Manjit Misra (Chair), Seed Science Center, Iowa State University

Jane Dever, Texas AgriLife Research, Texas A&M University

Matthew Dillon, Clif Bar Family Foundation on Food & Farming Initiatives, Seed Matters

Karen Moldenhauer, University of Arkansas Division of Agriculture Rice Research & Extension Center

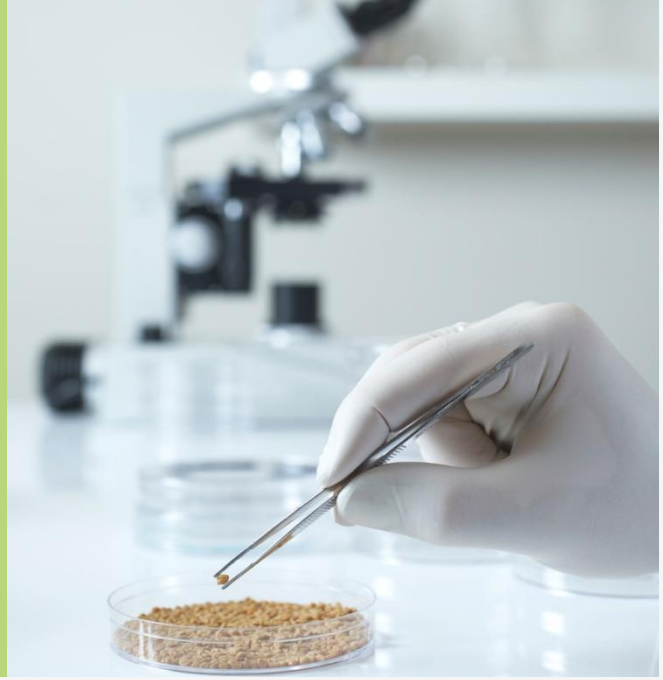
Stephen Smith, DuPont Pioneer

Allison Snow, Ohio State University

Herman Warren, Warren & Associates Seeds

Terry Williams, Tulalip Tribes Natural Resources Dept.

Mulumebet Worku, North Carolina Agricultural & Technical State University



REPORT AND RECOMMENDATIONS OF THE NATIONAL GENETICS RESOURCES ADVISORY COUNCIL (NGRAC) to the

National Agricultural Research, Extension, Education & Economics (NAREEE) Advisory Board

April 29, 2015

USDA

What We Do

- Advise the Secretary of Agriculture and Director of the National Genetic Resources Program (NGRP) on the activities, policies, and operation of NGRP.
- Scope includes acquisition, preservation, access, evaluation, characterization, distribution, and exchange of genetic resources of life forms important to American agriculture; plants, forest species, animals, aquatics, insects, and microbes.
- NGRAC shall make recommendations to ensure that these essential resources are adequately conserved and appropriately accessible in order to address current and future agricultural needs.
- NGRAC is also to advise on research needs for genetic resources, on coordination of NGRP with similar domestic activities, and on policies–both international and domestic–regarding access and exchange of genetic resources for the public's benefit.

First Meeting
March 5 – 6, 2013, Wash DC

•Discussed AC21 recommendations

•Identified major issues in plant genetic resources

Second Meeting
Sept 25 – 26, 2013, Fort Collins, CO

•Submitted an interim plan in response to AC21 recommendations.

• Strongly encouraged the Secretary of Agriculture to seek ratification of the International Treaty for Plant Genetic Resources for Food and Agriculture by the U.S. Senate

Third Meeting
Sept 23 – 25, 2014, Ames, IA

•Adopted a **systems** approach that identified the principal players, problems and solutions at different stages of the seed development process for response to AC21 recommendations

Fourth Meeting
March 31 – April 1, 2015, Wash DC

•Worked almost exclusively on elements of a plan for final response to AC21 recommendations and prepared a preliminary draft of the report that was finalized via teleconferences

Approach

We examined issues at each of the following stages of germplasm use:

- Uncharacterized germplasm for breeding
- Characterized germplasm for breeding
- New inbred lines and varieties in the appropriate form including Foundation seed, which is the first generation multiplication of breeder's seed
- Seed for farmers
- Harvested products for processors and consumers

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Crop Focus

We focused on 8 major crops that currently have GE varieties available in the U.S.:

- Corn, Soybean, Cotton, Canola, Alfalfa, Sugar Beet, Squash, and Papaya
- Similar issues apply to future GE crops

Area 1. Ongoing evaluation of the pool of commercially available non-GE and organic seed varieties.

Recommendation 1 – *USDA should encourage and facilitate seed producers to provide information on the available pool of appropriate organic and non-GE seed.*

Recommendation 2 – *USDA should work with plant breeders and other seed providers to increase the availability of organic and non-GE germplasm.*

Area 1. Ongoing evaluation of the pool of commercially available non-GE and organic seed varieties.

Recommendation 3 – *USDA should commission a study on the release and availability of inbred lines and varieties developed at public universities in order to determine the extent to which they deliver well adapted crop genetics for different agricultural systems. This should include an assessment of the unintended impacts of the Bayh-Dole Act on public sector capacity to serve all agriculture.*

Area 2. Identify market needs for producers serving GE-sensitive markets.

Recommendation 4—*USDA should conduct an ongoing economic assessment of non-GE and organic seed markets to allow stakeholders to better understand the value and plan investment opportunities in the seed sector. Market demands for organic and non-GE should be identified by crop for each of the crops affected by commercial GE trait adoption by region, acreage, maturity and adaptation.*

Area 3. Ensure that a diverse and high quality commercial seed supply exists that meets the needs of all farmers.

Recommendation 5—*USDA should convene regular roundtables with balanced representation by all stakeholders on extending GE trait stewardship to encompass prevention and mitigation of adventitious presence in non-GE breeding programs and genebanks.*

Recommendation 6 – *To facilitate coexistence and maintain stewardship, USDA should work with and encourage industry to develop and provide low cost assays of GE traits.*

Area 3. Ensure that a diverse and high quality commercial seed supply exists that meets the needs of all farmers.

Recommendation 7—*The NGRAC encourages USDA to promote diversity in agriculture by devoting additional resources to genotyping, phenotyping, evaluation, breeding and/or pre-breeding. USDA should facilitate more public, private, and/or tribal partnerships in developing, characterizing, and evaluating genetic resources from the NPGS and non-U.S. sources adapted to U.S. growing conditions. Further assessment is needed for developing, characterizing, and evaluating tribal genetic resources.*

Area 3. Ensure that a diverse and high quality commercial seed supply exists that meets the needs of all farmers.

Recommendation 8—*USDA should identify gaps in genetic diversity and/or passport information, including samples or accessions with known use restriction issues, and remedy those omissions by additional collection or documentation.*

Recommendation 9—*USDA should communicate to State seed foundations and the American Seed Trade Association (ASTA) members the importance and need for inbred lines and foundation seeds that are not treated with chemicals prohibited by USDA National Organic Program.*

Excellent support was provided by Ex-Officio members, additional experts and NAREEE Board:

Dr. Peter Bretting, National Program Leader, USDA Agricultural Research Service

Preston Hardison, Watershed Resource Analyst, Office of Treaty Rights, Tulalip Tribes

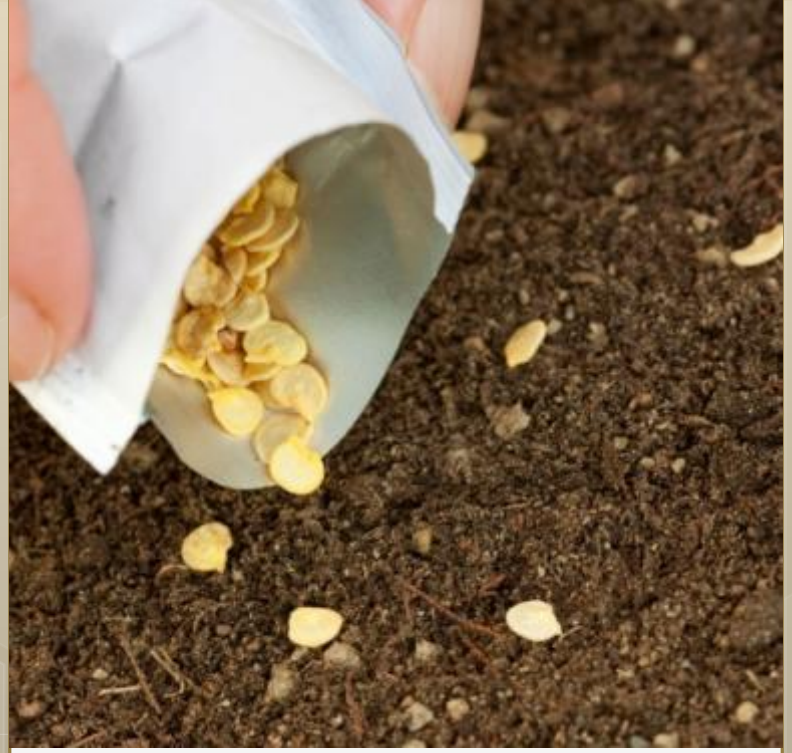
Dr. Gary Pederson, Supervisory Geneticist, Plant Genetic Resources Conservation Unit, for the USDA-ARS

Dr. Ann Marie Thro, National Program Leader, USDA National Institute for Food and Agriculture

Michele Esch, Executive Director, NAREEE Advisory Board

Dr. Charles Boyer, NAREEE Board Liaison to NGRAC

Shirley Morgan-Jordan, NAREEE Board Program Support Coordinator



National Genetics Resource Advisory Council (NGRAC)

USDA

Thank you! Questions?