



NSHS

National Seed Health System

Charles Block
ISU Seed Science Center

Aug. 15, 2018 – National Plant Board Meeting

What is the U.S. NSHS?

- Federal program - Established by 7 CFR 353 in July 2001.
- Program authorized by USDA-APHIS.
- **Government** and **industry** collaboration designed to address seed health and trade issues.
- Allows both public and private entities to become accredited to conduct activities that support acquiring federal phytosanitary certificates for export.

Administration

- **USDA-APHIS-PPQ**

- Accreditation Manager: Dr. Sarika Negi
- National Seed Health Coordinator: Dr. Ed Podleckis

- **Iowa State University**

- Administrative Unit: Manages many daily activities of the National Seed Health System on behalf of USDA-APHIS.

ISU Administrative Unit

- **Co-Directors:**
 - Dr. Gary Munkvold, Professor of Plant Pathology
 - Dr. Charles Block, Seed Health Testing Coordinator
- **Accreditation Coordinator:**
 - Dr. Tracy Bruns
- **Administrative Assistant & Website Coordinator:**
 - Cindy Robertson

ISU's Role

- **Administrative activities**
 - Process applications
 - Coordinate audits
 - Official record keeper of the system
 - Make provisions for testing of minor use crops
 - Collect & organize scientific information for review in method standardization
- **Scientific activities**
 - Method development & standardization

NSHS Advisory Board

- Policy and Procedures Advisory Board (PPAB):
 - 6 voting members that represent the major stakeholders, 4 ex-officio members.
 - Primary body giving direction to the NSHS through recommendations to APHIS.

Policy and Procedures Advisory Board

- Dr. Samantha Thomas, Monsanto (Seed industry, ASTA rep., Chair)
- Dr. Wayne Wiebe, HM Clause (Seed industry, ASTA rep.)
- Dr. Scott Heuchelin, DuPont Pioneer (Seed industry, ASTA rep.)
- Doug Miller, IL Crop Improvement Association (AOSCA)
- Johnny Zook (AASCO)
- Deborah Meyer, CDFA/ National Plant Board (NPB)

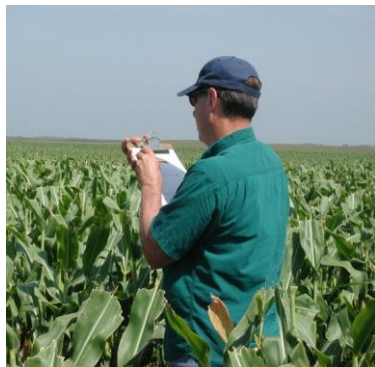
- Dr. Ric Dunkle, Senior Dir. Seed Health & Trade, ASTA (ex-officio)
- Dr. Gary Munkvold, ISU (ex-officio)
- Dr. Charles Block, ISU (ex-officio)
- Dr. Sarika Negi, USDA-APHIS PPQ (ex-officio)

Who Can Become Accredited?

- Any public or private organization that meets the requirements for accreditation.
- Audited for ability to perform desired activities. Need well-defined quality management system. On-site audits repeated at least every 3 years.
- Allowed to perform only those lab tests, seed sampling or phytosanitary inspection procedures for which they are accredited.
 - See list of accredited groups at <http://www.seedhealth.org>

Four Areas of Accreditation

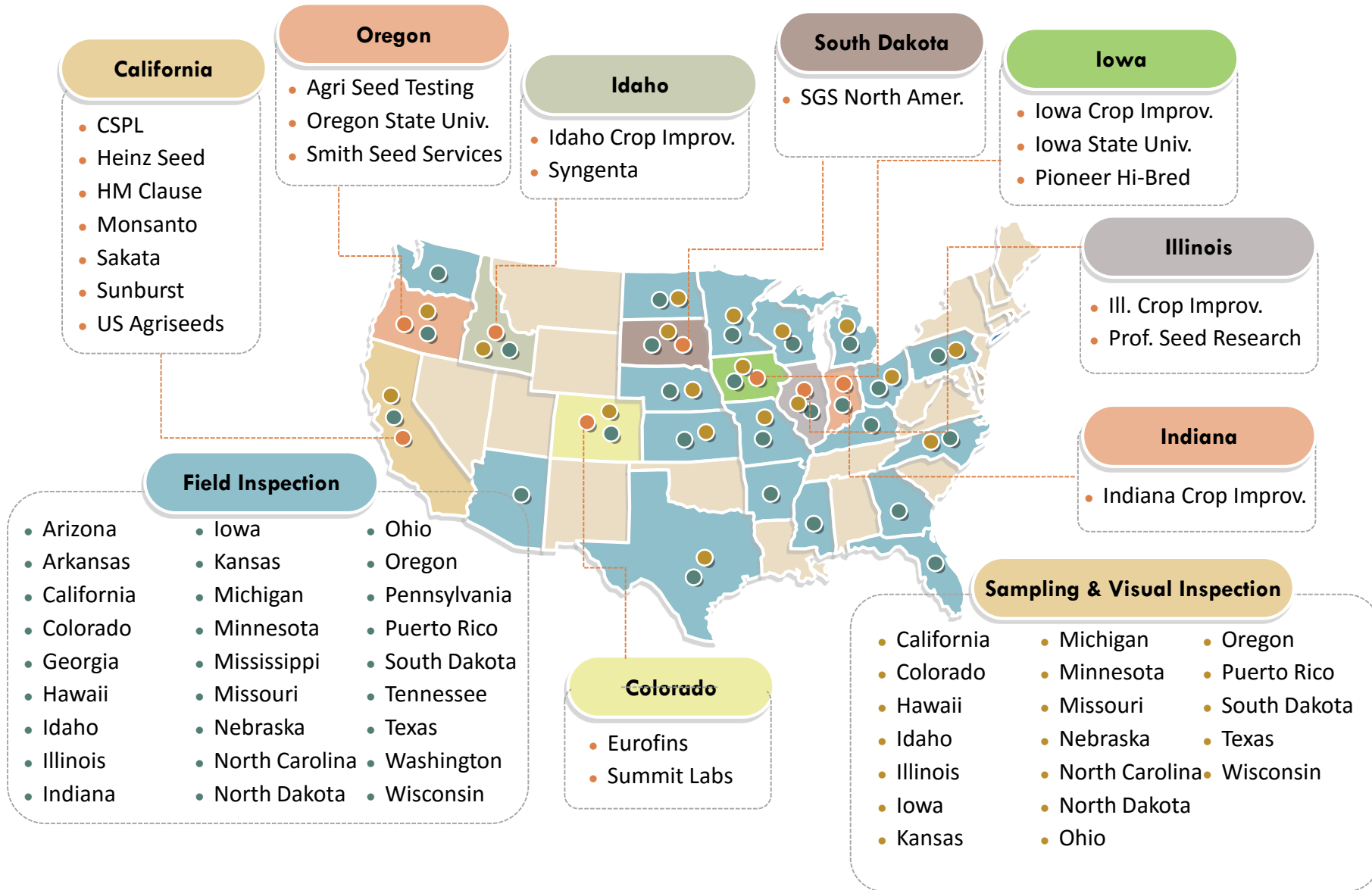
- 1. SEED HEALTH TESTING – 13 entities accredited**
Laboratory-based program to test for plant pathogens in seeds.
- 2. PHYTOSANITARY INSPECTION – 6 entities accredited**
Disease inspection of plants grown for seed in the field, nursery, or greenhouse.
- 3. SEED SAMPLING FOR SEED HEALTH TESTING – 11 entities accredited**
Sampling seeds that require laboratory seed health tests.
- 4. VISUAL INSPECTION OF SEED – 4 entities accredited**
Visual inspection of seed shipments (e.g. insects) at exporter's facility prior to issuance of phytosanitary certificates.



NSHS accredited organizations-2018

- 22 accredited organizations
 - 7 private testing labs/inspection services
 - 9 seed companies
 - 4 Crop Improvement Associations
 - 2 public seed testing labs

NSHS Accreditations



National Seed Health Accreditation Pilot Program (NSHAPP)

- APHIS Pilot Program for imported seed
- Target – CGMMV in cucumber, melon, watermelon
- Coordinated effort between Iowa State University and APHIS
- Industry participants voluntarily self-test imported seed and report results to APHIS
– 7 enrolled companies



Test results - July 2018

Crop	Country	# lots	Pos. lots
Melon	Brazil	85	0
Melon	Chile	4704	0
Melon	China	580	6
Melon	Ecuador	19	0
Melon	France	291	0
Melon	Guatemala	388	0
Melon	India	81	1
Melon	Israel	10	1
Melon	Italy	2	0
Melon	Japan	2	0
Melon	Mexico	163	0
Melon	Peru	307	0
Melon	South Africa	3	0
Melon	Spain	121	0
Melon	Taiwan	4	0
Melon	Tanzania	3	0
Melon	Thailand	267	0
Melon	Unknown	2	0
Melon	Vietnam	1	1

Crop	Country	# lots	Pos. lots
Cucumber	Chile	198	0
Cucumber	China	98	2
Cucumber	France	1	0
Cucumber	Guatemala	42	0
Cucumber	India	138	2
Cucumber	Italy	139	0
Cucumber	Latvia	1	0
Cucumber	Mexico	45	0
Cucumber	Netherlands	2888	0
Cucumber	Peru	175	0
Cucumber	South Africa	4	0
Cucumber	Spain	9	1
Cucumber	Taiwan	2	0
Cucumber	Tanzania	84	0
Cucumber	Thailand	20	0
Cucumber	Vietnam	2	0

Crop	Country	# lots	Pos. lots
Watermelon	Brazil	426	0
Watermelon	Chile	3248	0
Watermelon	China	48	0
Watermelon	Ecuador	3	0
Watermelon	France	23	0
Watermelon	Guatemala	1213	0
Watermelon	India	60	2
Watermelon	Israel	53	7
Watermelon	Italy	292	0
Watermelon	Kenya	2	0
Watermelon	Mexico	211	0
Watermelon	Peru	464	0
Watermelon	South Africa	5	0
Watermelon	Spain	27	0
Watermelon	Taiwan	5	0
Watermelon	Thailand	317	1
Watermelon	Unknown	13	0

Total Samples: 17,289
Positive lots: 25 (0.15%)

Moving toward ReFreSH

- NSHAPP – focused only on seed testing
- Successes
 - Detected and destroyed positive seed lots
 - Increased APHIS collaboration with industry
 - Increased knowledge of seed business models within APHIS
 - Created ideas for future seed work that recognizes industry seed production practices – systems approach (ReFreSH).
- ISU & ReFreSH: Work with companies to develop accreditation requirements; Establish auditing procedures.

Netherlands example

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