

Measuring White Rice Quality (a)

What are the properties of milled rice that should be measured?

1. Moisture,
2. Grain dimensions
3. 1000 grain weight
4. **Milling degree**
5. **Milling recovery**
6. **Dockage**
7. **Head rice and broken grains**
8. Chalkiness
9. Whiteness
10. Grain shape

Measurements

4. Milling degree

Milling degree is computed based on the amount of bran removed from the brown rice. To obtain the weight of brown rice, dehull the paddy samples using the Laboratory Huller. Estimate the percent milling degree using the following equation:

$$\% \text{ Milling degree} = \frac{\text{Wt of milled rice}}{\text{Wt of brown rice}} \times 100$$

5. Milling recovery

Using the Abrasive Whitener, mill the dehulled samples. Compute milling recovery by dividing the weight of milled rice recovered by the weight of the paddy sample.

$$\% \text{ Milling recovery} = \frac{\text{Wt milled rice}}{\text{Wt of sample used}} \times 100$$

6. Dockage

Select, segregate and weigh the foreign matter. Record the number of unhulled grains collected from the sample. Determine the percentage of dockage of milled rice using the equation:

$$\% \text{ Dockage (mr)} = \frac{\text{Wt. of dockage}}{\text{Total wt of milled rice}} \times 100$$

7. Head Rice and broken grain

Using the Grain Grader, separate the broken grain from the whole grains. Compute the percentage of the milling recovery components using the following equations:

$$\% \text{ Head rice} = \frac{\text{Wt of whole grains}}{\text{Wt of paddy samples}} \times 100$$

$$\% \text{ Broken} = \frac{\text{Wt of broken grains}}{\text{Wt of paddy samples}} \times 100$$

For more information contact

Agricultural Engineering Unit
IRRI, DAPO Box 7777, Metro Manila, Philippines
Tel.: (63-2) 580-5600, Fax.: (63-2) 580-5699
Email: M.Gummert@cgiar.org
J.Rickman@cgiar.org

IRRI INTERNATIONAL RICE RESEARCH INSTITUTE