Measuring seed germination

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Rice Fact Sheet

What is a germination test?

A germination test determines the percentage of seeds that are alive in any seed lot. The level of germination in association with seed vigor provides a very good estimate of the potential field performance. While the speed of germination varies slightly across varieties, seeds should absorb moisture within 2 days and produce a root and the first leaf within 4 days. At this point, the seed is considered to have germinated.

Why is measuring germination important?

A germination test is often the only test a farmer can conduct on the seed to determine if it is suitable for planting. When seed is stored in traditional open systems, the germination rate of most rice seed begins to deteriorate rapidly after 6 months. Also, many varieties have a dormancy period immediately after harvest that can last for 12 months. By knowing the germination rate, farmers can adjust their planting rates to attain the desired plant population in the field.

How to measure germination ?

Sampling

To obtain a random sample for testing, it is always best to take samples from different parts of the bag or container. If the seed to be tested is contained in more than one bag, a sample 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 get sample from at least 10 bags.

Equipment

- To conduct this test, you will need the following:
- Waterproof tray. A flat sided water bottle cut in half length wise makes a good tray.
- Water absorbent material. Tissues or cotton wool are ideal.
- Seeds
- Water supply

Assam Agribusiness and Rural Transformation Project (APART)

The World Bank is the funding agency of APART
Department of Agriculture, Assam is the nodal department for implementation of APART
ARIAS Society is the State Level coordinating and monitoring agency for APART
Assam Agricultural University is the leading Agricultural University of the State and implementing agency of APART, imparting research and scientific support.
International Rice Research Institute (IRRI) is the rice global leader providing technical and hand-holding support in the implementation of APART