Maize dryness testing before storage

Recognize the problem
Post-harvest losses are a common problem in maize production. Some farmers are storing maize before the cobs and grains are dry enough. Then fungal diseases germinate on the grains and destroy them.

Background
Farmers must dry or wait for their maize grains to dry in order to avoid germination of fungal diseases in the storage period. Well dried grains have only about 12 to 15% moisture, a cob that has just been harvested can have up to 50% moisture. Well dried cobs and grains maintain quality (Bubotu in Tonga), and the grains can be kept for a long period (up to 12 months). This assures food can be stored in households for a long period. After drying, the farmer needs to do a home grain dryness test to make sure very low moisture content (Mudumu in Tonga) is reached. There are three test methods.

Management
• Spread the harvested maize cobs on drying racks off the ground and not in a heap and if possible do not spread onto the ground for drying.
• Alternatively, store them in well ventilated open-air flow barns.
• 2 to 5 weeks of drying process is needed in dry sunny conditions.
• Sample (kusala in Tonga) 10 cobs that were dried.
• This is usually done at shelling after short storage in the ban.
• 1. Break a few grains using teeth and if the grain breaks without any difficulty then the grain has reached its low storage moisture content.
• 2. The second test method is to remove 10 grains from the 10 selected cobs and put them in a dry tin. Tightly close it for 2 to 3 days and if there is no heating or fungal disease, it has reached its low storage moisture content.
• 3. Alternatively, a seed moisture tester can be jointly bought by a farming community, or may be used via a service provider.
• If dryness testing shows that cobs are still too wet proceed with drying.

Scientific name(s) > Aspergillus spp., Fusarium spp.

The recommendations in this factsheet are relevant to: Zambia

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