

# Pasture seed quality testing

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## Introduction

Seed quality refers to genetic purity, germination percentage, vigour, mechanical integrity, freedom from disease and pest infection, size and appearance of seeds. High germination percentage is an indicator of the potential of pasture seeds to establish a healthy crop in reseeded or pasture establishment.

Germination tests take between 1 to 4 weeks depending on the species. In some cases, seeds require treatment before the test is carried out.

Range pasture seed quality is determined mainly through a viability test, the most common one being the germination test. A germination test measures the ability of seed to germinate and produce seedling.



*Germination test using petri dishes in the lab*

## How it is done

- Take a sample from the main seed batch
- Rub clean seed between two sand papers
- Use appropriate sand paper grade for different grass species e.g.
  - Grade 0- *Chloris roxburghiana* *Chloris gayana* and other *Chloris species* (Rhodes grass)
  - Grade 1 – *Cenchrus ciliaris* (Buffel grass) and *Enteropogon macrostachyus* (Bush rye)
  - Grade 2 – *Eragrostis superba* (Maasai love grass)



*Clean grass seeds ready for rubbing*



*Seeds being rubbed between two filter papers*



*Seeds arranged on a filter paper*

- The clean seeds are placed on petri dishes lined with wet filter paper
- The seeds are watered regularly to ensure the filter paper remains moist for 21 days
- Observations and recording is done on a daily basis
- At the end of 21 days, the number of seeds that have germinated are counted against the total number of initial seeds in the petri dish
- To determine the viability of the seeds the formula used is:
 
$$\frac{\text{Number of germinated seeds}}{\text{Total number of seeds}} \times 100$$
- The method however does not indicate the number of seeds expected to germinate under field conditions since some seeds may be viable but hard.

### **Factors affecting seed quality**

- They can be broadly categorized into three namely:
  - Environment
  - Properties of the seed
  - Contaminants
- Viability tests of stored seeds should be done regularly

### **To ensure good quality seeds, take into account the following factors**

- Correct time of harvesting, which varies depending on species
- Recommended storage conditions
- Correct protocols are followed while undertaking the germination test



*Germination test set up*

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