (1976) was employed for categorisation of varieties into resistant, moderately resistant, susceptible and highly susceptible.

In 1979, 14 short, medium and long duration cultures received from Rice Research Station, Pattambi were again tried for disease resistance adopting the above method.

The data indicated that none of the varieties used in this trial developed the disease when inoculated artificially. But in 1978, it was observed that Kalinga I, Annapoorna and I ET-1444 when grown as bulk crop exhibited high levels of disease intensity. Govindu (1969) reported that IR-8 was susceptible to 'Udbatta' disease. Shivandappa, *et al.* (1974) found varieties like IR-20 and Jaya to be highly susceptible to this disease. This confirmed that the varieties used in the trial were not necessarily disease resistant as indicated by the study but dry seed inoculation of spore suspension was ineffective to induce disease. It is possible that the pathogen is internally seed borne in nature as in smuts or that the plant is vulnerable to infection at a later period of growth. This needs to be confirmed.

Mohanty (1976) reported that he could produce disease in 10 varieties out of 24 in winter 1972 and 20 out of 25 varieties in winter 1973 by artificial inoculations of dry seed with spore suspension. Mohanty (1977) reported that dry seed smeared with spore suspension and soaked seed mixed with spore dust appeared to be more

Table 1  
List of varieties tested

1978 1st crop (July-Dec )	1979 1st crop (Aug.-Dec.)
1. Chamala	1. 1907
2. KalladiAryan	2. BR-51
3. Gandhakasala	3. 1725
4. Chenellu (Ceylon)	4. 1934
5. Chenthadi	5. 1936
6. Paluveliyam	6. 1675
7. Kothandan	7. 2054
8. Kannikazhama	8. 1661
9. Chettuveliyam	9. 1937
10. Chennellu(Kolathara)	10. 1727
11. Veliyam	11. 1624
12. Mullan Punched	12. IR-5
13. Kottathondi	13. Mashuri
14. Punnatan thondi	14. H-4
15. Mannu veliyam	
16. Velumpala	
17. Peruvaya	
18. Jaya	
19. Annapoorna	
20. IR-8	
21. IR-20	
22. Kalinga-I	
23. IET-144	
24. Rohini	

effective in inducing disease. The findings of the present study are in disagreement with the above results.

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## സംഗ്രഹം

വിവിധയിനം നെല്ലുവിത്തുകൾക്ക് കമ്പിത്തീരിരോഗത്തെ (ഉട്ബത്ത) ചെറുത്തു നീല്ക്കാനുള്ള കഴിവിനെ വിലയിരുത്തുവാനുള്ള ഒരു പഠനം അമ്പലവയൽ ഗവേഷണ കേന്ദ്രത്തിൽ rosmmlcawil rai കൃത്രിമമായി രോഗം ഒരിനത്തിലും വളർത്തുവാൻ കഴിഞ്ഞില്ല.

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## References

- Govindu, H. C. 1969. Occurrence of *Ephelis* on rice variety IR-8 and cotton grass in India. *Pl. Dis. Reprtr.* **53**: 360.
- Mohanty, N. N. 1976. Note on the varietal resistance in rice to 'Udbatta' disease. *Indian J. agric. Sci.* **46**: 490-92.
- Mohanty, N. N. 1977. Mode of infection of 'Udbatta' disease of rice. *IL. RISO*, **26**: 243-47.
- Shivandappa, N., Govindu, H. C. and Naidu, B. S. 1974. Effect of 'Udbatta' disease (*Ephelis oryzae* Syd.) on yield loss in rice. *Rice Path. News letter.* **1** : 9-11.