

Rice or known as oryzae sativa is

[Parts of the World](#), [Asia](#)



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Rice or known as *Oryza sativa* is an annual grass which need a lot of water to keep it alive. Rice is the most important food security crop and staple food of half of the world's population. Asia becomes the largest producer of rice globally. US is the second largest exporter of rice in the world after Thailand. It is a major source of food in most Asian country. This country truly depend on rice as their staple food which they will severely affect when there is shortage in rice supply in the market (Timmer, 2010).

Rice can grow in a wide range of water-soil regimes, from a prolonged period of flooding in deep water to dry land on hilly slopes (Prabhu etc. al., 2009). Its growth cycle is from initial growth to mature and harvest. Different varieties of rice had different period for their growth cycle. In Malaysia, government had to import paddy due to insufficient supply of rice for our local consumer. Hence, there are many chemicals being used to increase the production of rice which is loss due to pests and diseases and resulting the emergence of resistant pests and diseases.

Diseases are most common problem that affect rice productivity worldwide. The severity of diseases depends on different country or region. Rice blast (*Pyricularia oryzae*) is the most serious constraint on high productivity among more than 70 diseases caused by fungi, bacteria, viruses or nematodes have been recorded on rice. (Song and Goodman, 2001). Rice blast is significantly a fungi type of disease which caused by *P. oryzae*. It is a hemibiotrophic fungal pathogen that causes rice (*Oryza sativa*) blast.

P. oryzae was widely spread severely affect the rice production in Malaysia. Rice blast disease results from the interaction between a virulent isolate of

this pathogen, and a susceptible genotype in the presence of favorable ambient conditions. There are several types of blast which are leaf blast, node blast, collar blast and neck blast.

Blast can occur wherever blast spores are present. It occurs in areas with low soil moisture, frequent and prolonged periods of rain shower and cool temperature in the daytime. In upland rice, large day-night temperature differences that cause dew formation on leaves and overall cooler temperatures favor the development of disease.

Rice can has blast in all growth stages. Leaf blast incidence tends to lessen as plant mature and develop adult plant resistance to disease. The critical phase for the disease to infect the rice is within 25 to 35 days after planting and during milking stage. The disease affect directly or indirectly toward the rice production especially if it spread during panicle formation. It can reduce the amount of grain to being harvest and significantly affect the income of the farmer. A leaf blast infection can kill seedlings or plants up to the tillering stage. At later growth stages, a severe leaf blast infection reduces leaf area for grain fill, reducing grain yield.

Several symptoms of blast disease are the fungus attacks all the aerial parts of the plant, majorly leaves and panicle are infected. Small brown flecks are formed on leaves later enlarges into spindle shaped spots with pointed ends known as lesions. The central portion of the lesion is pale green or dull grayish green colour but in older spots they become grey or straw colour.

The lesions also present on the other parts like leaf sheaths, nodes, rachis and culms. The pathogen infects the leaf in young stage which is known as leaf blast. The neck of the panicle is infected at the time of ear emergence and produces brown necrotic lesions which turn black causing neck rot. This phase is known as neck blast, black neck, black neck or rotten neck. The affected parts can be identified by the presence of bluish patches on the stems.