

Table 2. Effect on ShR of frequent spraying of fungicides. TRRI, Aduthurai, India.

Fungicide	Frequency of spraying (d)	Disease intensity ^a
Carbendazim 0.1%	3	0 a
	5	0.6 a
	10	4.6 b
	15	7.4 c
Captafol 0.125%	3	3.4 b
	5	3.4 b
	10	4.6 b
	15	6.2 c
Unsprayed check	–	6.6 c

^a Means followed by the same letter are not significantly different at the 5% level by DMRT.

medium and individual grains were inserted by forceps into the leaf sheaths of CO 43, a susceptible cultivar.

Only the boot leaf sheath was susceptible to the disease; all other leaf sheaths showed no symptoms.

Different fungicides were sprayed at boot leaf emergence. A grain containing the fungus was inserted into the boot leaf sheath 24 h later. Disease development was assessed at intervals. When the entire leaf sheath was infected, thus preventing panicle emergence, the plant was graded 9; grades 7, 5, 3, and 1 showed decreasing disease intensity, with 0 as no infection. Fungicide captafol and carbendazim effectively controlled the disease up to 10 d after spraying. But at 15 d after treatment, none of the fungicides gave any protection (Table 1).

These results suggest that captafol and carbendazim are only fungistatic against the pathogen, not fungicidal. For effective protection, fungicides must be sprayed more often than once in 15 d.

In another experiment, the fungicides were sprayed and the fungus was inoculated 24 h later. Spraying was repeated once every 3 d 5 times, every 5 d 3 times, every 10 d 2 times, and every 15 d 2 times. Final disease intensity was assessed 3 d before harvest.

Carbendazim sprayed every 3 or 5 d gave complete protection throughout the crop period. Captafol sprays at intervals of 3, 5, or 10 d and carbendazim sprayed at 10-d intervals also gave significant protection. However, the fungicides sprayed at 15-d intervals were ineffective (Table 2). □

Chemical control of rice false smut

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False smut caused by *Ustilagoidea virens* (Cke) Tak. is a minor disease that usually occurs sporadically in ricefields. It rarely becomes serious in susceptible varieties.

We conducted a fungicidal trial in 1982 on CR1014, a popular susceptible

variety, with 10 treatments in a randomized block design with 3 replications. The chemicals were sprayed 4 times at 5-d intervals at the boot leaf stage. Disease incidence was calculated as percentage of panicles showing smutted grains in a randomly selected 1-m² area in each treatment.

CuO and TB significantly reduced disease incidence (see table). There was no significant difference in yield due to treatments. □

Effect of fungicidal sprays on false smut incidence. OUAT, Bhubaneswar, India, 1982. ^a

Treatment	Application rate (ai/liter)	Disease incidence angular (%) values	Grain yield (t/ha)
Copper oxychloride (CuO)	2.5 g	0.42 (0.16)	2.0
Thiophanate benzyl (TB)	0.2 ml	0.63 (0.03)	1.8
Captafol	1.2 g	4.41 (0.59)	1.9
Maneb	1.8 g	3.12 (0.32)	1.9
Benomyl	1.0 g	5.67 (1.00)	1.8
Carbendazim	0.5 g	4.13 (0.59)	1.9
Zineb	1.8 ml	1.66 (0.13)	2.1
MBC	0.5 g	4.45 (0.63)	1.9
Organophosphate	0.5 ml	6.37 (1.31)	2.1
Check (water)	–	4.41 (0.61)	2.0
CD (0.05)	–	2.18	ns

^a Mean of 3 replications.

Silica reduces disease on upland rice in a high rainfall area

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The effect of silica in reducing disease in lowland rice is well known, but reports of its effect on upland rice are few. Highly weathered, leached acid soils in

high rainfall upland areas might be expected to be low in available silica.

Trials at IITA's high rainfall station at Onne in southeast Nigeria examined the effect of silica on diseases in upland rice. The soil is a Typic Paleudult with coarse-loamy texture, pH 4.3, and low effective cation exchange capacity (2.86 meq/ 100 g soil in the top 15 cm). Exchangeable Al is the dominant cation. Minerals in the clay fraction are mainly kaolinite, with a small amount of

Effect of silica application on fungal diseases of upland rice. ^a Onne, Nigeria, 1986 wet season.

Variety	Silica treatment	Disease score ^b			
		Sheath blight	Leaf scald	Neck blast	Grain discoloration
ITA212 (lowland semidwarf)	Without	1.7	3.7	3.0	7.0
	With	1.0	1.7	2.3	3.7
ITA303 (upland semidwarf)	Without	3.7	5.7	4.3	5.0
	With	3.0	4.3	2.3	3.0
OS6 (upland tall)	Without	1.0	1.0	4.3	3.0
	With	1.0	1.0	1.0	1.0

^a Means of 3 replications. ^b Standard evaluation system for rice.