tion showed cytoplasm vacuolation, and coagulation followed by hyphae bursting.

Bacteria with different colony types were isolated from sheath blight sclerotia and tested in petri dishes to study their antagonistic activities against *T. cucumeris*. Many isolates were antagonistic. Some inhibited mycelial growth and caused browning of hyphal tips. Microscopic examination showed that necrosis of hyphae occurred. Hyphae remained intact but nonviable, and protoplasm was agglutinated and pigmented.

Isolate 17 prevented lesion development when sprayed on detached rice flag leaves before, after, and simultaneously with inoculation of the pathogen. Sclerotial bodies soaked in a suspension of bacterial isolate 17 for 2 weeks were not viable. Bodies treated with isolate 24 showed an abrupt germination decline (63.3% to 26.7%) at 0 and 2-week sampling periods. Twenty percent of the sclerotia soaked in isolate 24 for 6 weeks were viable.

Effect of antagonistic bacteria on incidence and severity of sheath blight in the IRRI greenhouse.[a]

Treatment	Incidence[b] (%)	Severity (lesion length, cm)
Isolate 17 + pathogen	30	0.61
Isolate 24 + pathogen	75	1.27
Pathogen alone	100	2.00

[a]Bacterial suspension (1×10^6 cells/ml) was sprayed at the basal portion 1 day before inoculation. [b]Incidence based on number of tillers infected divided by total number of tillers: 3 hills/replication; 3 replications/treatment.

Preliminary greenhouse test results showed isolate 17 sprayed at the basal portion of the rice plants 1 day before inoculation was superior to isolate 24 for reducing sheath blight incidence and inhibiting lesion development (see table).

Host range of rice gall dwarf virus

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A new rice virus disease that causes stunting, dark green leaf discoloration, and presence of galls along the leaf blades and leaf sheaths was identified as rice gall dwarf virus (RGDV) in Thailand in 1979.

Second- and third-instar nymphs of rice green leafhopper *Nephotettix nigropictus* that had fed on infected rice plants for 2 to 3 days were reared on healthy TN1 seedlings for 10 to 14 days, then *N. nigropictus* was used to inoculate 11 plant species grown in pots: maize *Zea mays,* sorghum *Sorghum nervosum.* timothy grass *Phleum pratense,* orchard grass *Dactylis glomerata,* Italian rye-grass *Lolium multiflorum,* Japanese grass *Alopecurus aequalis* var. *amurensis,* wild rice *Oryza rufipogon,* barley *Hordeum distichum.* wheat *Triticum aestivum,* rye *Secale cereale.* and oat *Avena satilla.* At the second leaf stage seedling were inoculated by placing 2 viruliferous insects on each plant for 2 to 3 days.

Virus symptoms developed 15 to 30 days after inoculation. Inoculated plants were examined by electron microscope using a negative stain preparation, then were back-inoculated to healthy rice seedlings. Barley, wheat, rye, oat, Italian ryegrass, Japanese grass, and wild rice showed typical symptoms. Polyhedral particles 65 nm in diameter were observed in the negatively stained preparation. Rice plants exhibited symptoms after back-inoculation.

Maize, sorghum, timothy grass, and orchard grass did not show symptoms. No particles were observed under the electron microscope, nor did symptoms appear after back-inoculation.

Weed host of *Rhizoctonia solani* Kuhn, a rice sheath blight pathogen

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During July 1982 *Echinochloa colona,* a common rice field weed, was severely infected with *R. solani* in some fields in the Cooch Behar district of West Bengal and the Goalpara district of Assam.

Both areas are in high-rainfall zones (more than 300 cm/year). The infected weed was growing in rice fields with 20-25 cm standing water, and on the boundary ridges of the fields. Soil pH was between 5.5 and 6.5. Rice plants were moderately affected by the disease.

R. solani isolates from this weed species have been found to infect artificially inoculated rice.

Decline in number and viability of sclerotia of rice stem rot fungus in soil

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Sclerotia of *Sclerotium oryzae* Catt., the causal pathogen of rice stem rot disease, were produced on a sterile rice-rice hull mixture and used to artificially infest soil from a wet fallow field.

Seventy-nine mg of sclerotia were weighed and mixed thoroughly into 3 kg of sandy loam soil in pots by sprinkling the sclerotia on the soil surface and thoroughly mixing the soil using a hand-operated rototiller. Propagules (sclerotia) were introduced at the rate of about 5 sclerotia/g of soil, which corresponds to a moderate infestation level. There