

Tests for Seed

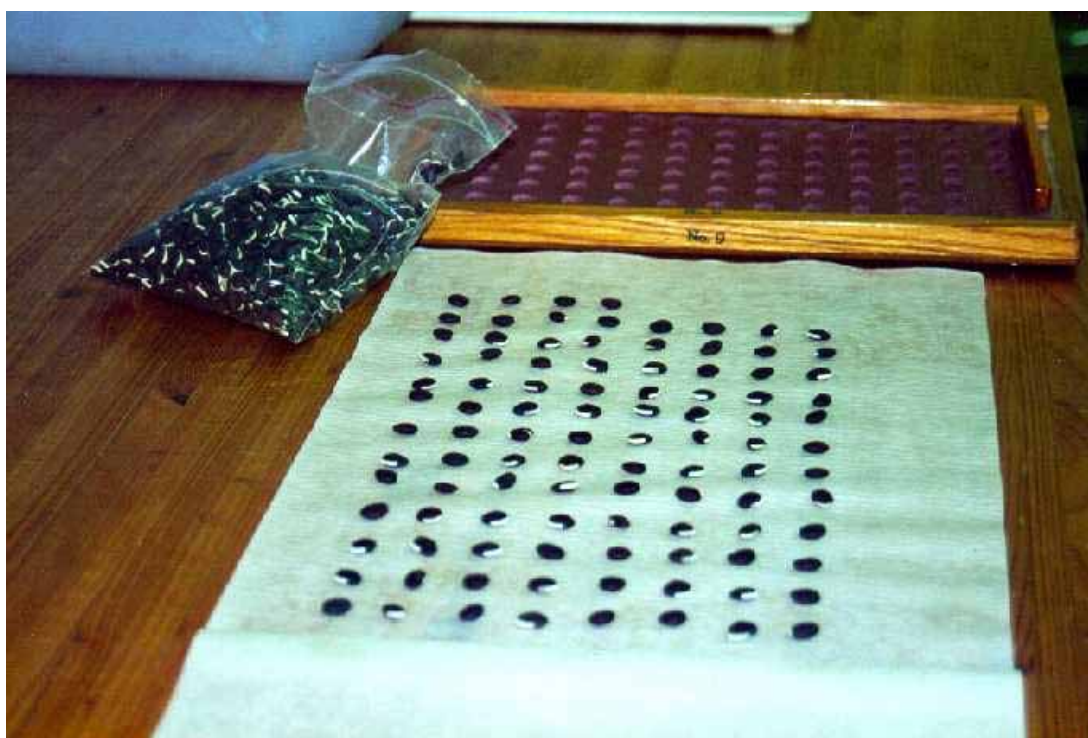
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INTRODUCTION

The Department of Primary Industry, Fisheries and Mines operates a seeds laboratory in Darwin. It is located at Berrimah Farm.

The laboratory works under the rules and regulations laid down by the International Seed Testing Association. This is to ensure that work carried out in the Darwin laboratory can, if necessary, be duplicated at other laboratories in Australia, obtaining similar results.

Seed testing is the foundation of the seed industry. Laboratory tests on seed help government departments, farmers and others to obtain information, which is essential for the industry. The seeds laboratory conducts a variety of tests. These are listed below, with an explanation of what is involved in conducting the tests.



CERTIFICATION

The purpose of seed certification is to ensure type i.e genetic purity. This is achieved through sowing a specified seed, conducting field inspections and rigorous laboratory and field-testing. Species and cultivars included in the Seed Certification Scheme are those specified by DBIRD.

For a list of current eligible species and more information on seed certification contact the Certification Officer on 08 8999 2214 or the seeds laboratory on 08 8999 2236 or fax 08 8999 2043 or obtain Agnote C13 on Certified Seed.

PURITY

A purity analysis determines how much of a sample is intact pure seed of the particular species or cultivar submitted. This is referred to as the pure seed fraction and expressed as percent by weight.

The purity sample is split into three categories:

1. Pure seed.
2. Inert matter that comprises other material present which is not seed i.e. plant parts, insects, soil.
3. Other seed that is not the named seed submitted for testing. This can be seed of weeds, other crops, pasture etc.

GERMINATION

The purpose of the germination test is to determine the field planting viability of seed and to provide results that can be used to compare with different seedlots. The germination test has several components which, when added together, give a germination value calculated as a percentage.

These are:

1. Germinated seed – produces a normal seedling.
2. Fresh/un-germinated seed – takes up water but does not germinate in the test period.
3. Hard seed – does not take up water, remains hard.
4. Abnormal seed – grows but the seedling is not normal and would not produce a healthy plant in the field.
5. Dead seed.

BULK SEARCH

This shows the types of other seed in a sample, but not the numbers of each type. A bulk search is usually conducted to determine if there is any weed seed in the sample.

SEED MASS/KG

Shows the number of seeds/kg. Or if small seed, then seeds/g. For Cavalcade the number is about 48,000 seeds/kg.

MOISTURE CONTENT

Shows the amount of free water present in the seed and is expressed as a percentage by weight.

OTHER SEED COUNT

This shows the number and types of other seed in a sample. It is usually expressed as a number per kilogram of seed. e.g. Hyptus suaveolens 43 seeds/kg.

IDENTIFICATION AND QUARANTINE EXAMINATION

Usually carried out on interstate or international seed lots to screen for weed seeds, inert or disease presence and prohibited imports.

OTHER TESTS

Other tests are used if required. The Tetrazolium test is a biochemical test of seed viability that is used if seed is fresh (for grasses) or hard (for legumes) and does not grow during a normal germination test.

Some other tests such as potassium nitrate, acid, fungicide and scarification are used on seed lots containing fresh or hard seed to break dormancy as an additional test with germination.

Sprouting and other tests are also available for seed.

More than one test can be conducted on a sample of seed. However request only those tests that are required. If you are unsure of which tests are needed or you need any other information on seed, contact:

The Seeds Laboratory

DPIFM

GPO Box 3000

Darwin NT 0801

Tel. 08 8999 2236

Fax. 08 8999 2043

Please visit us at our website:

www.nt.gov.au/dpifm

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