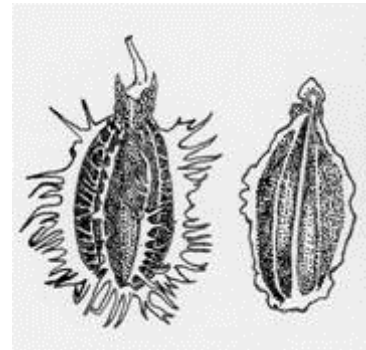




Canadian Food  
Inspection Agency

Agence canadienne  
d'inspection des aliments

## Canadian Food Inspection Agency



### Our Vision:

To excel as a science-based regulator, trusted and respected by Canadians and the international community.

### Our Mission:

Dedicated to safeguarding food, animals and plants, which enhances the health and well-being of Canada's people, environment and economy.



## Lab Accreditation: Proficiency Monitoring Sample Preparation

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Seed Biologist

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Canada



# Accreditation requirement

ASLPMP requirements for accredited labs:

- Must participate CFIA Proficiency monitoring programs
- Must conduct internal proficiency monitoring
- Meet minimum performance standards





# The Demonstration Objectives

- Provide transparency and understanding for CFIA PT sample program
- Provide an example for setting up a proficiency monitoring sample in a lab





# PT Schedule

A 3-year PT schedule is pre-determined  
in the beginning of each cycle.





# Current Schedule

No.	Crop Group	Crop Kind
12-01	Grade Tables VIII-X (forage legumes and timothy)	Red clover
12-02	Grade XVI – XX (vegetables)	Carrot
13-01	Grade Tables I-IV (cereals)	Canarygrass
13-02	Grade Table VII (canola/rapeseed, mustard)	Canola
14-01	Grade Tables V-VI (pulses, corn and sunflower)	Lentil
14-02	Grade Table XI-XV (grasses)	Kentucky bluegrass





# PT Sample Preparation Steps

- Crop kind is selected from each crop group
- Germination pre-tests could be conducted for assistance of lot chosen
- Each lot is mixed, divided and sub-sampled.
- A log sheet records the completion of each task.





# Sample Homogeneity in Germination

Homogeneity test is conducted on each lot

- Randomly assign 10 samples for a 100 seed germination test
- Once passed the lot is ready to proceed to spiking phase





# Purity Sample Preparation

- Impurities are selected for each lot
- Each impurity is selected and then lined up on a brassica board







# Impurity Preparation

- Impurities are packaged in a vial. As seeds are removed from the board, the analyst verifies the impurity and quantity.





# Impurity Preparation

- Vials are placed into labelled envelopes.





# Impurity verification

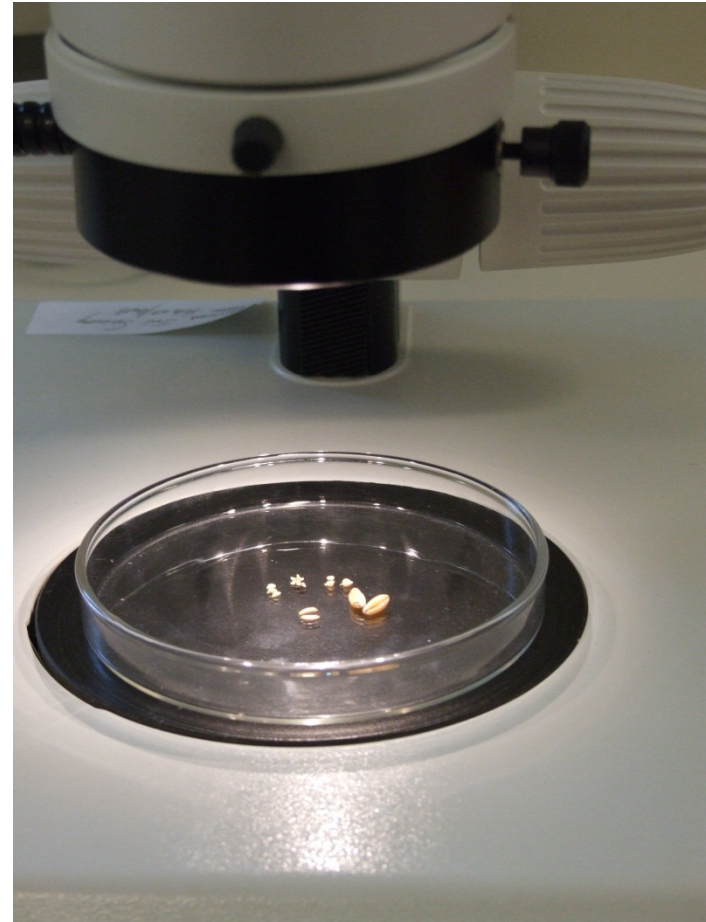
- 5 impurity vials are randomly selected from each lot and verified by another analyst for:
  - Content of intended species
  - Within the main variation range of the mature seeds of a species
- After verification, sub-samples are ready to be spiked.





# Impurity verification before spiking

- Each vial is opened and poured into a petri dish.
- Contents are microscopically examined and verified against the master list for species and quantity





# Impurity Spiking

- Impurity are poured from petri dish into the sample envelope





# PT Sample Package

- Each sample envelope is sealed in a manner that the seeds will not be lost during transport
- Each lot is packaged with a letter and mailed to each laboratory





## “Quiz”

How are you going to apply these principles for your internal proficiency monitoring?





# Group Discussions

- Using split samples within a lab – one time per year, per crop season
- Select normals/abnormals/borderline seedlings to evaluate for monitoring analyst proficiency
- Set up QA blind samples
- 5 random samples of varied crop kinds (retests)
- Retest regular samples by a different analyst
- Send to a buddy lab as a split sample test







# CFIA suggestion

Conduct internal proficiency monitoring:

- Set up annual pre-scheduled PT plan
- Define the monitoring scope
- Define acceptable performance
- Analyze internal data to identify gaps for training and improving

Quality control applies to whole test process, not only to skill, e.g., resources, sample management and handling, and data reporting.



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