

Sheath blotch of rice in Bangladesh

A. K. M. Shahjahan, H. U. Ahmed, and S. A. Miah, Bangladesh Rice Research Institute (BRRI), Joydebpur, Dacca

A new disease symptom was observed on BR9 and other varieties in fields at BRRI farm in Joydebpur in July 1982. Outer leaf sheaths near the lower part of the stem showed brownish blotching or banding. The 5-cm band usually circled the entire sheath wrapping the culm. Outer leaves died. As plants matured black pycnidia with protruding ostioles and setae emerged from the sheath tissues. Similar symptoms were described as "sheath blotch" caused by *Pyrenochaeta oryzae* by Miyake (1910).

The fungus was isolated from diseased tissue and produced pycnidia and pycnidiospores in 15- to 20-day-old cultures. The fungus was *Pyrenochaeta* sp. To complete Koch's postulates, BR9 plants were inoculated at booting stage with the

fungus. Blocks were attached to slightly wounded sheaths with scotch tape, and the whole plant was covered with a polyethylene bag for 3 days. Water-soaked lesions and brownish discoloration and banding similar to those found in the field were produced 7-10 days after inoculation (see figure). *Pyrenochaeta* sp. was also reisolated from the artificially inoculated plants, confirming the cause of the disease.

A survey was conducted on the BRRI farm to determine level of sheath blotch occurrence on different varieties. Of 178 entries examined, 152 were infected. The most susceptible were: BR9, BK194-1-2-1-3-2, BR593-647-25-2, BR1045-188-2-1, BKNFR76001-3-4-1-4-1, IR5, IR9288-B-B-B240-2, IR4744-295-2-3, IR9852-22-3, IR11297-158-1-1, IR13539-100-2-2-2-3, IR19661-131-1-3-1-3, IR5889-8-1-4-1-0, IR7732-1-198-RGA-BR(B)-B, IR9288-1-48-RGA-BR(B)-B, IR7732-1-87-RGA-BR(B)-B, DWCB-464-B, and DWCT134-3-1-5. □



Typical symptoms of sheath blotch of rice produced by artificial inoculation of BR9 with *Pyrenochaeta* sp.

Serological relations between rice grassy stunt and the unknown disease of rice transmitted by *Nilaparvata lugens* (Stål) in the Philippines

H. Hibino and P. Q. Cabauatan, IIRRI

Serological tests were conducted to determine the relationship between the causal viruses of rice grassy stunt (GSV) and the unknown disease of rice transmitted by brown planthopper *N. lugens*. A latex agglutination test was made using an antiserum to GSV-associated filamentous particles prepared in Japan (1982).

Latex suspension (Difco Bacto Latex 0.81) was mixed with tris-HCl buffer containing antiserum at a 1/1,000 dilution and allowed to stand for 30 minutes. The coated latex suspension was washed and stored for use in the agglutination test. Sap of TN1 plants artificially infected with either the unknown disease or GSV was diluted 2 times. Diluted sap was mixed with the coated latex suspension and shaken for 30 minutes. Reaction was judged visually or under a light microscope based on clumping of latex particles. Positive reactions were obtained from sap of plants infected with the un-

Reaction of rice grassy stunt virus (GSV) and the unknown virus from the Philippines to GSV antiserum from Japan using the latex agglutination technique.

Source of infection	Reaction at given sap dilution									
	1:10	1:20	1:40	1:80	1:160	1:320	1:640	1:1280	1:2560	1:5120
GSV	+	+	+	+	+	+	+	+	+	+
Unknown virus	+	+	+	+	+	+	+	+	-	-
Virus-free	-	-	-	-	-	-	-	-	-	-

known disease up to 1 : 1280 dilution. The sap from GSV-infected plants gave positive reaction up to 1 : 5 120 (see table). Positive results were also obtained from the sap of 19 of 24 naturally infected plants showing tungro-like symptoms. Results indicate that the unknown virus and GSV in Japan and the Philippines is

serologically related. The unknown virus is therefore identified as a strain of GSV because of their serological relationship and similarity in their symptomatology and virus-vector interactions. We propose that the new strain be designated as strain 2 (GSV-2) and the former type be designated strain 1 (GSV-1). □

Unknown disease of rice transmitted by the brown planthopper in the Philippines

P. Q. Cabauatan and H. Hibino, IIRRI

Rice plants with rice tungro virus-like (RTV) symptoms were observed at IIRRI experimental farm (Laguna) and in Koronadal (South Cotabato). Infected plants showed stunting, leaf yellowing,

and spreading growth. Symptoms varied according to variety and age of plant when infected. Leaves of some varieties were mottled or striped and had irregular rusty blotches. Plants infected at seedling stage showed profuse tillering similar to that caused by rice grassy stunt (GSV) and usually died prematurely. Plants infected at later stages developed symptoms indistinguishable from those caused by