

in a field trial October-February 1980. The randomized block design with 11 treatments and 3 replications used 3- × 1.5-m plots and 20- × 10-cm spacing. Test variety was IR20. Fertilizer was applied at 120-8.75-147.5 kg NPK/ha. P₂O₅ and K₂O were applied as basal dressings; N as urea was applied 1/2 as basal and 1/2 as topdressing. Chemicals were sprayed three times: 30, 45, and 60 days after transplanting.

The data indicate that spraying 0.1% carbendazim significantly controlled helminthosporium leaf spot disease (see table). ■

Rice blast disease outbreak in Sinjai and Bulukumba, South Sulawesi, Indonesia

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The Indonesian Government released Semeru (IR2307-247-2-2-3, CRI 3/IR1561-228-3-3) in 1980 for planting in both low and high elevations. As part of a rainfed wetland pilot production program (Lappo Ase) in South Sulawesi, Semeru was planted at elevations of 300-1,000 m in Sinjai District and at 700-1,000 m in Bulukumba district.

In Bulukumba, rainfall varied from 151 to 521 mm June-July (8-18 rainy days), with July overcast most days and nights. In the more than 900 ha planted to Semeru and fertilized with 100 kg N/ha (urea) and 37.5 kg P₂O₅ triple superphosphate, neck blast infection ranged from 6 to 85%. About 80 ha had more than 85% neck blast infection.

At Sinjai, rainfall ranged from 60 to 658 mm June-September (7-20 rainy days). Of about 390 ha planted to Semeru and fertilized with 87.5 kg N/ha (urea and ammonium) and 37.5 kg P₂O₅/ha, 3.5 ha suffered early from serious leaf blast. Eventually the entire area was seriously affected. Observations during heading to hard dough stage showed that neck blast infection varied from 1 to 100% on about 390 ha. More than 100 ha were hopperburned during the filling stages. ■

Effect of chemicals on the control of helminthosporium leaf spot disease. Ambasamudram, India.

Treatment		Helminthosporium	infection
		%	Transformed value
Carbendazim	0.1%	6.5	14.7
Copper oxychloride	0.25%	8.8	17.3
Edifenphos	0.15%	8.8	17.3
Zineb	0.25%	9.5	18.0
Agrimycin	0.025%	9.0	17.4
Urea	1.0%	7.7	16.1
DAP	1.0%	11.1	19.4
Kcl	1.0%	9.4	17.8
Carbofuran at 0.5 kg a.i./ha ^a		8.8	17.1
Carbendazim SST ^b	0.04%	8.3	16.7
Control		12.0	20.3
CD (P = 0.05 level)			2.19

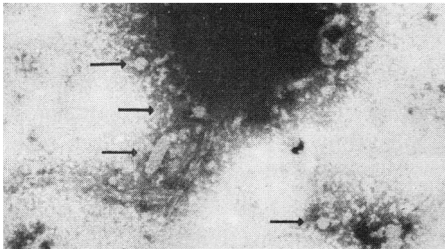
^aCarbofuran was applied 10, 25, and 40 days after transplanting. ^bSprouted seed treatment = sprouted seeds were soaked in carbendazim solution for 15 minutes before sowing.

Association of rice tungro spherical virus and rice tungro bacilliform virus with the disease in Janakpur, Nepal

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Rice plants showing symptoms of yellow leaf discoloration, plant stunting, and delayed flowering were found at Hardinath Agricultural Farm, Janakpur, Nepal. The disease occurred in circular field patches several meters in diameter.

Electron microscopic observations of dip preparations revealed polyhedral



Electron micrograph showing rice tungro spherical virus and rice tungro bacilliform virus (arrows) in dip preparation from leaf sap infected with rice tungro disease from Janakpur, Nepal.

particles about 30 nm in diameter and bacilliform particles about 30-35 nm in diameter, both 100-300 nm in length (see figure). This shows that rice tungro disease in the Janakpur area is caused from double infection by both rice tungro spherical virus and rice tungro bacilliform virus, as has been reported in the Philippines, Thailand, Malaysia, and Indonesia. ■

Rice stem nematode disease in Vietnam

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Rice stem nematode disease has become a serious concern in Vietnam. Department of Plant Protection surveys 1975-1980 showed that the disease was focused in the Mekong Delta, the largest (more than 2 million ha) rice production area.

Each year *D. angustus* causes important losses in thousands of hectares of

deepwater rice and double-transplanted rice (yield losses of 50-100%). Some damage is done in improved rice areas.

The disease appears to be serious in the deepwater area between two branches of the Mekong (Hau-Giang and Tien-Giang Rivers) and in provinces along the rivers (An-Giang, Hau-Giang, Long-An, Bon-Tre). It has not been reported in coastal and upland areas.

The nematode has caused great damage to rice crops in Cuu-Long, Dongthap, An-Giang Provinces. At the end of 1974, hundreds of hectares of deepwater rice in the Due-Thanh district were totally lost. Infested areas increased to