

Hot-Water Treatments

Hot-water seed treatments is a common method used by seed companies for the eradication, or reduction of pathogen levels present on or just within the seed coat of seeds. Other common treatments, such as fungicide treatments reduce pathogens, but not once they have penetrated the seed coat. Hot-water treatments work better for smaller seeds and is not as effective for large, old or primed seeds. Or seeds already treated with fungicides.



Purity Testing

Purity testing refers to the amount of pure seed vs other matter in a sample, and is recorded as a percentage weight. In essence, the cleanliness of your seed batch/lot. Other matter includes weed/other seeds and 'trash' from harvesting.



**The journey to productive crops
begins with healthy seeds.**

“Unlocking Potentials through Technology.... Securing our Future”

Benefits of planting healthy seeds.

- High germination rates
- Healthy crops
- High yields

Services Offered:

- General Screening for specific pathogens (\$1,500/sample)
- Germination Evaluation - \$1,250/sample
- Emergence Evaluation - \$1,250/sample
- Hot-water treatment of seeds - \$1,500/sample

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POST ENTRY QUARANTINE
MINISTRY OF AGRICULTURE, FISHERIES AND
MINING

SEED HEALTH LABORATORY

Enhancing Food Security



Introduction

The continued worldwide movement of plants and plant parts as part of international trade increases the chance of the entry of seed-borne pathogens across borders. The Seed Health Laboratory aims to help reduce this risk by screening imported material for specific pests using various methods including plating, serology and biological indexing.

Activities

Seed health testing is one of PEQ's core functions and provides the following services with regards to seed health:

- Screening for a limited number of pathogens of economic importance
- Germination and Emergence evaluation of seeds
- Hot-water treatment for various types of seeds
- Seed purity testing

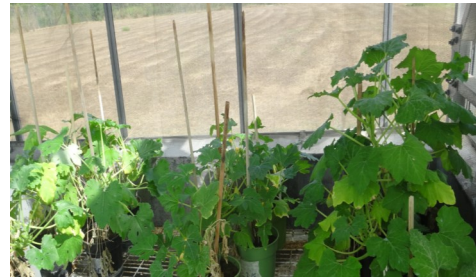
The PEQ also assists in the importation of new varieties of crops for evaluation/research that would benefit the Agricultural sector. This is limited however to seeds and other types of planting material.

Screening

The Laboratory processes over 500 samples, both imported and locally, each year. Collected and submitted samples are screened for a limited number of pathogens using plating and biological indexing methodologies, diagnostic kits and growing out observations.



Sampling from field (L) and submitted samples (R)



Growing out observation of seeds and other planting material



Testing of imported potatoes for pathogens

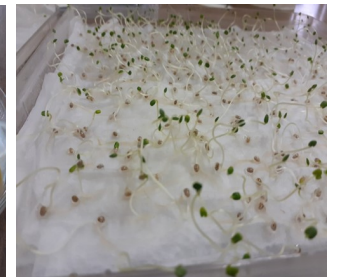


Screening for specific pests/pathogens using lab testing (above) and biological indexing (right)



Germination and Emergence Evaluation

The germination and emergence evaluations of seeds are an important part in any production programme. The germination rates of seeds show the viability of the seeds while emergence rates show the seeds' vigour. While germination rates in laboratories can be high, it is the ability of the generated root to establish and the shoot to break the soil line that can determine the success of your crop. In many cases the emergence rate is lower than the germination rate and can be due to planting practices. It is therefore important to follow proper planting guidelines as seeds planted too deep would have difficulty breaking the soil line.



Germination evaluation (top row) vs emergence evaluation (bottom pic)