Paddy Quality

What determines paddy quality?

The quality of rice paddy is influenced by the variety, the environmental weather conditions during crop production, crop production practices, soil conditions, harvesting, and post harvest practices.

What characteristics are used to quantify paddy quality?

Moisture content

Paddy is at its optimum milling potential at 14%. Grains with high moisture content are too soft to withstand hulling pressure without undue breakage and may be pulverized. Grain that is too dry becomes brittle and has greater breakage during processing.

Degree of purity

Purity is related to the presence of material other than paddy and includes chaff, stones, weed seeds, soil, rice straw, stalks. Foreign matter in the grain reduces the milling recovery, the quality of rice, and increases the wear and tear on milling equipment.

Variety Purity

A mixture of varieties causes difficulties at milling and usually results in reduced capacity, excessive breakage, lower milled rice recovery and reduced head rice

Grain dimensions.

Grain size and shape (length-width ratio) is a very stable varietal property. Long slender grains normally have greater breakage than short, bold grains and consequently have a lower mill rice recovery.

Cracked grains

Overexposure of mature paddy to fluctuating temperature and moisture conditions leads to development of fissures and cracks in individual kernels. Cracks in the kernel result in reduced milling recovery and head rice yields.

Immature grains

The amount of immature paddy grains in a sample has a major affect on head rice yield and quality. The immature rice kernels are very slender and chalky and are easily broken during milling

Damaged grains.

Paddy deteriorates through biochemical change in the grain, the development of off-odors and changes in physical appearance and color. These types of damage are caused from water, insects, and heat exposure.

Yellowing is caused by over-exposure of paddy to wet environmental conditions before it is dried. This results in a combination of microbiological and chemical activity that overheats the grain similar to a milled form of parboiling..

Black spots around the germ end of the brown rice kernel are caused by the microorganisms (fungi) and are increased by unfavorable weather conditions. In the process of milling, these black spots are only partly removed which consequently increases the presence of damaged or unattractive grains.

For more information:
For an overall view of crop management practices, visit www.knowledgebank.irri.org/tropRice
To diagnose problems in the field, visit www.knowledgebank.irri.org/ricedoctor

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