

LOUISIANA PLANT PATHOLOGY

DISEASE IDENTIFICATION AND MANAGEMENT SERIES

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Bacterial Panicle Blight of Rice

Burkholderia glumae and *Burkholderia gladioli* (Severin) Yabuchi, et al.

Bacterial panicle blight is a major disease of rice that tends to develop during hot, dry weather. Losses include reduced yield and milling, and losses reported in commercial rice fields vary from a trace to as high as 70 percent.

The seed-borne and soil-borne bacteria cause seedling blights, but most of the damage in the United States is associated with the developing grain. The bacteria appear to survive between emergence and grain formation as an epiphytic population on the rice leaves and sheath, spreading upward as the plant grows. This population infects the grain at flowering and causes grain abortion or rotting during grain filling after pollination.

The disease is first detected as a light- to medium-brown discoloration of the lower third to half of the hulls (Figure 1). The stem below the infected grain remains green. The grain discoloration and the green stems are the key diagnostic characteristics (Figure 2), but those must be observed early in the season. Infected grains can be unevenly distributed on the panicle. Over time, diseased grains become infected with secondary fungi and bacteria and become discolored gray to black or pink – making diagnosis difficult (Figure 3).

Bacterial panicle blight tends to develop in circular patterns in the field, with the most severely infected panicles in the center remaining upright due to sterility (Figure 4). Infected heads can be confused with straighthead, but no parrot-beaked grains are present. The disease occurs more when daytime temperatures are in the high 90s or above and nighttime temperatures remain in the 80s. High nitrogen levels also contribute to disease development.

There is no prediction system for bacterial panicle blight, and there are no chemical control measures currently recommended in the United States to manage it. Some rice varieties are more resistant than others. (See the current version of LSU AgCenter Pub. 2270, “Rice Varieties and Management Tips.”) In addition,



Figure 1. Early bacterial infection of grain.



Figure 2. Typical grain discoloration and healthy stem symptoms.

rice planted earlier in the spring tends to have less damage from bacterial panicle blight because of cooler temperatures at heading and grain filling. High nitrogen rates also should be avoided. Since the bacteria are

seed-borne, rice crops planted with infested seed can suffer severe losses. Ask an LSU AgCenter extension agent in your parish for the latest information on control of this disease.



Figure 3. Late-season damage overgrown by secondary fungi and bacteria.



Figure 4. Field symptoms appearing in a circular pattern with the worst-damaged heads in the center.

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