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## Characterization of White Core Mutant of Rice

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### Objectives

We characterized white core mutant of rice and compared with normal rice by morphological and micro-scopic method. Finally, we investigated location of the mutant gene caused white core through mapping.

### Materials and Methods

#### 1. Material

Kinuhikari (*japonica* rice cultivar), White Core Mutant of Kinuhikari (Mutant caused by  $\gamma$ -ray radiation), Kasalath (*indica* rice cultivar)

#### 2. Methods:

Scanning Electron Microscope : Scanning endosperm especially amyloplasts and starch granules of normal and mutant grain with S.E.M.

Particle Size Analyzer : Particle size distribution of the rice flour prepared from the normal and mutant grains.

Polymerase Chain Reaction : PCR achieved using 57 marker for the mapping of the mutant gene.

### Results and Discussion

When we observed whole grains and cross section of normal and mutant grains, normal grains were more transparent than mutant grains. And grain weight of white core mutant was lighter than normal grain. This was due to decreased width, thickness and density of the mutant grain. When observed with S.E.M. of the mutant endosperm, amyloplasts were less developed and had more spaces between them. Although mutant grain became finer particle quicker in milling process, the usefulness of the property needs further investigation. The white core mutation is caused by one recessive gene. We obtained F2 grains from the cross between the White core Kinuhikari (*japonica*) and Kasalath (*indica*). So we used F2 grains with white core phenotype, for the mapping of the mutant gene. By rough mapping we detected mutant gene on chromosome 5.