The National Plant Germplasm System: 2023 Status, Prospects, and Challenges

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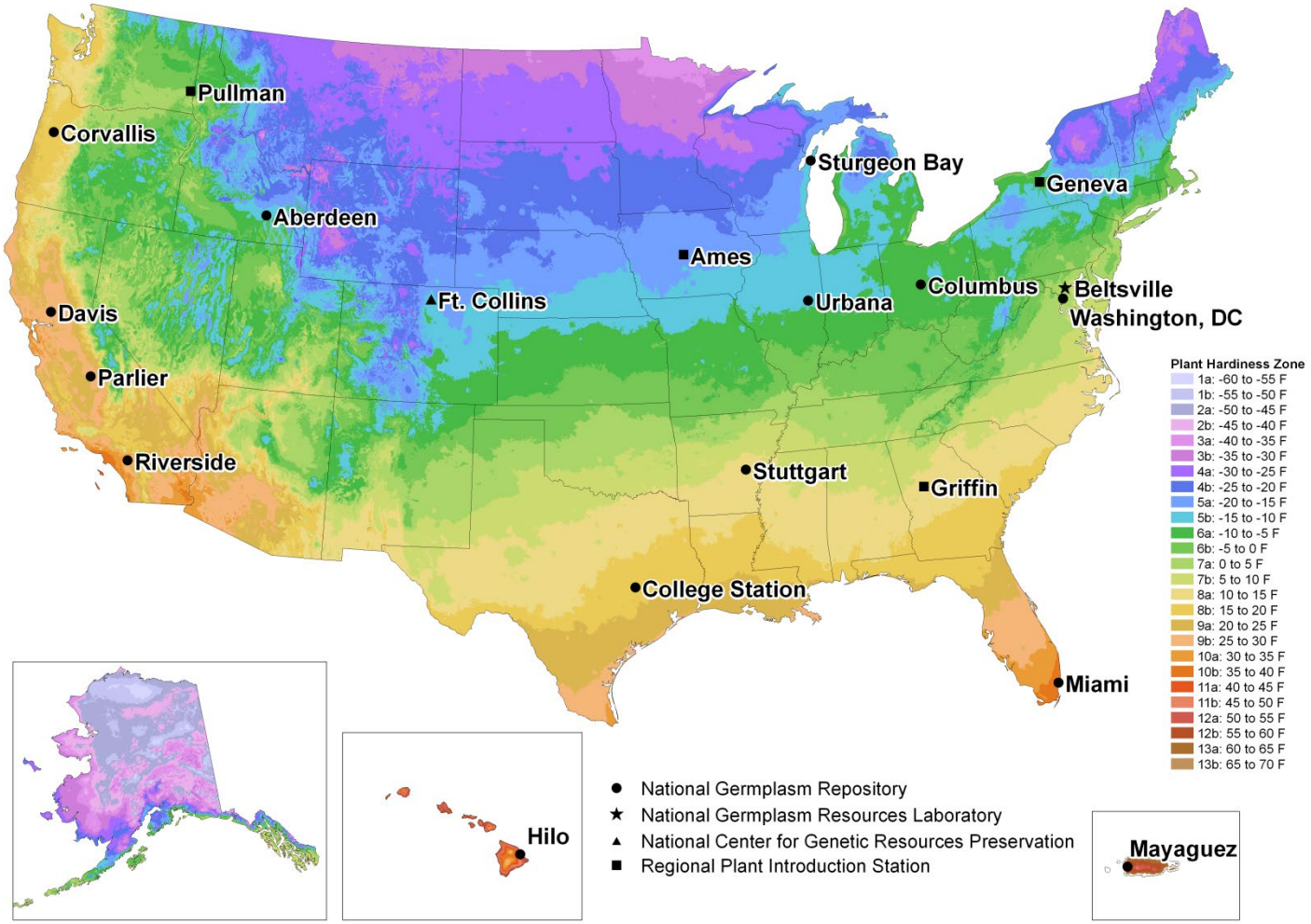
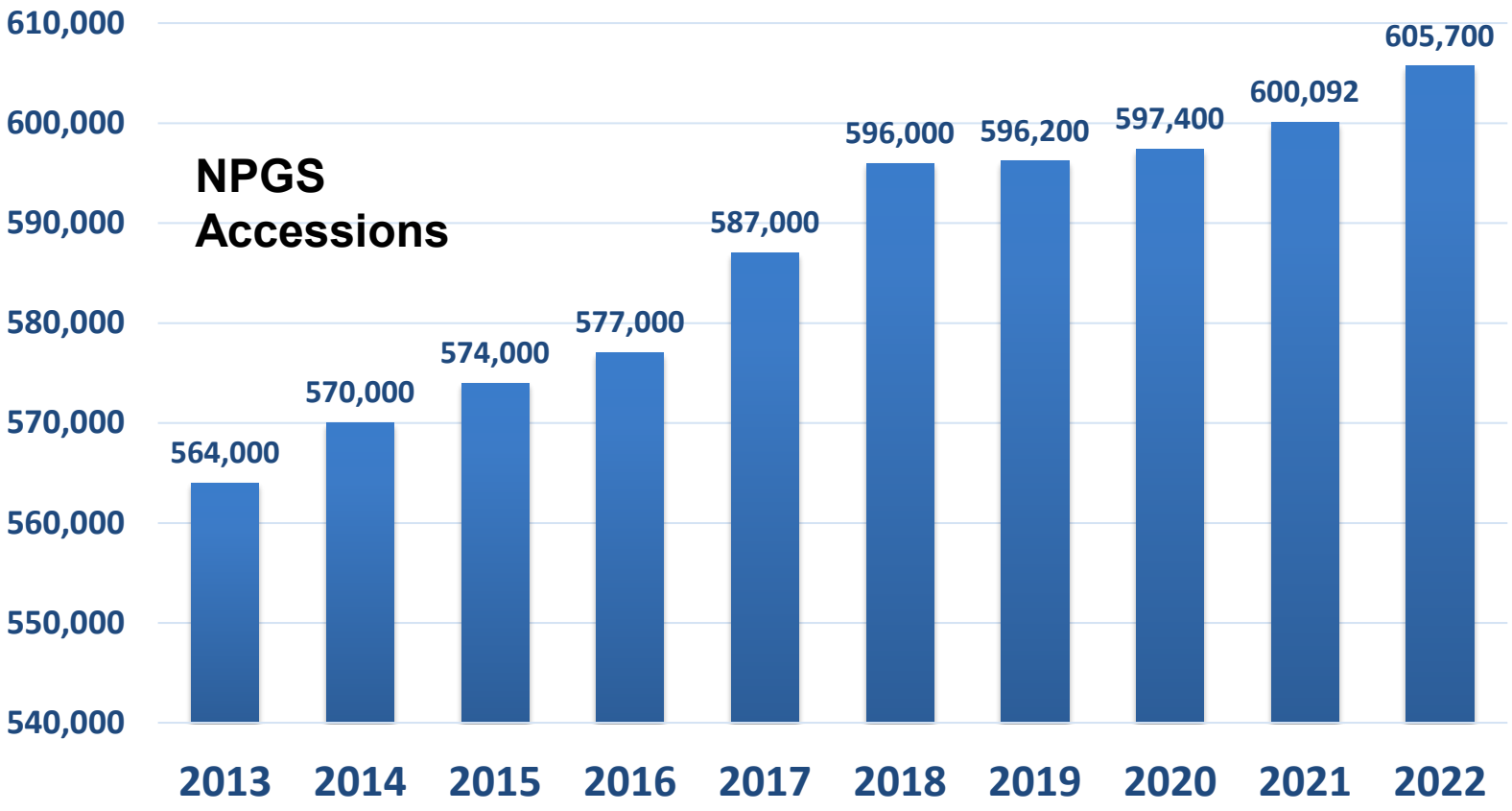
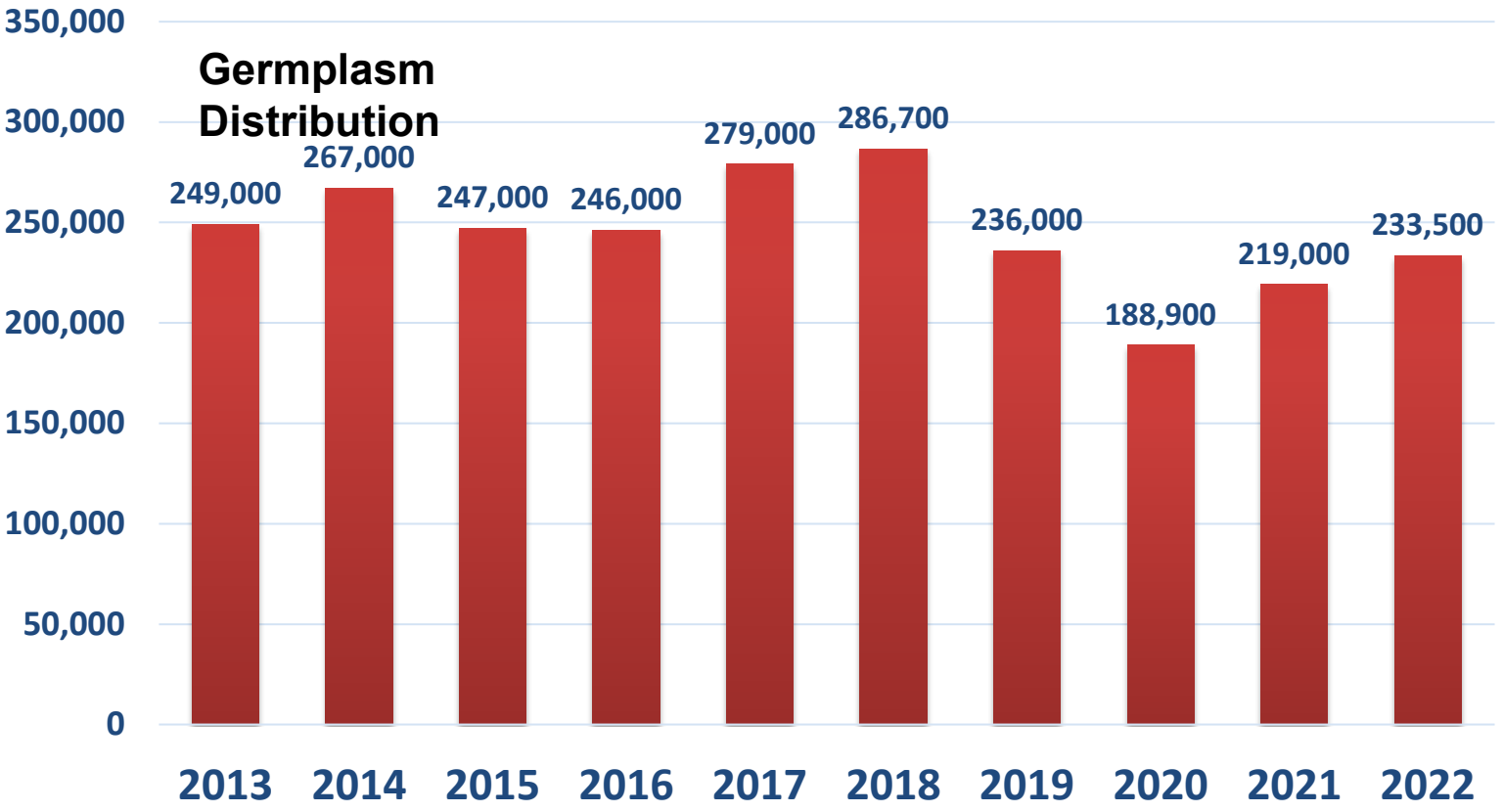
USDA National Plant Germplasm System (NPGS)



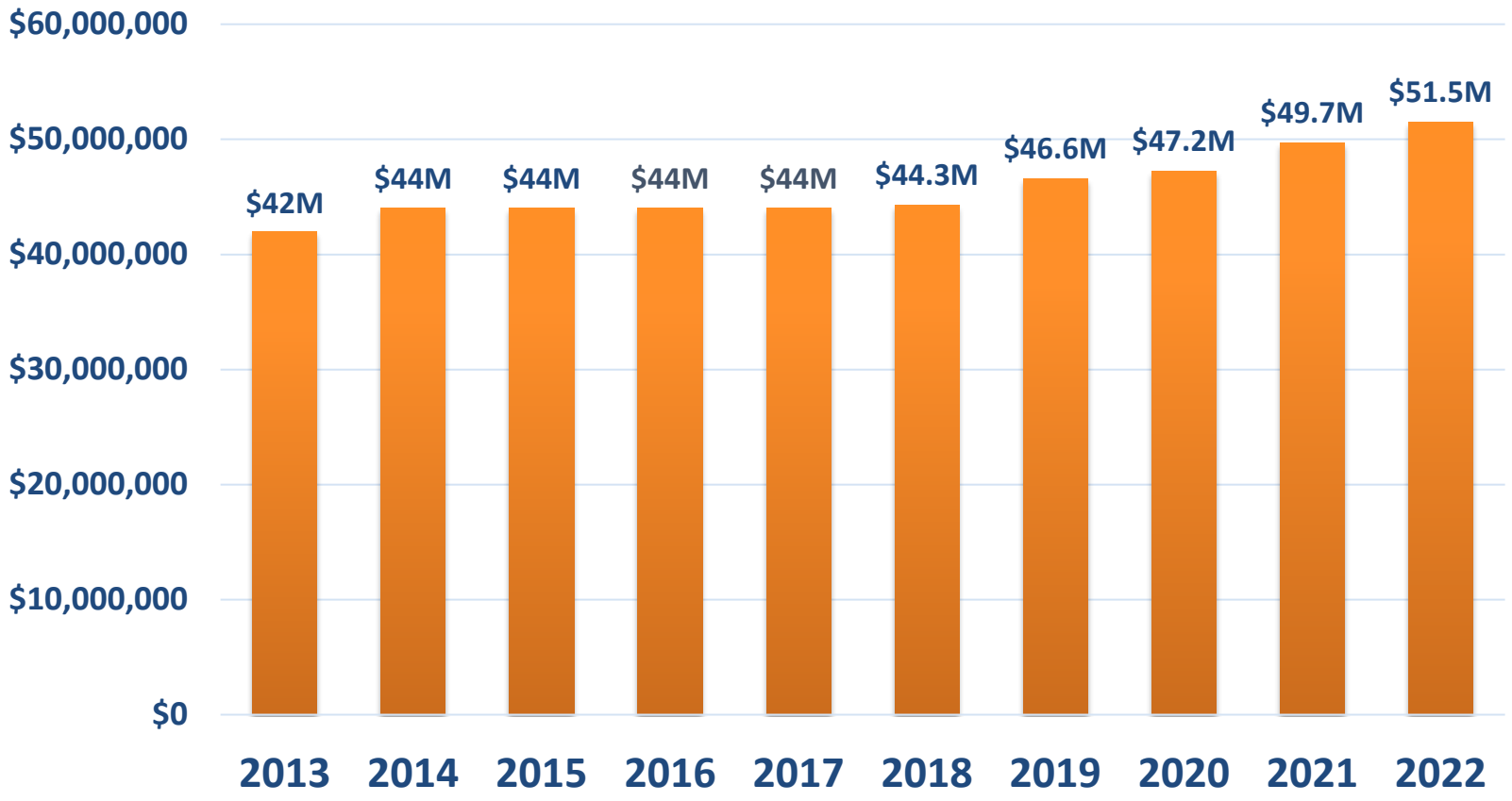
Number of NPGS Accessions 2013-2022



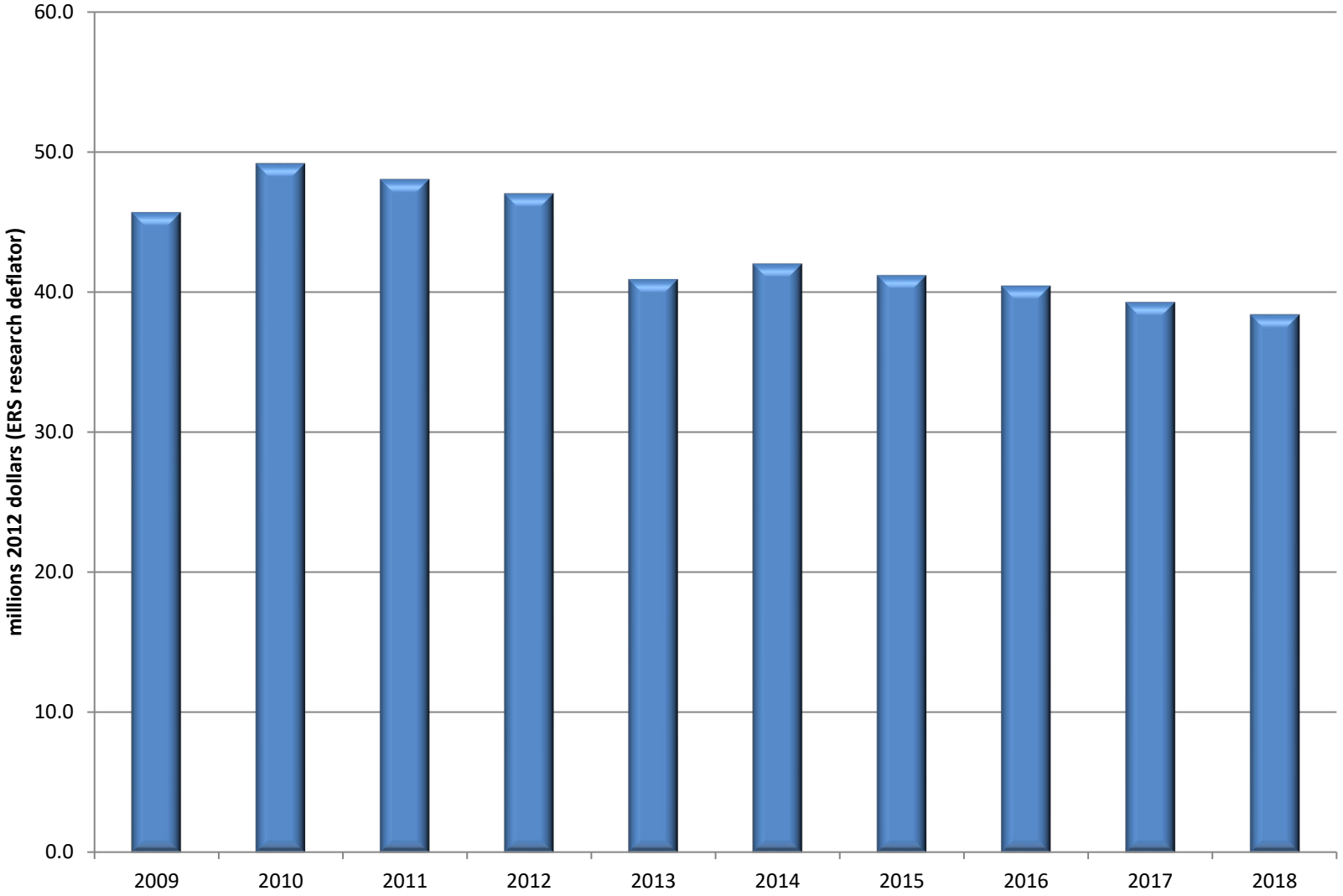
Demand for NPGS Germplasm
2013-2022



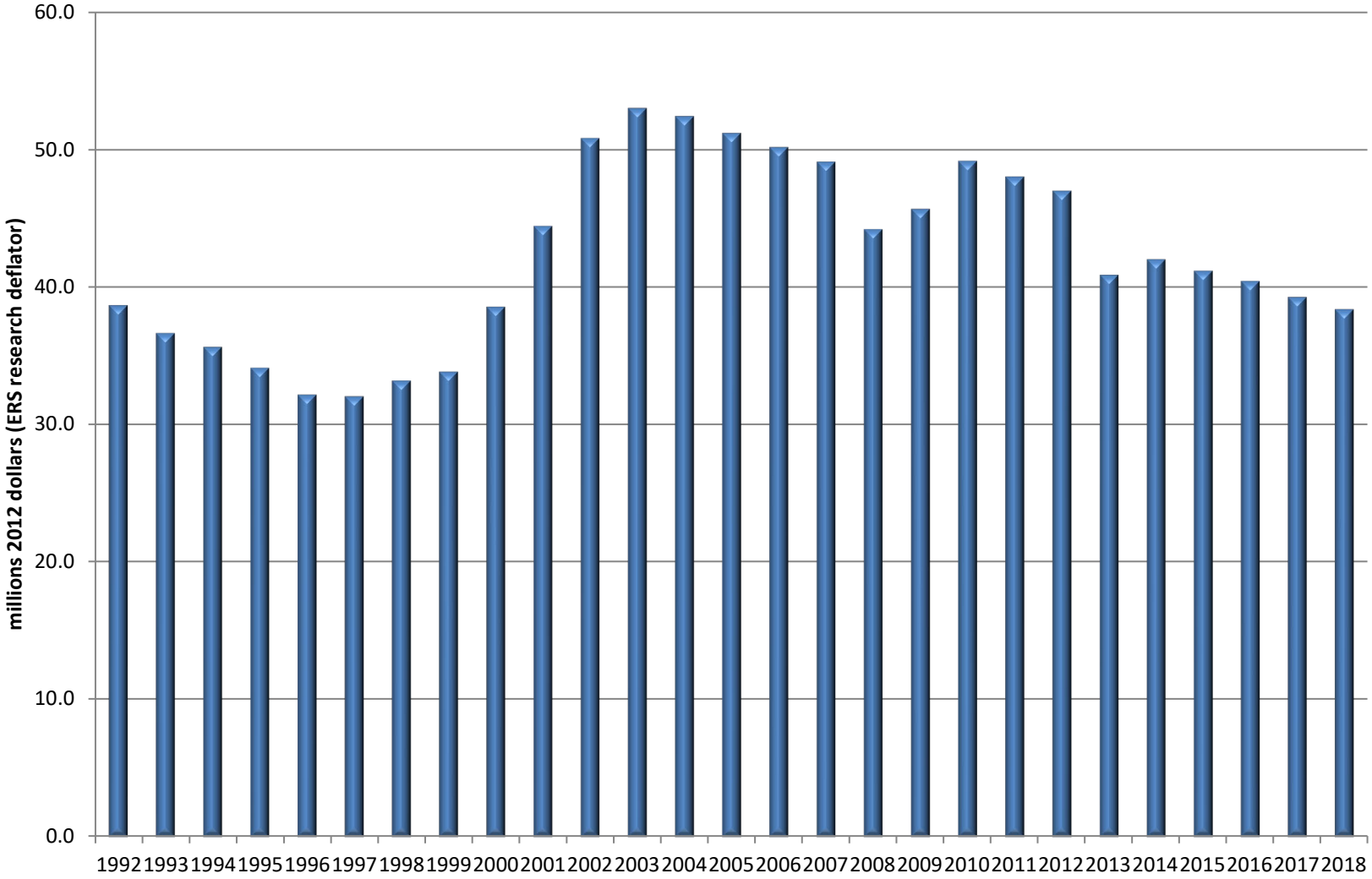
ARS National Plant Germplasm System Budget 2013-2022



ARS NPGS real (deflated) budget, 2009-2018



ARS NPGS real (deflated) budget, 1992-2018



Some key challenges for the NPGS

- **Expanding the NPGS operational capacity and infrastructure to reduce PGR management backlogs and meet increased demand for PGR and associated information.**
- **Increased operational costs (labor, inputs, overall inflation).**
  See https://www.ers.usda.gov/amber-waves/2022/june/investment-in-u-s-public-agricultural-research-and-development-has-fallen-by-a-third-over-past-two-decades-lags-major-trade-competitors/?cpid=email#
- **NPGS personnel transitions—hiring, training, etc.**
- **Developing and applying cryopreservation and/or in vitro conservation methods for clonal and some seed PGR.**
- **BMPs and procedures for managing accessions (and breeding stocks) with an increasing diversity of GE traits in more crops, the occurrence of adventitious presence (AP), and the products of gene editing.**
- **Acquiring and conserving additional PGR, especially of crop wild relatives.**

PGR Management Priorities: Foundations for Crop Innovation

- Acquisition
- Maintenance
- Regeneration
- Documentation and Data Management
- Distribution

- Characterization
- Evaluation
- Enhancement
- Research in support of the preceding priorities

NPGS Personnel Transitions

- **Farewell and best wishes to Stephanie Greene, Curator, (ARS- Ft. Collins); and Kim Hummer, RL (ARS-Corvallis).**
- **Welcome and best wishes to Robert Krueger, RL (ARS-Riverside); and Marilyn Warburton, RL, Sarah Dohle, Curator, Paul Galewski, Curator, and Bailey Hallwachs, SOS Coordinator (ARS-Pullman); and Claire Heinitz, RL (ARS-Davis and Parlier).**
- **We are recruiting staff at Ft. Collins, CO; Corvallis, OR; Parlier, CA; and Geneva, NY.**

PGR Management Training Initiative

- **Numerous NPGS PGR managers have retired recently; no formal, comprehensive program existed for training new PGR managers.**
- **G. Volk (ARS-Ft. Collins) and P. Byrne (CSU-Ft. C.) lead a project, supported by ARS and a NIFA grant, to design and develop a training program for PGR management to be delivered primarily through distance-learning.**
- **A now three module, 3 credit hour Colorado State online course Plant Genetic Resources: Genomes, Genebanks, and Growers to be taught in Aug.-Sept. 2022-- the first time for the three-part course. http://pgrcourse.colostate.edu/**
- **Numerous PGR training/educational materials are freely accessible from GRIN-University at https://grin-u.org/**
- **Infographic posters for PGR, genebanks and conservation, and PGR and food security in 6 languages; download at http://genebanktraining.colostate.edu/trainingmaterials.html**

FY 22 ARS NPGS Budgetary Increases

- **Pecan PGR (ca. $600,000): College Station, TX.**
- **Coffee PGR (ca. $250,000): Hilo, HI**
- **Pulse PGR (ca. $100,000) Pullman, WA**
- **Pulse PGR (ca. $100,000) Urbana, IL**

Many thanks to CGC Chairs!

- **Writing and updating Crop Vulnerability Statements**
- **Assessing Plant Exploration and other proposals**
- **Your invaluable technical input and views regarding crop needs and priorities**

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Fort Collins, CO

Amy Gurza and Dr. Stephanie Greene in the -18C storage vault

- Preserve seeds and clonal germplasm
- Provide genomic tools to improve and access collection diversity

- ~ 1.2 million accessions currently; ~ 15,000 species
- Conventional (-18°C) and cryogenic storage (-175 to 196°C)
- Room to expand collection (~2.5 million accession capacity)
- Research programs to increase management efficiency

Lisa Hill and Remi Bonnart with liquid nitrogen cryovats

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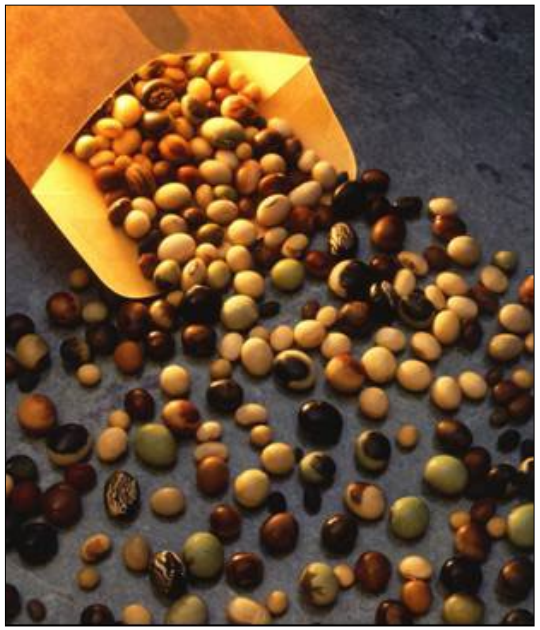
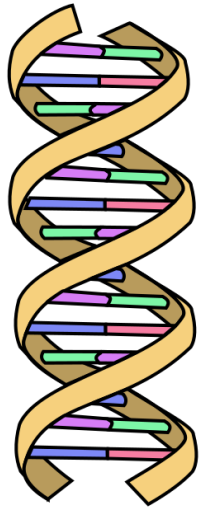
Fort Collins, CO

The ‘seed’ team



Principal Investigators:
Christina Walters
Stephanie Greene (retired 11/2022)

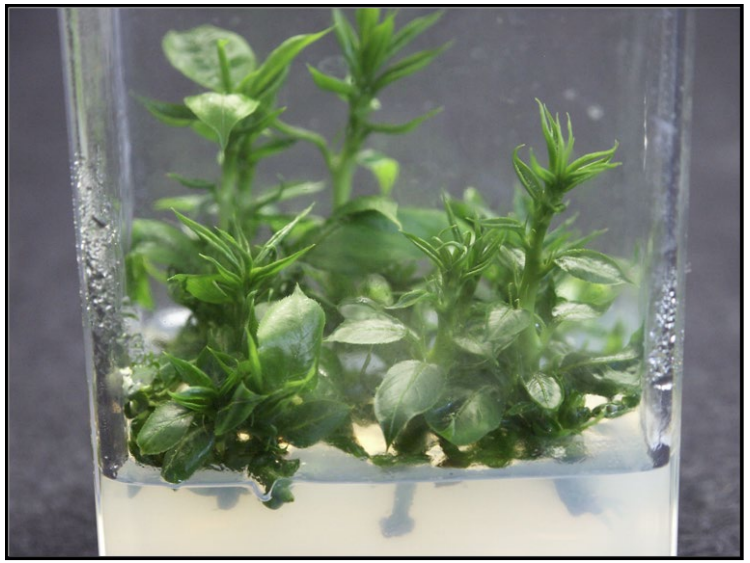
The ‘genomics’ team



DNA

Principal Investigator:
Christopher Richards

The ‘clonal’ team



Principal Investigators:
Gayle Volk
Maria Jenderek

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Fort Collins, CO

Changes in Staffing

Retirements or transfers in 2022

Stephanie Greene (PI)
Greg Holman (seed curation, LN management)
Renee White (data management)
Amelia James (data management)

New hires in 2022/3

Hannah Tetreault (support scientist, vice-Crane)
Vincent Warnock (seed analyst, vice-Hernandez)
Torie Kloppenborg (seed analyst, vice-LaTona)
Quincy Robinson (data management, vice-White)

New supervisors 2022

Lisa Hill – seed quality lab (+ lab manager for Walters)
Cullen McGovern – data management (+ programmer)

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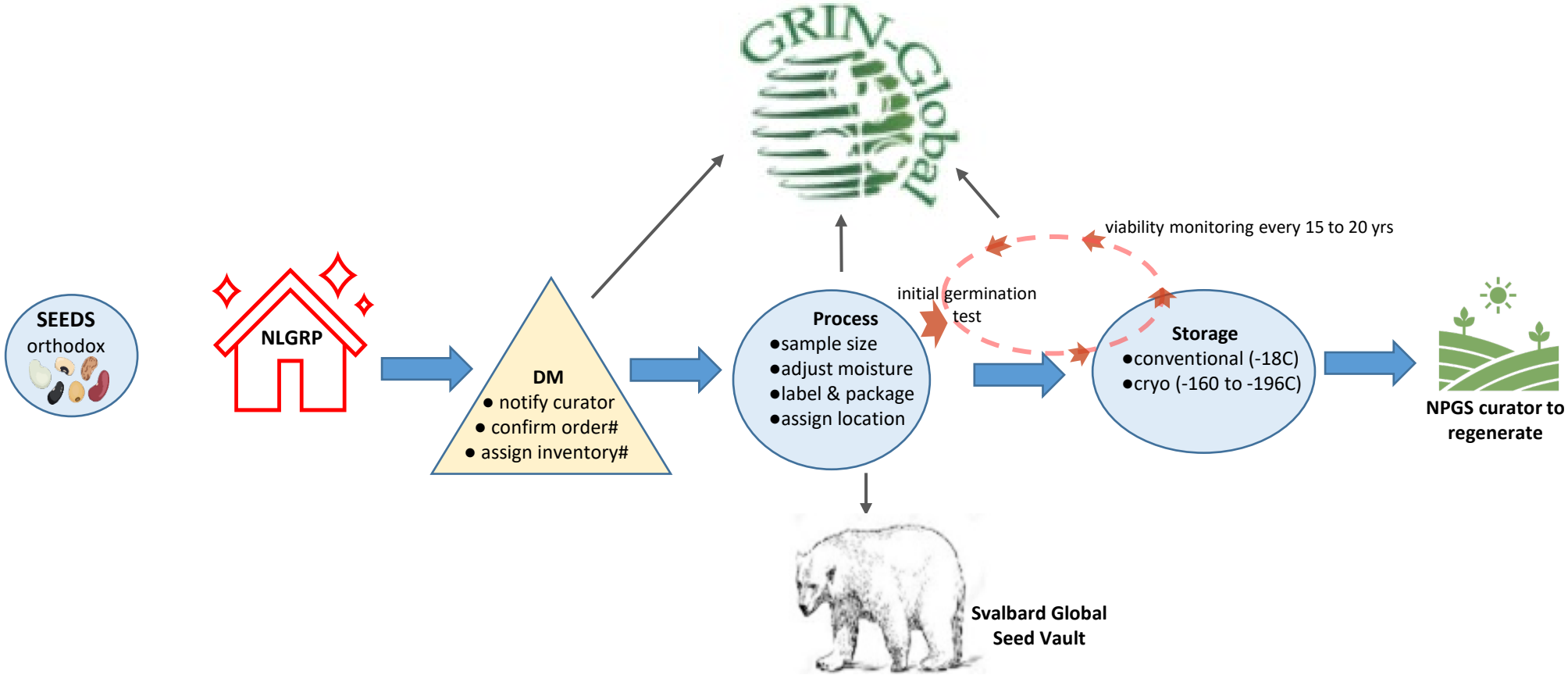
Fort Collins, CO



NLGRP's process for storing orthodox seeds

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Fort Collins, CO

NLGRP seed and microbial holdings

Germplasm	# accessions or isolates
Seed	
NPGS Base collection	432,272
NPGS accns only at NLGRP	10,356
non-NPGS: PVP/JPR	9,105
non-NPGS: Black Box	465,175
Microbes (non-NPGS)	111,066
Total	**1,027,974**

Seed	# accessions
Received per yr (5 yr avg)	6208
monitored tested/yr (5 yr avg)	4740
Total tests/yr	**10,948**

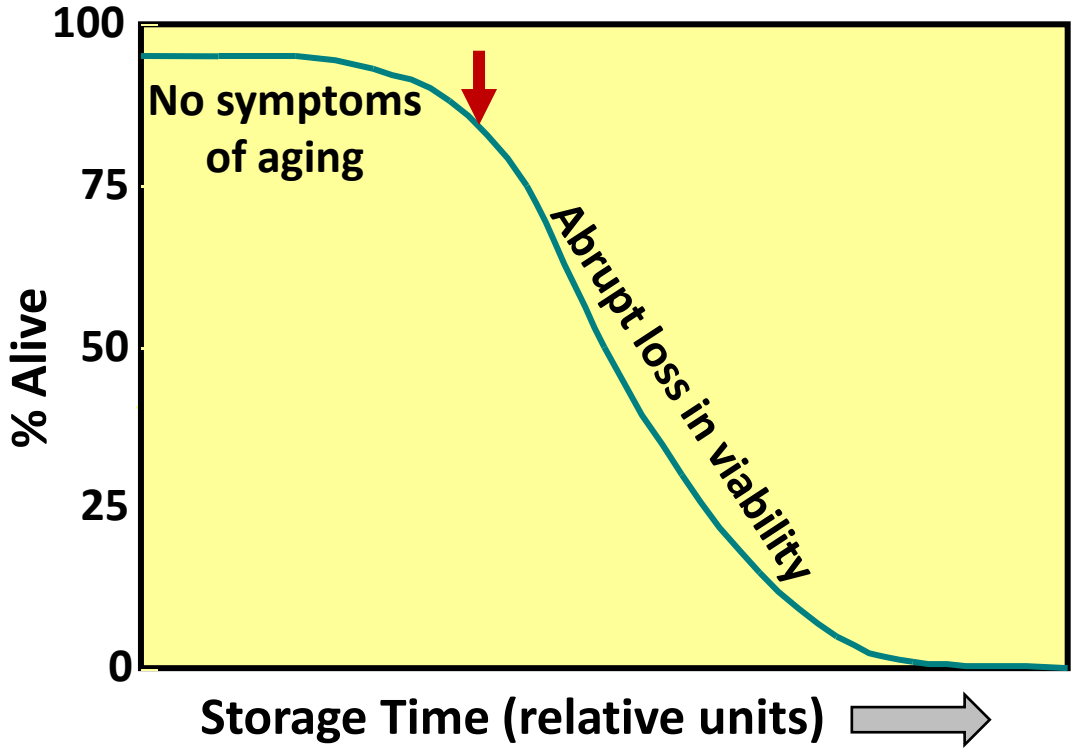
% of collection duplicated

Site	Storage at -18°C	Storage in LN
Aberdeen	89	8
Ames	68	13
College Stn	59	0
Geneva	52	19
Griffin	80	9
Parlier	25	11
Pullman	67	9
Sturgeon Bay	30	51
Stuttgart (GSOR)	0	0
Urbana (GSZE)	100	0
Urbana (soy)	98	0
Wash DC (USNA)	5	0
average	56	10

ARS research and curation cycle

Some initiatives for seed curation and research

1. Reduce the time between receiving seeds and putting them at storage temperature



As seeds approach the threshold (↓), low storage temperature becomes less effective.

Some initiatives for seed curation and research

1. Reduce the time between receiving seeds and putting them at storage temperature

2. Seeds in cryo-storage. What is currently stored? What should be stored? Does LN storage offer a benefit for the additional cost?

The top 10 species of seeds that are stored cryogenically at NLGRP based on mass. Total # of genera: 491 Total # of accns: 52781 Total # of tanks: 25
Average time in cryogenic storage: 23 years

genus with most mass	total mass in LN	# of accns	avg seed age (years)	% of total mass in seed cryotanks
Oryza	456121	5655	28.4	0.26
Sorghum	278261	3988	32.4	0.16
Hordeum	223684	2582	34.5	0.13
Secale	160642	1954	34.0	0.09
X Triticosecale	81945	893	25.0	0.05
Capsicum	46130	2810	30.7	0.03
Beta	34640	785	27.2	0.02
X Elymotriticum	31462	342	24.6	0.02
Solanum	25791	8299	27.9	0.01
Elymus	22688	1022	26.5	0.01

Some initiatives for seed curation and research

1. Reduce the time between receiving seeds and putting them at storage temperature

2. Seeds in cryo-storage. What is currently stored? What should be stored? Does LN storage offer a benefit for the additional cost?

3. Pilot project for cryopreserving 'intermediate' seeds

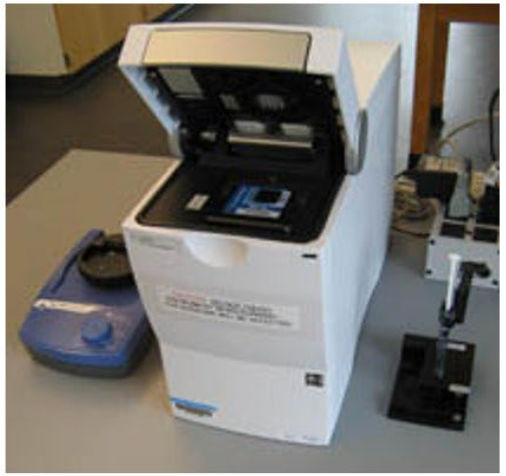
crop	Site	total # 'BASE' accns unique to site	total # duplicated at NLGRP (veg+seed)
citrus	RIV	3170	462*
coffee	HILO	0	0
hazelnut	COR	835	45*
hazelnuts CWR	COR	38	0
macadamia	HILO	48	0
papaya	HILO	140	0
pecan	BRW	1351	9*
pistachio	DAV	150	0
Saccharum	MIA	1400	197
walnut	DAV	803	0
woody landscape	NA	12518	673
woody landscape	NC7	1959	908
woody landscape	OPGC	7	3

* Preserved as clonal propagules or pollen (pecan).

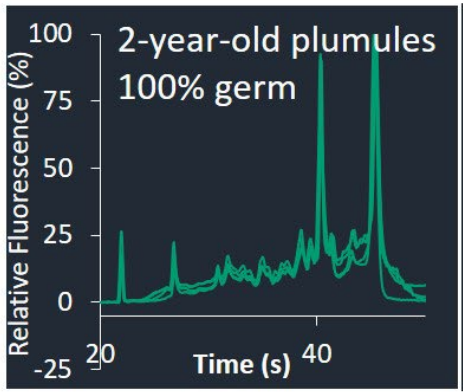
Some initiatives for seed curation and research

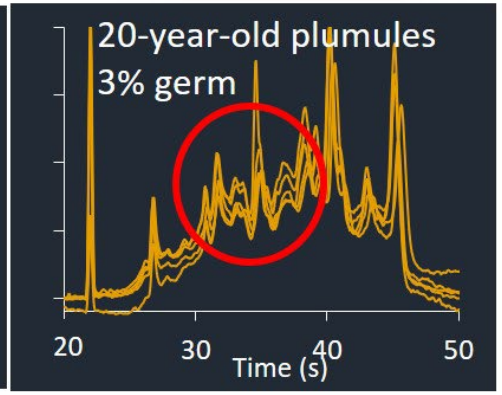
4. Detect seed aging before viability declines

RNA Integrity and pre-mortem gene expression



'Bioanalyzer' RIN kits



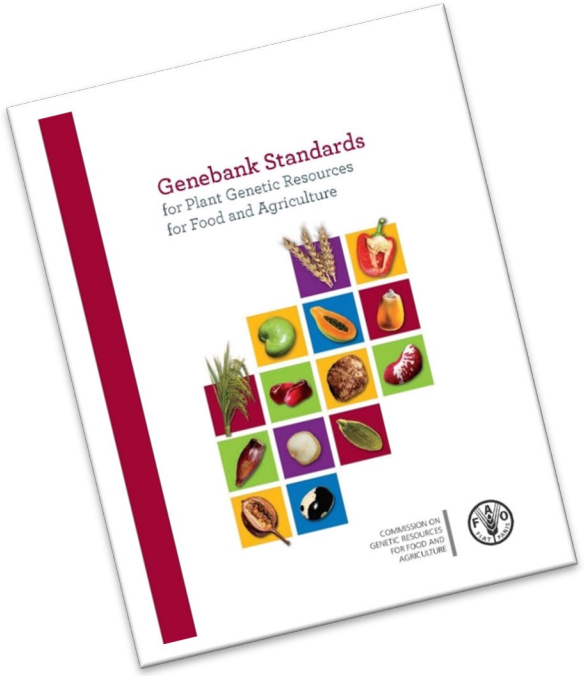


RNA fragments

Some initiatives for seed curation and research

4. Detect seed aging before viability declines

5. Review standards and improve them for NPGS's needs



The difference between "duplication" and "back-up"

1) > 85% viability
2) 1500-3000 seeds
3) 15 yr monitoring interval

Some initiatives for seed curation

4. Detect seed aging before viability declines

5. Review standards and improve them for NPGS's needs

6. A new API *"smile"* for NLGRP to input and retrieve data from GRIN

Germination assay of a SOS accession. Photo credit: Alison LaTona

National Laboratory for Genetic Resources Preservation
Fort Collins, CO

Thanks for your time!

And now Gayle Volk will describe clonal collections at NLGRP

Vitrified mint shoot tips. Photo credit: Stephen Ausmus, ARS

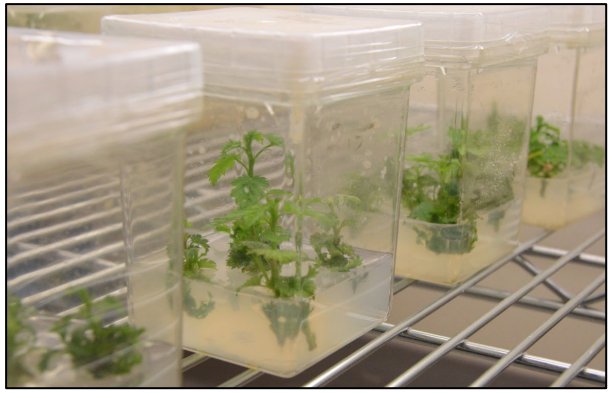
Securing Non-seed Collections at NLGRP

Many fruit and nut crops and some vegetable crops

Field

Greenhouse/screenhouse

Cold storage



In vitro

Cryostorage

Cryopreserved Clonal Collections at NLGRP

Shoot tips	Accn.
Garlic	102
Strawberry	280
Hops	90
Sweet potato	169
Mint	48
Banana	22
Pear	231
Currants	199
Raspberry	201
Potato	157
Potato PVP	430
Blueberry	42
Sugarcane	25
Citrus	420
Grapes	40

Dormant buds	Accn.
Apple	2152
Sour cherry	52
Willow	52

~5000 clonal accn. cryopreserved

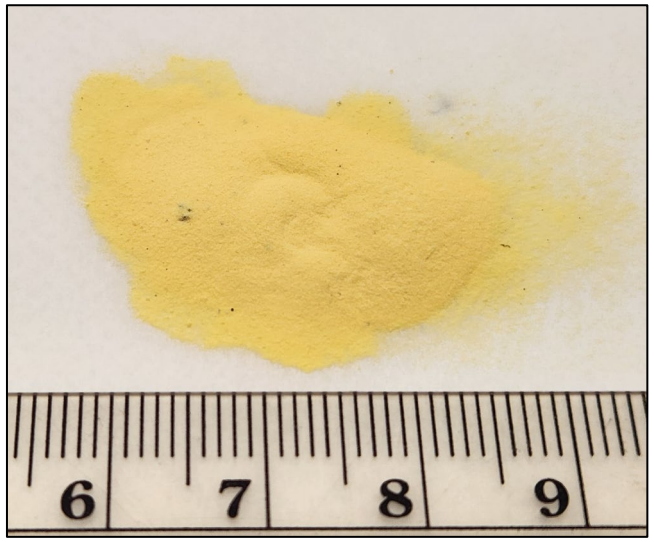
12% of the NPGS clonal accns. secured

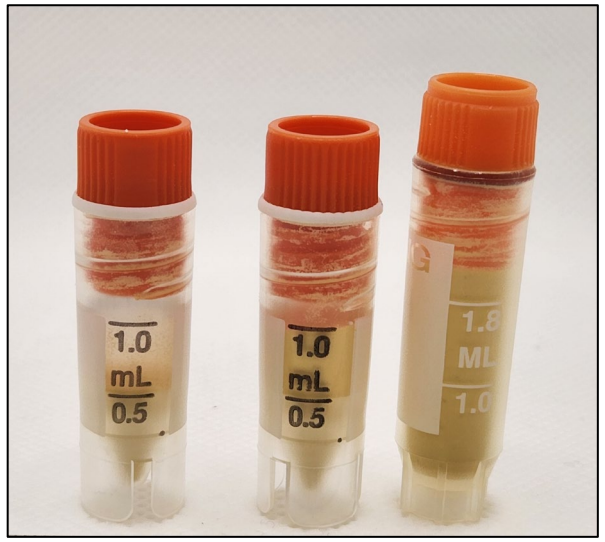
82% of NPGS seed accn. duplicated

Grape

Mint

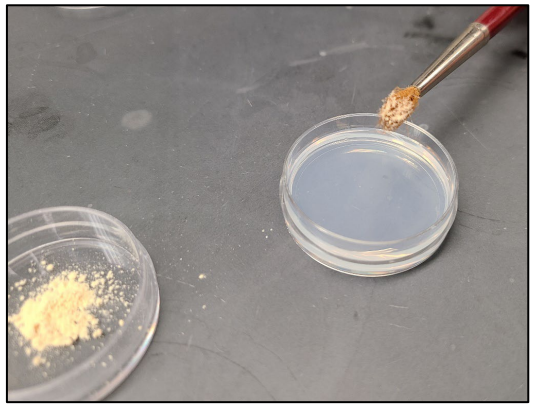
Pollen Cryopreservation

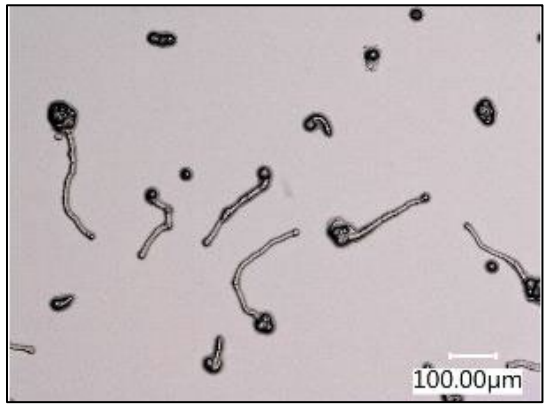




120 Accessions of
- Date palm
- Prunus
- Walnut
- Pecan

In vitro germination assay to assess viability





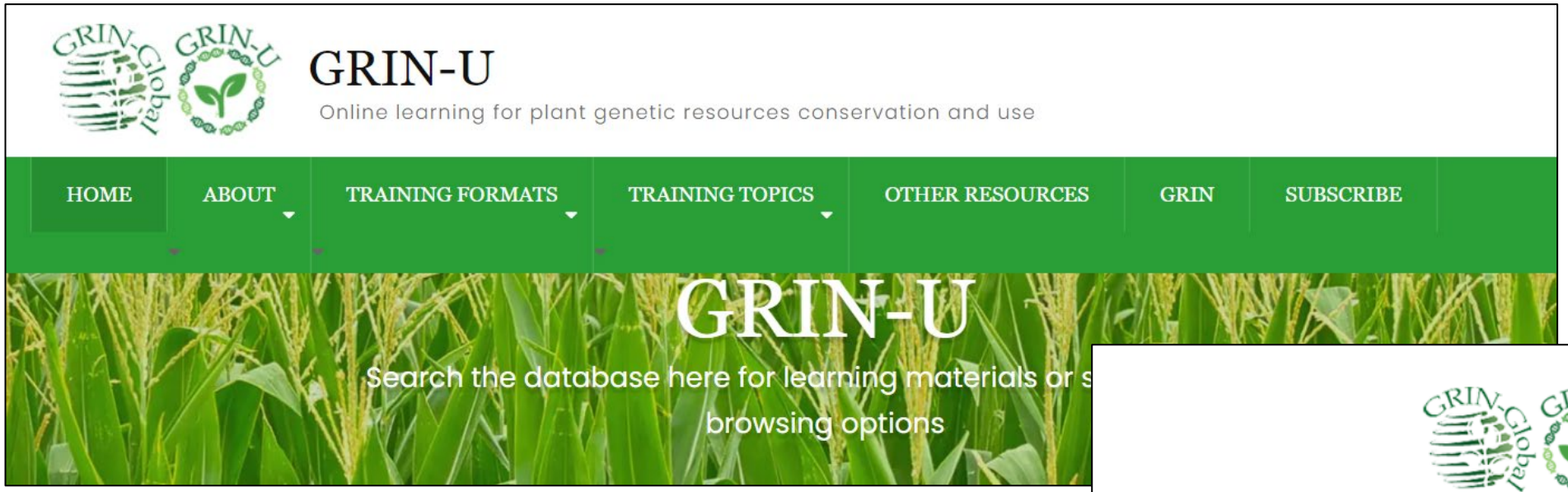
Clonal Cryopreservation Data Clean-up Effort

- 30+ years of using seed-fields in GRIN to document cryopreservation data for clonal crops
- Reviewing field use and adding appropriate new fields to document processes and results (clonals & pollen)
- Developing new data entry systems that are standardized
- Reviewing all the data for clonal collections in GRIN and revising field use

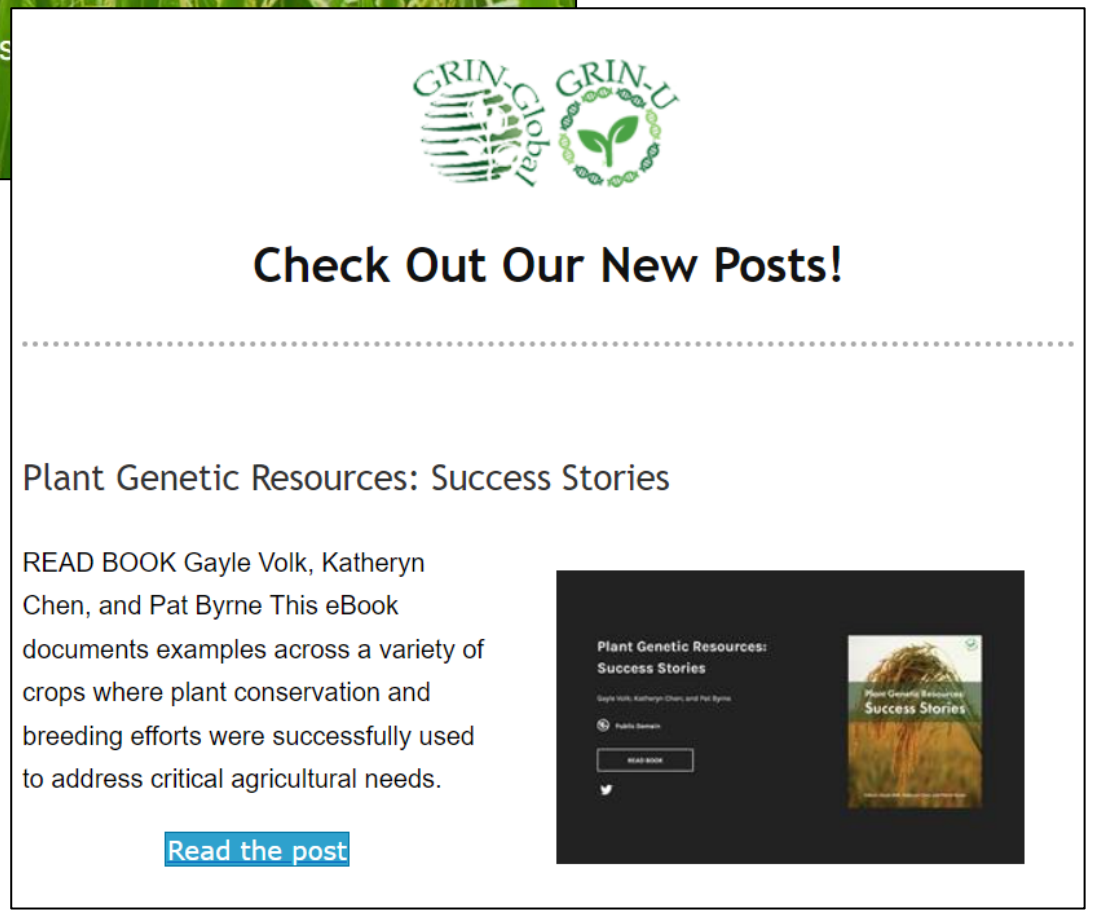
Goal: Complete inventory-specific clonal cryopreservation reports & data that can be easily downloaded anytime by curation teams

Developing training materials for Plant Genetic Resources Management and Use

- Many NPGS staff members are retiring
- Training content for current staff and future generations
- NIFA Grant: CSU, USDA, ISU 2020-2023



Quarterly email
sent to GRIN-U.org
subscribers
with updates



Public Ebooks on GRIN-U.org

Crop Diversity: A Virtual Crop Science Field Tour

Patrick F. Byrne; Meagan Schipanski; and Deana Namuth-Covert

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Fundamentals of Plant Genebanking

Gayle Volk

Public Domain

Crop Wild Relatives and their Use in Plant Breeding

Gayle Volk and Patrick Byrne

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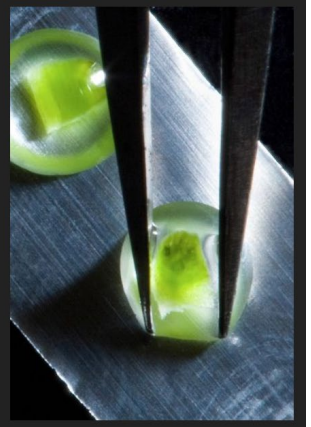
Training in Plant Genetic Resources: Cryopreservation of Clonal Propagules



Gayle Volk

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READ BOOK

Field Tour of the USDA National Clonal Germplasm Repository for Tree Fruit, Nut Crops, and Grapes in Davis, California

Gayle M. Volk and John E. Preece

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READ BOOK

Applications of Plant Pathology in Genebank Collections

Gayle Volk

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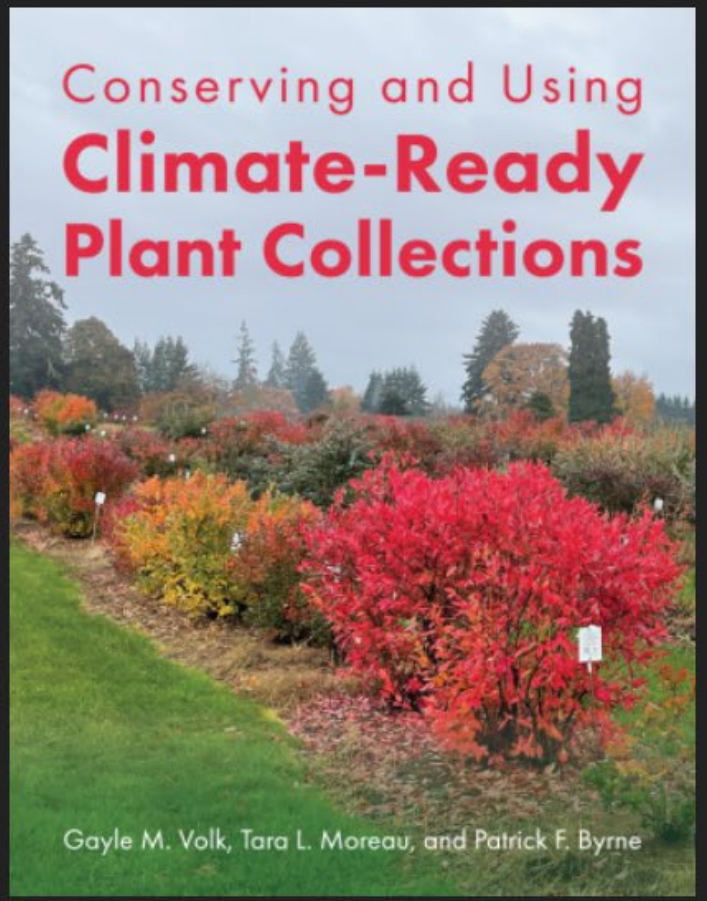
Conserving and Using Climate-Ready Plant Collections

Gayle M. Volk; Tara L. Moreau; and Patrick F. Byrne

READ BOOK



Released January 2023

Plant Genetic Resources: Success Stories

Eds. Gayle Volk; Katheryn Chen; and Patrick Byrne

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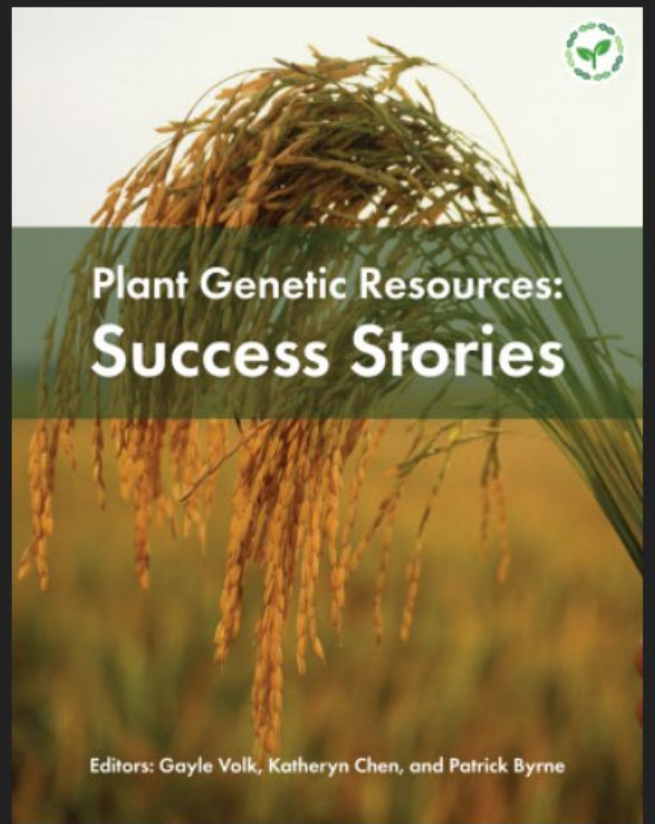
READ BOOK



Seeking Success Story Submissions

Plant Genetic Resources Success Story Submission Template

Documenting Success Stories

Documenting success stories and making them available to the public are important for ensuring continued support for plant genetic resources conservation and plant breeding efforts. Our goal is to document successes, broadly defined, that relate to plant genetic resources conservation and use, and crop improvement activities.

To ensure this information is accessible to the broadest possible audience, please keep content concise, minimize the use of jargon and acronyms, and write with a general audience in mind. It is the contributors' responsibility to seek permissions to share success stories from other researchers and breeders. Content may be edited and formatted before being posted on the public GRIN-U website and/or the National Association of Plant Breeders website. All edits will be shared with the contributor for final approval before posting to websites.

Once completed, email this form and 1-3 high-quality images to PGRSuccesses@gmail.com. For questions or comments, please contact Pat Byrne (Patrick.byrne@colostate.edu) or Gayle Volk (Gayle.Volk@usda.gov).

*Required fields

Contributor Information

***Contributor(s) name:** Author1 and Author2

Strawberry 'Cordial' - Late Season, Long Shelf Life

USDA-ARS Genetic Improvement for Fruits & Vegetables Laboratory

Strawberry cultivar 'Cordial', released in 2020 by the USDA, is a late-season cultivar for planting during the late part of the growing season in the Mid-Atlantic region of the U.S. It is a short-day strawberry, meaning that plants will flower as the daylength grows shorter in the northern hemisphere. 'Cordial' has large attractive fruits that are tough enough for rough handling, have increased shelf life, minimal proportion of produce lost to degradation, and possesses consistently high yields with low rot when grown in plasticulture production systems without fumigation/fungicide.

Cordial strawberries produced in plasticulture.

Photo from Lewers and Enns, 2022 (CC BY-NC-ND 4.0)

PROJECT GOALS

- ✓ Develop non-tart strawberries with increased shelf life
- ✓ Improve resistance to rot and provide consistent high yields

Problems Addressed

U.S. Department of Agriculture-Agricultural Research Service strawberry research efforts at Beltsville, MD, have resulted in release of several cultivars with high yields and good fruit flavor: 'Keepsake', 'Flavorfest', 'Allstar', 'Galletta', 'Ovation', 'Earlyglow', 'Chandler', etc. Decayed fruit, poor handling and refrigeration tolerance, foliar and fruit disease incidence, and reduced shelf life remained a production problem. The project therefore focused efforts on increasing shelf life, tolerance to rough handling, resistance to diseases, as well as reducing tartness and maintaining consistently high yields.

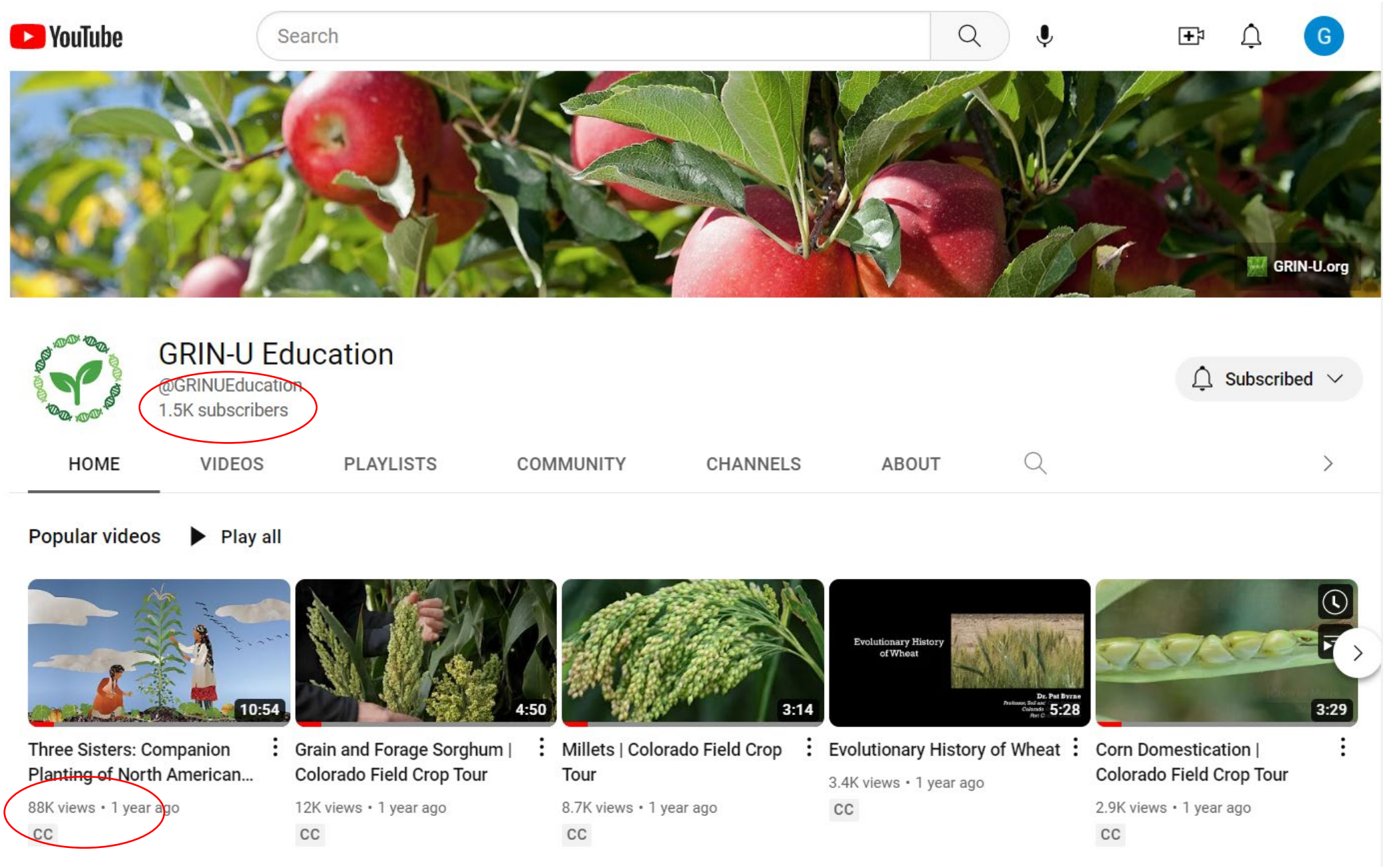
Solutions Developed

'Cordial' was developed by cross-pollinating B1893 × B1805. This new cultivar's average total yield was significantly higher than all cultivars tested, with one of the highest marketable yields. 'Cordial' showed significant resistance to crown rot, very mild bacterial angular leafspot disease symptoms, and mild powdery mildew disease symptoms. 'Cordial' fruit skin toughness rating was very high, and it exhibited fruit sweetness similar to 'Flavorfest', 'Keepsake', and 'Earliglow'. Due to its longer shelf life, less tartness, and disease resistance, 'Cordial' has the potential for a greater market share.

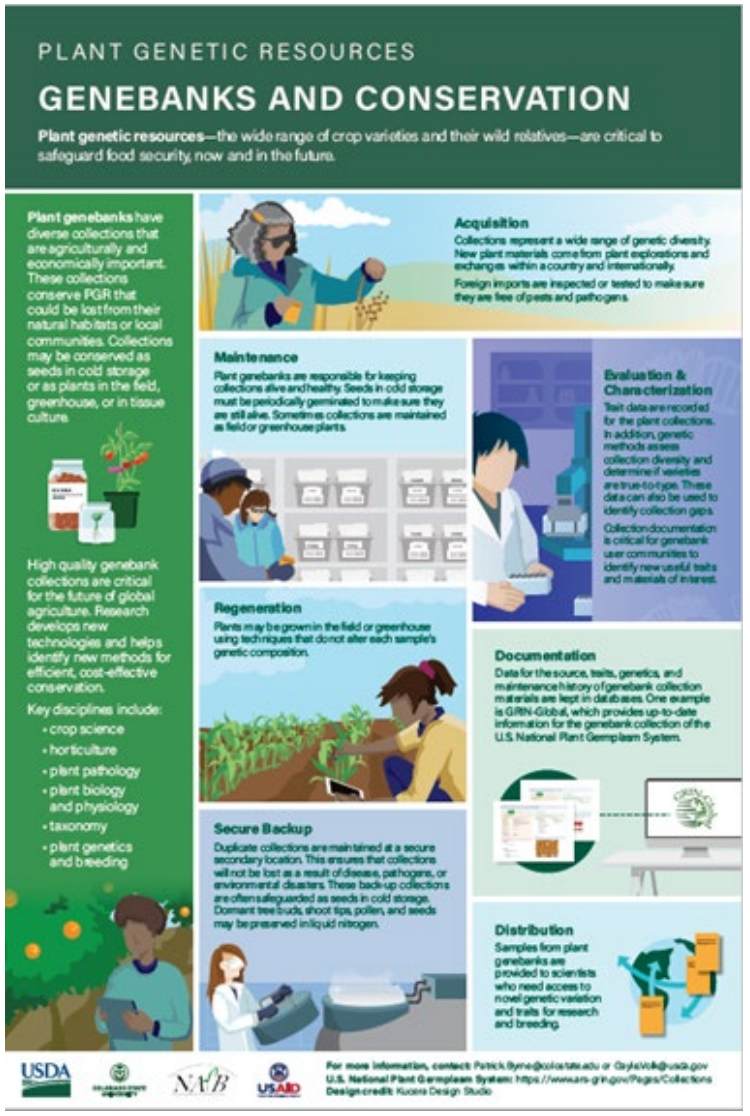
Written by: A. Mahama, S. Gray, W. Suza, K. Chen (editor)

To learn more about this and other success stories, visit colostate.pressbooks.pub/pgrsuccessstories

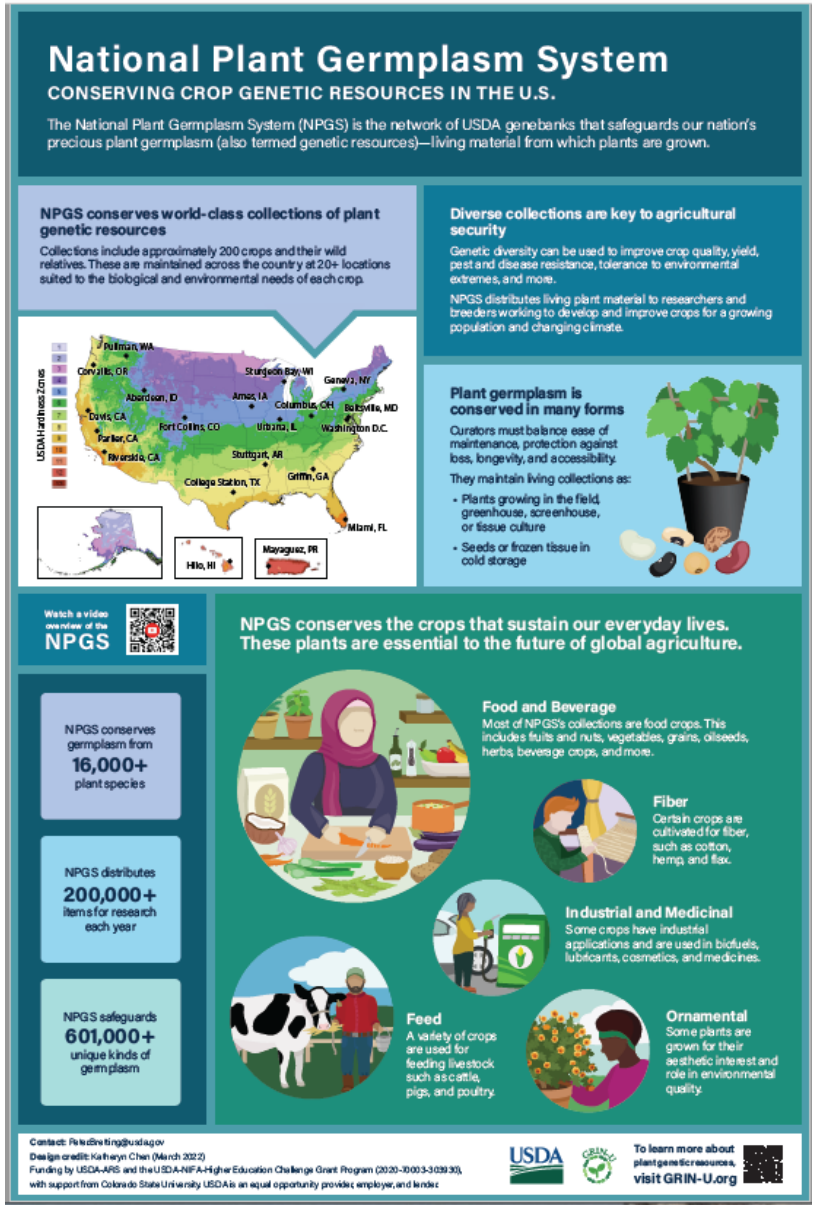
73 Videos, Webinars, Virtual tours



Infographics available on GRIN-U (posters or handouts)



English, French, Spanish, Arabic, Chinese, Portuguese



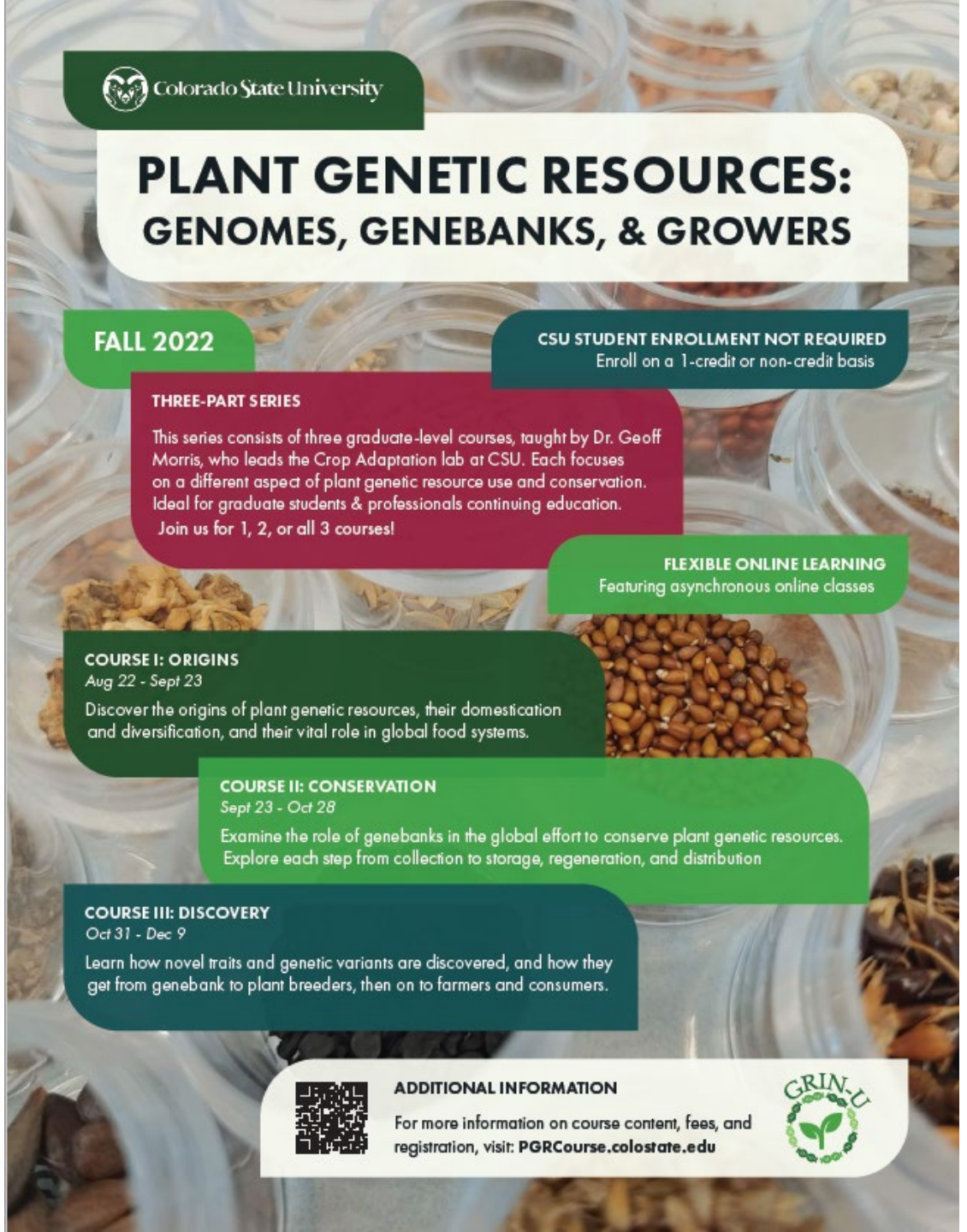
English, Spanish

English, French, Spanish

3 one-credit courses (5 weeks each)
Fall 2023
CSU Online
Geoff Morris (and G. Volk)

1) Origins
2) Conservation
3) Discovery

https://pgrcourse.colostate.edu/



For more information about

- Clonal Cryopreservation at NLGRP
- NPGS Training and Education Efforts
- Success Story Submission

Contact: Gayle Volk
Gayle.Volk@usda.gov

National Germplasm Resources Laboratory

Plant Exchange Office

Anne Frances
Melanie Schori
Jennifer Friedman

Crop Germplasm Committee Chairs Meeting
March 1, 2023

Plant Exchange Office Updates

- Plant Exploration & Exchange Program
- Crop Wild Relatives
- International Distributions (with USDA-APHIS)
- GRIN Taxonomy

Vitis ripara, Hedrick and Booth 1908

NPGS Plant Exploration & Exchange Program


Carya illinoiensis


Helianthus mollis


Asimina triloba

Anne Frances
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National Germplasm Resources Laboratory
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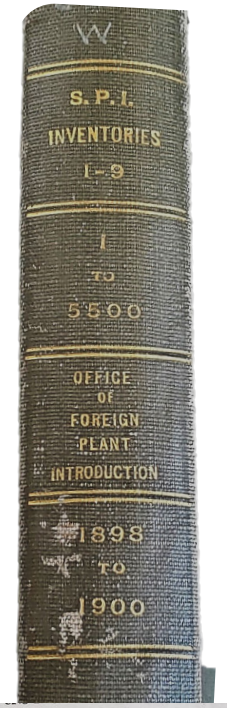
NPGS Plant Exploration & Exchange Program

- Fills gaps in the NPGS
- Proposal guidelines on SharePoint
- Proposals accepted yearly (due July 31)
- CGCs and curators must endorse proposals
- Crop Vulnerability Statements help identify priorities
- International explorations require prior informed consent



O. F. Cook,
Special Agent in Charge of Seed and Plant Introduction.

INVENTORY.

OLERACEA. **Cabbage.**

w, Russia. Received through Prof. N. E. Hansen, February, 1898.
ges.) "Bronka;" early variety.

Access and Benefit Sharing for International Explorations

- NPGS explorations abide by the CBD* principle of national sovereignty over genetic resources
- Prior informed consent (PIC) obtained from national authority (form of a letter, permit, MTA, etc.) via PEO
- Includes agreement on benefit sharing
- Acceptable benefits are “in-kind” (training, equipment purchase, increase projects, etc.)
- SMTA provides terms for some explorations

*Convention on Biological Diversity https://www.cbd.int/convention/

NPGS Plant Explorations FY 2022

Monarda lindheimeri	US (TX)
Phaseolus polystachios	US (GA, FL)
Solanum jamesii, S. fendleri	US (NM, TX)
Fraxinus anomala, F. velutina	US (AZ, NM)
Salix armeno-rossica	Georgia

NPGS Plant Explorations

Monarda lindheimeri US (TX) Jeff Carstens

Solanum jamesii US (NM, TX) John Bamburg

Fraxinus velutina US (AZ, NM) Andy Sherwood

Salix armeno-rossica Georgia Tamar Kurdadze

Postponed Explorations

Scheduled for 2023

Malus doumeri	Vietnam
Camelina spp.	France
Citrus	Vietnam
Woody plants	United States (WI)
Fraxinus cuspidata	United States (AZ, NM)

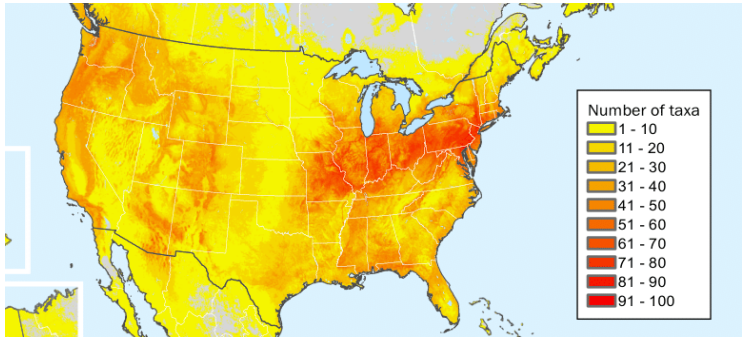
Grindellia squarrosa

Scheduled for 2024

Grindelia squarrosa	United States (CA, ID, NV)
Small fruits	Canada
Daucus and *Allium* spp.	Jordan
Vicia faba landraces	Morocco

Crop Wild Relative Conservation

- Many opportunities for gap filling in the NPGS
- National inventory provides potential distributions for 600 taxa, preliminary threat assessments, and conservation gap analyses
- Major *ex situ* conservation gaps were identified for 93.3% of wild relatives assessed



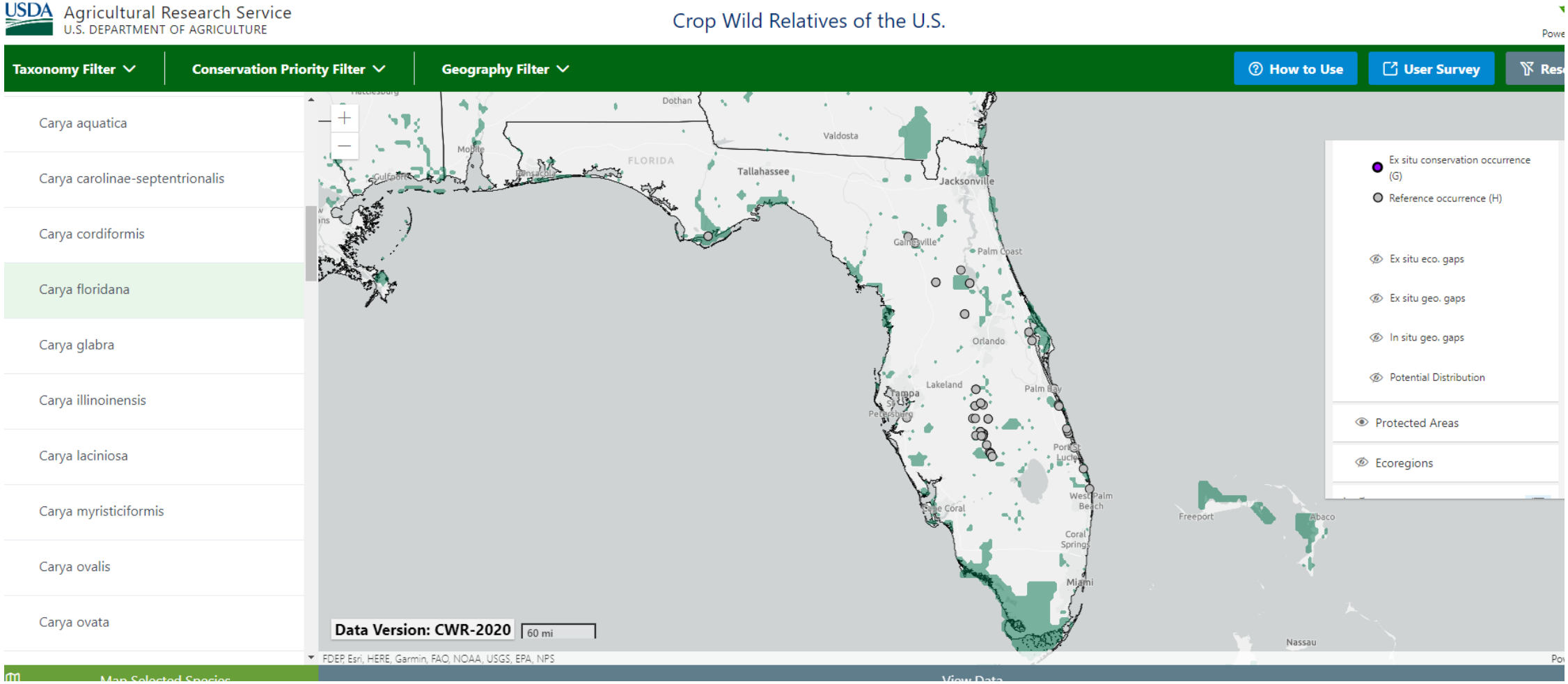
Predicted taxonomic richness map for assessed US CWR/wild food plants in categories 1A, 1B, and 1C.

Crop wild relatives of the United States require urgent conservation action

Colin K. Khoury[a,b,c,1,2], Daniel Carver[a,d,1], Stephanie L. Greene[a], Karen A. Williams[e], Harold A. Achicanoy[b], Melanie Schori[e], Blanca León[f,g], John H. Wiersema[h], and Anne Frances[i]

Proceedings of the National Academy of Sciences 117.52 (2020): 33351-33357

Interactive Map: Crop Wild Relatives of the US



https://cropwildrelatives.scinet.usda.gov/#/

Crop Wild Relative Conservation

- Continued collaborations: Forest Service, US Botanical Garden, NatureServe, etc.
- Presentations to Natural Areas Association, US Biosphere Network with George Wright Society
- Native Grape Conservation Workshop

Saving Wild Vitis: The Conservation of North American Native Grapes Workshop

https://graperesearch.org/2022/12/27/saving-wild-vitis/

NPGS International Distributions
(Jennifer Friedman)

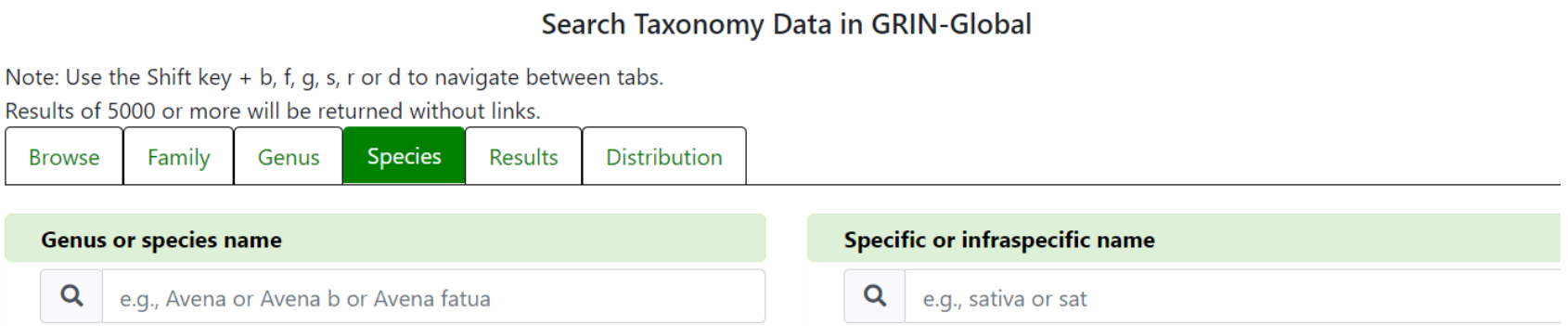
National Cotton Germplasm Collection (COT)	Woody Landscape Repository (NA)
Griffin Plant Introduction Station (S9)	Potato Germplasm Introduction Station (NR6)
National Small Grains Collection (NSGC)	Ornamental Plant Germplasm Center (OPGC)
Western Regional Plant Introduction Station (W6)	Desert Legume Program (DLEG)
National Arid Land Plant Genetic Resources Unit (Parlier)	North Central Regional Plant Introduction Station (NC7)
U.S. Nicotiana Germplasm Collection (TOB)	Soybean/Maize Germplasm, Pathology, & Genetics Research Unit (SOY)
Plant Genetic Resources Unit, Geneva*	National Laboratory for Genetic Resources Preservation*

*Occasional

FY22: 45,226 samples to 62 countries

Contact: jennifer.friedman@usda.gov

GRIN Taxonomy Updates



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Taxonomy search page updates

Search Taxonomy Data in GRIN-Global

Note: Use the Shift key + b, f, g, s, r or d to navigate between tabs.
Results of 5000 or more will be returned without links.

Browse | Family | Genus | Species | Results | Distribution

Genus or species name

e.g., Avena or Avena b or Avena fatua

Specific or infraspecific name

e.g., sativa or sat

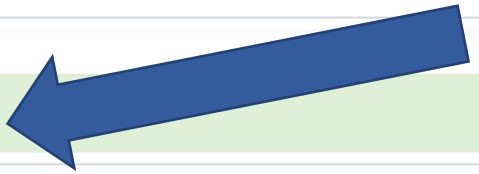
Common name

e.g., wheat or amar

☐ Exact match

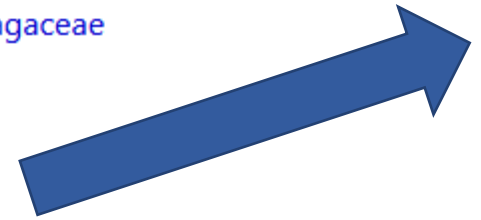
Hybrid parentage

e.g., quercus suber



Hybrid parentage

Name	Synonym of	Taxon Family	Hybrid Parentage
***Quercus* ×*auzandrii* Gren. & Godr.**		Fagaceae	= *Quercus coccifera* × *Q. ilex*
***Quercus* ×*bebbiana* C. K. Schneid.**		Fagaceae	= *Quercus alba* × *Q. macrocarpa*
***Quercus* ×*beckyae* Gaynor**		Fagaceae	= *Quercus macrocarpa* × *Q. prinoides*
***Quercus* ×*bimundorum* E. J. Palmer**		Fagaceae	= *Quercus alba* × *Q. robur*
***Quercus* ×*comptoniae* Sarg.**		Fagaceae	= *Quercus lyrata* × *Q. virginiana*
***Quercus* ×*crenata* Lam.**		Fagaceae	= *Quercus cerris* × *Q. suber*



Crop Wild Relatives

Crops

Achira
Ahipa
Aji
Alfalfa
Almond
Amaranth, Purple
Annatto
Apple

Reset Crops

Families

Anacardiaceae
Apiaceae
Araceae
Asteraceae
Brassicaceae
Bromeliaceae
Cannabaceae
Chenopodiaceae

Reset Families

Crop common name

e.g., pigeon-pea

Regulation search

Query Regulation Data in GRIN Taxonomy

Use the Genus or species name search box to find regulations that apply for a species (results will include applicable genus and family regulations). Use the Genus name search box to find genus-level regulations (including applicable family regulations). These two searches cannot be used at the same time, but either one can be combined with a family search. CITES regulations will be included for all geography options unless one or more regulation types or states is selected.

Note: Every effort is made to ensure the query results for regulations are accurate and current. However, regulations frequently change. Users should consult with the appropriate state or federal agencies with any questions about the accuracy of the regulatory content presented here.

Search | Results

	Genus or species name	Genus name	Family name
Clear row	e.g., Sorghum or Sorghum b	e.g., Saccharum	e.g., Poaceae or Poa

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U.S. DEPARTMENT OF AGRICULTURE

Geography

- ○ All*
- ○ Worldwide (CITES)
- ○ United States (federal)
- ◉ U.S. states and territories

*Must include species, genus or family.

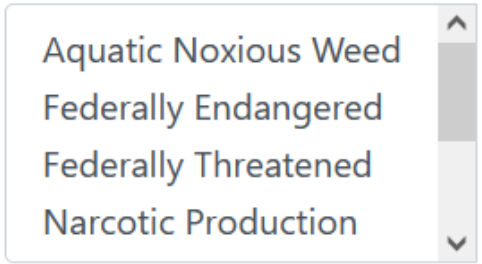
Regulations in selected U.S. states and territories

All states will be searched if nothing is selected.

Clear States

Regulation type

All types will be searched if nothing is selected.



NAPPRA is a separate federal import category. Parasitic includes federal noxious weeds and quarantine pests. Seed includes Federal Seed Act and state regulations. Terrestrial includes multiple federal and state regulations.

Regulations in selected U.S. states and territories

All states will be searched if nothing is selected.

Alabama
Alaska
American Samoa
Arizona

Clear States

☑ Include U.S. regulations

☐ Include CITES regulations

Regulation levels in Alabama

☐ All

AQUATIC: B – Class B Noxious Weed
AQUATIC: C – Class C Noxious Weed
SEED: PROHIBITED – Interstate Shipment Prohibited by Federal Seed Act
SEED: RESTRICTED – Interstate Shipment Restricted by Federal Seed Act

Regulation results

Species	Taxon Family	Note	Locality	Type	Description	Link
Alternanthera philoxeroides (Mart.) Griseb.	Amaranthaceae	"*Althernanthera*"	Alabama	Aquatic Noxious Weed	Class C Noxious Weed	Regulation source details
Egeria densa Planch.	Hydrocharitaceae		Alabama	Aquatic Noxious Weed	Class C Noxious Weed	Regulation source details
Eichhornia crassipes (Mart.) Solms	Pontederiaceae		Alabama	Aquatic Noxious Weed	Class C Noxious Weed	Regulation source details
Lythrum salicaria L.	Lythraceae		Alabama	Aquatic Noxious Weed	Class B Noxious Weed	Regulation source details

World Economic Plants search

Query World Economic Plants in GRIN-Global

Enter one or more search terms or options below. Selections must apply to all results. For example, it is not possible to search for the genus *Celtis* and the family Fabaceae at the same time.

Search | Results | Common Names | Distribution

Genus or species name

e.g., celtis

Common name (full or partial)

e.g., wheat or (partial name) amar

☐ Exact match

Families

Select one or more families

Infrafamilial name

e.g., Amygdaleae

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World Economic Plants search

Economic Importance

Classes

- Animal food
- Bee plants
- Environmental
- Food additives

Subclasses

- Food additives – adulterant
- Food additives – clarifier
- Food additives – coloring
- Food additives – dietary fiber

Reset Classes

☐ Restrict to names with accessions in GRIN

☑ Include synonyms

World Economic Plants results

Search | Results | Common Names | Distribution

Click to display query parameters.

Economic importance	Food additives – clarifier, Food additives – coloring
	Include synonyms

☑ Include references in results

Show 10 rows | Excel | CSV

Search:

Showing 1 to 10 of 32 entries

Taxonomy	Family	Economic Use	Usage Type	Note	Reference
Aronia melanocarpa (Michx.) Elliott	Rosaceae	Food additives	coloring		**Hanelt, P., ed.** 2001. Mansfeld's encyclopedia of agricultural and horticultural crops. Volumes 1-6
Basella alba L.	Basellaceae	Food additives	coloring		**Wu Zheng-yi & P. H. Raven et al., eds.** 1994-. Flora of China (English edition).
Beta vulgaris L. subsp. *vulgaris*	Chenopodiaceae	Food additives	coloring		**Leung, A. Y. & S. Foster.** 1996. Encyclopedia of common natural ingredients used in food, drugs, and cosmetics, ed. 2

World Economic Plants results

Search | Results | Common Names | Distribution

Common names

Excel | Show 100 rows | Search:

Showing 1 to 344 of 344 entries

TAXONOMY	LANGUAGE	NAME	ALTERNATE NAME	NOTE	CITATION
Aronia melanocarpa (Michx.) Elliott	English	black chokeberry			**Huxley, A., ed.** 1992. The new Royal Horticultural Society dictionary of gardening
Aronia melanocarpa (Michx.) Elliott	English (Canada)	black chokecherry		Agriculture & Agri-Food Canada official name	**Darbyshire, S. J.** 2003. Inventory of Canadian Agricultural Weeds Agriculture and Agri-Food Canada. 131.
Aronia melanocarpa (Michx.) Elliott	French (Canada)	aronie à fruit noir		Agriculture & Agroalimentaire Canada nom officiel	**Darbyshire, S. J.** 2003. Inventory of Canadian Agricultural Weeds Agriculture and Agri-Food Canada. 131.

Habitat for *Fraxinus anomala*, Ames 35908, Andy Sherwood

Thank you!

Questions?

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Melanie Schori
Melanie.Schori@usda.gov

Jennifer Friedman
jennifer.friedman@usda.gov

GRIN-Global

Public Website
&
Server Changes

…some stats…

- 4 major releases since last CGC
- 130+ tickets addressed
- next release: March 4, 2023

Changes

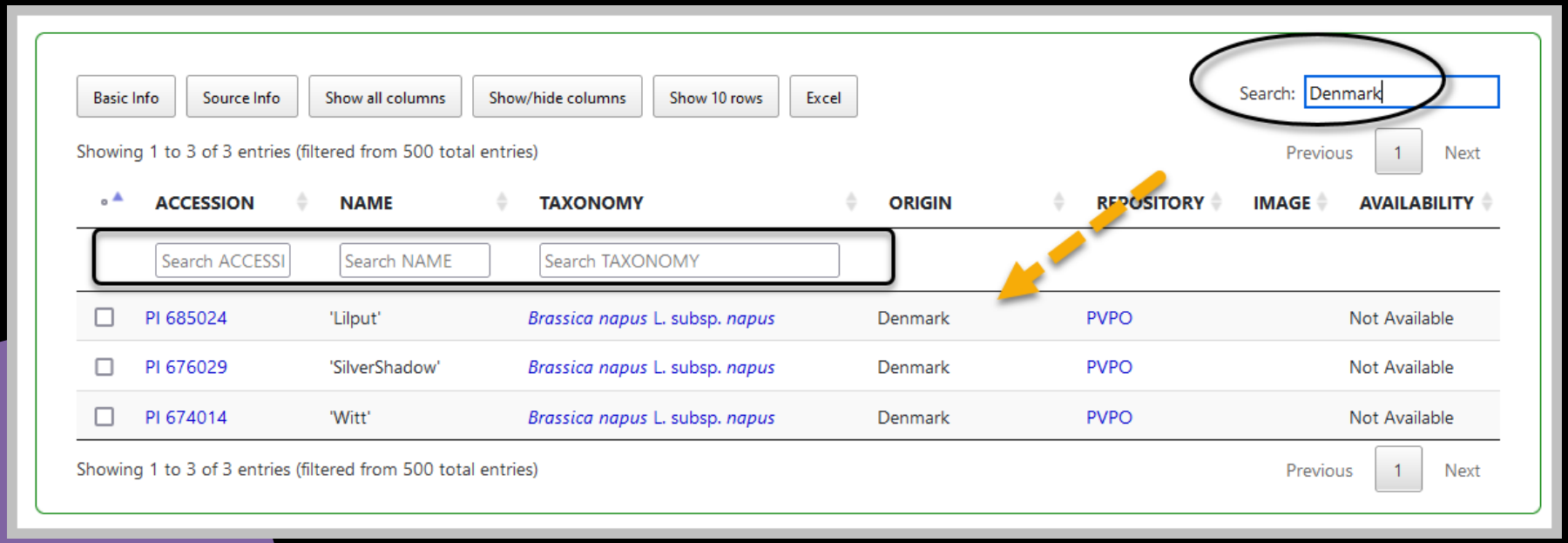
Searches

Taxonomy

User Experience

Searches

- Results weighted by fields (Narrative < Genus)
- Recent PI's listed before older PI's
- Frequently used criteria
- Search Results – can be filtered

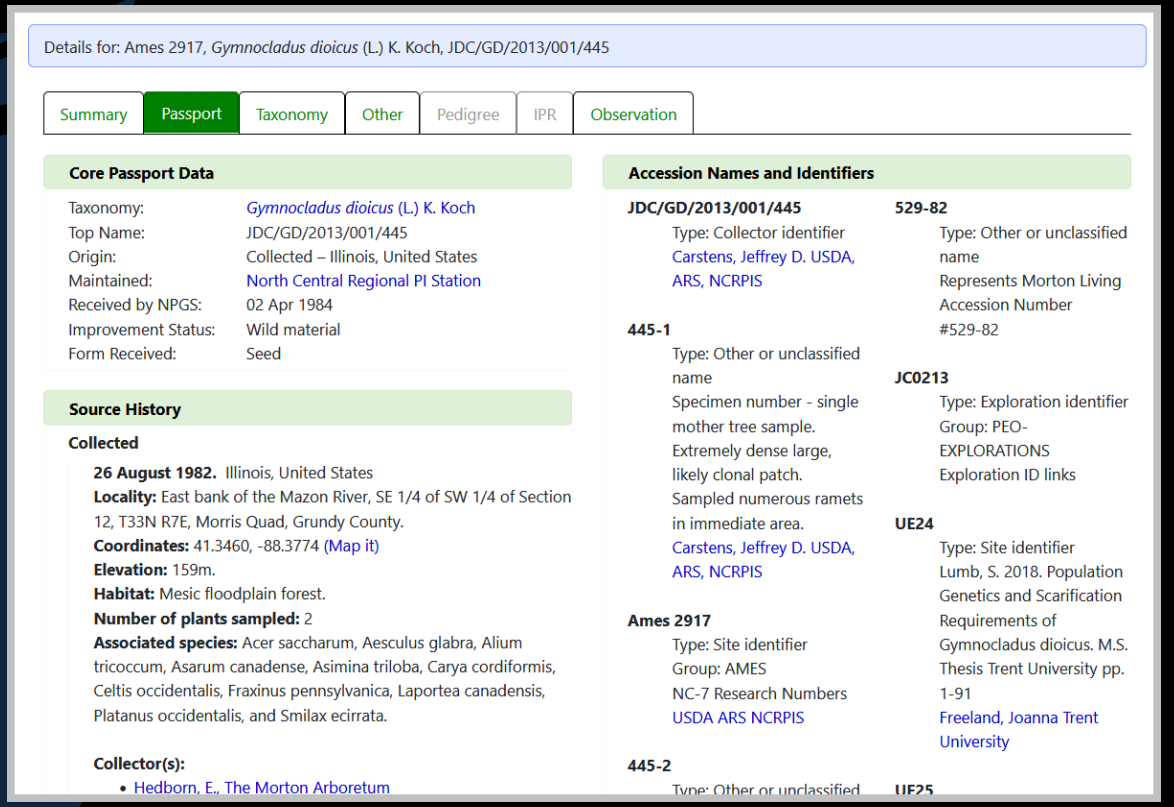


Taxonomy

- Taxonomy Searches
- Hybrid Parentage
- Crop Wild Relatives
- Regulations
- World Economic Plants

User Experience

- Screen changes for accessibility (WCAG Compliance)
- Seasonal availability
- / choice of inventory items
- Availability check at submit
- Detailed FAQs and Help



Contact Us

Please do!

CGC Business

How do I update CGC reports, minutes, Crop Vulnerability Statements, etc. on GRIN?

- Send updates to Gary Kinard, who will post them to the site.

How do I update CGC membership rosters?

- Two options:
  - We can give you permission to update them real-time on the CGC page (Google spreadsheet). This is the preferred method.
  - If it's a minor update, Gary can make it for you.

- Note: Feel free to delete or omit detailed information such as mailing address and phone numbers if you choose. We recognize there is more sensitivity to public access to this information than in prior times. ARS would primarily like to know the names and affiliations of CGC members. As chairs, you might find the rosters a convenient way to maintain an email group for your committee.

We've recently revised the GRIN site, mostly for ease of maintenance and concordance with USDA themes, although the functionality is also better.

Thank you for serving as a CGC Chair.