

Grain Sampling

What is grain sampling

Grain sampling is the process of selecting a small portion of grain from a larger amount either from the field, from a grain bulk or from grain stored in sacks. The objective of proper sampling is to collect a “representative” sample, which means that the percentages of the grains with different properties (e.g. moisture content) in the sample are similar to those in the lot of which the sample was taken from.

Why is proper grain sampling important

Rice is a very heterogeneous material and because of small field sizes and the use of many different varieties in many Asian countries the paddy or milled rice contained in a lot can be highly variable. Even within one field moisture content can be very different in one location. Proper sampling methods are therefore very important for getting a representative grain sample.

How to sample properly

Field Sample

Obtaining a representative field sample before harvest is difficult.

- Since the outside rows are atypical, walk through the field in a pattern.
- Hand pick and shell grain from several plants, mix the samples.
- Take at least three readings for an average value.

Grain Load Sample

When sampling a load of grain probe the load at several locations (avoid the center and the corners), or preferably sample the flowing grain during loading/unloading:

- Pass the can across the grain stream in fixed intervals and collect the grain into a bucket.
- After loading/unloading is completed, mix the grain in the bucket, then draw out a sample.

Bin Sample

When sampling from a bin, a probe (Figure 1) to collect samples from various depths will provide the most representative samples.

- Sample from as many as possible representative parts within the grain bulk.
- Do not mix the samples and test them separately. Knowing the properties of the samples at different locations will help in making better management decisions.

Sack sample

If the grain to be tested is from a seed lot that contains more than one bag, samples must be taken from several bags. A good rule of thumb for determining how many bags to sample is to take samples from a number of bags that represents the square root of the lot size. For example if the lot

contains nine bags, then sample at least three bags. If the lot contains 100 bags, then sample at least 10 bags.



Figure 1: Probe, sample containers, and protocols

Treatment of samples

Avoid delays in processing the samples because changes in moisture content and quality occur over time.

- Seal samples either in containers or in plastic bags right after sampling to maintain the current moisture content.
- If temporary storage is necessary store the samples in a refrigerator or a cold room.
- Always label the sample containers properly with a permanent pen.

Check local seed quarantine regulations when shipping seed samples abroad.

For more information contact

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