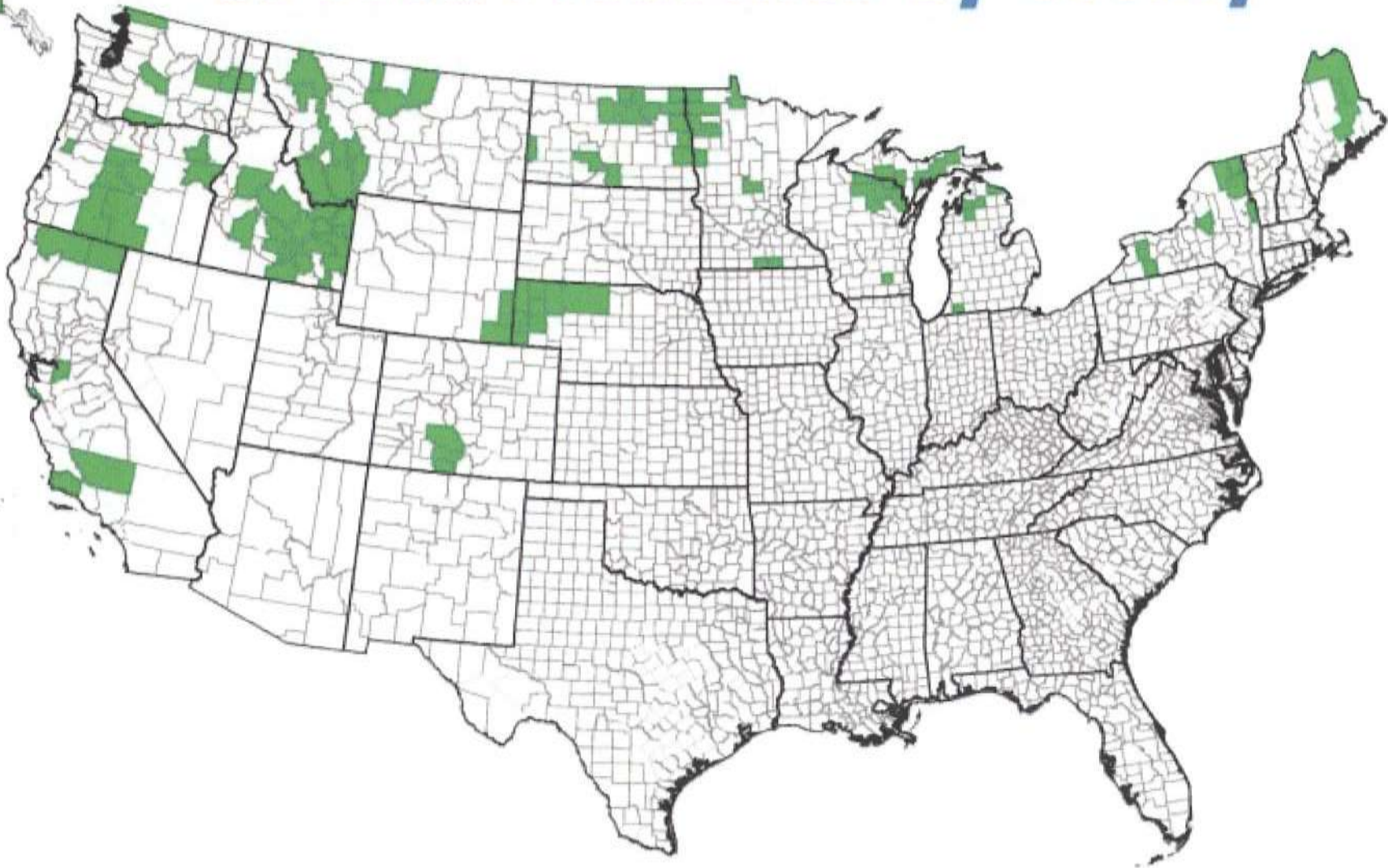


Seed Potato Certification

Willem Schrage, NDSSD, USA.

A large center pivot irrigation system is shown over a lush green field. The system consists of a long, curved metal structure supported by multiple legs, with numerous smaller pipes and nozzles extending downwards. The background is a clear blue sky with scattered white clouds.

US Seed Production by County



North Dakota



Purposes of Seed Certification

- **Indication of minimum quality requirements of seed potatoes**
- **Marketing Tool**
- **Legal instrument to have only seed planted within disease tolerance.**

Factors Influencing Potato Productivity

Variety

**Conditions for: Growing/ Harvesting/
Storage/ Transportation**

Sprouting Conditions

Soil Conditions: Stand

Seed Quality: Disease content

Physiological Age of Seed

From PREVIOUS SEASON:

- **Growing Conditions: Stress factors - moisture and fertility**
- **Disease pressure: Disease content**
- **Handling factors - cuts, bruises, etc.**
- **Storage conditions - moisture, temperature.**
- **All factors which contribute to the physiological age of the tubers.**

Certification

A large center pivot irrigation system is visible over a lush green field. The system consists of a long metal wheel line supported by a series of truss-like structures, with multiple smaller wheels branching off. The field is filled with dense, vibrant green crops. The sky is bright blue with scattered white clouds.

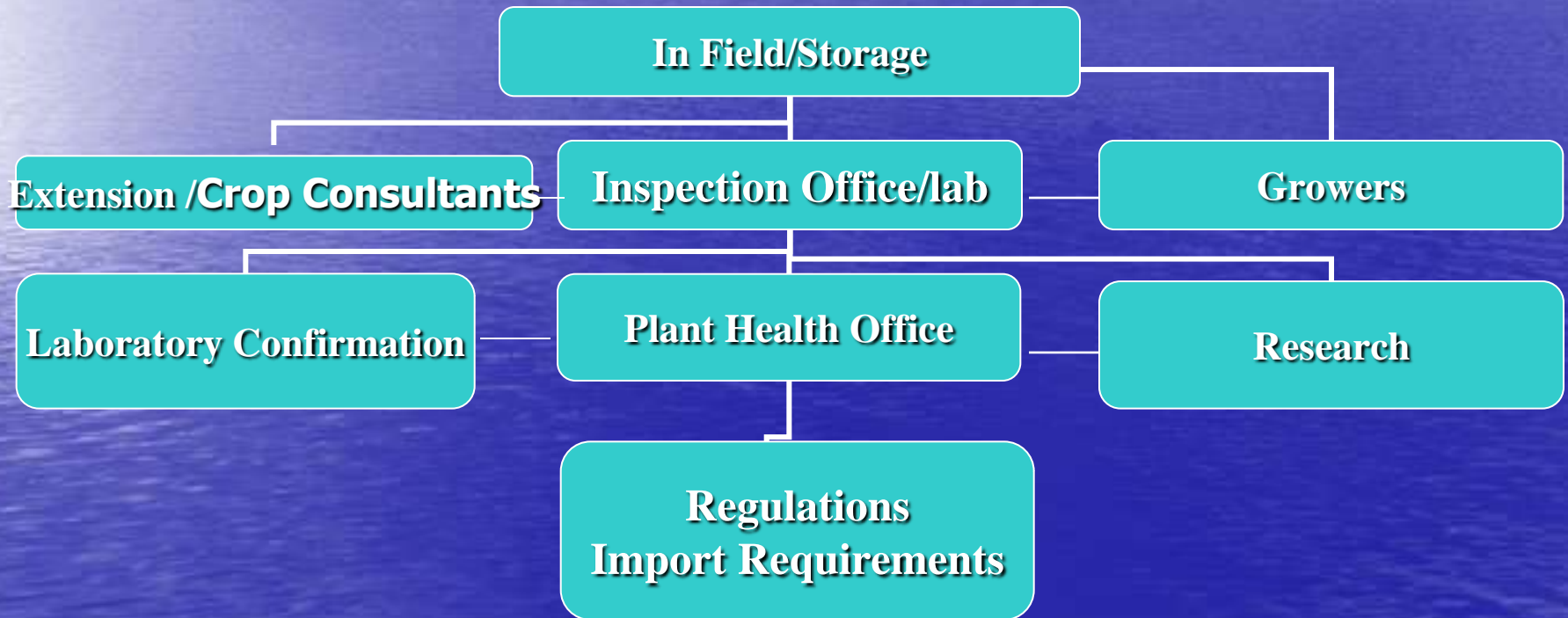
Quality: Varieties,
Plant Diseases,
Defects

Some Conditions:
e.g. Stand, Vigor

Plant Diseases

- 1. Plant Quarantine: (Trying to keep diseases out)
(Phytosanitary Certificates)**
- 2. Certification: Establishing Tolerances, related to the influence on yield and/or quality: e.g. Rot, Rhizoctonia, Scab, Virus**

Plant Health



Certification

- **Documentation,**
- **Trace Back,**
- **Inspections,**
- **Tolerances,**
- **Label.**



Potato Quality Diseases

- **In field and/or in tubers**
- **EITHER PRESENT OR**
- **(SUPPOSEDLY) ABSENT**
- **i.e. positive tolerance or zero tolerance**



Regulated non-quarantine pest

- A non-quarantine pest whose presence in plants for planting affects the intended use of these plants with an economically unacceptable impact and which is therefore regulated within a territory (e.g. Country, Province or State) by a designated authority.

Expectations of certified seed:

- 📖 That there are tolerances for
 - a) Viruses
 - b) Rhizoctonia
 - c) Dry Rot
 - d) Rot -Soft Rot
 - f) Verticillium or Fusarium Wilt
 - g) Scab or Silver Scurf
 - h) Late Blight
 - l) Nematodes

Other Characteristics

- **Variety**
- **Tuber Size**
- **Tuber defects**



Quality Assurance

A wide-angle photograph of a vast agricultural field. The field is filled with rows of green plants, likely potatoes, which are in bloom with small, light pink flowers. The rows stretch far into the distance, creating a strong sense of perspective. The sky is a clear, bright blue, and a line of trees is visible on the horizon in the background.

Field Inspection
(Post Harvest) Testing
Shipping Point Inspection

Field Inspection



Post Harvest Test



Post Harvest Test



Laboratory testing

**Effort to avoid
zero tolerance
diseases
Preventative for
potential
symptomless
carriers
Within maintenance
program**



Grade (Lot)
Inspection
At Shipping-
Point



Disease Testing/Sampling

**Effort to avoid zero tolerance
diseases**

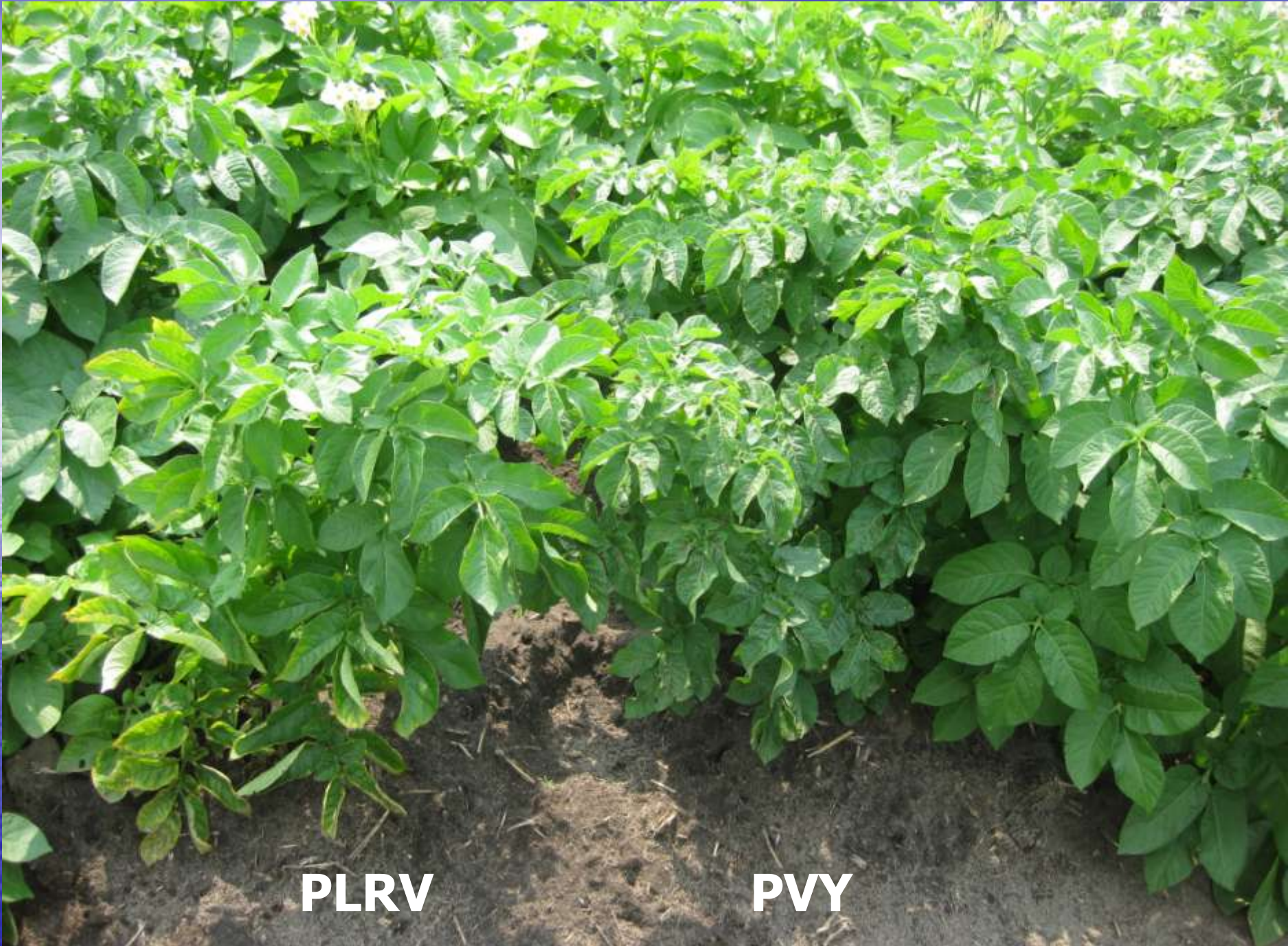
**Preventative, because of
potential symptomless
carriers**

Part of maintenance program

Seed Potato Certification

Components

- Regulations
- Documentation: Planting approved seed stock.
Trace Back
- Inspection for diseases, off types, variety mix, herbicide damage.
- Quality Assurance
 - Lot, Shipping Point Inspections for diseases and defects
 - Post Harvest Test
- Disease Testing
- Follow Up



PLRV

PVY



TRV



PMTV





● Black Leg

Rot



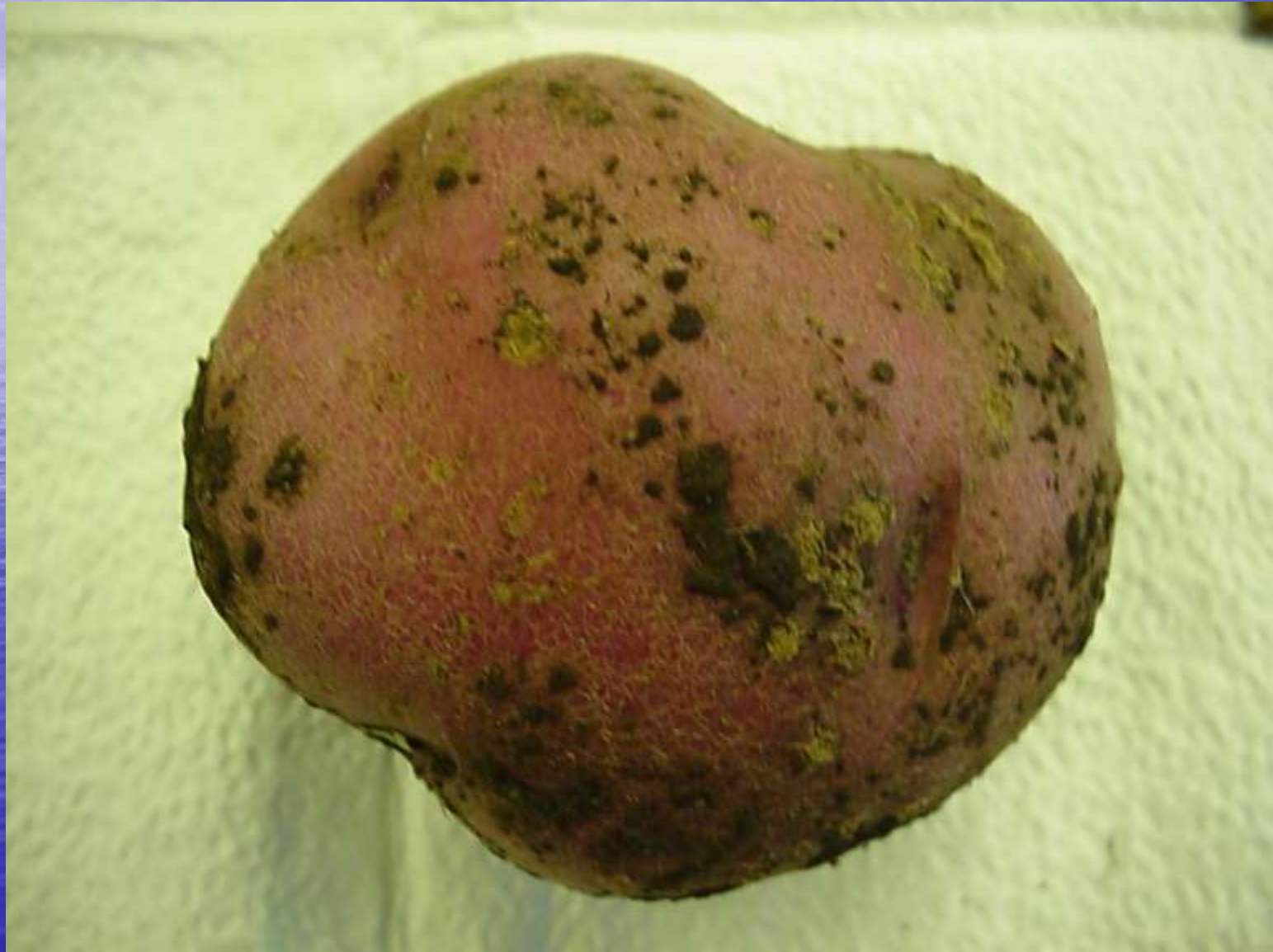
Late Blight



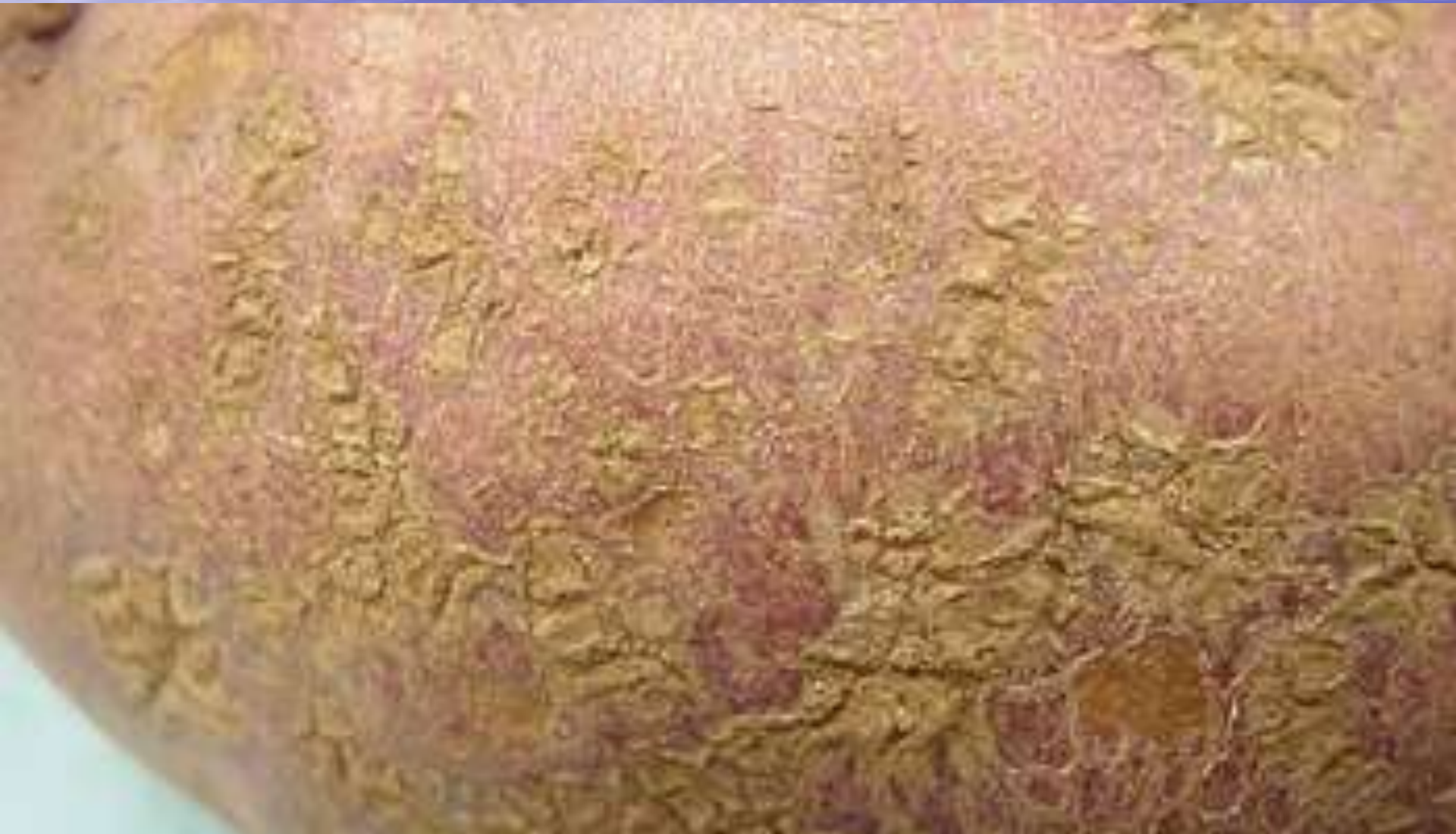
Dry Rot



Rhizoctonia and Powdery Scab



Common Scab



A large quantity of red potatoes is shown on a conveyor belt. The potatoes are piled up, filling most of the frame. They are a vibrant red color with some darker spots. The conveyor belt is made of metal and has a red metal frame. In the background, there are some mechanical parts and a person's legs. The overall scene is a busy potato processing or sorting facility.

QUESTIONS?