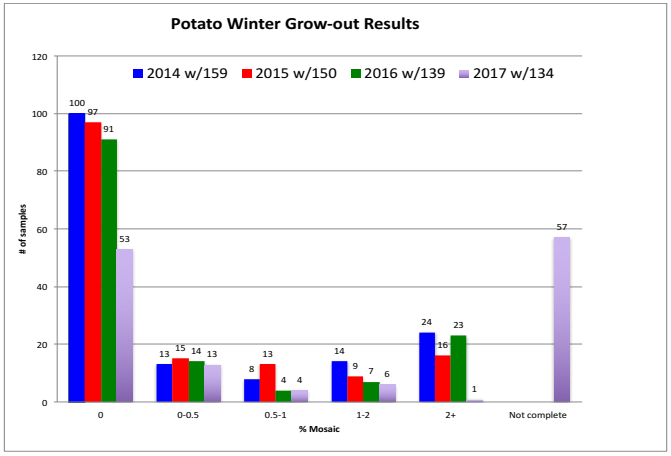
Potato winter grow-out update

- We had a good fall delivery process, not everyone delivered the same week.
- My students were a very dependable crew and showed up when they were supposed too.
- The last day of cutting was December 26th which is about normal.
- We have 57 lots left to read out of 134 samples. 42% remain.



Tray planting Experiment

- Reasons to plant in trays

1. Eliminate the irregularity of soil effects on germination.
2. More and more samples are being leaf tested.
3. Direct planting into trays saves time and could speed up the grow-out process.
4. Quicker and better germination.
5. Trays take up less room.
6. Potato variety development have been using trays for years.

Tray planting Experiment

- Reasons not to plant in trays.

1. Expense of purchasing the trays (one time) and soil.
2. Harder to handle trays.
3. Plants are a tad smaller in leaf size.

Side by side comparison

- The second planting is always lower germination
- I wanted to see the same lot side by side, which finished first and had the best germination?


SAMPLE NO.
95
VARIETY
FL2137
NO. PLANTED
780
DATE PLANTED
12/15/19

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Item 2 - **Changes and Challenges with PVY testing in the WGO**

Changes for PVY sampling/testing in 2017
- Continual shift of PVY strains to 'latent' strains
- Increase number of growers testing
- ICIA to OSU as primary testing lab
- Concerns about Mosaic scores vs. % PVY

Strains of PVY being found in North America

O - the ordinary or common strain. Typically causes severe symptoms on foliage but no tuber defects. Diagnosed by serological (ELISA) tests as an O strain.

N - the tobacco necrosis strain. Typically causes mild symptoms on potato foliage and no tuber defects. Diagnosed by serological (ELISA) tests as an N strain.

NTN - the tuber necrosis strain. Typically causes mild symptoms on foliage but can cause PTNRD (potato tuber necrotic ringspot disease). Diagnosed by serological (ELISA) tests as an N strain.

N-Wi (N:O) - the recombinant strain. Typically causes mild symptoms on foliage and no tuber defects. Diagnosed by serological (ELISA) tests as an O strain.

Potatovirus.com

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Changes for PVY sampling/testing in 2017
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Good germination few dry areas

Poor germination many dry areas

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Item 2 - **Changes and Challenges with PVY testing in the WGO**

ICIA to OSU as primary testing lab

Reason for shift

mailing problems, overlapped sampling times

Costs: Sampling and Mailing, ICIA, OSU, NDSU

Lab: ICIA **~$192** for 400 leaves; OSU **~$208** for 400 leaves

Sampling and Mailing (per 400-leaf sample):

ICIA $42; OSU $32

Strain testing (variable) but generally about $10/sample

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Tracking and reporting (complicating factors)

400-leaf vs. "All emerging plants" (flagging, bags)

Strain testing vs no strain testing

Multiple reading and sampling dates (% PVY)

2017 three labs involved (!)

Delays in reporting, issues

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Item 2 - **Changes and Challenges with PVY testing in the WGO**

- Concerns about Mosaic scores vs. % PVY

Standards specify "% Mosaic" not % PVY

1. Cases where PVY % > Mosaic scores (expected)

2. Cases where PVY % < Mosaic scores

Not expected, concern

Possible reasons:

(a) 400-leaf vs "all" sampling (first vs last reading dates)
(b) PVY strain not detected
(c) Virus other than PVY (PVA, ? AlfMV, other?)
(d) Non-viral "mosaic" (should not be scored)

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Item 2 - **Changes and Challenges with PVY testing in the WGO**

2. Cases where PVY % < Mosaic scores (on 100% tested lots)

Solutions ('hold for lab results")

- Don't remove 'scored' plants until lab results received *
- Allows for adequate follow-up on actual causes
- Allows OSCS to know of problems in the system, new 'non- detected' strains recognized
- Possible delay in getting WGO result and Final Reports

* - *tested lots only*

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Item 2 - **Changes and Challenges with PVY testing in the WGO**

2. Cases where PVY % < Mosaic scores – Solutions (continued)

Should all 'scored' plants be tested?

- Current 'confirmation testing' system (kits, lab)
- Increased cost (fees), delays in reporting
- Cap on confirmation testing (for high mosaic lots)

400 tuber/plant test

Class	Max Tol	# Mosaic leaves = DG	
G2	0.5%	2	
G3	1.0%	4	
G4	2.0%	8	