

after inoculation, seedlings were indexed by enzyme-linked immunosorbent assay.

No line showed visible symptoms of RTV. All lines were resistant to RTSV; RTBV infection varied from 40 to 85% (see table). Ratakita 1, RAUSRR15, and TCA227 had no RTBV + RTSV infection. Varieties resistant to GLH were predominantly infected with RTBV alone.

Crosses made to incorporate resistance to GLH and RTV can serve as new sources of resistance. ■

Reaction of selected rice lines from Bihar, India, to GLH, RTBV, and RTSV. IRRI, 1987.

Line	Plants tested (no.)	GLH reaction ^a	Infection ^b (%)	
			RTBV + RTSV	RTBV
Ratakita 1	53	1	0.0	45.3
RAUSRR15	42	3	0.0	76.2
RAUSRR18	54	3	1.4	42.6
TCA4-1	35	3	8.5	40.0
TCA227	41	3	0.0	85.4
TCA269	20	3	30.0	40.0

^aNo-choice test. ^bAll lines had zero RTSV infection. Standard evaluation system for rice scale 1 to 9. Susceptible TN1 scored 9; resistant IR29 scored 3.

Detection of tungro viruses after inoculation

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We examined how soon rice tungro bacilliform (RTBV) and spherical viruses (RTSV) can be detected by enzyme-

linked immunosorbent assay (ELISA). Adult green leafhoppers *Nephotettix virescens* were given 3 d acquisition feeding on TN1 Plants infected with both RTBV and RTSV or with RTSV alone and introduced on 21-d-old TN1 seedlings in the greenhouse at 1 or 5 insects/seedling for 24-h inoculation (90 seedlings inoculated with each virus source

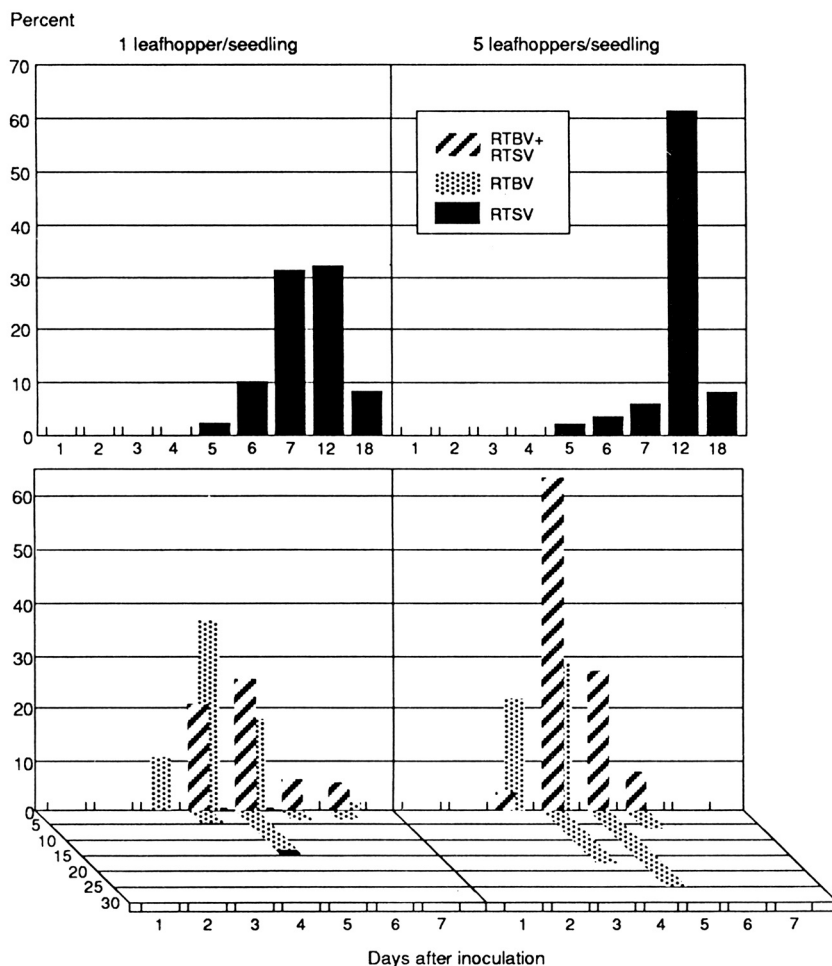
with a given number of leafhoppers).

Leaves 10-15 mm long were sampled daily to 7 d after inoculation (DAI) and at 12 and 18 DAI.

Initial detection of RTBV was at 3 DAI. At 4 DAI, the number of plants in which both viruses were newly detected increased sharply, then gradually decreased thereafter (see figure).

RTSV alone was initially detected 4 DAI in seedlings inoculated by 5 leafhoppers and 5 DAI in seedlings inoculated with 1 leafhopper. Maximum detection of RTSV was 7-12 DAI.

These results indicate that multiplication of RTSV alone is slower than when plants are infected with both viruses. ■



Detection of RTSV alone, RTBV alone, and RTBV + RTSV in 21-d-old TN1 seedlings inoculated 1 or 5 *Nephotettix virescens* in the greenhouse. Bars below the base line show percentage of plants in which RTBV or RTSV was detected first as single infection, then as double infection.

Upland rice genotypes resistant to blast (BI) disease in West Sumatra

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In 1987, we developed a method for screening B1 resistance in the field and evaluated 437 upland rice genotypes from Indonesia, CIAT (Colombia), EMBRAPA (Brazil), and IRRI (Philippines) six times within 2 yr. Under heavy disease pressure, 176 showed a high degree of resistance (see table). Many of them showed attributes of slow susceptibility under epiphytotic conditions in the field.

The materials are being used in our upland rice breeding program to improve the B1 resistance of local cultivars. ■