Rot or Not?
(and Other Potato Disease Issues)

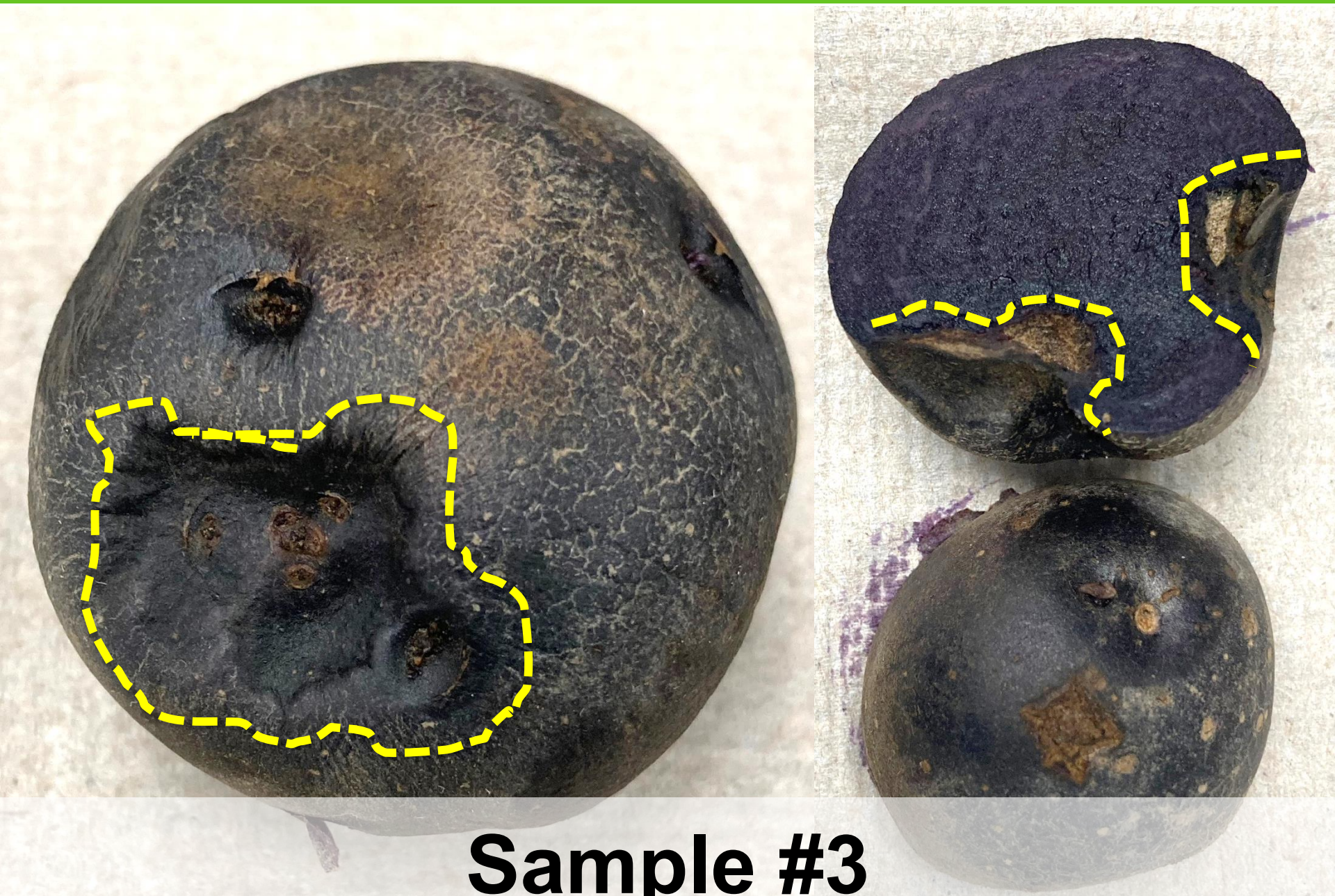
Jaime Willbur

Potato & Sugar Beet Pathology
Department of Plant, Soil and Microbial Sciences
Michigan State University

Winter Potato Conference
January 28, 2026

Sample #1

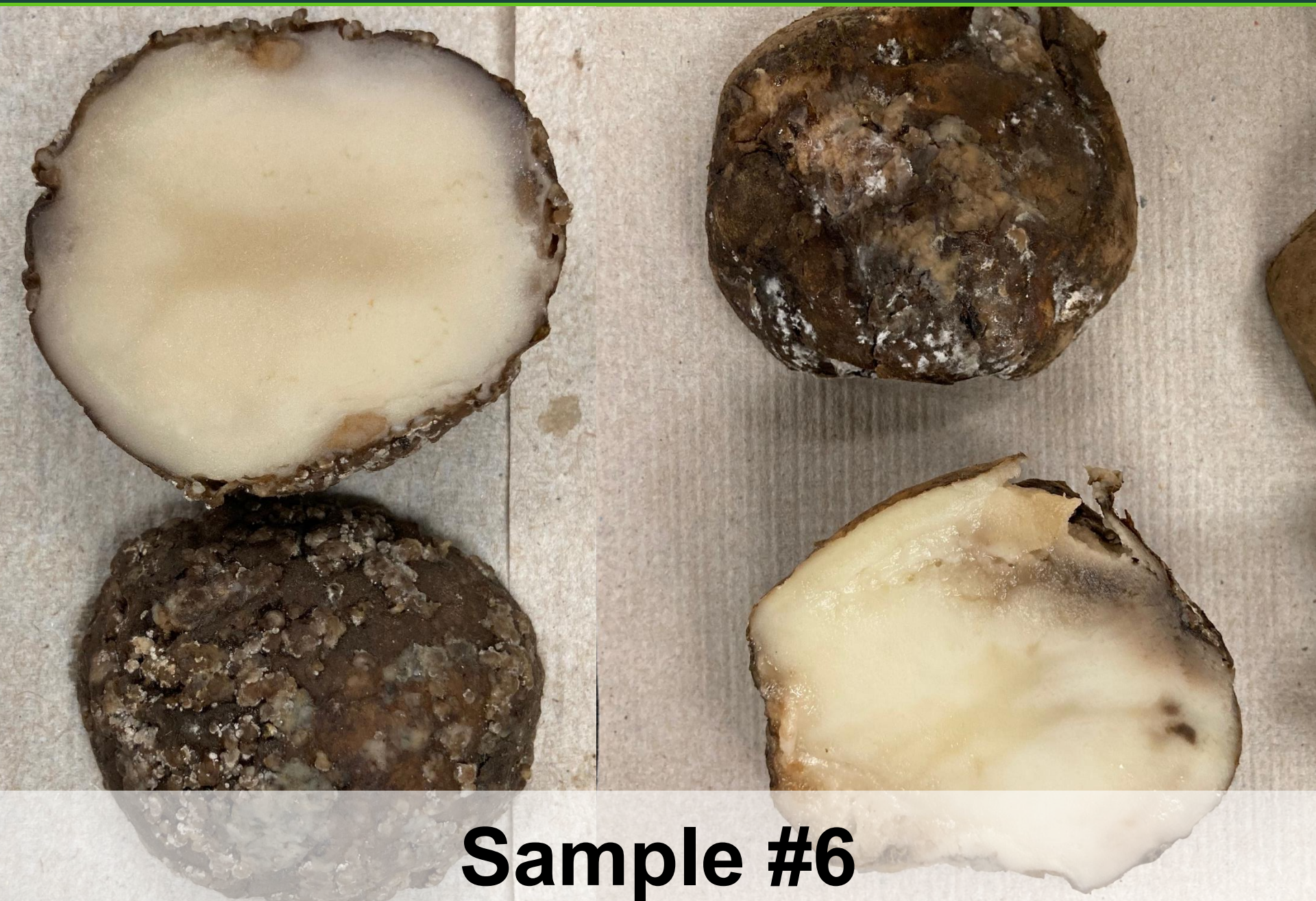
Sample #2



Sample #3

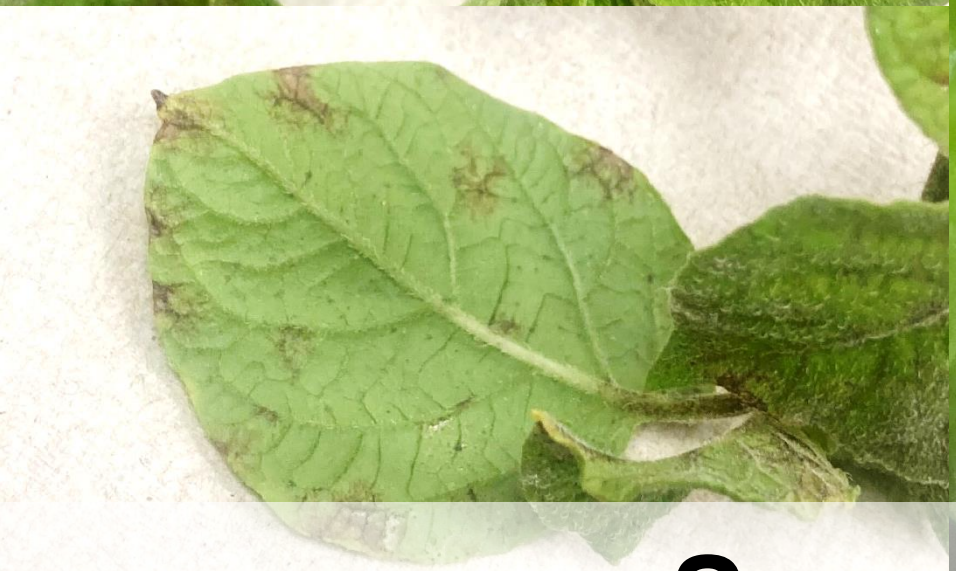
Sample #4

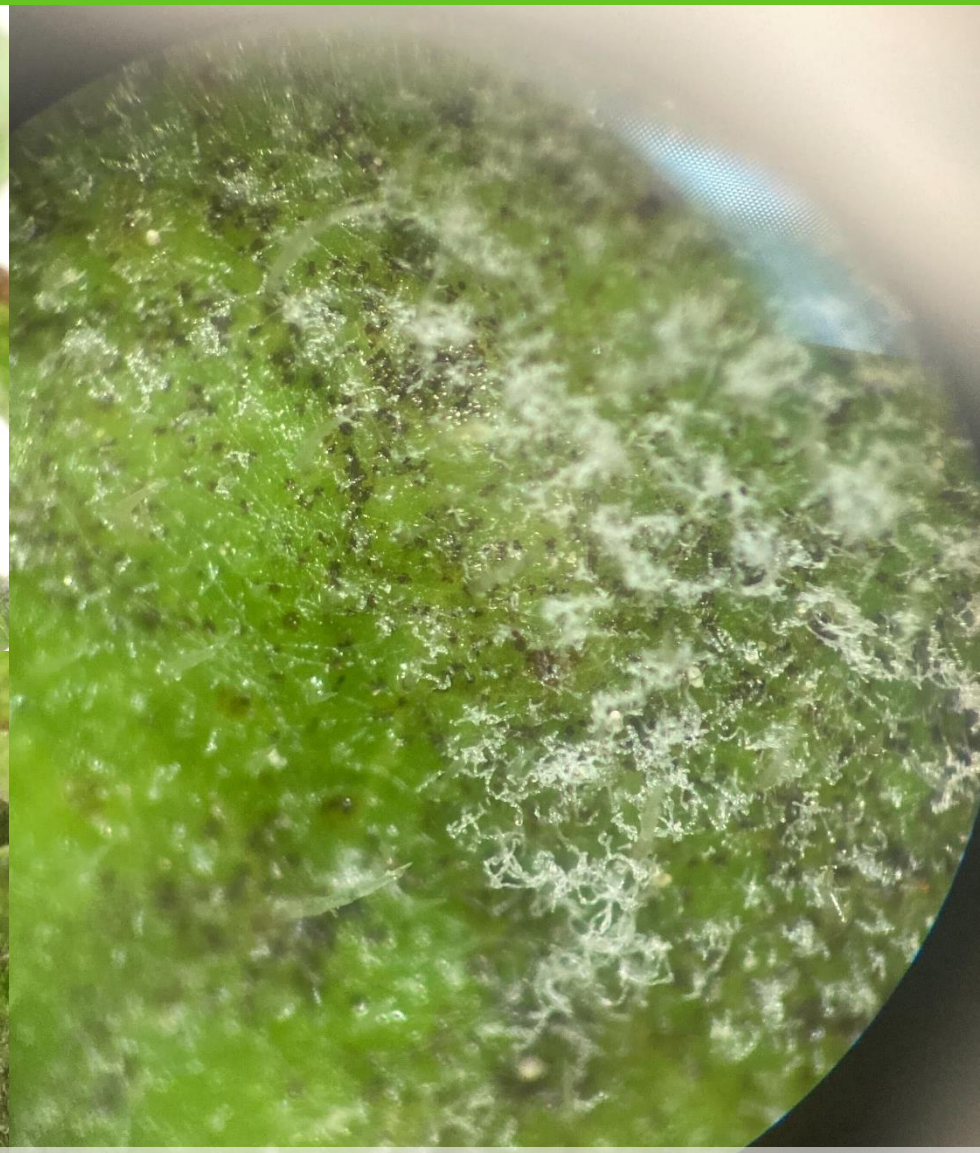
Sample #5



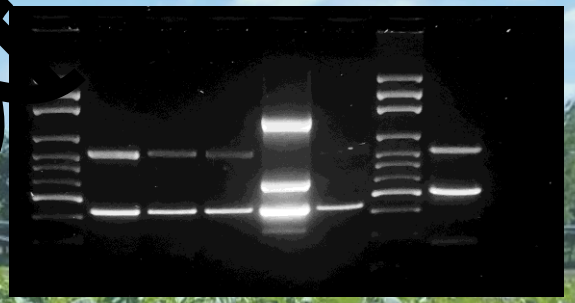
Sample #6

Sample #7





Sample #8



Rot or Not?

(Solutions)

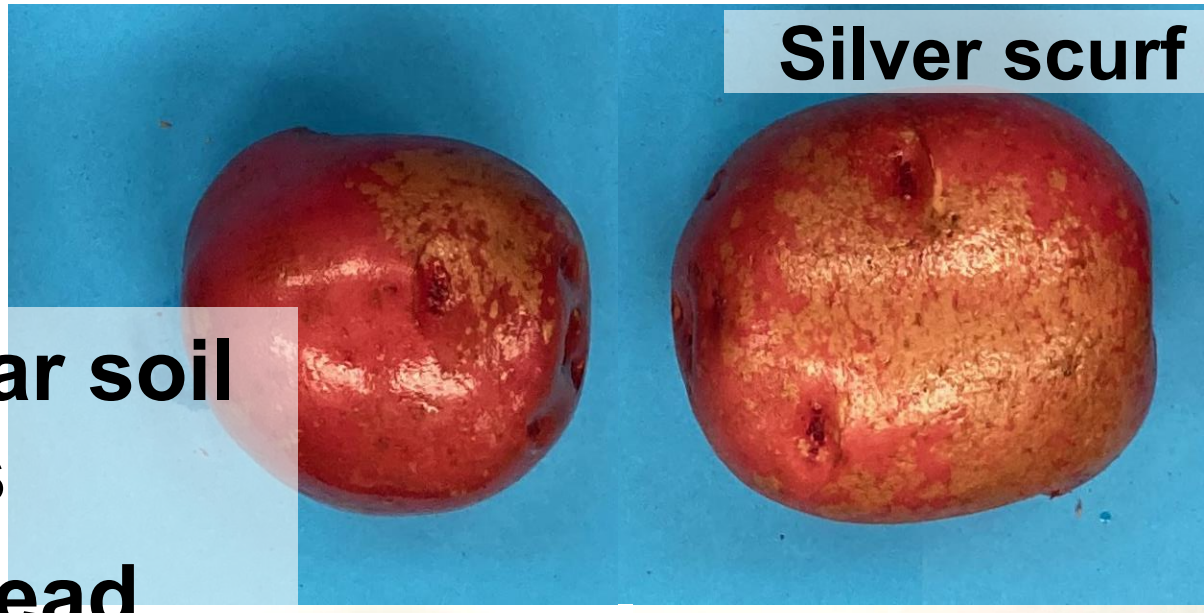
Black dot

Black dot

What to look for:

- Darkened color
- Cloudy edges
- Black sclerotia
- Acervuli/setae “black eyelashes”

Black dot



Key notes:

- On stems near soil line to tubers
- Does not spread readily in storage
- Silver scurf look-a-like, which can spread in storage
- Variety differences

Ozone injury

EGLE MICHIGAN DEPARTMENT OF ENVIRONMENT, GREAT LAKES, AND ENERGY

Michigan.gov

Michigan.gov Home | EGLE Home | EGLE Air | EGLE Air Monitoring | Contact EGLE

Air Quality Index | Action! Days | Air Quality Notification | Monitoring Data | Ozone Maps | $PM_{2.5}$ Maps

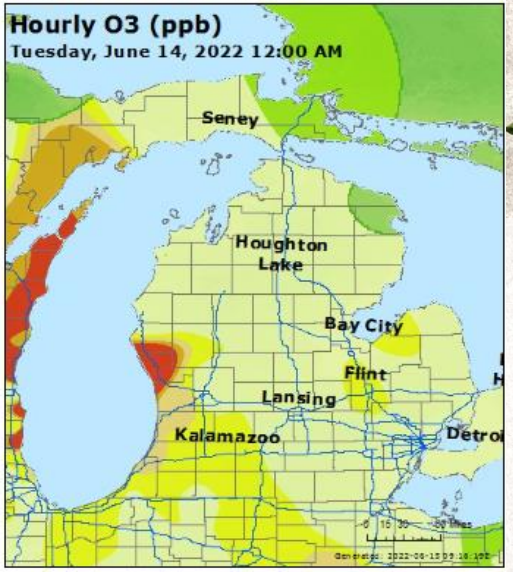
Forecast Discussion | Ozone Data Summaries

Ozone Maps

<< < Today > >> 6/14/2022 Go

Site	Avg. Period	Max. (ppb)
Allen Park	1-hr	50
	8-hr	47
Cassopolis	1-hr	67
	8-hr	58
Coloma	1-hr	76
	8-hr	70
Detroit - E 7 Mile	1-hr	50
	8-hr	48
Flint	1-hr	69
	8-hr	62
Frankfort	1-hr	50
	8-hr	47
Grand Rapids	1-hr	60
	8-hr	52
Harbor Beach	1-hr	50
	8-hr	47
Jenison	1-hr	78
	8-hr	68
Kalamazoo	1-hr	72
	8-hr	62
Lansing Filley St	1-hr	55
	8-hr	49
Manistee	1-hr	53
	8-hr	48
Muskegon	1-hr	108
	8-hr	82
New Haven	1-hr	61
	8-hr	54
Oak Park	1-hr	53
	8-hr	50

6/14/2022 1-hr Peak — Legend | Animate



Ozone Map Legend

Concentrations (ppb)	
	0-24
	25-50
	51-65
	66-75
	76-85
	86-95
	96-115
	≥ 116
	Data Not Available

8-hr Averaging Conventions	
Latest & Today's max	Rolling (end hour, EDT)
Yesterday's max and Max for previous days	Rolling (begin hour, EST)

Notes:

- Colors do not represent an AQI value.
- 8-hr NAAQS for ozone is 70 ppb
- 1-hr NAAQS for ozone is 125 ppb

Ozone injury

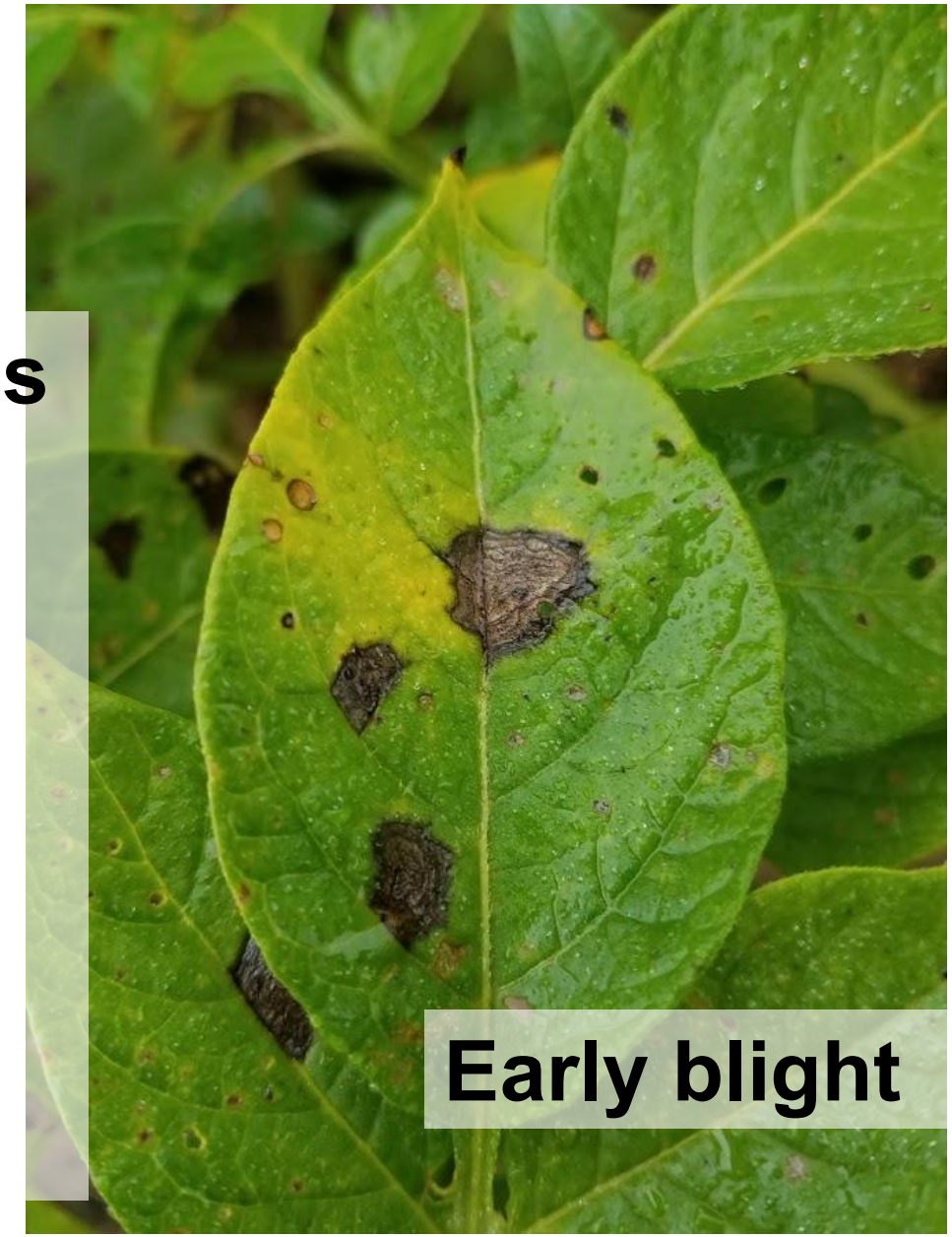
What to look for:

- Pepper spots, sunken necrotic
- Back-side of leaves
- Rapid onset
- Air quality alerts

Ozone injury

Key notes:

- Variety differences
- Brown spot/early blight look-a-like
- No concentric rings (at first)
- May lead to secondary diseases

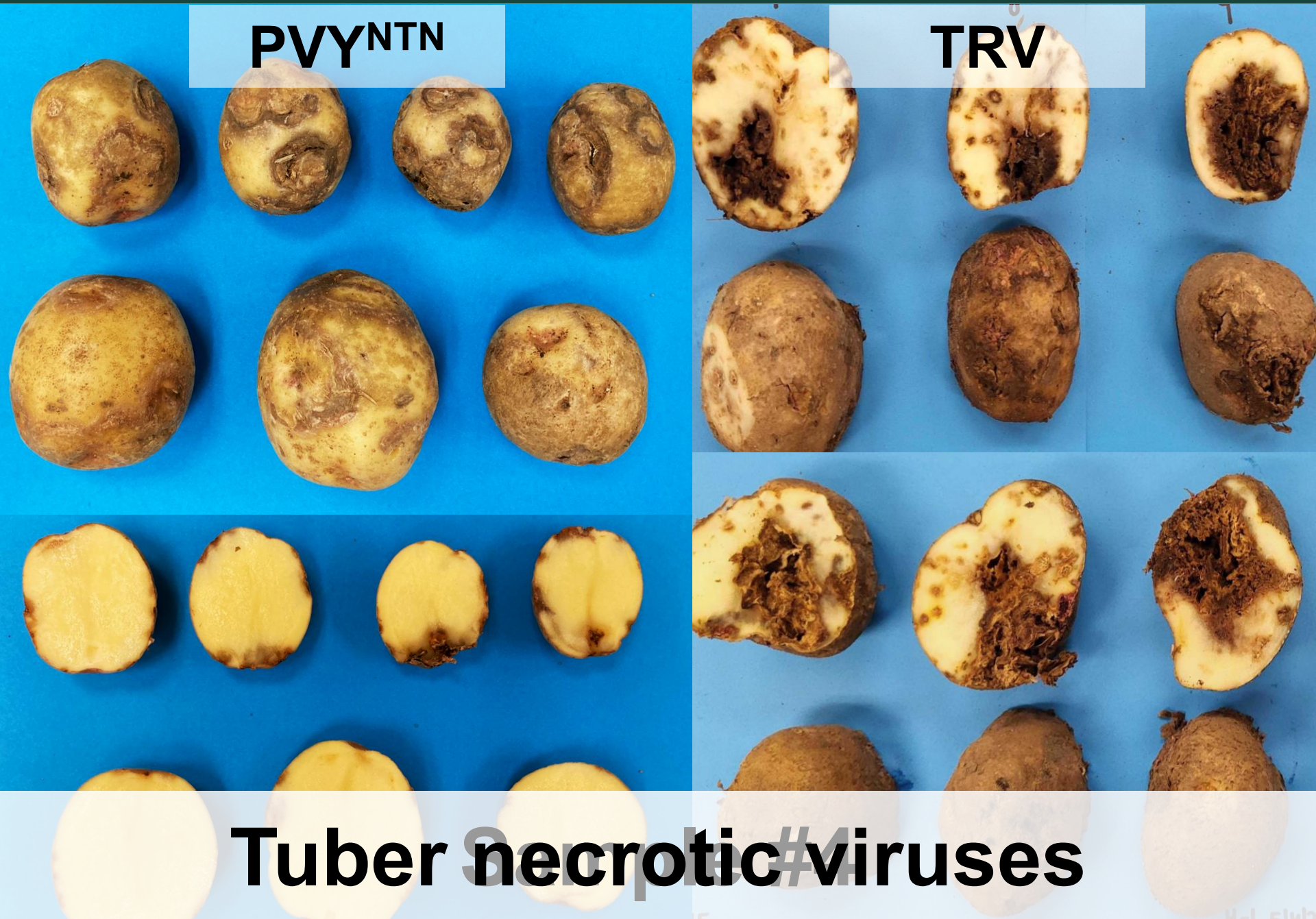


Early blight (on tubers)

Early blight (on tubers)

Key notes:

- **Dark, circular, irregular sunken lesions**
- **Decayed tissue leathery or corky**
- **May increase tuber dehydration**

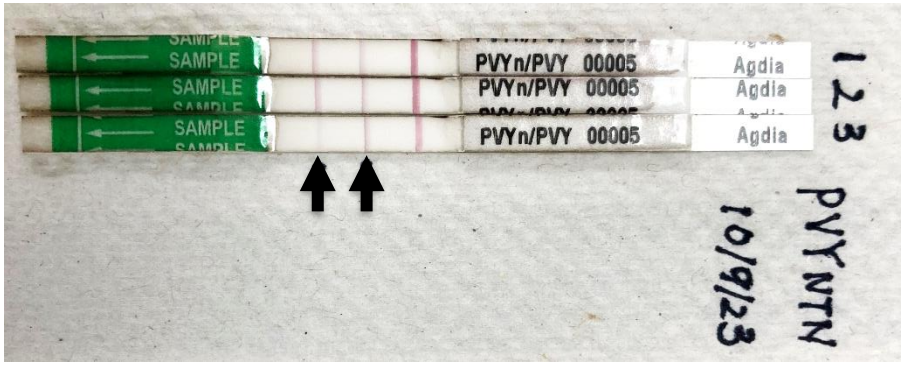


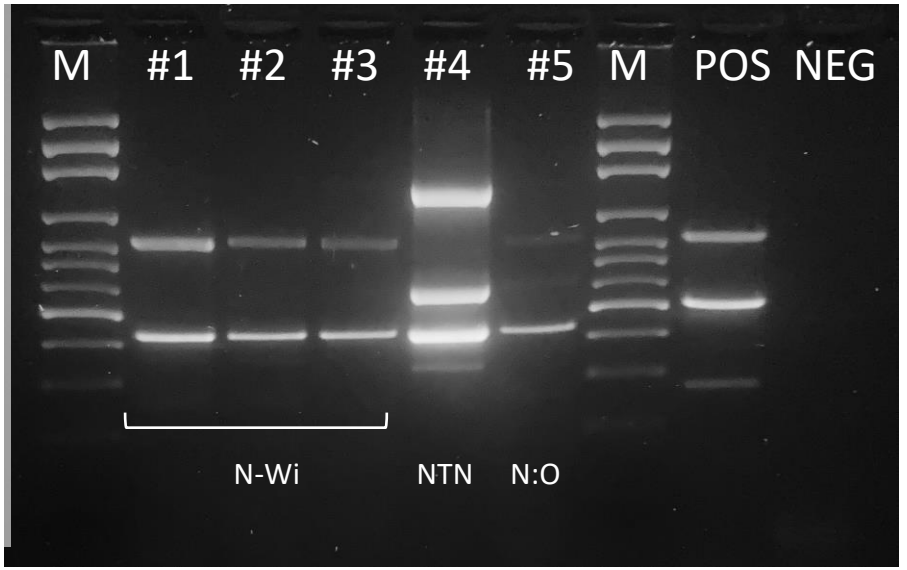
Tuber necrotic viruses

Tuber necrotic viruses

Key notes:

- Potato virus Y (PVY) strains
- Potato mop top virus (PMTV) – vectored by powdery scab
- Tobacco rattle virus (TRV)
- Immunostrip, ELISA, PCR, qPCR





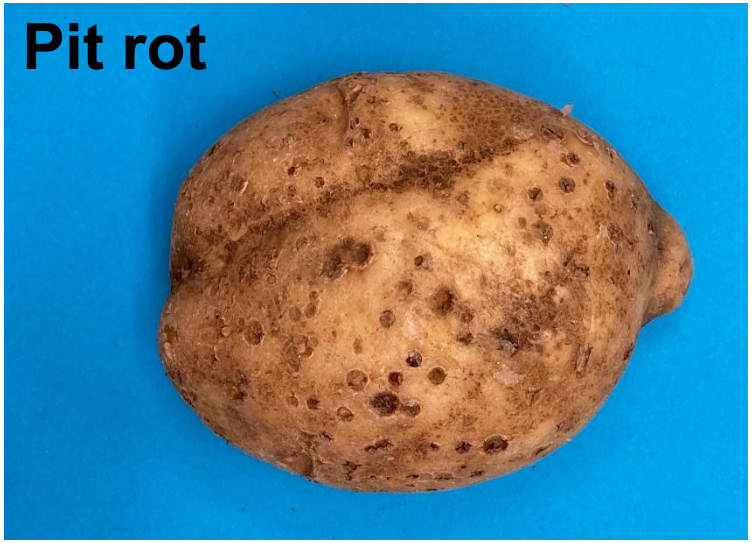
Sample #5

Pit rot

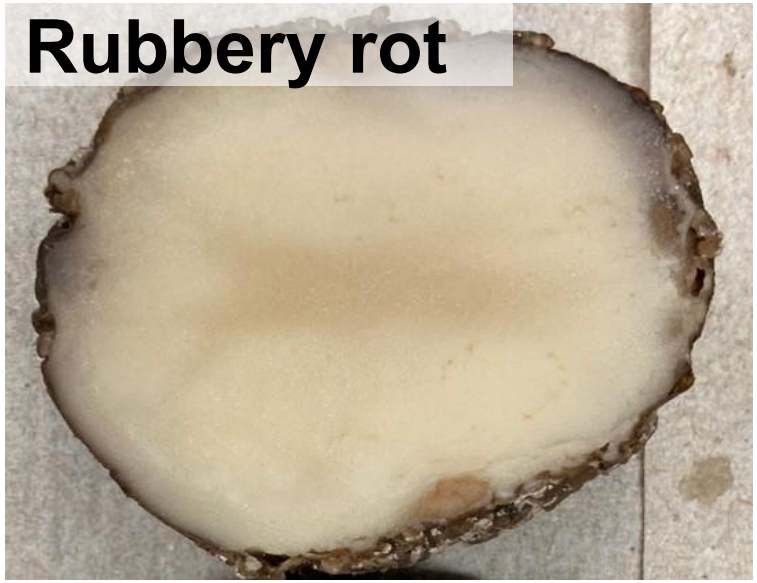
Pit rot

Key notes:

- Sunken, necrotic lenticel pits
- Restricted lesion growth
- Defect of poor ventilation, high CO_2 and low O_2 or bacterial infection



Rubbery rot

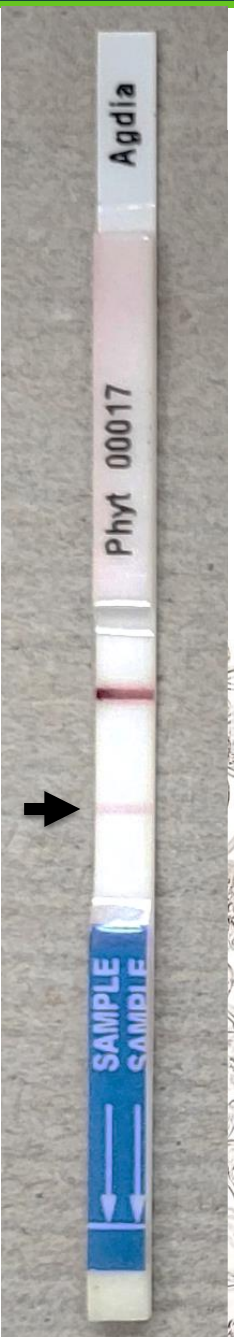


Rubbery rot

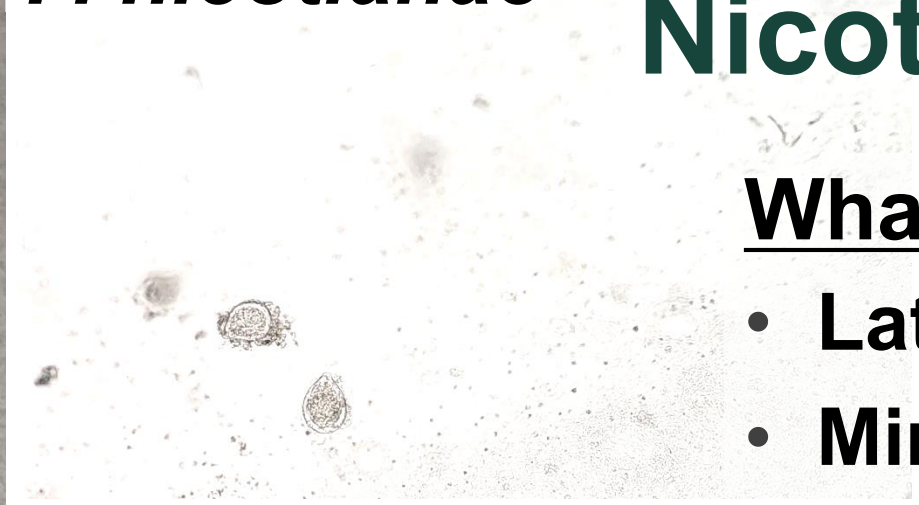
Key notes:

- Grayish, brown discoloration
- Sweet odor
- Spongy texture
- White, wart-like growth on exterior
- Pythium leak look-a-like

Nicotianae blight



P. nicotianae

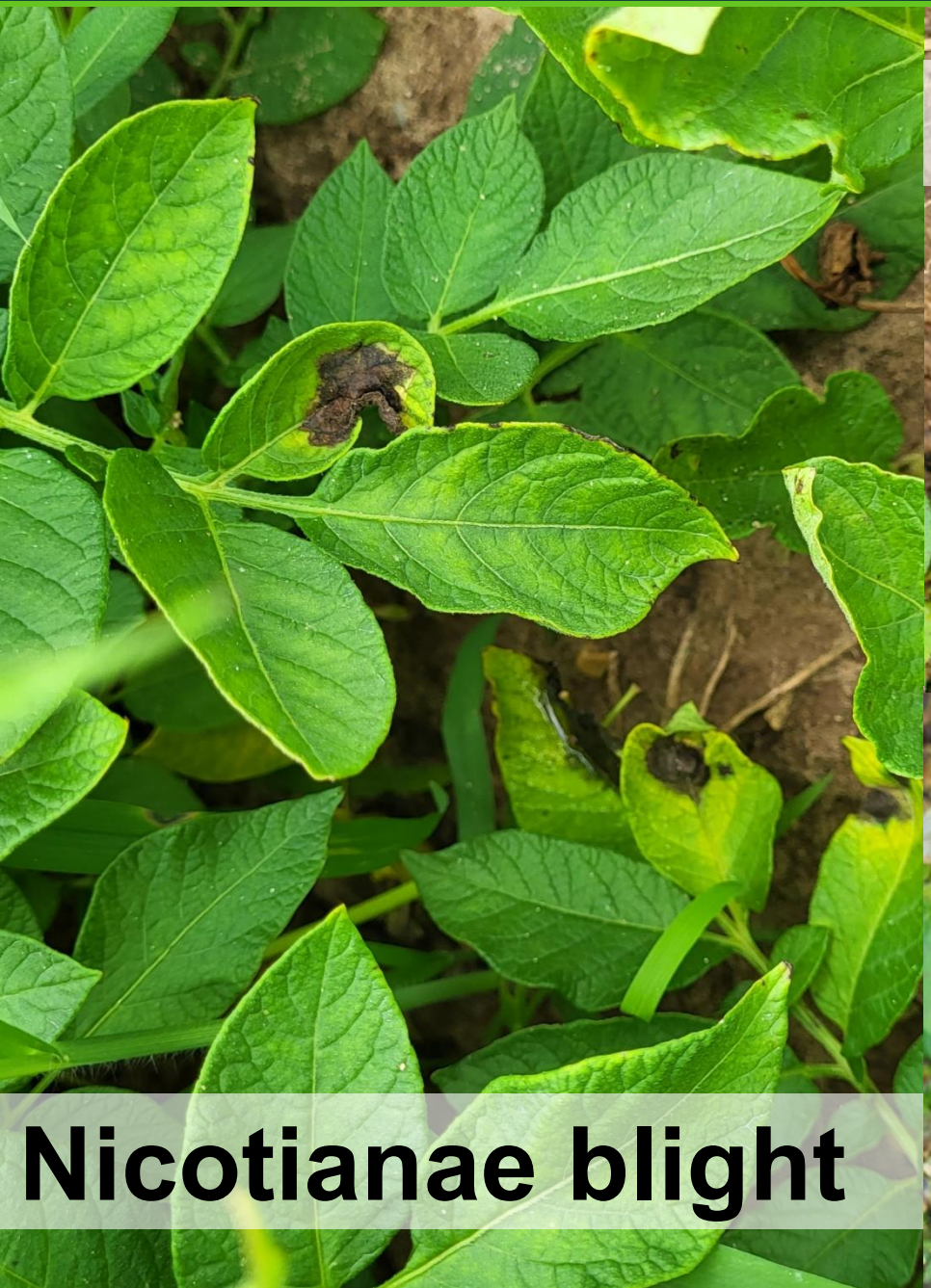


Nicotianae blight

What to look for:

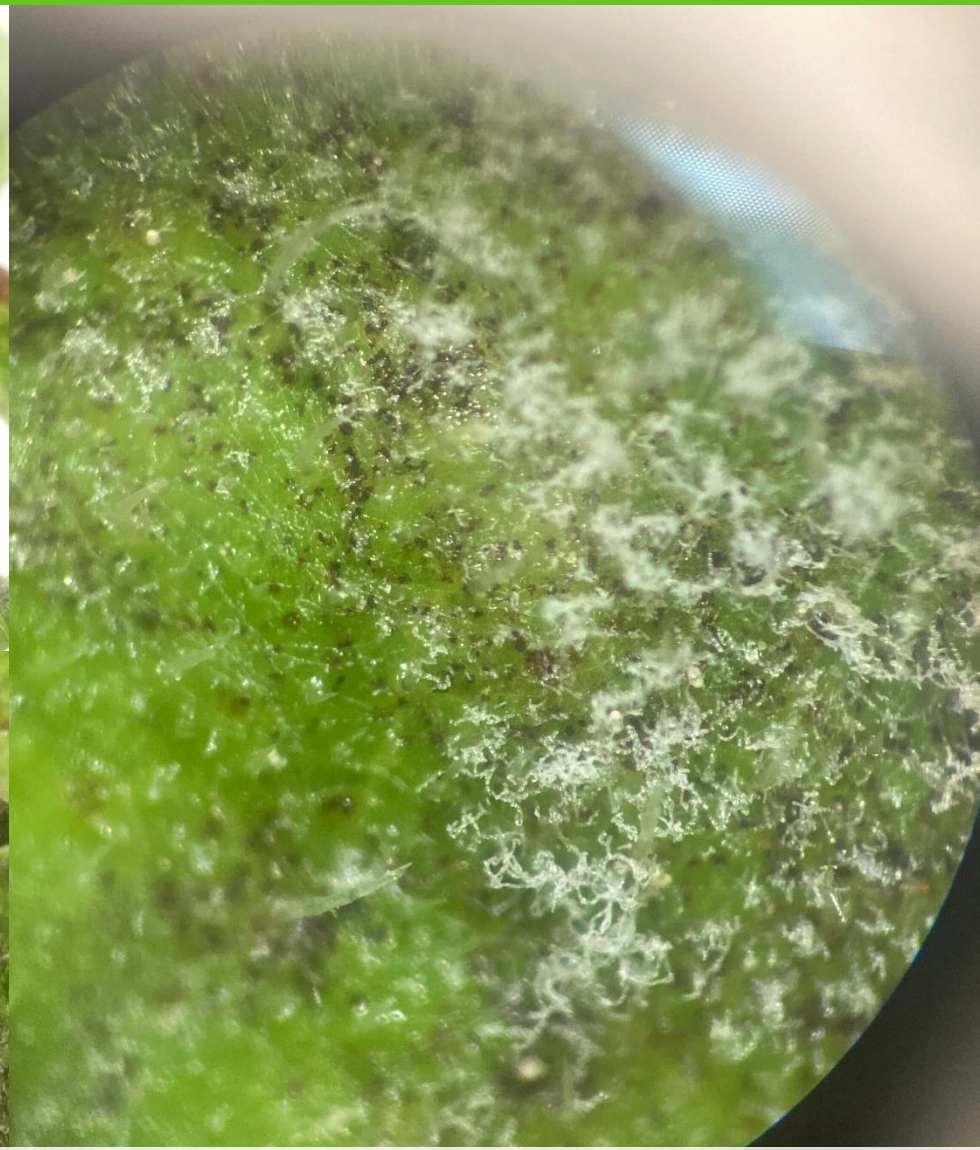
- Late blight look-a-like
- Minimal sporulation
- Slow spread in field
- *Phytophthora nicotianae* sporangia
- *Phytophthora* detection + species identification

P. infestans

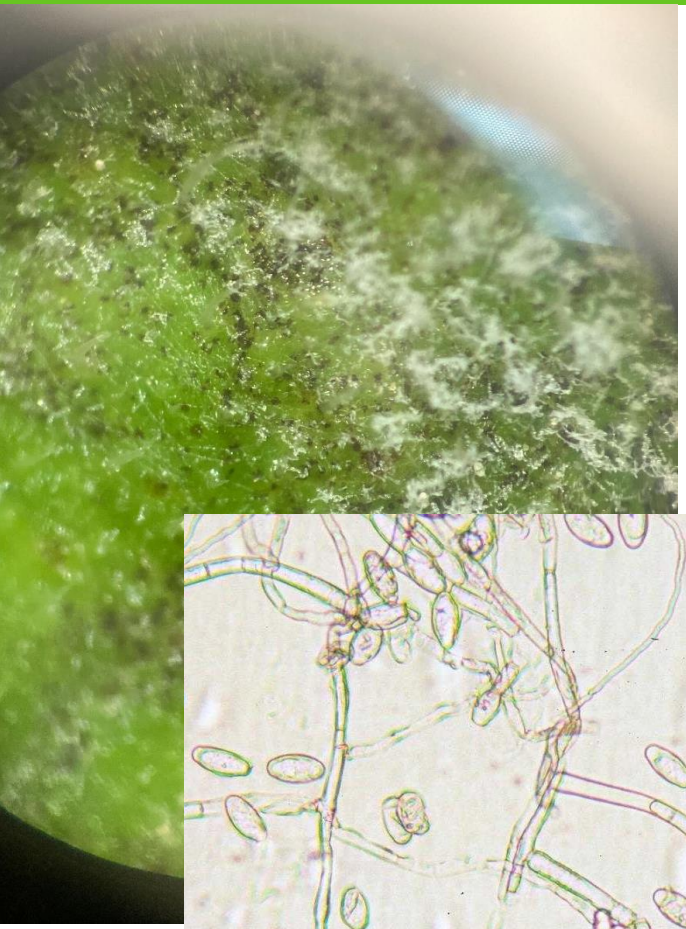


Nicotianae blight

Late blight



Powdery mildew



Powdery mildew

What to look for:

- Powdery white sporulation on leaf surface
- Necrosis on reverse
- Chains of oblong conidia
- Greenhouse sample, warmer temps and moderate humidity

MSU Potato & Sugar Beet Pathology

1. **Foliar, tuber, and seed sample diagnostics from field or storage in cooperation with MSU Plant & Pest Diagnostics**
   - Microscopic and molecular pathogen and disease identification
   - Fungicide sensitivity testing, additional fee upon request
   - Late blight genotype services

2. **Resources and information for potato disease management**
   - Visit our website: http://www.canr.msu.edu/psbp/
   - MSU Plant & Pest Diagnostics: https://www.canr.msu.edu/pestid/

MICHIGAN STATE UNIVERSITY | AgBioResearch & Extension

Questions?

Jaime Willbur, Ph.D.
Associate Professor
Potato & Sugar Beet Pathology
Plant, Soil and Microbial Sci.

Plant Biology Laboratories
612 Wilson Rd, 35
East Lansing, MI 48824

willbur1@msu.edu
(517)355-4754
canr.msu.edu/psbp

Michigan Seed Potato Association

Project GREEEN

USDA ARS

BEET SUGAR DEVELOPMENT FOUNDATION

NIFA

MICHIGAN POTATOES

PIONEER • BIG CHIEF
MICHIGAN SUGAR

Michigan Department of AGRICULTURE & Rural Development

This work is supported by the USDA National Institute of Food and Agriculture, Hatch project 1020281.