Agnote

| No: C16 |
| --- |
| October 2013 |

| A Guide for Sampling Seeds |
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INTRODUCTION

The purpose of sampling seed is to obtain a representative sample for size and uniformity from a bulk lot of seeds. There is a minimum sample size or weight for each seed type, and there are certain sampling methods, which have to be followed. Seed samples received by the laboratory fall into two categories: Official and Unofficial.

Official samples are collected by a Certified Seed Sampler who has taken an approved seed-sampling course. These samples are deemed to represent the entire seed lot.

Unofficial samples can be submitted by anyone. However, the test will only represent the sample that was delivered to the seed laboratory, not the entire seed lot.



MAXIMUM SEED LOT SIZE

The International Seed Testing Association rules prescribe the maximum seed lot sizes for different seed types. Should the lot size be greater than the maximum, the lot would have to be split into two lines. For example, maize has a maximum lot size of 40 000 kg. If the lot size is 42 000 kg, it should be split into two lines of 21 000 kg each. Then a sample should be taken from each lot.

In general, the maximum lot sizes are as follows:

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| Seed the size of maize (*Zea mays)* | 40 000 kg |
| Seeds the size of Centro seeds *(Centrosema pascuorum*) | 20 000 kg |
| Seed under the size of Centro  | 10 000 kg |
| Grasses such as sabi (*Urochloa mosambicensis)* | 5000 kg |
| Fluffy grasses such as buffel *(Cenchrus ciliaris*) | 1000 kg |

TESTS IN A Seeds LABORATORY

Since there is currently no seeds laboratory in the Northern Territory, seed samples should be sent to an interstate laboratory for testing.

There is a range of tests that can be carried out in a seeds laboratory to assist farmers with information on their seed. Tests include purity, germination, moisture content and the number of seeds/kg. This information is used to determine which seed line to buy, how much would be required for planting a given area, when to plant or harvest and whether the storage of the seed is feasible. The test results, in the form of a computerised analysis statement, are forwarded to the owner at the completion of the tests. The time required for testing depends on the type of seed and the tests requested.

Grasses, such as buffel grass (*Cenchrus ciliaris*), require a germination period of 28 days from the time they are put in the cabinet for germination, not from when they are submitted to the laboratory.

SAMPLE SIZES REQUIRED FOR TESTS

The following sample sizes are a guide to the amounts required for testing. For small packets of seed, such as flower seed, several unopened packets can be sent in to make up the minimum size. If required, the seed not used in the tests can be returned to the owner.

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| **Types of seed** | **Weight (g)** |
| Cereals - sorghum, maize | 1000 |
| Large-seeded legumes – lablab, peanuts | 1000 |
| Pasture legumes – Cavalcade | 400 |
| Pasture grasses - buffel grass | 200 |
| Lawn grasses - Argentine paspalum | 150 |
| Small vegetable seed – lettuce | 50 |
| Large vegetable seed – onion, tomato | 100 |
| Small tree seed – *Melaleuca* spp | 50 |
| Large tree seed – *Acacia* spp. | 200 |
| Small flower, spice, herb – *Amaranthus* spp. | 50 |
| Large flower, spice, herb – *Asparagus* spp. | 400 |

SAMPLING PROCEDURE

There are two basic ways of sampling seed:

1. The use of a trier for free--flowing seed, such as mung bean (*Vigna radiata)*. A trier is a pointed tube, approximately 500 mm in length and with an oval hole near the pointed end. Triers come in various sizes for the various seed types. A trier is pushed into a bag at approximately 30 degrees below horizontal. This allows the seed to fall into the tube and tumble out of the end into a bag or container. While the trier is being withdrawn, it should be gently agitated to ensure that an even flow of seed is maintained. The bag or bags should be sampled from the top, middle, and bottom. This ensures that the sample obtained represents the bag or bags. The reason for this is that heavy seed will work down to the bottom of the bag and light seed will go to the top. For seed in bulk containers, larger triers are used. These can be 7 m long.
2. Hand-sampling for non-free-flowing seed, such as buffel grass *(Cenchrus ciliaris*). The hand-sampling method is used on seed that would clog up triers. The bags are sampled at the top, middle and bottom. The sample is grabbed by pushing a hand into the bag until it reaches the depth required. The hand is closed after grabbing a sample, withdrawn and the sample placed in a container. The action is repeated until all samples have been taken. Some large bags may have to be partially emptied to enable the bottom sample to be taken.

SAMPLING INTENSITY

**Bag sampling**

1. 1 to 5 bags: sample every bag.
2. 6 to 30 bags: take five samples or sample every third bag, whichever is greater.
3. 31 to 400 bags: take 10 samples or sample every fifth bag, whichever is greater.
4. 401 or more: take 80 samples or sample every seventh bag, whichever is greater.

**Bulk sampling**

1. Up to 500 kg: at least five samples.
2. 501 to 3000 kg: one sample for each 300 kg.
3. 3001 to 20 000 kg: one sample for each 500 kg.
4. 20 001 kg and above: one sample for each 700 kg.

SUBMISSION OF SAMPLES

The submission of samples requires a certain amount of information from the submitter and/or owner. The following information is required on the bag or container:

1. Owner – T. Smith
2. Address (postal) P.O. Box. 444 Darwin N.T. 0801/ fax No. (08) 8999 9991
3. Kind – the type of seed for testing e.g. Finger grass (*Digitaria milanjiana*), the botanical name is preferred but is not essential
4. Cultivar – if known e.g. Jarra
5. Lot number – this is for the owner’s information so that he/she can find the same lot or bag when they get the results, e.g. Bag 1
6. Mass of lot - 37 kg
7. Date sent - 12-02-2012
8. Certified seed - No/yes. If yes, a certified number would have been given previously
9. Tests required e.g. purity, germination and weed seed count.

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ISSN 0157-8243

Serial No. 511

Agdex No. 100/43

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