relative humidity to 90% and above and decreased number of sunshine hours. Temperatures remained optimum for multiplication of BLS (Fig. 2). The decrease in severity from 55 to 65 DT might be attributed to reduced available N and heavy rain that could have washed bacterial exudate from the diseased leaves, limiting disease spread.

BB disease was severe at 60 and 90 kg N/ha, causing 15-42% leaf area damage in Pakistan Basmati, T412, IET8580, and IET8579. Basmati 370 and Badshabhog suffered the least damage at all N levels. The disease levels established during early growth stages gradually increased through the season, although peak incidence was between 35 and 45 DT. Disease intensity overlapped at 60 and 90 kg N/ha in Pakistan Basmati; intensity increased with increascd N in IET8580 (Fig. 2). □

Rhizoctonia solani: an agent of rice boot blight

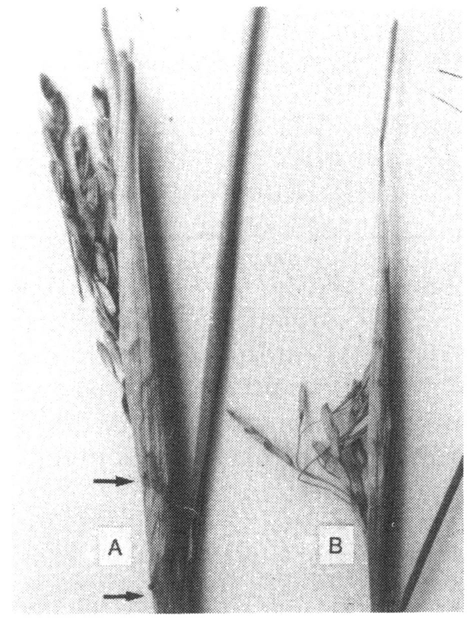
N. I. Singh, Km. R. K. T. Devi, and Kh. U. Singh, Botany and Plant Pathology Department, Manipur Agricultural College, Iroisemba, Imphal 795001, India

During disease surveys at different growth stages of rice in several rice-growing areas in Manipur 1978-88, we identified a severe boot blight disease.

The blight occurs on the uppermost leaf sheath enclosing young panicles. Early lesions are ellipsoid or ovoid greenish grey, coalescing to occupy the whole sheath. The center of lesions becomes greyish white with a brown margin. Sclerotia of the fungus forming on or near the affected area (see figure, a), are easily detached. Infected panicles rot within the sheath or emerge only partially. Infected grains become chaffy brown. Sometimes a few panicle branches within an infected sheath emerge sidewise (see figure, b) and become chaffy.

We collected several samples of diseased rice and isolated the causal fungus on potato dextrose agar (PDA) slants. Mycelium is white when young, becoming brown and septate. Its internodal area range is 20 × 120-40 × 350 μm. Sclerotia are more or less globose when young, becoming dark brown. Individual sclerotium measures as long as 4 mm.

Pathogenicity test was performed by inserting artificially infected rice grains or mature sclerotia inside the leaf sheaths enclosing young panicles. The causal fungus was identified as *Rhizoctonia solani* Kuhn, the causal agent of rice sheath and leaf blight. This is the first report of the occurrence of *R. solani* causing boot blight in India. □



Rice panicles infected with *Rhizoctonia solani* Kuhn, Imphal, India, 1988. A = fungal sclerotia, B = infected panicle branches.

Effect of roguing on rice tungro virus (RTV) incidence and rice yield

D. B. Estano, Entomology Department, IRRI; and B. M. Shepard, Clemson University, Coastal Research and Education Center, Charleston, South Carolina 29414, USA

RTV is controlled by planting resistant rice varieties. However, resistance has broken down in many areas. In these cases, early insecticide application and frequent removal, or roguing, of diseased rice plants are recommended. The principle behind roguing is to remove the source of inoculum, reducing the chances of disease spread by the green leafhopper (GLH) vector.

We transplanted 21-d-old seedlings of rice variety IR42 (moderately resistant to GLH, susceptible to RTV), on a 1/8 ha field at IRRI farm in 1988 wet season. The area was divided into 12 plots; 6 were rogued, 6 were not. RTV-infected hills were rogued and replaced with healthy plants from adjacent hills beginning 14 d after transplanting (DT) and continuing weekly to 60 DT.

RTV-infected hills were counted at 30, 45, and 60 DT. Grain yield was taken from the center of each plot, leaving two border rows.

RTV was significantly lower in rogued than in nonrogued plots at 45 and 60 DT, but yields did not differ significantly (see table). Yields were low with and without roguing.

RTV incidence and yield of IR42 in rogued and nonrogued plots. [a] **IRRI, 1988 wet season.**

Plot treatment	RTV incidence (%) 30 DT	45 DT	60 DT	Grain yield (t/ha)
Rogued	1.9 a	7.2 a	12.0 a	1.8 a
Nonrogued	3.2 a	18.0 b	29.7 b	1.7 a

[a] DT = days after transplanting. In a column, treatment means having a common letter are not significantly different at the 5% level by DMRT.

Our conclusion is that, while roguing may help reduce RTV incidence, it is not likely to help if RTV intensity is high. □