

In vitro isolation of rice tungro virus from cut leaves of rice

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Repeated tests at AICRIP show that rice tungro virus can be recovered from detached tungro-infected leaves even after 15 days. When nonviruliferous leaf-

hoppers were used to pick up the virus from infected leaves, the infection of detached leaves was similar to that of intact leaves at all ages. The negative transmission to test plants in several replications showed that the insects used carried no virus. Preliminary results are in the table; details will be published elsewhere. The longevity of the virus in vitro in dry tissues is also being studied.

laid out in a randomized block design with six replications. The nursery bed was sprayed twice with the formulations at a dose of 0.2% mixed with 0.5 cc of ligton liquid sticker for each liter of spray suspension. It was first sprayed at 10 days after seedling emergence and next at 1 day before transplanting. Spraying in the field began about a month after transplanting and continued at 10-day intervals for four spraying. The dose of Sankel and New Sankel used for spraying in the field was 2.22 kg/ha, with the spray suspension mixed with ligton liquid sticker at the rate of 0.5 cc/l. Disease incidence was recorded and a disease index (percent of damage) was calculated after the completion of all the sprays. The 0-4 scale for bacterial blight rating was used on 100 first leaves randomly collected by moving along both diagonals of each plot.

Both Sankel and New Sankel lowered the disease incidence in 1971 and 1973, but no definite indication was obtained in 1972 because disease pressure was low. In 1971, Sankel was significantly superior to New Sankel, but no such difference in their performance was found in 1973. No clear-cut yield differences were observed, probably because many factors other than disease affect yield.

In vitro isolation of tungro virus transmissible from detached infected rice leaves. AICRIP, Hyderabad, India.

Treatment	Infected plants ^a (no.) at				
	0 DS	2 DS	5 DS	10 DS	15 DS
Insect control	0	0	0	0	0
Healthy control	0	0	0	0	0
Healthy leaf bit	0	0	0	0	0
Infected plants	3.20 (3-4)	2.08 (1-4)	2.40 (1-4)	3.60 (3-4)	3.00 (2-4)
Infected leaf bit	3.60 (3-4)	2.60 (1-4)	2.20 (1-3)	1.40 (1-2)	1.40 (1-2)

^aOut of a total of four plants at 20 days after inoculation. DS = days after storage. Means of five replications. Ranges are in parentheses.

Efficacy of Sankel and New Sankel against bacterial blight of rice Xanthomonas oryzae (Uyeda Ishiyama) Dowson in field tests in West Bengal, India

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The control of bacterial blight of rice, especially among semidwarf varieties, is one of the most serious problems in rice-growing countries, including India. Until now, little success has been achieved through chemical applications, although in isolated instances, seed treatments and foliar sprays in the field have considerably reduced disease incidence and enhanced yields. Two new formulations, Sankel and New Sankel, both of

which contain 65 percent nickel dimethyl dithio carbamate, were tested against the disease at the Rice Research Station, Chinsurah, West Bengal. In the monsoon seasons of 1971, 1972, and 1973, 25-day-old seedlings of IR8 transplanted at one seedling/hill were

Disease index of bacterial blight during 1971, 1972, and 1973 (mean of six replicates). Rice Research Station, Chinsurah, West Bengal, India.

Treatment	Disease index (% damage)		
	(1971)	(1972)	(1973)
Sankel	43.33	1.29	20.20
New Sankel	48.79	2.33	20.50
Control	50.04	1.96	27.95
S.E.m	1.69	3.96	1.00
F ratio	5.04*	n.s.	19.07**
C.D. 5%	5.32	-	3.14

Influence of nitrogen fertilization on the development of bacterial blight

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Bacterial blight, incited by Xanthomonas oryzae, is a serious disease in many ricegrowing areas. Its occurrence has intensified with the introduction of

susceptible high-yielding varieties and increased use of nitrogen fertilizer.

To assess the intensity of bacterial blight, a field trial was conducted during the 1975 kuruvai season (July–October) with four levels of nitrogen (0, 50, 100, and 150 kg N/ha). A variety that was highly susceptible to bacterial blight, Karuna (Co. 33), was grown. The intensity of the disease was recorded during the maximum tillering stage, and the total nitrogen content of healthy and diseased leaves was estimated. The disease severity was significantly less with zero nitrogen, and increased with increasing levels of nitrogen. Severe bacterial blight was observed at 150 kg N/ha. The total nitrogen content of infected leaves was reduced more than that of healthy leaves. Increased grain and straw yields were observed in all treatments except the check. However, the reduction in grain and straw yield at the 150 kg N/ha level was due to the severity of the disease.

Efficacy of certain fungicides in the control of bacterial blight of rice

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Field trials were conducted with certain fungicides to assess their efficacy in controlling bacterial blight of rice caused by *Xanthomonas oryzae*. The trials were conducted in randomized block design in two seasons in 1973–74, the kuruvai (June–September) and the thaladi (November–February), using the susceptible varieties Karuna and IR8, respectively. The treatments were 1) Fytolan, 2) T.F. 130 (thiadiazole compound), 3) Vitavax, 4) Cuman EC, 5) Dithane Z-78, 6) Hinosan, and 7) untreated control. Three applications were made at 55, 65, and 75 days. Significantly less disease incidence was recorded in all treatments than in the untreated check. The lowest disease incidence in both seasons was obtained with T.F. 130, followed by Cuman EC and Fytolan (copper oxychloride). copper oxychloride was not phytotoxic on the two varieties.

Efficacy of certain fungicides in the control of sheath blight

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Sheath blight of rice incited by *Corticium sasakii* Shirai Matsumoto is a serious disease in many ricegrowing areas. With the introduction of high-yielding and high-fertility strains of rice, the disease is becoming more common. To study control measures, the fungicides Benlate W.P., Brassicol W.P., Hinosan EC, Kitazin EC, and Dithane D-14 EC were tested at 0.3 and 0.4 levels under pot culture conditions during kuruvai 1975. ADT 31, a variety susceptible to the disease, was raised in cement pots and then sprayed with the fungicides during the maximum tillering stage. The results showed that the systemic fungicide Benlate most effectively checked the disease, followed by Hinosan and Brassicol. Kitazin was also effective in controlling the disease, but it was phytotoxic at the concentrations tested. Dithane D-14 was ineffective against sheath blight, and phytotoxic to rice plants.

Incidence of sheath rot in rice – a potential problem for Sambalpur, Orissa

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Sheath rot caused by *Acrocyldrium oryzae* Saw. was observed in high-yielding varieties (HYV) grown in and around the Sambalpur ricegrowing areas in 1974 kharif and rabi and again in 1975 kharif. The intensity of the disease in 1974 rabi was higher than that in the preceding or the succeeding kharif. Sheath rot was widely prevalent in the HW and, to a lesser extent, in local tall varieties in farmers' fields. The disease was also noticed in local tall varieties in some ricegrowing areas of the adjacent district, Sundargarh, in 1975 kharif. The choking and sheath rot symptoms with discolored grains were more conspicuous in the HW. The table shows rice that are doing well under sheath rot pressure,

Reactions of varieties to sheath rot at Chiplima (Sambalpur), Orissa, India, in the 1975 kharif.

Designation	Reaction ^{a/}
IR24	R
IR26	R
CR 44-1 20-1	R
RP 825-70-7-1	MR
RP 825-71-4-1	R
RP 884-81-1	R
RP 974-1 12-1-6	R
IR1529-RP6801	R
IR2071-176-1-2-1	R
IR2071-669-3-6-4	MR
IR2071-685-3-5-4	R
CR 93-4-2	R
R 2410	R
Jaya	MR

^{a/}R = resistant; MR = moderately resistant.

Widespread occurrence of leaf scald of rice in Indonesia

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During the 1976 wet season (December–March), leaf scald disease (caused by *Rhynchosporium oryzae*) affected more than 1,000 ha of lowland rice in two districts, Gowa and Takalar, of South Sulawesi province. Bakka, a popular local variety, suffered most, but others, including improved varieties, were also affected.

The disease was observed at all plant stages, from seedling to maturity. Panicles of severely affected mature plants were also affected. The most commonly affected stage was maximum tillering. The disease was generally restricted to the tips of the lower leaves. When the spots were few and isolated, typical leaf scald symptoms were noticed. When the spots coalesced and were in an advanced stage, the symptoms resembled those of bacterial blight. Isolations yielded the leaf scald pathogen.

The disease was also observed in upland rice. It was found in both nitrogen-deficient and fertilized fields, but was more conspicuous in the latter.

Although the disease has previously been noted, this was the first time that large areas were affected in this province. Its present incidence, however, is not alarming. Its spread and incidence would be worth watching in other areas in the future.