

Sugar Beet CGC Meeting

(in conjunction with the ASSBT Meeting in Anaheim, CA, Feb. 27 - March 2, 2013)

Wednesday, February 27 – 8:30 until 12:00 noon

In the Nile Room of the Adventure Tower of the Disney Hotel

Agenda

- 1) Membership Elections
 - a) Members whose seat is up for election
 - i) Margaret Rekoske
 - ii) Syngenta Seeds, Inc. Representative (Neil Glynn nominated)
 - iii) Kelley Richardson
 - iv) Klass van der Woude
 - v) Gary Franc's Pathologist position
 - vi) Imad Eujayl
- 2) Curator's Report – Barbara Hellier
- 3) Collection Trips – Barbara Hellier
 - a) Discussion of Morocco collection trip
 - b) Discussion of Imperial Valley collection trip
- 4) Project with Irwin Goldman on red beet accessions in the collection – Barbara Hellier
- 5) Reminder to send seed from new releases to Pullman
- 6) Request for help in increasing sugarbeet germplasm in the collection
- 7) Update concerning the CGC Chairs Teleconference - <http://www.ars-grin.gov/npgs/cgc2012mtg.html>
- 8) Should we develop a “core” of old ARS releases, and other developed germplasm in the NPGS?
 - a) Other beet culti-groups
 - i) Table beet – Irwin Goldman's project
 - ii) Fodder beet – especially for “Energy Beets”
 - iii) Swiss Chard
- 9) New Business

Members attending the CGC Meeting were Mitch McGrath, Margaret Rekoske, Larry Campbell, Lee Panella, Kelley Richardson, Neil Glynn, and Imad Eujayl. Excused were Klaas Van der Woude and Robert Harveson.

Ex-officio members attending were: Barbara Hellier, Gail Wisler, and Jingou Hu.

Interested parties attending were: Werner Beyer (KWS), Axel Schechert (Strube Research), Jan Sels (SES vanderHave), Hendrik Tschoep (SES vanderHave), Britt-Louise Lennefors (Syngenta), and Anna Pranger (Syngenta)

1. Membership Elections

Re-elected for another four year term were Margaret Rekoske, Kelley Richardson, Klass van der Woude, and Imad Eujayl.

Neil Glynn was elected to fill the seat that Roy Martens of Syngenta had held and the chairman was asked to see if Mohamed Kahn of NDSU would take the seat previously held by Gary Franc passed away in 2012. Mohamed Kahn graciously accepted.

2. Curator's Report - Barbara Hellier (See appendix 1 for PowerPoint presentation)

Status Report on the *Beta* Collection at the
Western Regional Plant Introduction Station (WRPIS)
to the Sugar beet Crop Germplasm Committee
Barbara Hellier (Curator) February 27, 2013

The *Beta* collection at the Western Regional Plant Introduction Station in Pullman, WA currently has 2,633 accessions with 1,685 accessions (63.9%) available and 2005(76.1 %) backed-up at the National Center for Genetic Resources Preservation (NCGRP), Fort Collins, CO. Table 1 contains a breakdown of the collection by species.

From January 1, 2011 to December 31, 2012, we received 308 orders (an increase of 117 from the previous reporting period) from 271 requestors. A total of 1276 accessions and 2680 seed packets (an increase of 773 from the previous reporting period) were distributed. In the same time period, we acquired 94 new accessions: 55 sugar beet releases (one genetic stocks), 32 wild *Beta* species, and 7 table beets. In 2011 fifty-three accessions of beet were sent to the Svalbard Global Seed Vault. No beet seed was sent in 2012 to Svalbard.

Regeneration and maintenance activities:

We continue to focus our regeneration efforts on accessions of *B. v. ssp. maritima* and wild species. The majority of our increases are done in the greenhouse. We are using all available, suitable spaces in the WRPIS and Washington State University greenhouse systems, a total of 13-19 rooms. In 2011 and 2012, we regenerated/increased a total of 56 accessions: 44 of *B.v. ssp maritima* and 12 *Patellifolia patellaris*. We had help increasing *B. v. ssp vulgaris* accessions

from Dr. Kelley Richardson in this reporting period. At the Salinas, CA research station a total of 107 accessions were regenerated in 2011 and 2012. We greatly appreciate this help.

Table 1. Total number of accessions, number backed-up, and number available per species in the NPGS *Beta* collection (includes the genus *Patellifolia*, formerly classified as *Beta*).

Taxon	Total Accessions	Accessions Backed-up	Accessions Available
<i>Beta corolliflora</i>	4	3	0
<i>Beta hybrid</i> *	2	1	1
<i>Beta lomatogona</i>	29	4	2
<i>Beta macrocarpa</i>	15	12	8
<i>Beta macrorhiza</i>	19	2	1
<i>Beta nana</i>	21	0	
<i>Beta patula</i>	3	3	1
<i>Beta sp.</i>	17	5	3
<i>Beta trigyna</i>	48	5	7
<i>Beta vulgaris</i>	55	50	38
<i>Beta vulgaris ssp. maritima</i>	588	406	427
<i>Beta vulgaris ssp. vulgaris</i>	1754	1492	1177
<i>Beta vulgaris ssp. vulgaris (NCGRP & CSR)</i>	4 CSR		
<i>Beta x intermedia</i>	8	1	1
<i>Patellifolia patellaris</i>	44	14	13
<i>Patellifolia procumbens</i>	14	5	5
<i>Patellifolia webbiana</i>	8	2	1

*One accessions *P. patellaris x procumbens* and one *P. procumbens x webbiana*

Regeneration and maintenance activities:

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From January 1, 2011 to December 31, 2012 ninety-three *Beta* accessions were tested for viability (56 at NCGRP and 37 at WRPIS) and 48 accessions were sent to NCGRP for back-up. We are continuing to collect descriptor data on increased/regenerated accessions. Data collected is hypocotyl color, bolting tendency, cluster fasciation, flowering pattern, leaf hairiness, leaf width (min. and max.), leaf length (min. and max.), leaf pigment, petiole color, susceptibility to *Erysiphe sp.*, and images of pre-bolt plants and roots.

WRPIS changes and updates:

At the Pullman Plant Introduction station there were several personnel changes in 2011 and 2012. We had 4 people retire: Dr. Steve Clement, station entomologist, Dr. Molly Welsh, *Phaseolus* curator, Leslie Elberson, entomology technician, and Jannis Bacani, unit program assistant. The entomologist position was abolished, the entomology technician position was converted to a biological technician (plants) position and filled by a current Research Unit employee and we are waiting for authorization to fill the *Phaseolus* curator and program assistant positions.

We are in the process of erecting an additional Quonset style greenhouse at our Central Ferry Farm. This facility will primarily be used for bean regeneration but the beet program may be given room for one accession.

3. Recent Collection Trips – Barbara Hellier (See Appendix 1 for PowerPoint Presentation)

Imperial Valley of California (Red lines on Map in Appendix 1 outline production area)

In April 2011 Dr. Kelley Richardson and Barbara Hellier participated in a collecting trip to the Imperial Valley, CA. This trip was made at the request of the California Sugarbeet Producers and funded by the Beet Sugar Development Foundation. Guided by Spreckels Sugar Company agronomists, we surveyed 27 sites and collected seed from 24 sites (= 24 accessions) of *B. macrocarpa*. Seed was collected from 20 to 50 plants of each accession. In addition to seed, herbarium samples and leaf tissue samples (for DNA extraction – 4 to 8 plants in each site) were collected. Because some the plants sampled had unclear *B. macrocarpa* characteristics, we grew-out this collection in Pullman, WA in 2012. Images, morphological data, and herbarium samples were collected from the grow-outs. The elongated stems and lack of seed at the base of the plant on some of the samples was due to the *B. macrocarpa* having grown under the sugar beet canopy and, when grown out in the greenhouse, free from these canopy plants exhibited the typical *B. macrocarpa* morphology, which confirmed that all of our samples were indeed *B. macrocarpa*.

Discussion

There was discussion of a collection trip throughout a larger area of California. Kelley Richardson mentioned that there was a biofuel operation using sugar beet as a feedstock planned for the Mendota area, where *Beta vulgaris* ssp. *maritima* had been reported in the past. She noted that gene flow might be a concern, especially if they were planning on growing glyphosate tolerant varieties. Lee Panella pointed out that as long as growers rouged any bolters there shouldn't be a problem.

It was asked by Mitch McGrath if there had ever been any glyphosate resistant *B. macrocarpa* reported in the Imperial Valley. He noted that *Beta* belongs to a family of plants in which weeds have been reported to have developed glyphosate resistance after continued exposure to the herbicide. No one knew of any report of glyphosate resistant in *B. macrocarpa* and reports from growers using glyphosate resistant sugar beet are that it is handling the *B. macrocarpa* weed problem in sugar beet very well.

Kelley Richardson report that her initial molecular analyses of *B. macrocarpa* showed that there was very little variation (SSR markers) within or between populations.

Northern Atlantic and Mediterranean of Morocco (See Appendix 1 for PowerPoint Presentation)

In late May and early June 2012 Dr. Chris Richards, population geneticist at NCGRP, and Barbara Hellier participated in a collecting trip to northern Morocco. Moroccan collaborators were Dr. Yasmina El Bahloul and Mrs Naima Qariouh. This trip completed collecting along the coasts of Morocco. We explored from Rabat north to Tangier, along the Mediterranean coast and inland from Oujda to Meknes to Rabat. We collected 56 accessions, 15 *B. macrocarpa* and 40 *B. v. ssp maritima*, and visited a total of 70 sites of which 43 had *Beta* populations. New development is occurring all along the coasts of Morocco destroying wild *Beta* habitat. Several of the locations we visited where we didn't find beets were locations where Dr. El Bahloul had previously collected. Even though these are weedy species their habitats can be destroyed.

4. Future projects:

Dr. Irwin Goldman and Barbara Hellier received funding from the ARS National Program Staff to evaluate the table beet collection. This material will be planted in Wisconsin and at the WRPIS farm at Central Ferry, WA in 2013. Leaf and root characteristics, images, and leaf tissue samples will be collected. All the data will be loaded into the NPGS GRIN database.

Another project is to document and characterize the molecular and phenotypic diversity within and among our ARS genebank accessions of wild relatives of beet focused on species within the genus, *Patellifolia*. Many of the accessions have very poor germination and Barbara Hellier is working with a group on campus to see it is possible to X-ray the seed to see if it contains a viable embryo. The seed must be decorticated to germinate and knowing whether there was a viable embryo would save time and effort otherwise spent on decortivating dead seed.

Discussion

Gail Wisler brought up several items from the Plant Germplasm Operations Committee's report including the new plant zone hardiness map that has been developed. There also are some comments on the President's 2014 budget, which would ease some of the pain felt by ARS during the sequestration. (The full report is in appendix 2)

It was noted that John Wiersema had included in GRIN a classification of crop wild relatives, including those of sugar beet. There is a link to this site in GRIN in appendix 3.

5. Seed from New Germplasm Releases to Pullman

There was a reminder of all of the ARS researchers that develop new germplasm to remember to send seed to Pullman. Seed must be sent to the NCGRP for a PI number to be issued. If we at that time send 200 grams of seed to Barbara Hellier at Pullman, then she will not have to expend resources to do an increase from the NCGRP seed lot.

6. Increase of PI Accession Seed by Seed Companies

I would like to express thanks to all of the seed companies who had representatives at the CGC Meeting. Once again they offered to help increase (5 – 10 accessions each year) seed of accessions that are biennial sugar beet types. This allows our curator to concentrate time and resources on those accessions that are more difficult to regenerate and require greenhouse conditions.

7. Update Concerning the CGC Chairs Teleconference

This was a brief discussion on the CGC chairs teleconference held in 2012. Most of the presentations are available on the GRIN website at the following URL and all of the CGC members are invited to view them - <http://www.ars-grin.gov/npgs/cgc2012mtg.html>

8. Should we develop at “core” of old ARS releases, and other improved germplasm in the NPGS

With the project by Barbara Hellier and Irwin Goldman looking through the table beet accessions in our collection, there is an opportunity to develop core collections of the other groups. Currently there is a core of sea beet accessions (*Beta vulgaris* subspecies *maritima*) and land race accessions of other cultivated beets. However, there has been no attempt to organize the sugar beet releases and old open pollinated varieties, the fodder beets, or the Swiss chard in the collection. Lee Panella, Mitch McGrath, Imad Eujayl, and Barbara Hellier volunteered to look into this.

9. There was no New Business

The meeting was adjourned at 11:40 am.

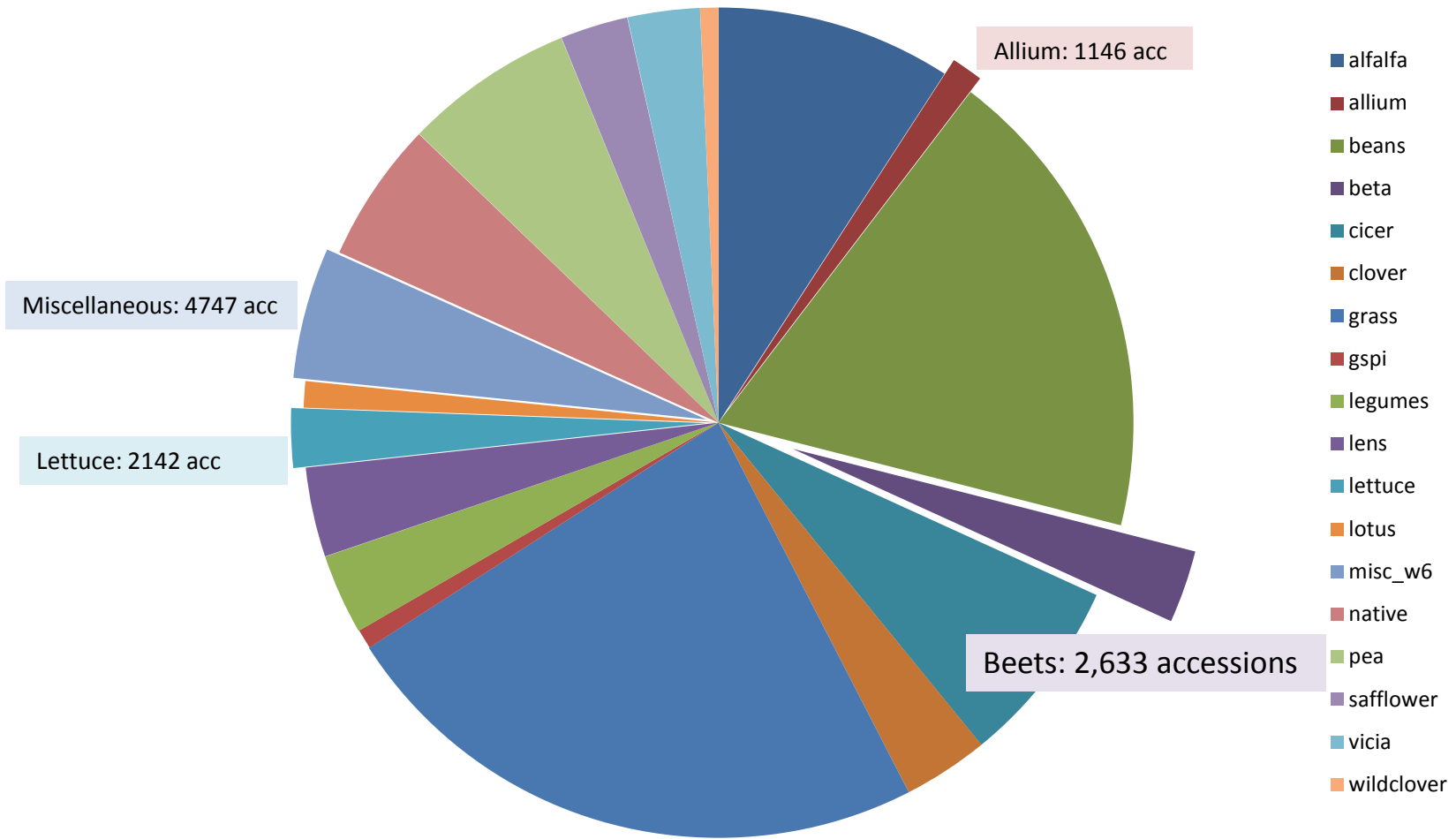
Appendix 1

Status report on the *Beta* collection
at the Western Regional Plant Introduction Station,
Pullman, WA to the Sugar Beet Crop Germplasm
Committee



Barbara Hellier curator,
February 27, 2013 Anaheim, CA

TOTAL Number of Accessions at the WRPIS by Inventory Maintenance Group



Total number of accessions at the WRPIS is 92,911

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Total accessions = 2,633

Total available = 1,685

Total backed-up = 2,005

* One accession *P. patellaris* X *procumbens* and one *P. procumbens* X *webbiana*

Orders, new inventories, and accessions sent to Svalbard.

From Jan. 1, 2011 to December 31, 2012:

Distributions

No. of orders = 308 (increase of 117 from previous reporting period)

No. of requestors = 271

No. of accessions distributed = 1,276

No. of seed packets distributed = 2,680 (an increase of 773 from previous reporting period.)

New inventories

94 new accessions: 55 sugar beet releases, 32 wild *Beta* species, and 7 table beets.

Back-up to Svalbard

53 beet accessions in 2011, 0 in 2012.

Regeneration and maintenance activities:

Regenerations:

Pullman increased 56 accessions:

44 B. maritima

12 Patellifolia patellaris

Salinas (Dr. Kelley Richardson) increased 107 accession

B. v. ssp vulgaris.

Germination tests:

56 accessions tested by NCGRP

37 accessions tested in Pullman

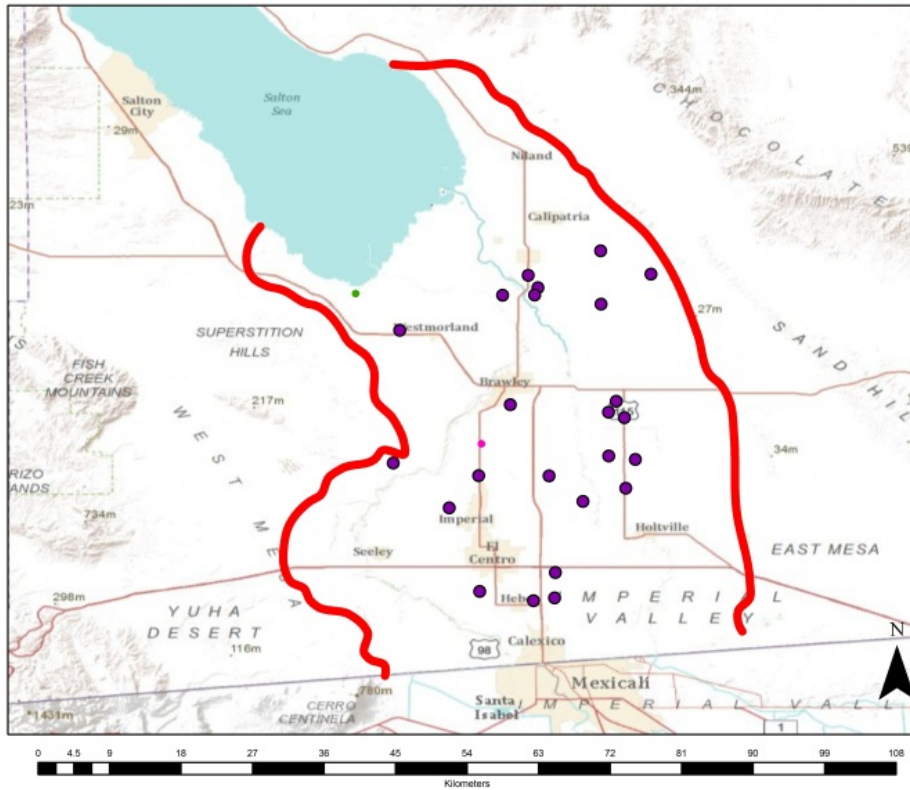
Back-up:

48 accessions sent to NCGRP for back-up.

A photograph showing three individuals engaged in field collection in a rural, arid landscape. On the left, a man in a light blue shirt and a tan bucket hat is crouching and examining a plant. In the center, a woman wearing a blue patterned long-sleeved shirt, blue jeans, a green cap, and a headscarf is leaning over, holding a small brown paper bag. On the right, another woman in a dark long-sleeved shirt, dark pants, and a blue cap is also crouching. The ground is dry and covered with sparse, yellowish-brown vegetation. In the background, there are rolling hills, a dirt road, and a tall, thin cypress tree. The sky is clear and blue.

Collection Trips: Imperial Valley Morocco

Imperial Valley, California Wild Beet Collection Sites April, 2011



Legend

- Wild Beet Collection Sites

POINTS OF INTEREST

- Spreckels Sugar, Brawley Plant
- Sonny Bono Salton Sea National Wildlife Refuge

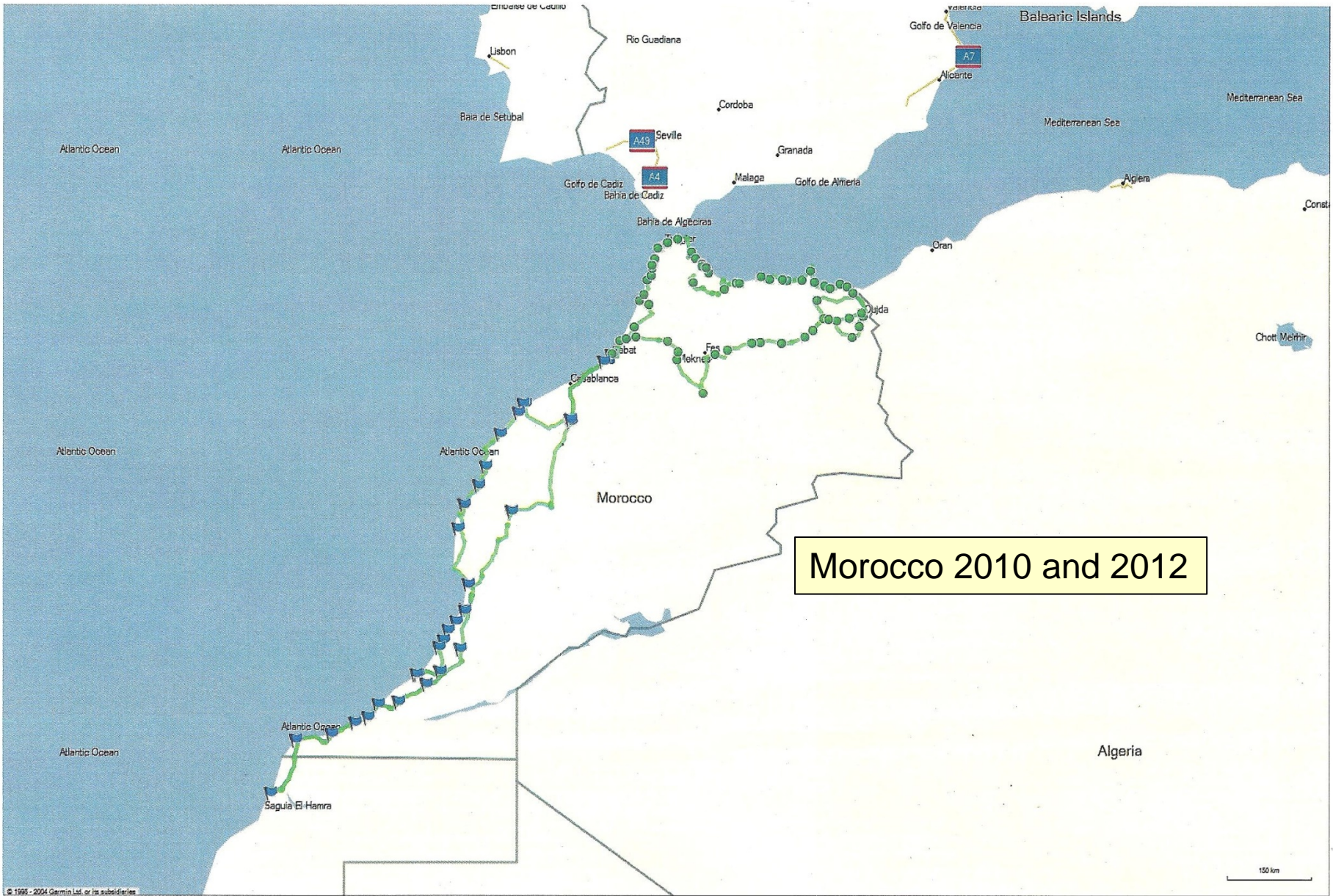
The agricultural crop production area in the Imperial Valley, California is outlined in red for visual reference. The actual border is not necessarily defined by these exact edges. This is only for display purposes.

Data Source: ESRI Website
 United States Geospatial Data Gateway
 Barbara Hellier, Beet and Horticulture Curator
 National Plant Germplasm System
 Geographic Coordinate System: GCS_WGS_1984
 Prepared By: Paula M. Moore
 June 4, 2011

27 sites visited
 24 accessions
 seed collected from
 20-50 plants per site

2012 grow-out







Sugar Beet CGC Meeting February 27, 2013





Appendix 2
2013 OFFICE OF NATIONAL PROGRAMS REPORT
FOR THE U. S. NATIONAL PLANT GERMPLASM SYSTEM
OFFICE OF NATIONAL PROGRAMS, NATIONAL PROGRAM 301: PLANT GENETIC RESOURCES,
GENOMICS, AND GENETIC IMPROVEMENT
(PETER BRETTEING, JACK OKAMURO, SALLY SCHNEIDER,
ROY SCOTT, GAIL WISLER, DA KAY SIMMONS)

1. **Personnel changes:**

1. Farewell and best wishes to Dave Ellis, who left the NCGRP in Ft. Collins, CO to curate the potato and sweet potato genebank in CIP, Peru; and to Molly Welsh, who retired as the Phaseolus curator at the WRPIS, Pullman, WA.
2. Welcome to Carolyn DeBuse, new Prunus curator at the NCGR-Davis; and Josef Pohl, new IT specialist at the NCGRP, Ft Collins.

2. **Site developments and changes:**

1. Researchers at the USDA/ARS NERPIS at Geneva, New York applied new statistical genetic approaches to identify, from tomato breeding stock, latent genes that originated from tomato wild relatives. They uncovered not only genes from wild relatives introduced into tomato through deliberate breeding, but also other genes genetically-linked to the target traits. Furthermore, previously-unrecognized hybridizations in nature between tomato and wild relatives were identified. These results will enable these genes from tomato wild relatives to be characterized, undesirable “hidden” variants eliminated from breeding stocks, and tomato genetic resources more effectively conserved and utilized in breeding.

2. 2 USDA/ARS researchers at the NGRRL Beltsville and collaborators from the University de San Carlos in Guatemala, Bioversity International, and the International Center for Tropical Agriculture (CIAT) completed the Guatemalan Atlas of Crop Wild Relatives. The Atlas provides detailed information on 105 species of wild plants--related to 29 different crops--which will support genetic resource conservation efforts. Because Guatemala and adjacent nations are very rich in plant biodiversity, these efforts will also support global efforts to conserve plant genetic resources. Available at <http://www.ars.usda.gov/ba/atlaswrguatemala>

- 2.3 USDA/ARS researchers at the WPRIS in Pullman, WA; Children’s Nutrition Research Center in Houston, TX; and their university collaborators analyzed the genetic diversity, population structure and genome-wide marker-trait association with seed nutrients for pea (Pisum) accessions in the NPGS pea core subset, identifying 28 significant marker-trait associations for eight of the seed mineral nutrient concentrations, including Ca, Cu, K, Mo, Ni and P. This information could help breeders implement marker-assisted selection in pea for improved mineral nutrient content.

- 2.4 The USDA/ARS NCRPIS, ONP, and OCIO partnered with the Oregon State University PRISM group and Esri, Inc. to deliver an updated edition of the USDA Plant Hardiness Zone Map (PHZM) on the web at <http://planthardiness.ars.usda.gov/PHZMWeb/> Unlike prior editions, the new

PHZM is GIS-based, identifies the PHZ for any zip code, and includes an interactive map for exploring variation in PHZ with the resolution of 800 m.

2 Budgets:

- 2.4 The current Administration's research priorities for USDA include climate change, food safety, children's nutrition/health, international food security, and bioenergy.
- 2.5 The President's FY 13 budget, announced on 13 Feb. 2012, proposed modest budget increases (\$581,000) for the NPGS. The Senate mark-up would have increased the USDA/ARS FY 13 budget slightly (0.6%) but did not include specific details. The House Agriculture Appropriations Sub-Committee mark-up would have reduced the USDA/ARS FY 13 budget by about 2%; it also did not include specific details. The House and Senate passed a Continuing Resolution which would fund ARS at the FY 12 budget level + 0.6% until the end of March 2013. But, notably, if the Congress does not act before the end of February 2013, a mandatory budget sequestration will occur, with potentially strong effects on ARS's programs.

3 National Programs:

ARS's research portfolio is organized as a series of 18 national programs. Plant and microbial genetic resource management, genetic improvement, genomics, molecular and biological processes, biotechnology risk assessment, bioinformatics, and genome database management are incorporated into National Program 301 (see the WWW at: <http://www.nps.ars.usda.gov/programs/programs.htm?NPNUMBER=301>). During 2011, NP 301 completed its second five year cycle. Its accomplishments are described in the 2006-2011 NP 301 Accomplishment Report available on the web at: http://www.ars.usda.gov/research/programs/programs.htm?np_code=301&docid=22191. During late October 2011, NP 301 underwent an external review which in general found that the NPGS was performing high-quality research and service programs with significant impact (see Executive Summary of the panel review at the web site above). The external review was followed by teleconferences-webinars on 8 and 9 November 2011 to inform scientists and customers-stakeholders of the review results. A customer/stakeholder workshop was held in Beltsville on November 15, 2011 to elicit input regarding future research needs and priorities. ARS leaders and researchers then developed an Action Plan for the next five years of NP 301 research (see <http://www.ars.usda.gov/SP2UserFiles/Program/301/NP%20301%20Action%20Plan%202013-2017%20FINAL.pdf>). Based on customer/stakeholder comments, the NP 301 Action Plan, and other input, ARS researchers have developed individual Project Plans, and these will be assessed by external review panels during 2013.

4 National Plant Germplasm Coordination Committee (NPGCC):

The NPGCC seeks to promote a stronger, more efficient, more widely-recognized and better utilized NPGS. Its goals are to facilitate the coordination of ARS, NIFA and SAES planning and assessment mechanisms for NPGS policy, organization, operations and support; promote awareness and understanding of the NPGS across ARS, NIFA, and

SAES and more broadly to the scientific community; and serve as a vehicle for improving communications and discussions about issues impacting the NPGS with ARS, SAES, and NIFA. It will assess, develop and recommend to the SAES, ARS and NIFA strategies for improved coordination of NPGS activities; develop and recommend a process for improved communication of the value of the NPGS; initiate a strategic planning effort for the NPGS to better define and communicate the vision, mission and short- and long-term goals; and to evaluate the current funding models for the NPGS and report findings to the SAES directors, ARS and NIFA.

The current members of the NPGCC are T. Burr (Cornell University-SAES), Chair; E. Young (Executive Director, Southern Region), Secretary; L. Sommers (Colorado State-SAES), J. Colletti (Iowa State-SAES); G. Arkin (University of Georgia-SAES); A. M. Thro (NIFA); E. Kaleikau (NIFA); P. S. Benepal (NIFA); P. Bretting (ARS-Office of National Programs); D. Upchurch (ARS-Southern Plains Area); and G. Pederson (ARS-Griffin). Representatives of the Association of Official Seed Certifying Agencies (AOSCA--Chet Boruff); the American Seed Trade Association (ASTA—Tim Cupka); and the National Association of Plant Breeders (NAPB, David Baltensperger) attend the annual NPGCC meetings as observers.

NPGCC members made a joint presentation on the NPGS to the 2006 Experiment Station Section/State Agricultural Experiment Station/Agricultural Research Directors Workshop September 24-27, 2006. That presentation, plus testimonials from key Directors about the NPGS's value, increased the NPGS's visibility to this important group. In May 2007, the NPGCC recommended to the National Research Support Project Review Committee that it recommend restoring off-the-top funds designated for NRSP-5 (the Prosser, WA virus-free pome and stone fruit project) and NRSP-6 (the potato genebank project at Sturgeon Bay, WI) to their FY 06 levels to sustain these valuable efforts. Since then, funding for NRSP-5 has been assumed by the National Clean Plant Network. Support for NRSP-6 has been maintained at the FY 06 level since then. The NPGCC met on June 5, 2008, in conjunction with the annual PGOC and biennial CGC Chairs meetings. It discussed the NPGS's budget levels, funding for NRSP-5 and NRSP-6, the location of crop collections, and mechanisms for publicizing the NPGS. Similarly, the NPGCC met on 23-24 June 2009, 9 June 2010, 16-17 June 2011, and 12 June 2012 in Beltsville, MD to continue its work on these priority issues.

5 International germplasm items:

The FAO International Treaty (IT) for Plant Genetic Resources for Food and Agriculture came into force on 29 June 2004, and beginning in 2007 its standard material transfer agreement (SMTA) for plant genetic resource exchange was adopted by Parties to the IT and the CGIAR Centers for distributing plant genetic resources. On 7 July 2008, the White House transmitted the IT to the Senate; ratification would require the advice and consent of a 2/3 majority of the Senate. The Senate Foreign Relations Committee (SFRC) held hearings on the IT on 10 November 2009. During their last Business Meeting of the 111th Congress (30 November 2010), the SFRC voted the IT out of committee, for consideration by the full Senate. Unfortunately, the Senate adjourned on 22 December 2010 without voting on the IT. It is hoped that the SFRC will schedule new hearings on

the IT during 2013, which might enable vote for consent (or not) to IT ratification to occur during the 113th Congress.

Concurrently, the Convention on Biodiversity (CBD) adopted the voluntary, non-binding Bonn Guidelines on Access and Benefit-Sharing during the sixth Conference of Parties (COP-6) of the CBD at The Hague in April 2002. Starting in 2006, Parties to the CBD began negotiating what became the legally-binding Nagoya Protocol on Access to Genetic Resources and the Fair and Equitable Sharing of Benefits Arising from their Utilization. Adopted by the COP-10 on 29 Oct. 2010, the Nagoya Protocol is quite complicated, with many ambiguous components; its ramifications are currently under analysis (see <http://ictsd.org/downloads/2010/11/abs-protocol.pdf> for the text).

The preceding developments at FAO and with the CBD will substantially affect international exchange of plant genetic resources, and the NPGS, whether or not the U. S. is ultimately a Party to either or both treaties. Precisely how these treaties will affect U. S. users of germplasm depends on the treaties' implementations.

6 National Genetic Resources Advisory Council (NGRAC):

The National Genetic Resources Advisory Council (NGRAC) includes nine members, was originally established by the 1990 Farm Bill, and has been inactive since 1999. Secretary of Agriculture Vilsack re-established the NGRAC in 2012 to formulate recommendations on actions and policies for the collection, maintenance, and utilization of genetic resources; to make recommendations for coordination of genetic resources plans of several domestic and international organizations; and to advise the Secretary of Agriculture and the National Genetic Resources Program (NGRP) Director of new and innovative approaches to genetic resources conservation. The NGRAC will advise on ways to ensure that the NGRP serves the needs of all farmers for high-quality and diverse seed (both genetically engineered and non-genetically engineered) for their particular farming operations. The NGRAC will also advise on how the USDA can develop a broad strategy for maintaining plant biodiversity available to agriculture, and strengthening public sector plant breeding capacities.

Last year, the NGRAC held an initial organizational teleconference; but further activity had been suspended because the 2007 Farm Bill expired. With the temporary extension of that statute through September 30, 2013, the NGRAC's first meeting will likely occur during the first half of 2013. The members of the NGRAC include Drs. Manjit Misra (Chair, Iowa State University), Jane Dever (Texas A & M), Karen Moldenhauer (University of Arkansas), Stephen Smith (Pioneer Hi-Bred, a DuPont business), Allison Snow (The Ohio State University), Mulumebet Worku (North Carolina A & T), Mr. Matthew Dillon (Seed Matters, Clif Bar Family Foundation), Dr. Herman Warren (Warren and Associates Seeds), and Mr. Terry Williams (Tulalip Tribes). Ex officio members include Drs. Gary Pederson (ARS-Griffin), and Peter Bretting (ARS-ONP), and representatives from other Federal science and technology agencies.

Appendix 3

Classification of Crop Wild Relatives in GRIN

John H. Wiersema

Data for this project have been compiled over the past four years in conjunction with Dr. Blanca León of the University of Texas. Data on additional crops will be added during the next several months from a project funded by the Global Crop Diversity Trust involving Dr. Nigel Maxted and Holly Vincent of the University of Birmingham. Before these crop wild relative (CWR) data are made public on the GRIN website in late 2013, our intention is to enlist the assistance of the CGC's to directly review or to suggest potential reviewers for the CWR classification of relevant crops. Our intention is to accomplish this goal during the coming year, so we will be formally approaching the CGC's about this in the coming months. Those CGC's who wish to be proactive in reviewing these data can use the following search form to view what has been accumulated thus far, the report from which links to accession data:

<http://www.ars-grin.gov/~sbmljw/cgi-bin/taxcrop.pl>

To view an example of a recently reviewed CWR classification, select the report for the crop "sugarbeet".

A second faster search form for accessing the same CWR data, but without the link to accession data in the report is at:

<http://www.ars-grin.gov/~sbmljw/cgi-bin/taxcwr.pl>