Measuring Weight

What is weight

Weight is the vertical force exerted by a mass as a result of gravity and is expressed in kilograms (kg).

Why is measuring weight important

Most figures used in rice production and postproduction are expressed (or referred to) in weight. In the markets and in rice testing accurate weighing is very important since any error in weighing can reduce profit or greatly affect the results of testing.

How to measure weight

Mechanical balances

Mechanical scales don't need power and are robust. They are therefore ideal for field work. There are many different types for all ranges and applications.

Electronic balances

Digital laboratory balance with a capacity of 2.2kg and a accuracy of 0.001g

They are very exact and easy to use and are mostly used in the laboratory.

Range of scales and accuracy

Make sure that the scale has a suitable range.

- If the range is too large for the sample the measurement error is also large.
- If the range is too small overloading might damage the scale.

For sampling and testing grain use the following:

- A scale for weighing paddy samples with a range of around 0.5-1.5kg and an accuracy of 0.1g.
- A precision balance for weighing small samples (e.g. for the moisture content determination using the oven method) or light materials like dust or other foreign matter with a capacity of around 50g and a accuracy of around 0.01 g.

Using balances

When using a balance make sure that the balance

- is set up at a suitable location (leveled and firm support structure without vibrations; protected from excessive temperature changes, e.g. from direct sunlight; and protected from wind);
- is leveled according to the manual;
- is operating in the correct mode; and
- is calibrated (check manufacturers manual for calibration procedure).

If the grain is weighed inside a container place the empty container on the balance first and press the "Tara" button (if available). Fill the container and the balance will display the weight of the grain without container.

Calibration

Balance

Before use calibrate the scales with known weights. If a calibration weight is not available other known weights can be used (coins, 1 liter of water etc.)

Containers

If you are using different similar containers you can match the weight of the containers using duct tape and little weights (coins). Tara

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