



Presentation to Interim Agriculture Committee

Ken Bertsch
ND State Seed Commissioner

Fargo, ND
January 13, 2010



State Seed Department

Agency Background and History

- Established 1931, ND Legislative Assembly
 - State Designated Authority: Statutory
 - ❑ Seed certification (field crops and potatoes)
 - ❑ State Seed Laboratory
 - ❑ State/Federal cooperative programs
 - ❑ Regulatory
 - Unique structure/mission among peers
 - ❑ “One-Stop” function: Field crops, potato, seed regulatory
 - ❑ Board Directed (Citizen)
 - ❑ Self Funded- Service Fees
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ND State Seed Commission

Bob Christman, Chairman
ND Dept. of Agriculture

Ken Bertsch, Commissioner
ND State Seed Department

Kim Alberty, West Fargo
ND Agriculture Association

Myron Uttermark, Leeds
ND Grain Dealers Assn.

Richard Fugleberg, Portland
ND Dry Edible Bean Assn.

Nick Otto, Crystal
ND Potato Council

Mike Gartner, Mandan
ND Crop Improvement Assn.

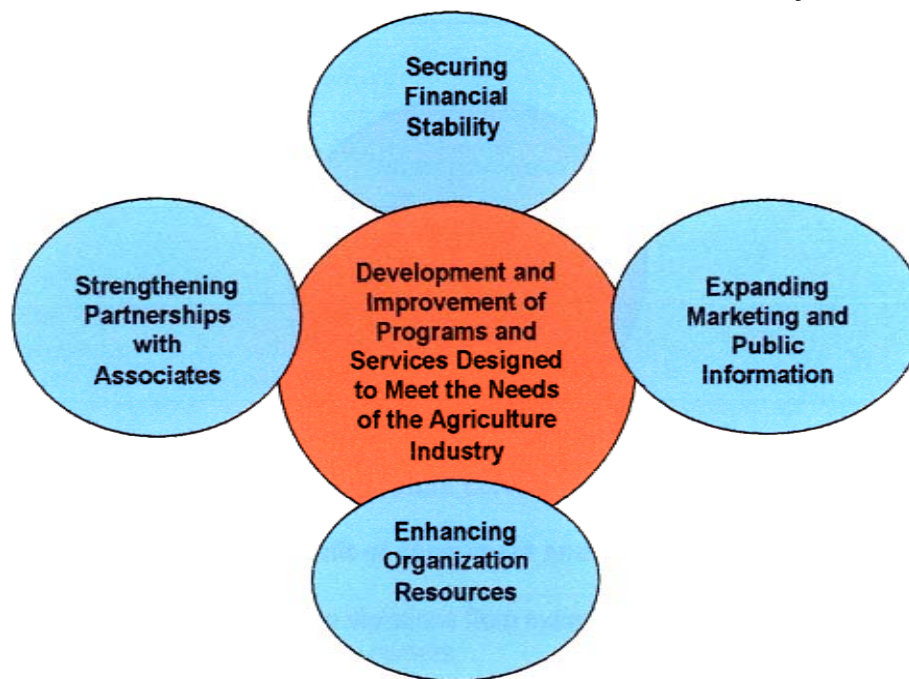
Brad Nilson, Hoople
Northern Plains Potato Assn.

Dr. Ken Grafton
NDSU Ag Exp Station

John Thiele, St. Thomas
ND Cert. Seed Potato Growers

NDSSD Long-Range Plan

Vision: The North Dakota State Seed Department is a recognized leader in services for the seed industry

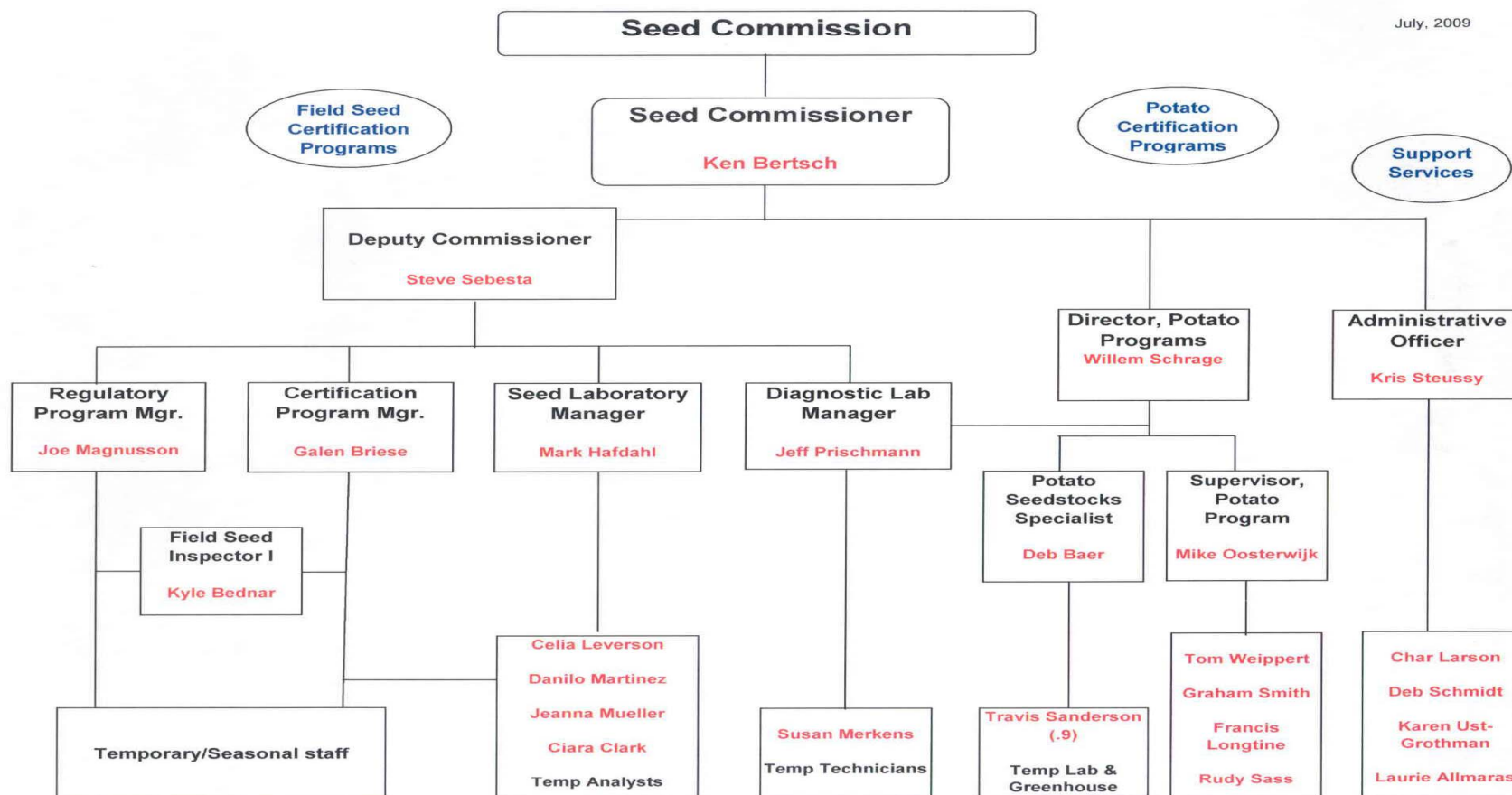


Mission: To assure the integrity of the seed industry through commitment to client service and product quality



Agency Organizational Chart

July, 2009





Agency Programs/Services

Administration

Field Seed Certification

Potato Certification

Laboratory Services

Seed Regulatory



Administration

- Coordination of administrative functions
- Technology (ITD, vendors)
- Human resources
- Budget administration
- Legal
- Equipment and capital improvements
- Support services

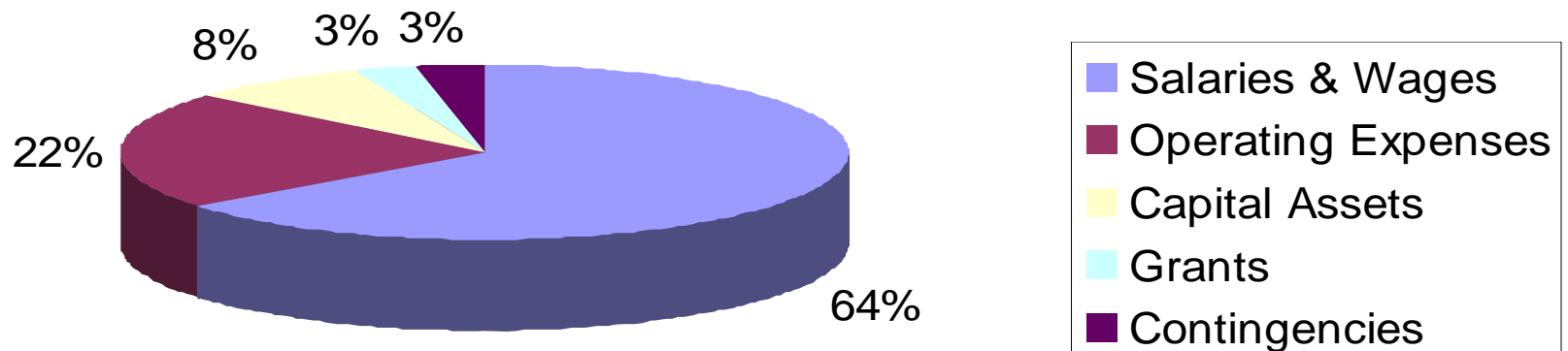
Administrative Officer, Kris Nicklay

NDCC 4-09, 4-09.1, 4-10, 4-11, 4-24, 4-25, 4-26, 4-42



Line-Item Budget Allocation

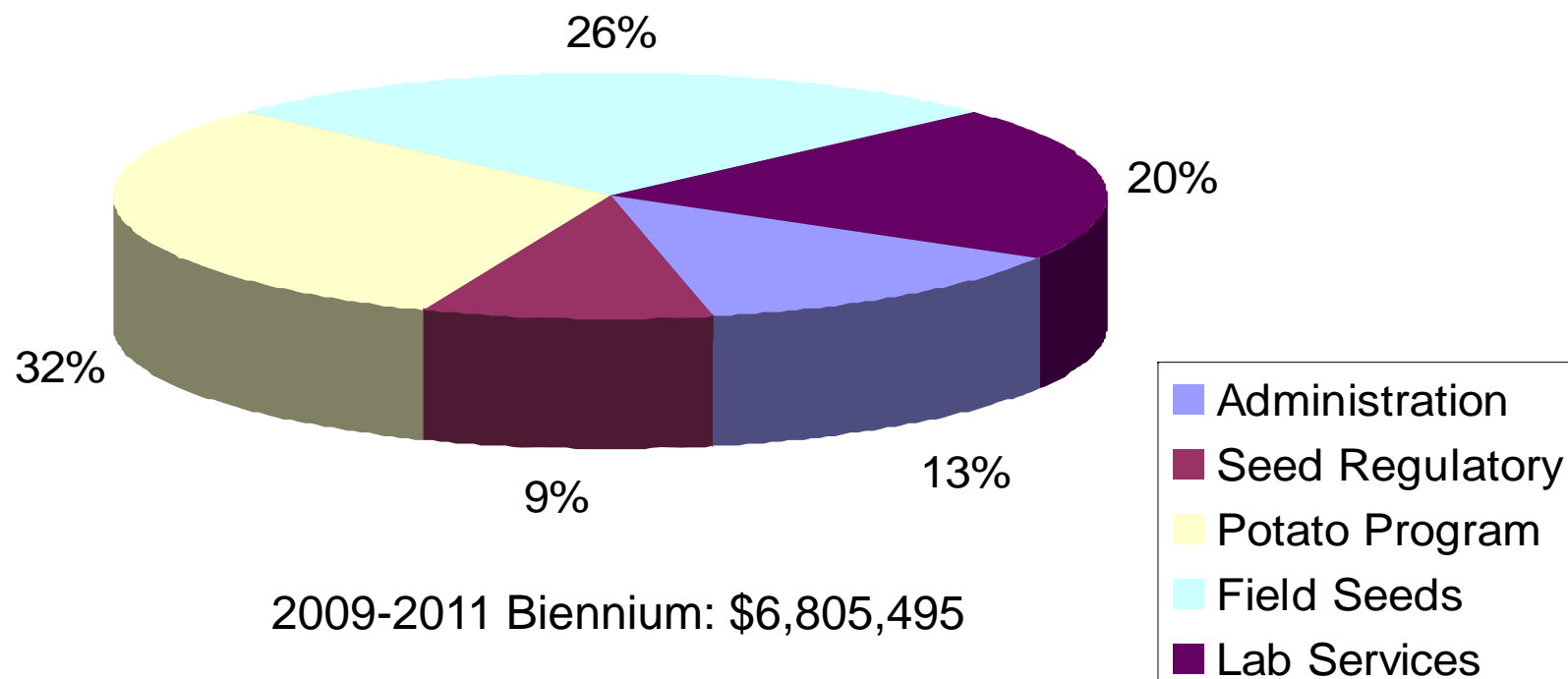
2009-2011 Budget by Line Items



2009-2011 Biennium: \$6,805,495

Program Budget Allocation

2009-2011 Budget by Major Program





Field Seed Certification Program

Field Seed Inspection

Seed Final Certification

Custom Programming

Seed Promotion

Technical Assistance

Seed Conditioner & Facility Approval



Program Director: Steve Sebesta, MS+

NDCC 4-09, 4-42



Field Seed Certification Program

- Purpose: Product certification and assurance of quality factors
 - Field inspection and lab analysis based on specific field and crop standards
 - Association of Official Seed Certification Agencies (AOSCA)
- * Largest field crop certification program in U.S

4-Step Certification Process

1. Field Inspection
 2. Final Certification
 3. Conditioner/Facility Approval and Licensing
 4. Seed Regulatory Inspections
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Field Inspection Training



Applying the criteria in practice.....

Step 1



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Field Seed Inspection

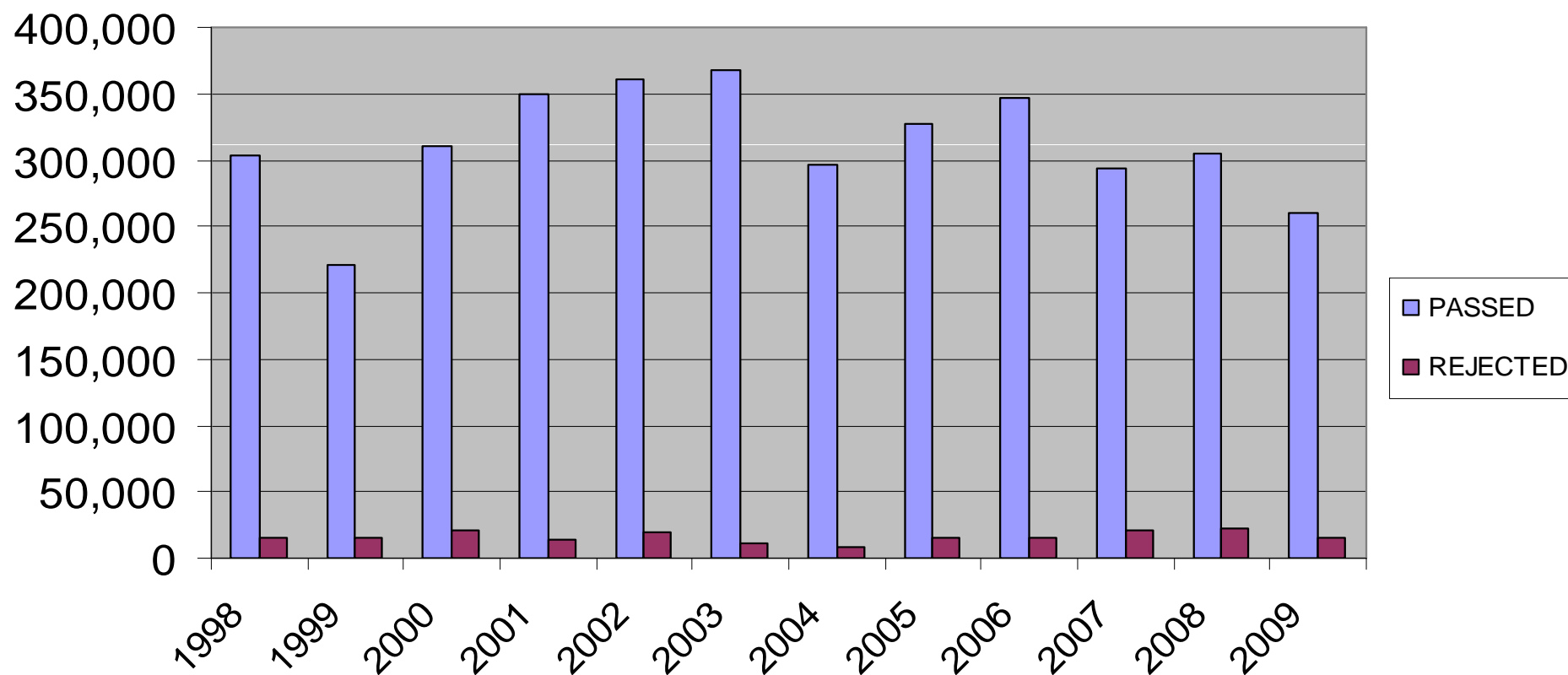


Step 1



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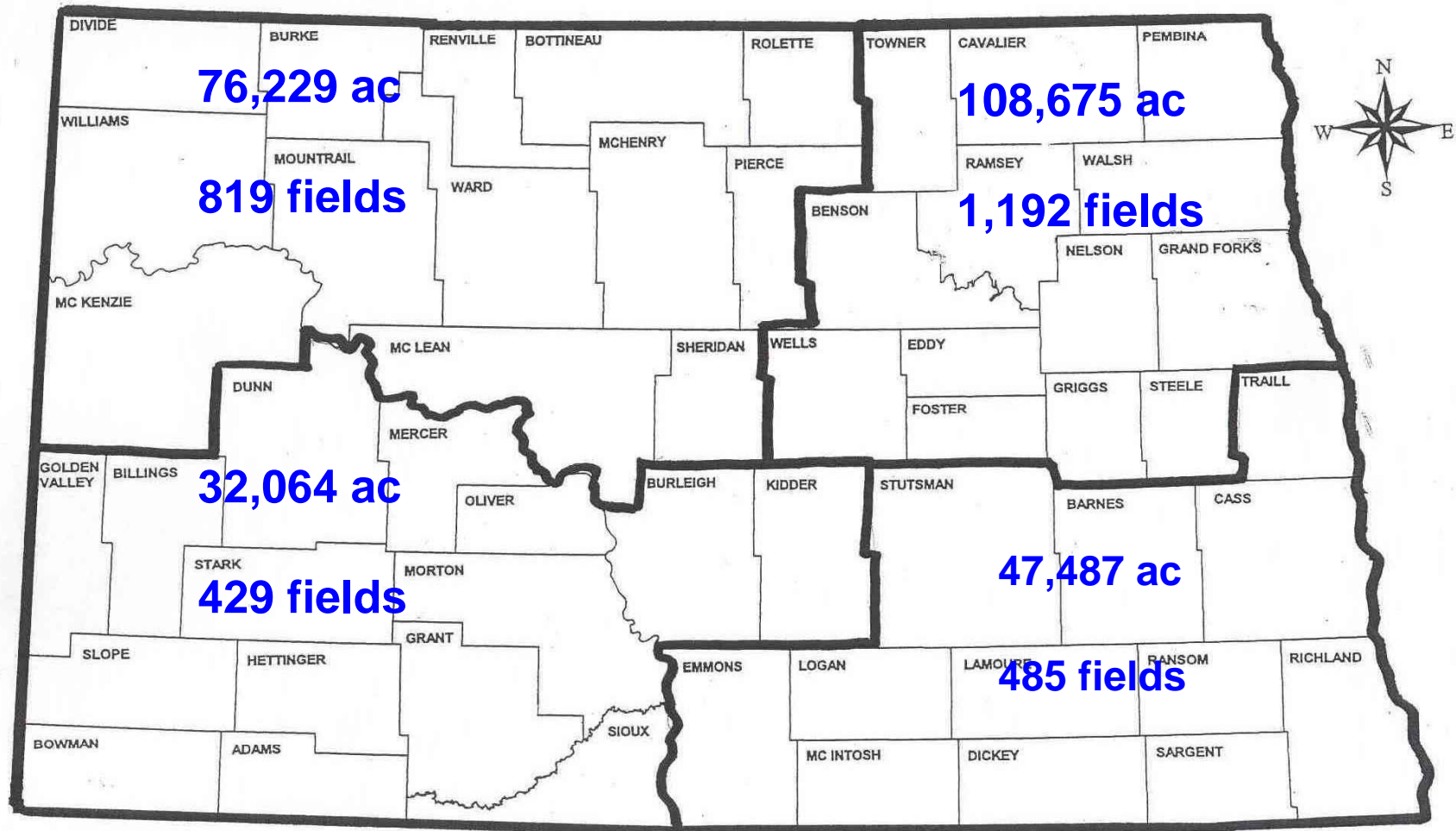
Field Inspection Acres 12 Year History





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Field Seed Program 2009 Inspections



Final Certification

- Laboratory analysis of quality factors
 - ❑ **Germination**
 - ❑ **Purity**
 - ❑ **Presence/absence of noxious weeds**
 - ❑ **Presence/absence of disease**
- Final grading (comparison to seed standards) performed by certification staff

Step 2

Custom Programs

- Identity Preserved (IP) Inspections
 - ❑ “Traceability” of product
 - ❑ Field to food channel, documentation of process
- Move toward Quality Assured (QA) processes
 - ❑ Internal or 3rd party inspections; company criteria or standards
- Specialty inspection programs
 - ❑ Seed Conditioner Intellectual Property Training
 - ❑ Bayer Crop Science: Liberty Link soybean programs
 - ❑ BASF: Clearfield Technology (multiple crops)

Promotion and Technical Support

- Seed Industry Promotion (NDCISA partners)
 - ❑ Certified seed promotion
 - ❑ PVP education
 - ❑ Statewide and regional trade shows
 - ❑ Print, radio and TV media

- Technical Support & Partnerships
 - ❑ NDCISA (other commodity/seed groups)
 - ❑ NDSU Foundation Seed Project
 - ❑ NDSU Breeders
 - ❑ AOSCA - Regional & National committee assignments

Conditioner and Facility Approval

- Annual Inspection and Approval process
 - ❑ Ensuring ability to handle, segregate and market quality seed products
- Technical Support
 - ❑ New facility construction
 - ❑ Facility improvements
 - ❑ Conditioning processes
 - ❑ Compliance with standards



Step 3



FS Program, Facts and Figures 2003 (High) to 2009 (Current)

	2003	2009
Total acres inspected	385,551	277,464
Total fields inspected	4,542	3055
Crops inspected	23	18
Varieties inspected	283	307
Seed growers	846	517
Bulk retail facilities	160	154
Approved conditioners	157	159
Mobile seed conditioners	37	51
Million bushels certified	6.718	7.523

Seed Regulatory Program

- **Primary Objective: Consumer Protection**

- Ensuring label claims meet actual product quality

- **Responsibilities**

- Enforcement of state and federal seed laws
- Regulation of seed labeling and sales

- **Compliance Measures**

- Sampling, testing, auditing....."Stop Sale"



Step 4

Program Manager: Joe Magnusson
NDCC 4-09, 4-24, 4-25

Seed Regulatory Program

- Plant Variety Protection (PVP): State Regulatory Responsibility
- Evolution of “Joint Ownership” of seeds
 - ❑ Owner of seed germplasm
 - ❑ Owner of trait
 - ❑ Limitations to Regulatory Enforcement: PVP vs Technology Agreements
- “PVP Title V”
 - ❑ “sold as a class of certified seed”
 - ❑ Primary authority of regulatory agency to act on disputes

Potato Certification Programs

- Purpose: Product certification and assurance of quality factors (perishable commodity)
- Field inspection and lab analysis based on plant health, virus and varietal standards
- Potato Association of America (PAA)
- * Second largest potato seed certification program in U.S



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NDSSD Grafton Office



4-Step Certification Process

1. Tissue Culture/Nuclear Seed Production
2. Field Inspection
3. Shipping Point Inspection
4. Winter Test Inspection

Program Director: Willem Schrage, MS
NDCC 4-09, 4-10, 4-26

Potato Seedstocks

- Production of Foundation class, disease-free seed under controlled, sterile conditions
- Quarantine environment, tissue culture lab
- Tissue culture/variety bank
 - ❑ 75-100 distinct varieties
 - ❑ 3-4 clones, each variety
- Main supplier of nuclear generation seed to ND Potato Industry

Step 1

**Seedstocks Production Manager:
Debra Baer, MS**





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Potato Tissue Culture





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Greenhouse Production



Potato Field Inspection

- Potato Seed Production: Highly reliant on quality of seed planted, isolation, cleanliness and precision of grower farm
- Based on visual factors, plant analysis
 - ❑ Intensive (3 inspection minimum)
 - ❑ Criteria: nearly invisible to untrained eye
 - ❑ Disease/virus factors are primary
- Limited Generation systems (nationwide)
 - ❑ Pre-nuclear, Generation 0-5, Certified class (commercial)



Step 2



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Potato Field Inspection





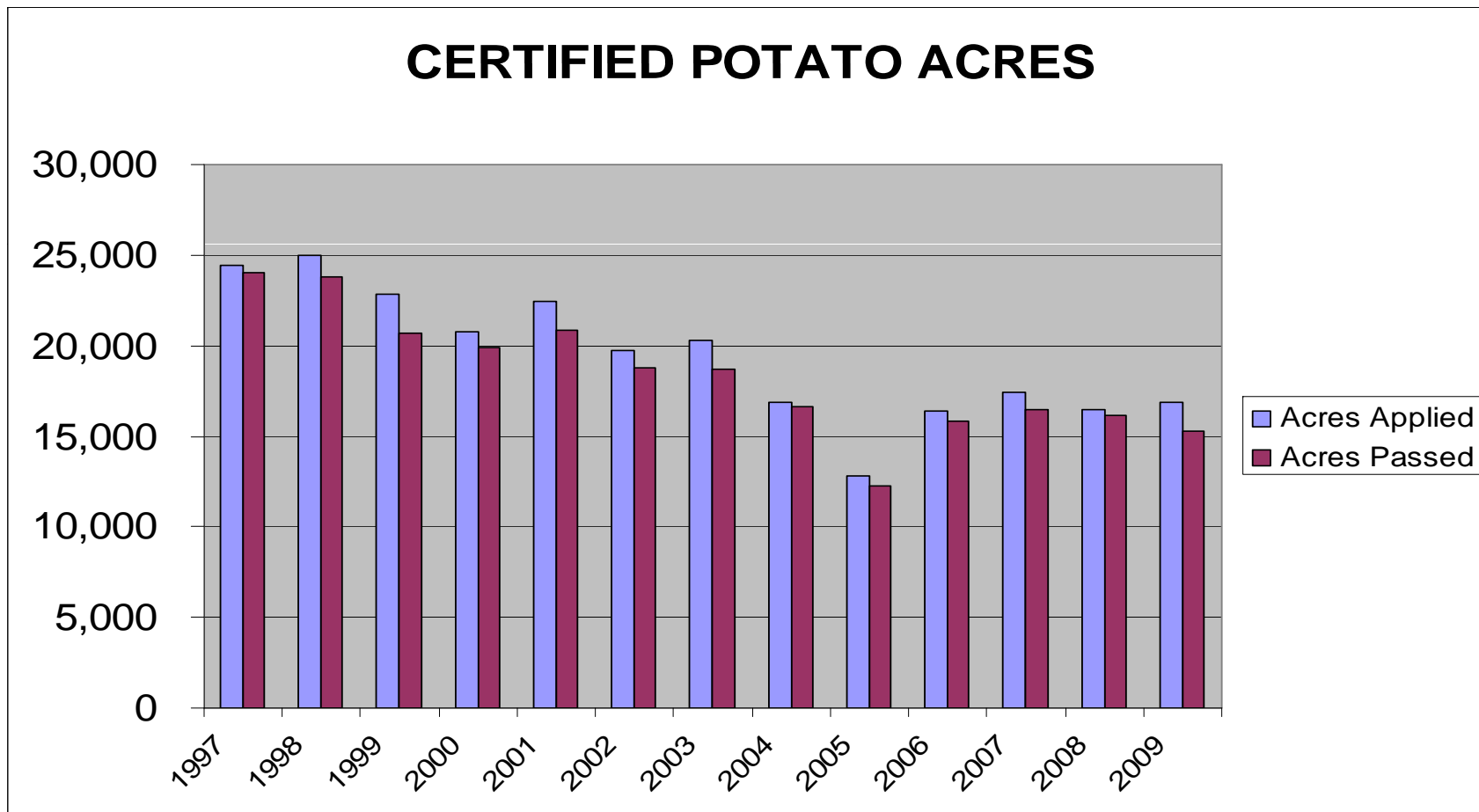
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Field Inspection Factors





Certified Potato Acres



Shipping Point Inspection

- Visual analysis of physical quality factors: tubers
 - ❑ rots
 - ❑ hollow heart
 - ❑ size/weight/shape etc.
- USDA-AMS/NDSSD Cooperative Agreement
 - ❑ USDA Commodity Grade standards for vegetable inspection
 - ❑ Examine internal and external defects
- Provided for seed and/or commercial production



Step 3



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Shipping Point Inspection



Post-Harvest Testing

- Objective: Determination of virus carryover, ad-mix
- Requirement for re-certification of seed
- ND Winter Test: Homestead, Florida
- ND Cert. Seed Potato Growers Assn.:
land, production costs, testing
- NDSSD: Technical inspections (seed standards)



Step 4



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Florida Winter Test



Promotion and Technical Support

- NDSU Potato Breeding Project
- ND Certified Seed Potato Growers Assn.
- Potato Association of America (Committees)
- USDA/Agricultural Marketing Service
- Natl. Potato Council (Seed Cert. Committee)
- Northern Plains Potato Growers Assn.
- Regional/National trade shows/publications
- UNECE (United Nations Economic Committee)
- US Potato Board Seed Export Task Force



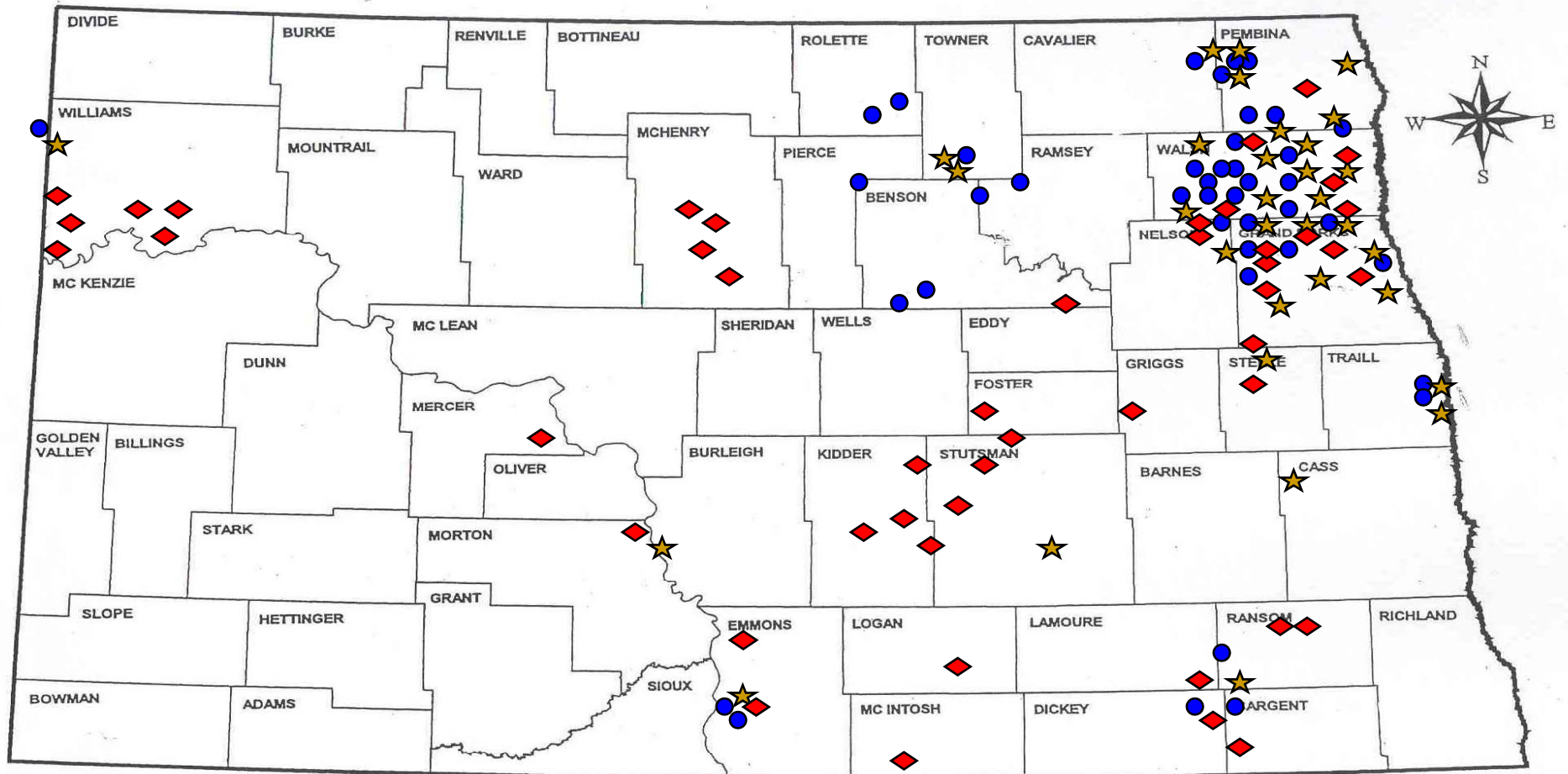
Potato Program: 2009 Facts and Figures

Total acres inspected	16,877
Total fields/lots inspected	522
Varieties/clones inspected	69
Potato seed growers	31
Shipping Point inspections	2938
CWT inspected	1,977,740
GHP/GAP operations	30
Counties inspected in	21
(field inspection, shipping point, GHP/GAP)	



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Potato Program Inspections



● = Seed production ◆ = GHP/GAP audits, field sites ★ = Shipping point

Laboratory Service Programs

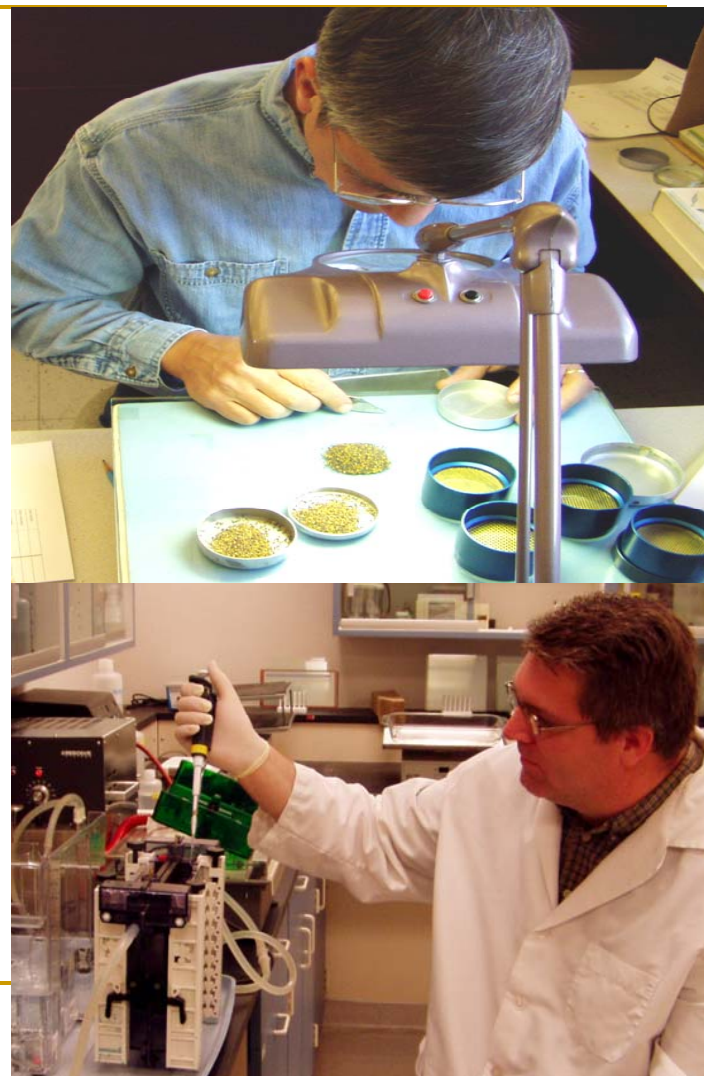
Seed Laboratory

Seed Lab Manager
Mark Hafdahl, BS, RST

Diagnostic Laboratory

Diagnostic Lab Manager
Jeff Prischmann, MS, RGT

NDCC: 4-09, 4-09.1, 4-10, 4-42



Seed Laboratory

- Statutory designation: “State Seed Laboratory”
- Seed purity and germination
- Primary support
 - Field Seed Program, final certification
 - Regulatory Program, germination and purity testing
- Herbicide trait tolerance, bioassay methods
- AOSA (Association of Official Seed Analysts)

Diagnostic Laboratory

- Primary support for Potato Program
 - Potato virus/pathogen/disease testing
- Variety identification; primarily wheat, barley
 - Limitations to technology
- GM trait/event testing
 - Protein based: ELISA
 - DNA based: PCR
- Pulse crops: plant health and pathogen testing
- SCST (society of Commercial Seed Technologists)

Summary

■ Challenges

- ❑ Versatility: Meeting customer expectations for new services
- ❑ Service development: Recognizing and developing services “ahead of the curve”
- ❑ Legal: Litigious environment
- ❑ Creating partnerships and cooperative ventures
- ❑ Ensuring financial stability: Balancing producer fees with agency cost of operation (within “breakeven” philosophy)



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The Seed Commission Thanks You!

