

## 6. Damage Analysis of Rice Panicle Blast on Disease Occurrence Time and Severity

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Rice blast disease attacked by *Pyricularia grisea* causes severe yield losses in temperate region. Some recent surveys confirm that blast remains among the most serious biotic constraints to yield in Korea. Infection of panicle base, branches and spikelet pedicels may occur together, or they may occur separately under some different conditions. The structural differences between healthy and diseased panicle necks were observed using electron-microscope. In the diseased panicle neck, the infection hyphae of the rice blast pathogen grew through the sclerenchymatous fiber tissue and reached to the central internal lucana. When the neck blast symptom developed early after heading, the yield loss was very high. Infection of panicle base by blast until 20 days after heading caused more than 50% of yield loss in both Jinmiby eo and Chucheongbyeo. There was positive correlation between incidence of the panicle blast and rice yield losses. The regression equations between incidence of the panicle blast and yield losses were  $y = -3.61 + 496.7(R^2 = 0.70)$  in Jinmiby eo and  $y = -3.93 + 520.2(R^2 = 0.82)$  in Juanbeo. The panicle blast caused deterioration of grain quality. Healthy grain rate was reduced by increase of panicle blast infection. Meanwhile, the percentage of damaged grain increased according to the increase of the panicle blast incidence.

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