

Salt method to determine moisture contents in basic grains

Introduction

The moisture contents of basic grains (maize, beans, sorghum, and rice) to be stored in a metal sheet silo is one of the most difficult problems faced by farmers.

Due to this situation, the Postcosecha Programme proposes a simple and safe method to determine the appropriate moisture content of basic grains, so they can be stored in metal silos.

Advantages of the Method

- Grains are stored with an acceptable amount of moisture content, thus avoiding losses as a result of rotting.
- It is a simple, practical and effective method, easily available to all farmers.
- The method involves virtually no expense.

Materials

- A glass bottle with a holding capacity of approximately 750 ml. The bottle must have a lid to keep it airtight.
- Common salt
- The grain to be stored

Procedure

1. Dry the salt for two days during hours when the sun is hottest (10 am - 4 pm). Salt should not be dried when the sun is weak, as it may absorb humidity.

To avoid this, the salt that has been put out to dry should be left covered and in a closed container after the first day. The drying process then continues the next day. Another way of drying salt is to use fire (stove, oven). The salt is placed in a flat clay dish or can for 30 minutes or more, and must be stirred for that entire time.

2. **The glass bottles** (1 or 2) to be used must be entirely dry and clean. This can be achieved by washing and leaving in the sun with the mouth facing **downward**. Another quick drying method is burning a little alcohol inside the **bottle** after washing. If the **bottle** is not entirely dry it is impossible to determine with certainty what occurs when the salt and the grain to be stored are mixed.

How to tell when both salt and bottle are dry?

- a. The salt turns hard.
 - b. Upon putting the salt in a dry glass bottle, it does not cling to the sides. Thus we can be sure that both bottle and salt are dry.
3. Once the salt and bottle are completely dry, fill one third of the bottle with grain (250 - 300 grams, depending upon receptacle size).
 4. Add 20 to 30 grams of (dry) salt (2 to 3 tablespoons).
 5. Steps 3 and 4 having been taken, proceed to close the bottle and shake vigorously for 1 minute. Let it rest for 15 minutes and then shake again.
 6. All of these steps are carried out in the shade.

How do we know the grain is dry?

If the salt sticks to the sides of the bottle, forming layers, the grain moisture content is higher than the permissible 14 - 15%. Therefore it must not be stored in the metal sheet silo and the drying process should continue.

If the salt does not stick to the sides of the bottle, the grain contains moisture content inferior to the permissible 14-15%, and may therefore be stored immediately in the metal sheet silo for a long period without further necessity of drying in the sun.