

For more information, please call/text us at: **0920-911-1398** or visit:
www.philrice.gov.ph | www.pinoyrkb.com | www.openacademy.ph

Bacterial Blight (BB)

Bacterial blight is prevalent in the tropics in both rainfed and irrigated conditions particularly during wet season.

This bacterial disease causes reduction in photosynthetic area, reduction in 1000 grain weight, empty grains, and 20-50% reported yield loss.

Local name:

nauga nga dahon, nalata nga tanum (Cebuano)
nadurot nga tanum (Waray)
naggapula (Ilonggo)

Causal organism:

Xanthomonas oryzae pv. *oryzae* (Xoo)

Xoo may survive in infected rice stubble or plant debris in or on soil as long as the host tissue is not decomposed.

Endemic sites

- Bicol Region and CARAGA region
- Calauan, Laguna
- Leyte
- Isabela

Symptoms:

- **Kresek (seedling to early tillering)**
 - ✓ tiny water-soaked spots on lower leaves; spots enlarge, turn yellow and dry rapidly; young plants wilt
 - ✓ critical at $\geq 30\%$ infection at mid to maximum tillering stages which can lead to total crop loss.

- **Leaf blight phase (maximum tillering and spreads rapidly during heading stage)**
 - ✓ presence of opaque dew drops on the surface of lesions in the morning; water-soaked stripes that later cover a large area of leaf blade; lesions are grayish white with wavy light brown margin



'Kresek' or wilting



Leaf blight phase

Disease development and severity are favored by the following:

1. Susceptible variety
2. High nitrogen fertilization rate; generally more than 120 kg/ha
3. Windy but not of typhoon speed
4. Cloudy and humid conditions for at least 5 days
5. Temperature range of 28°C – 35°C
6. Continuously flooded field

Detection of the earliest signs

1. Monitor the plants at 3 to 6 weeks after transplanting or sowing for signs and symptoms of BB.
2. Closely observe the rice plants early in the morning before the dew on the plant leaves dries up.
3. Look for dew beads on the leaf surface. Occurrence of opaque-yellowish dew beads (bacterial ooze) on the natural leaf openings (hydathode) is the sign of the presence of bacterial cells.
4. Days later, the leaf turns pale yellow and small water-soaked lesions appear on the leafblades that later cover most of the leaf surface.

When BB is observed in neighboring field/s:

1. Avoid the movement of irrigation water to your field. Generally, initial infection occurs at the bunds opening for irrigation water.
2. Clean farm implement used in affected field before operating in other areas.
3. Do not apply high rate of nitrogen fertilizer on your field

Immediate actions to be undertaken when symptoms are observed

1. Pull out diseased plants. Do not bury in the paddy soil because bacteria can survive and spread in irrigation water.
2. Drain and saturate the soil to reduce humidity.
3. Apply minimal amount of nitrogen fertilizer or withhold further application

Disease management

1. Treat seeds or use seeds from healthy plants
2. Keep nursery beds and main fields from flooding
3. Avoid thick stand in the seedbed and in the field
4. Reduce plant injury during transplanting
5. Practice field sanitation, perform regular weeding
6. Apply moderate level of nitrogen and required level of potassium
7. Chemical control of BB is not economical and effective
8. Fallow field after harvest and allow it to dry
9. Plow under infected rice stubbles and straw

Source:

Tiongco, ER, UG Duque, HX Troung, ML Aragon, RC Joshi, and JJ Tagubase. 2002. Field guide on major disorders of the rice plant in the Philippines. Philippine Rice Research Institute, Maligaya, Science City of Muñoz, Nueva Ecija.

Dela Peña FA, Cabunagan RC, Castillo N, Choi IR, Leung H, Mew TW, Oña I, Savary S, Vera Cruz CM, Willocquet L, Banigued C. 2010. Rice Diseases: Biology and Management (*Presentation during the Philippine Rice Self-Sufficiency Plan Technology Updates Seminar*)