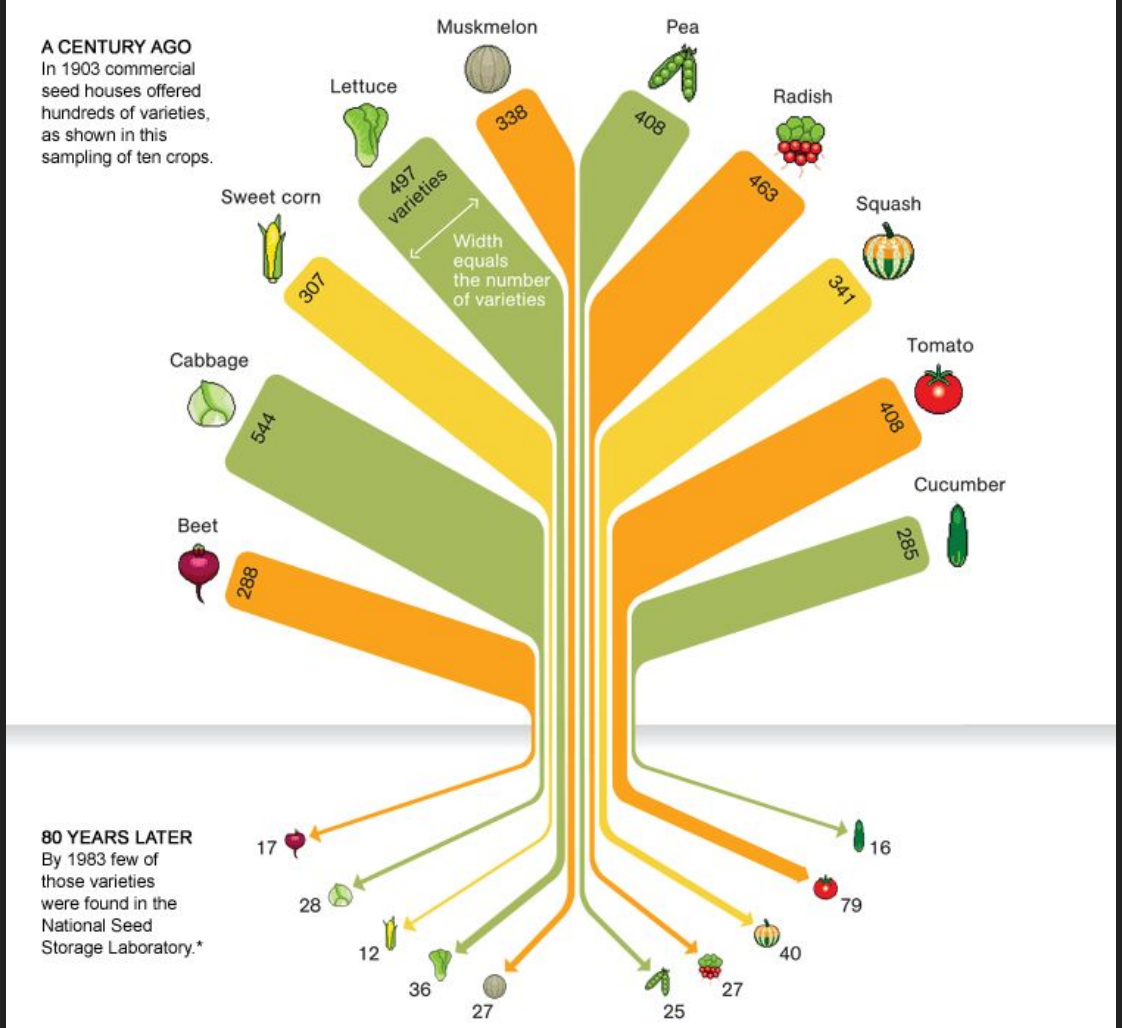
Preserving & Expanding Agrobiodiversity

Nate Kleinman
Co-Founder, Experimental Farm Network

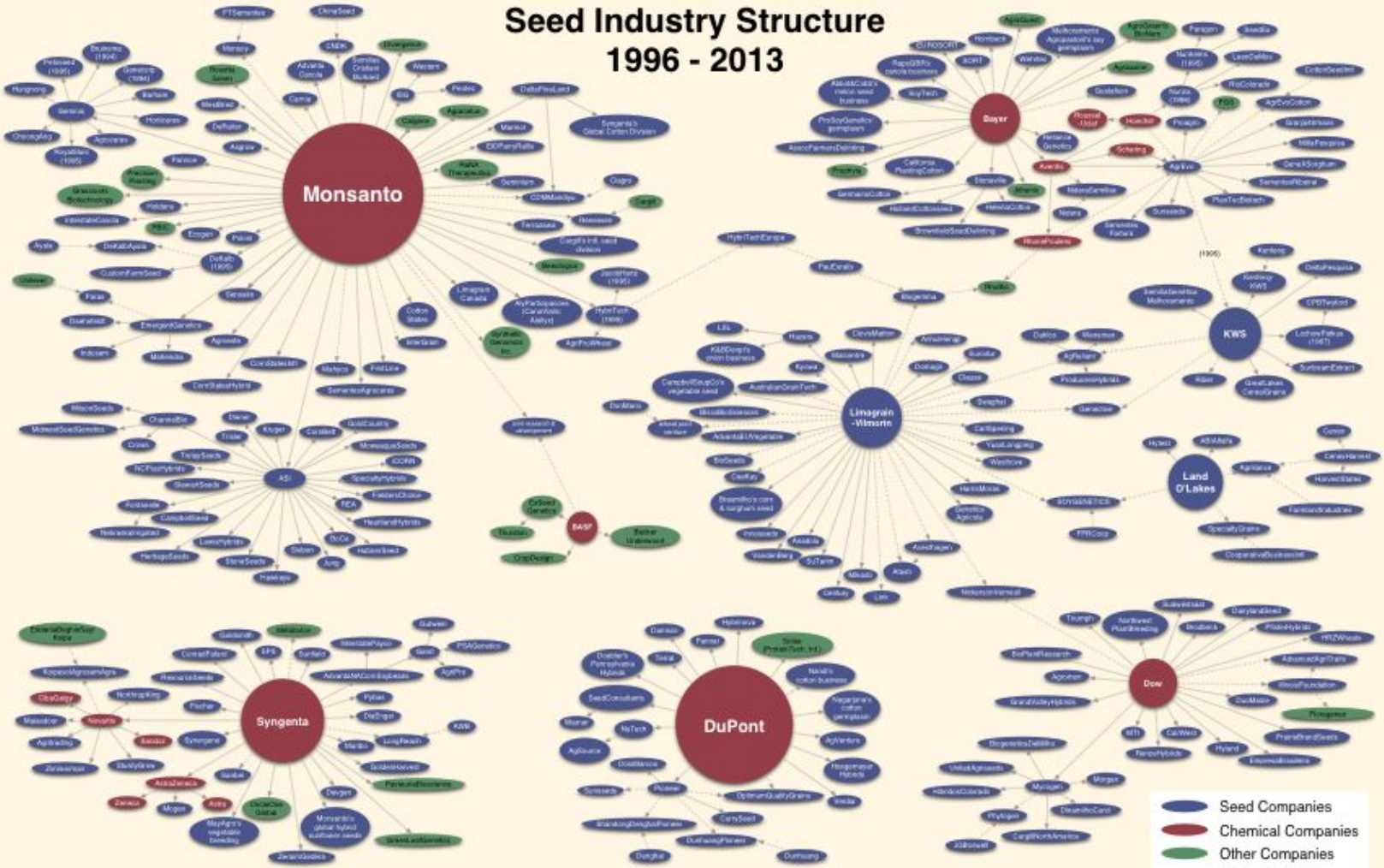


* CHANGED ITS NAME IN 2001 TO THE NATIONAL CENTER FOR GENETIC RESOURCES PRESERVATION

JOHN TOMANIO, NGM STAFF. FOOD ICONS: QUICKHONEY
SOURCE: RURAL ADVANCEMENT FOUNDATION INTERNATIONAL

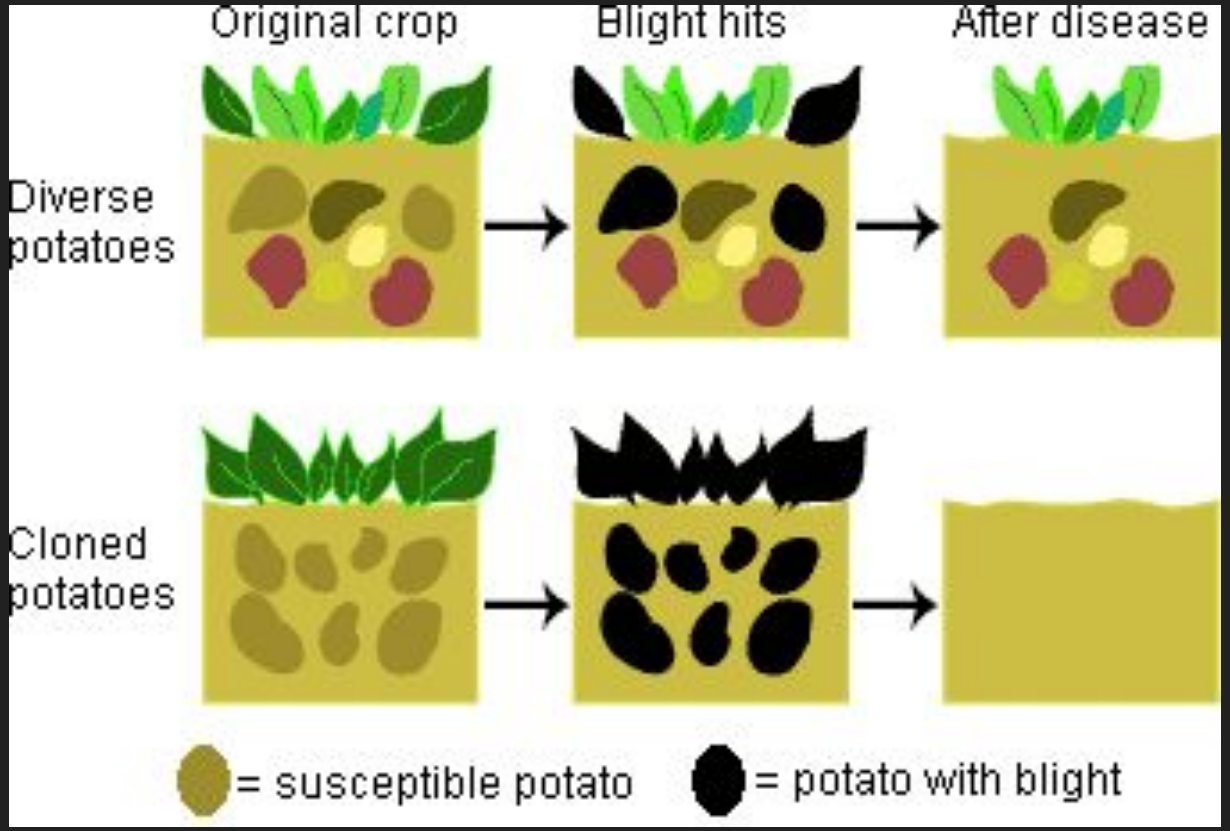

KRAFT
Coca-Cola
PEPSICO
Kellogg's
MARS
Nestlé
P&G
Johnson & Johnson
Unilever

Seed Industry Structure
1996 - 2013



Phil Howard, Associate Professor, Michigan State University
http://www.msu.edu/~howardp

POTATOES



Source: evolution.berkeley.edu

SEED STORIES


Zedoary (Curcuma zedoaria)


Moments
January 20
9:23 AM
Edit

THREATENED COMMUNITIES

LANDRACE AGRICULTURE

What is a “landrace”?

“Dynamic population(s) of a cultivated plant that has historical origin, distinct identity and lacks formal crop improvement, as well as often being genetically diverse, locally adapted and associated with traditional farming systems.”

Camacho Villa TC, Maxted N, Scholten MA and Ford-Lloyd BV (2005) *Defining and identifying crop landraces.* Plant Genetic Resources: Characterization and Utilization 3(3): 373-384.

“A landrace of a seed-propagated crop can be defined as a variable population, which is identifiable and usually has a local name. It lacks ‘formal’ crop improvement, is characterized by a specific adaptation to the environmental conditions of the area of cultivation (tolerant to the biotic and abiotic stresses of that area) and is closely associated with the traditional uses, knowledge, habits, dialects, and celebrations of the people who developed and continue to grow it”.

Negri V (2007) “*Towards a more comprehensive definition of ‘landrace’ than currently published*.” In: Del Greco A, Negri V and Maxted N (compilers) Report of a Task Force on On-farm Conservation and Management, Second Meeting, 19-20 June 2006, Stegelitz, Germany. Bioversity International, Rome, 20 pp.

CIMMYT (International Wheat and Maize Improvement Centre) image showing diversity of Turkish wheat landraces collected in 2012. (A. Morgounov/CIMMYT.)


Ancho
Apachito
Arrocillo
Azul
Blanco blandito
Blando
Bofo
Bolita
Celaya
Chalqueño
Chapalote
Checchi
Chulpi
Chuspilla
Comiteco
Concebideño
Conejo
Confite puneño
Cónico
Cónico norteño
Cristalino de Chihuahua
Coscomatepec
Cuzco Cristalino
Dulce
Dulcillo del Noreste
Elotes Cónicos
Elotes Occidentales
Gordo
Huancavelicano
Huayleno
Kulli
Mixteco
Motozinteco
Mushito de Michoacán
Naltel
Negrito
Olotillo
Olotón
Palomero de Chihuahua
Palomero Toluqueño
Pepitilla
Pisinkalla
Piscorunto
Ratón
Reventador
San Gerónimo
Serrano de Jalisco
Tablilla de Ocho
Tabloncillo
Tabloncillo Perla
Tuimuru
Tuxnor
Vandeño
Zamorano Amarillo
Zapalote Chico
Zapalote Grande

‘Kale Coalition’ from Adaptive Seeds

CROP WILD RELATIVES

Helianthus exilis A. Gray

Helianthus annuus L.

Phaseolus acutifolius A. Gray

Phaseolus vulgaris L.

Aegilops columnaris Zhuk.

Triticum aestivum L.

Tripsacum dactyloides (L.) L.

Zea mays L.

CWR of the U.S. are valuable genetic resources

Salinity tolerance from Pecos sunflower (*Helianthus paradoxus* Heiser)

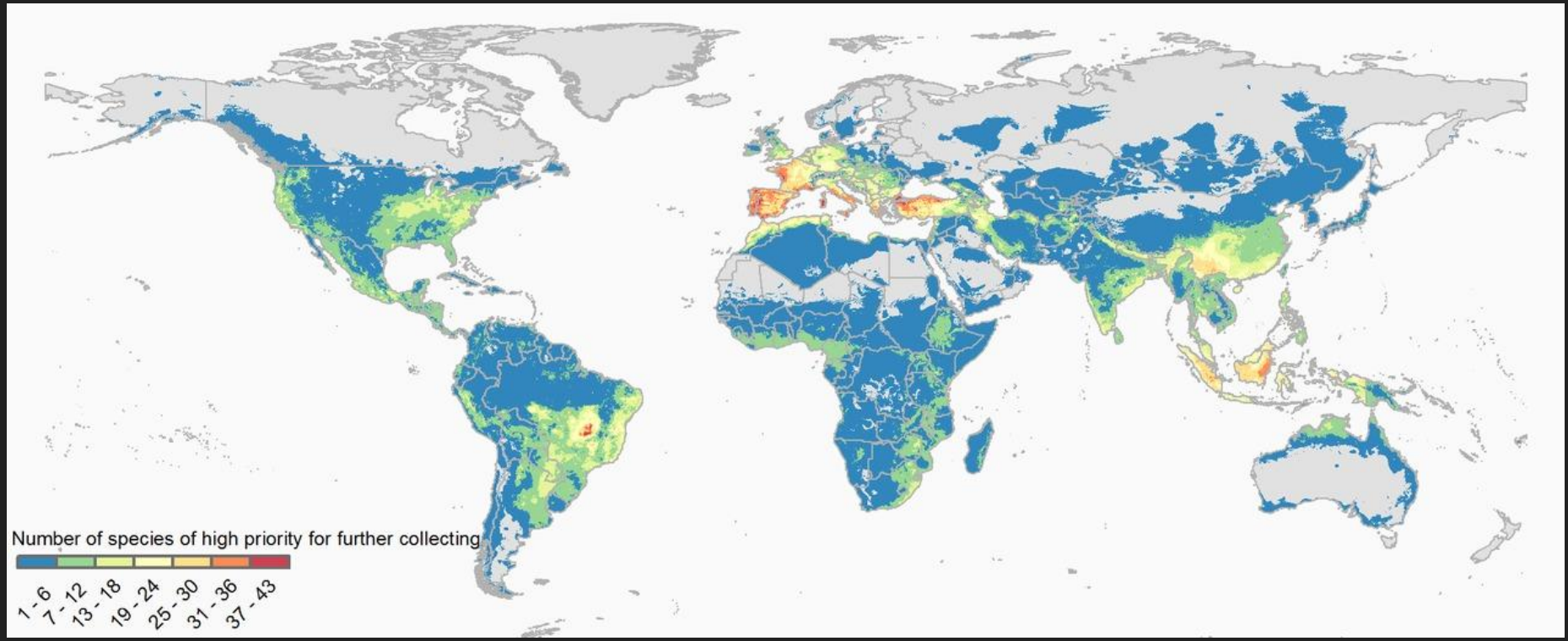
Eastern filbert blight resistance from American filbert (*Corylus americana* Marshall)

Western corn rootworm resistance from eastern gama grass (*Tripsacum dactyloides* (L.) L.)

Rootstock from northern California walnut (*Juglans hindsii* (Jeps.) R. E. Sm.)

Khoury *et al.* (2013) *Crop Science* 53(4): 1496.

How do breeders access these too-often rare plants? http://www.ars-grin.gov



Work associated with the publication Khoury CK, Castañeda-Álvarez NP, Dempewolf H, Eastwood RJ, Guarino L, Jarvis A, and Struik PC (2016). Measuring the state of conservation of crop diversity: a baseline for marking progress toward biodiversity conservation and sustainable development goals. Crop Wild Relatives project policy brief, 6 p. Available at: http://hdl.handle.net/10568/74483 - Colin Khoury

Global hotspots of distributions of crop wild relative species assessed as in urgent need of further collecting to improve their representation in genebanks. Areas colored yellow, orange, and red possess the highest concentrations of under-represented species

ACCESSING GOVERNMENT GERMPLASM


Strawberry


EMERGENCY EXIT ONLY
FIRST AID KIT
HOP


Hazelnuts


Fruits at the NCGR
BECKMAN COULTER
CEQ 8000
STOP
STOP


RUB 1695.001 2015
R. setchuenensis Nanjing 221
5 THS
S01-09
2016
RUB
1695.001
R. setchuenensis Nanjing 221
Rubus setchuenensis
5 THS
China, Guizhou
PI 604616

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- Careers

Germplasm Resources Information Network

Welcome!

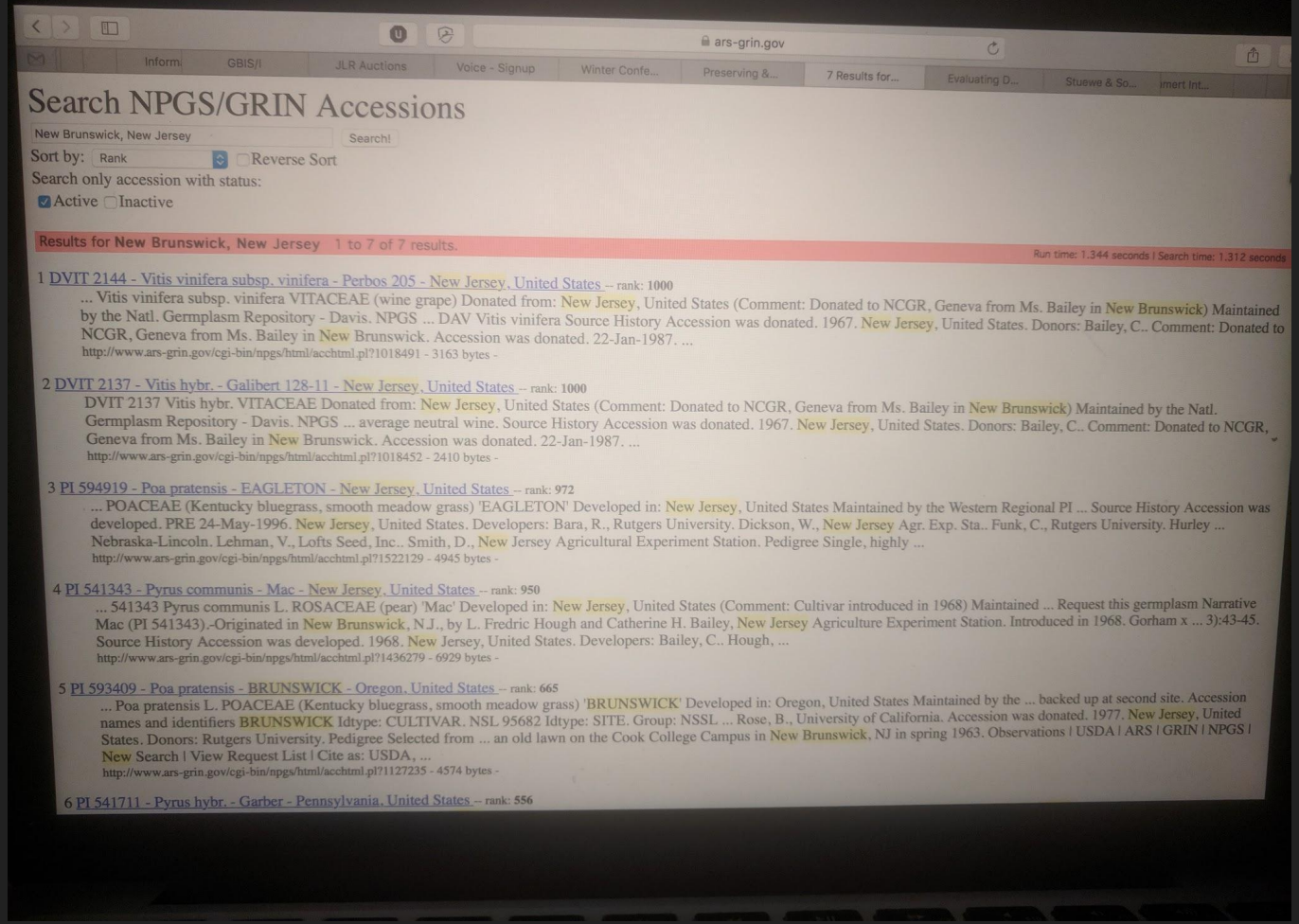
In 1990, the U.S. Congress authorized establishment of a National Genetic Resources Program (NGRP). It is the NGRP's responsibility to: acquire, characterize, preserve, document, and distribute to scientists, germplasm of all lifeforms important for food and agricultural production.

The Germplasm Resources Information Network (GRIN) web server provides germplasm information about plants, animals, microbes and invertebrates. This program is within the U.S. Department of Agriculture's Agricultural Research Service.

The National Genetic Resources Advisory Council (NGRAC) advises and makes recommendations to the Secretary and Director of the NGRP. The NGRAC responds to the important issues of the nation in respect to conserving and utilizing genetic resources for food and agriculture.

Click here. for a summary of the GRIN-Global project that is developing and deploying a new version of the GRIN system for plants.

Updated 28-Nov-2015


ars-grin.gov
Inform
GBIS/I
JLR Auctions
Voice - Signup
Winter Confe...
Preserving &...
7 Results for...
Evaluating D...
Stuewe & So...
mert Int...
Search NPGS/GRIN Accessions
New Brunswick, New Jersey
Search!
Sort by: Rank
Reverse Sort
Search only accession with status:
Active
Inactive
Results for New Brunswick, New Jersey 1 to 7 of 7 results.
Run time: 1.344 seconds | Search time: 1.312 seconds
1 DVIT 2144 - Vitis vinifera subsp. vinifera - Perbos 205 - New Jersey, United States -- rank: 1000
... Vitis vinifera subsp. vinifera VITACEAE (wine grape) Donated from: New Jersey, United States (Comment: Donated to NCGR, Geneva from Ms. Bailey in New Brunswick) Maintained by the Natl. Germplasm Repository - Davis. NPGS ... DAV Vitis vinifera Source History Accession was donated. 1967. New Jersey, United States. Donors: Bailey, C.. Comment: Donated to NCGR, Geneva from Ms. Bailey in New Brunswick. Accession was donated. 22-Jan-1987. ...
http://www.ars-grin.gov/cgi-bin/npgs/html/acchtml.pl?1018491 - 3163 bytes -
2 DVIT 2137 - Vitis hybr. - Galibert 128-11 - New Jersey, United States -- rank: 1000
DVIT 2137 Vitis hybr. VITACEAE Donated from: New Jersey, United States (Comment: Donated to NCGR, Geneva from Ms. Bailey in New Brunswick) Maintained by the Natl. Germplasm Repository - Davis. NPGS ... average neutral wine. Source History Accession was donated. 1967. New Jersey, United States. Donors: Bailey, C.. Comment: Donated to NCGR, Geneva from Ms. Bailey in New Brunswick. Accession was donated. 22-Jan-1987. ...
http://www.ars-grin.gov/cgi-bin/npgs/html/acchtml.pl?1018452 - 2410 bytes -
3 PI 594919 - Poa pratensis - EAGLETON - New Jersey, United States -- rank: 972
... POACEAE (Kentucky bluegrass, smooth meadow grass) 'EAGLETON' Developed in: New Jersey, United States Maintained by the Western Regional PI ... Source History Accession was developed. PRE 24-May-1996. New Jersey, United States. Developers: Bara, R., Rutgers University. Dickson, W., New Jersey Agr. Exp. Sta.. Funk, C., Rutgers University. Hurley ... Nebraska-Lincoln. Lehman, V., Lofts Seed, Inc.. Smith, D., New Jersey Agricultural Experiment Station. Pedigree Single, highly ...
http://www.ars-grin.gov/cgi-bin/npgs/html/acchtml.pl?1522129 - 4945 bytes -
4 PI 541343 - Pyrus communis - Mac - New Jersey, United States -- rank: 950
... 541343 Pyrus communis L. ROSACEAE (pear) 'Mac' Developed in: New Jersey, United States (Comment: Cultivar introduced in 1968) Maintained ... Request this germplasm Narrative Mac (PI 541343).-Originated in New Brunswick, N.J., by L. Fredric Hough and Catherine H. Bailey, New Jersey Agriculture Experiment Station. Introduced in 1968. Gorham x ... 3):43-45. Source History Accession was developed. 1968. New Jersey, United States. Developers: Bailey, C.. Hough, ...
http://www.ars-grin.gov/cgi-bin/npgs/html/acchtml.pl?1436279 - 6929 bytes -
5 PI 593409 - Poa pratensis - BRUNSWICK - Oregon, United States -- rank: 665
... Poa pratensis L. POACEAE (Kentucky bluegrass, smooth meadow grass) 'BRUNSWICK' Developed in: Oregon, United States Maintained by the ... backed up at second site. Accession names and identifiers BRUNSWICK Idtype: CULTIVAR. NSL 95682 Idtype: SITE. Group: NSSL ... Rose, B., University of California. Accession was donated. 1977. New Jersey, United States. Donors: Rutgers University. Pedigree Selected from ... an old lawn on the Cook College Campus in New Brunswick, NJ in spring 1963. Observations | USDA | ARS | GRIN | NPGS | New Search | View Request List | Cite as: USDA, ...
http://www.ars-grin.gov/cgi-bin/npgs/html/acchtml.pl?1127235 - 4574 bytes -
6 PI 541711 - Pyrus hybr. - Garber - Pennsylvania, United States -- rank: 556

PI 593409

Poa pratensis L.

'BRUNSWICK'

Status:	Available
Amt Distributed:	200 count
Type Distributed:	Seed

Add to My Favorites

Add to Order

Developed from:	Oregon United States
Maintained by:	Western Regional PI Station
NPGS received:	01-Feb-1977
PI assigned:	1996
Inventory volume:	205
Backup location:	National Center for Genetic Resources Preservation
Life form:	Perennial
Pedigree:	Selected from an old lawn on the Cook College Campus in New Brunswick, NJ in spring 1963.
Improvement status:	Cultivar
Reproductive uniformity:	
Form received:	Seed

Accession names and identifiers

BRUNSWICK	
Type:	Cultivar name
NSL 95682	
Type:	Site identifier
Group:	NSSL
Comment:	National Seed Storage Laboratory (USA)
Cooperator:	USDA, ARS, NCGRP
NJE P-57	
Type:	Other or unclassified name
Comment:	NSSL
Plant Patent 3223	

Plant Patent 3223

Type: Other or unclassified name

Group: PREV

Comment: Previously patented accessions

Intellectual Property Rights

Crop Science Registration

Identifier: CV-15 Crop: BLUEGRASS . Date Issued: 01 Sep 1978.

- Reference: R.H. Bailey, B.L. Rose, W.A. Meyer, K.J. McVeigh, C.R. Funk. 1978. .. Crop Sci. (Madison) 18(5):912 Comment: CV-15

U.S. Plant patent

Identifier: Plant Patent 3223 Crop: 88.Herbaceous Ornamental Foliage Plants . Date Issued: 27 Jun 1972.

Additional Availability Information

Seed available for distribution is a limited resource. The quantity of seed distributed is hopefully sufficient to conduct the intended research. If additional seed is required, the recipient is urged to grow and reproduce the seed. Repeated requests for seed of the same accession will not be honored.

Narrative

High degree of apomictic reproduction. Leafy, turf-type, medium green color, medium texture and moderately slow rate of vertical growth. Exceptionally aggressive, attractive, uniform, relatively weed-free, persistent. Excellent resistance to stripe smut disease. Moderately good resistance to leaf spot and crown rot disease. Moderately susceptible to powdery mildew and leaf rust. Adapted to most regions where Kentucky bluegrass is suited.

Source History

- Accession was donated. 1977. New Jersey United States

  Donors:
  1. Rutgers University

- Accession was developed. PRE 1977. Oregon United States

  Developers:
  1. McVeigh, Kevin J., Willamette Valley Plant Breeders,Inc.
  2. Rose, Barbara L., University of California
  3. Meyer, W., Pure Seed Testing, Inc.
  4. Bailey, R.H., R.H. Bailey Seed Inc.
  5. Funk, C.R., Hubbard Seed and Supply Company

Pedigree

Narrative

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Pedigree

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Observations

Click link below to see detailed observation data:
Detailed Accession Observation Page

Characterization and Evaluation Data:

Category	COMMENT	MORPHOLOGY
Descriptor	General Type	100 Seed weight in grams
Value	T - Turf	0.035
Study/Environment	GRASS.TYPE.POA.PRATENSIS	GRASS.SEEDWEIGHT.WRPIS

Taxon: *Poa pratensis* L.

Genus:	*Poa*
Family:	*Poaceae* (alt.*Gramineae*)
Subfamily:	*Pooideae*
Tribe:	*Poeae*
Subtribe:	*Poinae*
Nomen number:	28996
Place of publication:	Sp. pl. 1:67. 1753, nom. cons.
Link to protologue:	
Comment:	conserved (nom. cons.) with a conserved type (Melbourne ICN Art. 14.9 & App. IV)
Name Verified on:	13-May-1992 by ARS Systematic Botanists. **Last Changed:** 21-May-2013
Species priority site is:	Western Regional PI Station (W6)
Accessions:	821 in National Plant Germplasm System (GoogleMap)

Other conspecific taxa:

- *Poa pratensis* subsp. *alpigena* (1 accessions)
- *Poa pratensis* subsp. *angustifolia* (89 accessions)
- *Poa pratensis* subsp. *pratensis* (9 accessions)

Common names:

- **English meadow grass** (Source: Aust Pl Common Names) - English
- **Kentucky bluegrass** (Source: World Econ Pl) - English
- **smooth meadow grass** (Source: World Econ Pl) - English
- **pâturin des prés** (Source: Dict Rehm) - French
- **Wiesenrispengras** (Source: Dict Rehm) - German
- **erba fienarola** (Source: Mult Glossary Crops) - Italian
- **nagahagusa** (Source: F JapanOhwi) - Japanese Rōmaji
- **capim-do-campo** (Source: Dict Rehm) - Portuguese
- **grama de prados** (Source: Dict Rehm) - Spanish
- **poa común** (Source: Dict Rehm) - Spanish
- **zacate poa** (Source: Dict Rehm) - Spanish
- **ängsgröe** (Source: Kulturvaxtdatabas) - Swedish
- **cao di zao shu he** (Source: F ChinaEng) - Transcribed Chinese
- **wangpoapul** (Source: F Korea) - Transcribed Korean
- **mjatlik lugovoj** (Source: Mansf Ency) - Transliterated Russian

- **cao di zao shu he** (Source: F ChinaEng) - Transcribed Chinese
- **wangpoapul** (Source: F Korea) - Transcribed Korean
- **mjatlik lugovoj** (Source: Mansf Ency) - Transliterated Russian

Economic Importance:

- **Environmental:** erosion control (as cover crop fide Cover Crop Database)
- **Environmental:** lawn/turf (for turf fide Grass VarUSA)
- **Environmental:** soil improver (as cover crop fide Cover Crop Database)
- **Animal food:** fodder (fide F Iraq; F Pak)
- **Animal food:** forage (fide F Iraq; F Pak)
- **Weed:** potential seed contaminant (fide Weed CIBA; Intermt F; Invasive Pl Spec)

Distributional Range:

Native

- **Africa**
  - *Macaronesia*: **Portugal** Madeira Islands; **Spain** Canary Islands
  - *Northern Africa*: **Algeria** ; **Libya** ; **Morocco**
- **Asia-Temperate**
  - *Arabian Peninsula*: **Saudi Arabia**
  - *Caucasus*: **Armenia** ; **Azerbaijan** ; **Georgia**
  - *Middle Asia*: **Kazakhstan** ; **Kyrgyzstan** ; **Tajikistan** ; **Turkmenistan** ; **Uzbekistan**
  - *Mongolia*: **Mongolia**
  - *Russian Far East*: **Russian Federation-Far East** Far East
  - *Siberia*: **Russian Federation-Eastern Siberia** Eastern Siberia; **Russian Federation-Western Siberia** Western Siberia
  - *Western Asia*: **Afghanistan** ; **Cyprus** ; **Iran** ; **Iraq** ; **Israel** ; **Jordan** ; **Lebanon** ; **Syria** ; **Turkey**
- **Asia-Tropical**
  - *Indian Subcontinent*: **India** ; **Pakistan**
- **Europe**
  - *Eastern Europe*: **Belarus** ; **Estonia** ; **Latvia** ; **Lithuania** ; **Moldova** ; **Russian Federation-European part** European part; **Ukraine**
  - *Middle Europe*: **Austria** ; **Belgium** ; **Czech Republic** ; **Germany** ; **Hungary** ; **Netherlands** ; **Poland** ; **Slovakia** ; **Switzerland**
  - *Northern Europe*: **Denmark** ; **Finland** ; **Ireland** ; **Norway** ; **Svalbard and Jan Mayen** ; **Sweden** ; **United Kingdom**
  - *Southeastern Europe*: **Albania** ; **Bulgaria** ; **Croatia** ; **Greece** ; **Italy** ; **Romania** ; **Serbia** ; **Slovenia**
  - *Southwestern Europe*: **France** ; **Portugal** ; **Spain**
- **Northern America**
  - *Eastern Canada*: **Canada** New Brunswick, Newfoundland, Nova Scotia, Ontario, Quebec
  - *North-Central U.S.A.*: **United States** Illinois, Iowa, Minnesota, Missouri, Nebraska, North Dakota, South Dakota, Wisconsin

Rhode Island, Vermont, West Virginia, Maine, Massachusetts, Michigan, New Hampshire, New Jersey, New York, Ohio, Pennsylvania, Wisconsin
- *Northwestern U.S.A.*: **United States** Idaho, Montana, Oregon, Washington
- *Southeastern U.S.A.*: **United States** Delaware, Kentucky, Maryland, North Carolina, Tennessee, Virginia
- *Southwestern U.S.A.*: **United States** Arizona, California, Nevada, Utah
- *Subarctic America*: **Canada** Northwest Territory, Yukon Territory; **United States** Alaska
- *Western Canada*: **Canada** Alberta, British Columbia, Manitoba, Saskatchewan

Naturalized

- **Africa**
  - *Macaronesia*: **Portugal** Azores
  - *Southern Africa*: **Lesotho** ; **South Africa**
- **Australasia**
  - *Australia*: **Australia**
  - *New Zealand*: **New Zealand**
- **Northern America**
  - **Mexico**
- **Pacific**
  - *North-Central Pacific*: **United States** Hawaii
- **Southern America**
  - *Southern South America*: **Argentina** ; **Chile**
  - *Western South America*: **Colombia** ; **Peru**

Cultivated

- **Asia-Temperate**
  - *China*: **China**
- **Europe**
  - **Europe**
- **Northern America**
  - ~~United States~~

- Northern America
  - United States

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- **Sell, P. & G. Murrell** Flora of Great Britain and Ireland. 1996- (F GB life)
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- **Tovar, O.** 1993. Las gramíneas (Poaceae) del Perú (Ruizia) 13:135.
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- **Tzvelev, N. N.** Zlaki SSSR. 1976 (Grass USSR)
- **Ugarte, E. et al.** 2011. Vascular alien flora, Chile (Check List) 7:365-380.
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- **Villaseñor, J. L. & F. J. Espinoza-Garcia** 2004. The alien flowering plants of Mexico Diversity & Distrib. 10:113-123.
- **Voss, E.** Michigan flora. 1972- (F Mich)
- **Wagner, W. L. et al.** Flora of the Hawaiian Islands (on-line resource). (F Hawaii Online)
- **Weber, E.** Invasive plant species of the world: a reference guide to environmental weeds. 2003 (Invasive Pl Spec)
- **Wu Zheng-yi & P. H. Raven et al., eds.** Flora of China (English edition). 1994- (F ChinaEng)
- **Zelnik, U. et al.** 2008. Revegetation of motorway slopes using different seed mixtures Restorat. Ecol. 18:449-456.

Check other web resources for *Poa pratensis* L. :

- **Flora Europaea**: Database of European Plants (ESFEDS)
- **PLANTS**: USDA-NRCS Database of Plants of the United States and its Territories
- **BONAP** *North American Plant Atlas* of the Biota of North America Program:
- **Flora del Conosur**: Catálogo de las Plantas Vasculares del Conosur
- **Flora of China**: Online version from Harvard University
- **AVH**: Australia's Virtual Herbarium
- **SIBIS**: South African National Biodiversity Institute's (SANBI) Integrated Biodiversity System
- **TROPICOS**: Nomenclatural and Specimen Database of the Missouri Botanical Garden
- **CNWG**: Catalogue of New World Grasses Searchable Database
- **Grass Manual on the Web**: Manual of Grasses for North America North of Mexico
- **World Grass Species-Descriptions**: Morphological species description from Royal Botanic Gardens, Kew
- **Mansfeld**: Mansfeld's World Databas of Agricultural and Horticultural Crops
- **ePIC**: Electronic Plant Information Centre of Royal Botanic Gardens, Kew
- **AGRICOLA**: Article Citation Database or NAL Catalog of USDA's National Agricultural Library
- **Entrez**: NCBI's search engine for PubMed citations, GenBank sequences, etc.

Images:

- **Florets**: U.S. National Seed Herbarium image

Image for: Florets
Taken on: 29-Jan-2007
Comment: U.S. National Seed Herbarium image\; (PI 126518) collected by G. Kettermann from Germany [photographed by Steve Hurst*]

PI 541343

Pyrus communis L.

'Mac'

Status: Available
Amt Distributed: 2 count
Type Distributed: Scion

Add to My Favorites

Add to Order

Developed from:	New Jersey United States
Maintained by:	Natl. Germplasm Repository - Corvallis
NPGS received:	01-Feb-1983
PI assigned:	1990
Inventory volume:	199
Backup location:	
Life form:	Tree
Pedigree:	Gorham x NJ 1
Improvement status:	Cultivar
Reproductive uniformity:	
Form received:	Plant

Accession names and identifiers

Mac	
Type:	Cultivar name
EUROPEAN CULTIVAR	
Type:	Site identifier
Group:	CROPTYPE
CPYR 1111	
Type:	Other or unclassified name
Group:	LOCAL
Comment:	Corvallis local number

Web Availability Note

Dormant scion orders accepted September 1 to January 25. Please contact curator for other germplasm forms.

Web Availability Note

Dormant scion orders accepted September 1 to January 25. Please contact curator for other germplasm forms.

Narrative

Mac (PI 541343).-Originated in New Brunswick, N.J., by L. Fredric Hough and Catherine H. Bailey, New Jersey Agriculture Experiment Station. Introduced in 1968. Gorham x NJ 1. Cross made in 1950; first fruited in 1958; selected in 1958; tested as NJ 6. Fruit: size medium; acute-pyriform; skin straw yellow when tree ripened; flesh creamy white, texture fine, nearly buttery, no indication of astringency, quality good, comparable to Gorham; ripens with Gorham or 2 weeks after Bartlett; as resistant to fire blight as Kieffer, the best quality blight resistant variety selected so far. Tree: vigor below medium; central leader with open branching; not as productive as Lee or Star, pollen good, compatible with other varieties. --Brooks and Olmo Register of Fruit and Nut Varieties.

Mac, tested as NJ 6, is from the cross of Gorhan x NJ 1. (NJ 1 was a fire blight resistant seedling identified by Professor M.A. Blake in the 1930's and was probably a hybrid between P. pyrifolia x P. communis). Mac first fruited in 1958. The fruit is acute-pyriform and only medium in size. It ripens to a straw-yellow on the tree. It ripens about with Gorhan, or two weeks after Bartlett. The flesh of Mac is creamy white and of a fine texture that is nearly buttery. The fruit quality is quite comparable to Gorham at its best. There never has been any indication of astringency in the skin of Mac as their may be with Gorham. The original tree is below medium in vigor. It has a central leader with open branching. It has good pollen. On the basis of Mac's performance both as a male and as a female parent in the hybridization program, it will be compatible with other varieties. Mac has not been as consistently fruitful as Star or Lee. Again, the original tree of Mac is not growing in a favorable site in the seedling orchard. The blight resistance has not been as thoroughly tested as that of Star and Lee; but it is apparently as resistant as Kieffer. Certainly, it is the best quality blight resistant pear variety that has been selected so far... --L.F. Hough and C.H. Baily. 1968. Fruit Varieties and Horticlutural Digest 22(3):43-45.

Source History

- Accession was developed. 1968. New Jersey United States

  Developers:
  1. Hough, L.F., Rutgers University
  2. Bailey, Catherine H.,

  Comment: Cultivar introduced in 1968

- Accession was donated. 01-Feb-1983. West Virginia United States

  Donors:
  1. Bell, Richard L., USDA, ARS

  Comment: Received from OARDC, Wooster, OH to Kearneysville, WV to NCGR-Corvallis.

Pedigree

Gorham x NJ 1

Pathogen Test Information

Test	Material	Tested	Result	Needed	Started	Completed	Comments

Developers:

1. Hough, L.F., Rutgers University
2. Bailey, Catherine H.,

Comment: Cultivar introduced in 1968

- Accession was donated. 01-Feb-1983. West Virginia United States

Donors:

1. Bell, Richard L., USDA, ARS

Comment: Received from OARDC, Wooster, OH to Kearneysville, WV to NCGR-Corvallis.

Pedigree

Gorham x NJ 1

Pathogen Test Information

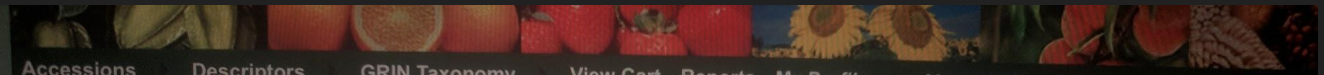
Test	Material	Tested	Result	Needed	Started	Completed	Comments
Bioassay							
P. communis 'Bosc', graft inoculation	CPYR 1111 .001 PL		NEGATIVE				
P. communis 'Nouveau Poiteau'	CPYR 1111 .004 PL		NEGATIVE				
Pyronia veitchii			NEGATIVE				

Observations

Click link below to see detailed observation data:
Detailed Accession Observation Page

Characterization and Evaluation Data:

Category	CYTOLOGIC	DISEASE				
Descriptor	**PLOIDY LEVEL**	**FRUIT_SCAB**		**LEAF_SCAB**	**PSEUDOMONAS**	**RUS**
Value	2x - diploid	1 - NO DAMAGE	7 - (1 = NO DAMAGE, 9 = SEVERE DAMAGE)	1 - NO DAMAGE	3 - (1 = NO DAMAGE, 9 = SEVERE DAMAGE)	1 - NO DAMAC
Study/Environment	PYRUS.PLOIDY.2013	PYRUS.CORVALLIS.1987	PYRUS.CORVALLIS.1988	PYRUS.CORVALLIS.1987	PYRUS.CORVALLIS.1988	PYRUS.CORV



Observations for accession PI 541343

Characterization and Evaluation Data:

Descriptor	Value	Study/Environment	Inventory ID
CYTOLOGIC Descriptors			
PLOIDY LEVEL	2x - diploid	PYRUS.PLOIDY.2013	CPYR 1111 .004 PL
DISEASE Descriptors			
FRUIT_SCAB	1 - NO DAMAGE	PYRUS.CORVALLIS.1987	
FRUIT_SCAB	7 - (1 = NO DAMAGE, 9 = SEVERE DAMAGE)	PYRUS.CORVALLIS.1988	
LEAF_SCAB	1 - NO DAMAGE	PYRUS.CORVALLIS.1987	
PSEUDOMONAS	3 - (1 = NO DAMAGE, 9 = SEVERE DAMAGE)	PYRUS.CORVALLIS.1988	
RUST	1 - NO DAMAGE	PYRUS.CORVALLIS.1987	
INSECT Descriptors			
BLISTER_MITES	1 - NO DAMAGE	PYRUS.CORVALLIS.1987	
MORPHOLOGY Descriptors			
BLOOM_DENSITY	3 - (1 = LOW, 9 = HIGH)	PYRUS.CORVALLIS.1987	
BLOOM_DENSITY	8 - (1 = LOW, 9 = HIGH)	PYRUS.CORVALLIS.1988	
CALYX	P - PERSISTANT	PYRUS.CORVALLIS.STD	
CALYX_BASIN	N - NONE	PYRUS.CORVALLIS.STD	
CARPEL_NUMBER	5	PYRUS.CORVALLIS.STD	
CAVITY	N - NONE	PYRUS.CORVALLIS.STD	
CORE_BREAKDOWN	1 - NONE	PYRUS.CORVALLIS.STD	
DOTS	O - OBSCURE	PYRUS.CORVALLIS.STD	
FLAVOR	S - SWEET	PYRUS.CORVALLIS.STD	
FLESH_COLOR	Y - YELLOW	PYRUS.CORVALLIS.STD	
FLESH_TEXTURE	5 - (1 = FINE, 9 = COARSE)	PYRUS.CORVALLIS.STD	
FRUITCORE	D - DISTANT	PYRUS.CORVALLIS.STD	
GRIT	5 - (1 = NO STONE CELLS, 9 = MANY STONE CELLS)	PYRUS.CORVALLIS.STD	
GRIT_SIZE	M - MEDIUM	PYRUS.CORVALLIS.STD	
GROUND_COLOR	Y - YELLOW	PYRUS.CORVALLIS.STD	
LENTICEL_SIZE	1 - SMALL	PYRUS.CORVALLIS.STD	
LENTICELS	7 - (1 = FEW, 9 = MANY)	PYRUS.CORVALLIS.STD	
OVER_COLOR	N - NONE	PYRUS.CORVALLIS.STD	
OXIDATION	1 - NONE		

FRUITCORE	D - DISTANT	PYRUS.CORVALLIS.STD
GRIT	5 - (1 = NO STONE CELLS, 9 = MANY STONE CELLS)	PYRUS.CORVALLIS.STD
GRIT_SIZE	M - MEDIUM	PYRUS.CORVALLIS.STD
GROUND_COLOR	Y - YELLOW	PYRUS.CORVALLIS.STD
LENTICEL_SIZE	1 - SMALL	PYRUS.CORVALLIS.STD
LENTICELS	7 - (1 = FEW, 9 = MANY)	PYRUS.CORVALLIS.STD
OVER_COLOR	N - NONE	PYRUS.CORVALLIS.STD
OXIDATION	1 - NONE	PYRUS.CORVALLIS.STD
PEDICEL_ATTACHMENT	L - LEVEL	PYRUS.CORVALLIS.STD
QUALITY	5 - (1 = POOR, 9 = EXCELLENT)	PYRUS.CORVALLIS.STD
RUSSET	5 - (1 = NONE, 9 = COMPLETELY RUSSETED)	PYRUS.CORVALLIS.STD
RUSSET_LOCATION	C - CALYX END	PYRUS.CORVALLIS.STD
RUSSET_LOCATION	P - PEDICEL END	PYRUS.CORVALLIS.STD
TEXTURE_TYPE	B - BUTTERY	PYRUS.CORVALLIS.STD
PHENOLOGY Descriptors		
FIRST_BLOOM	94	PYRUS.CORVALLIS.1986
FIRST_BLOOM	94	PYRUS.CORVALLIS.1988
FIRST_BLOOM	96	PYRUS.CORVALLIS.1988
FIRST_BLOOM	103	PYRUS.CORVALLIS.1989
FIRST_BLOOM	92	PYRUS.CORVALLIS.1990
FULL_BLOOM	96	PYRUS.CORVALLIS.1987
FULL_BLOOM	103	PYRUS.CORVALLIS.1988
FULL_BLOOM	108	PYRUS.CORVALLIS.1989
FULL_BLOOM	96	PYRUS.CORVALLIS.1990
FULL_RIPE	240	PYRUS.CORVALLIS.1987
FULL_RIPE	248	PYRUS.CORVALLIS.1990
LAST_BLOOM	105	PYRUS.CORVALLIS.1987
LAST_BLOOM	111	PYRUS.CORVALLIS.1988
LAST_BLOOM	116	PYRUS.CORVALLIS.1989
LAST_BLOOM	100	PYRUS.CORVALLIS.1990
PRODUCTION Descriptors		
YIELD	3 - LOW	PYRUS.CORVALLIS.1987

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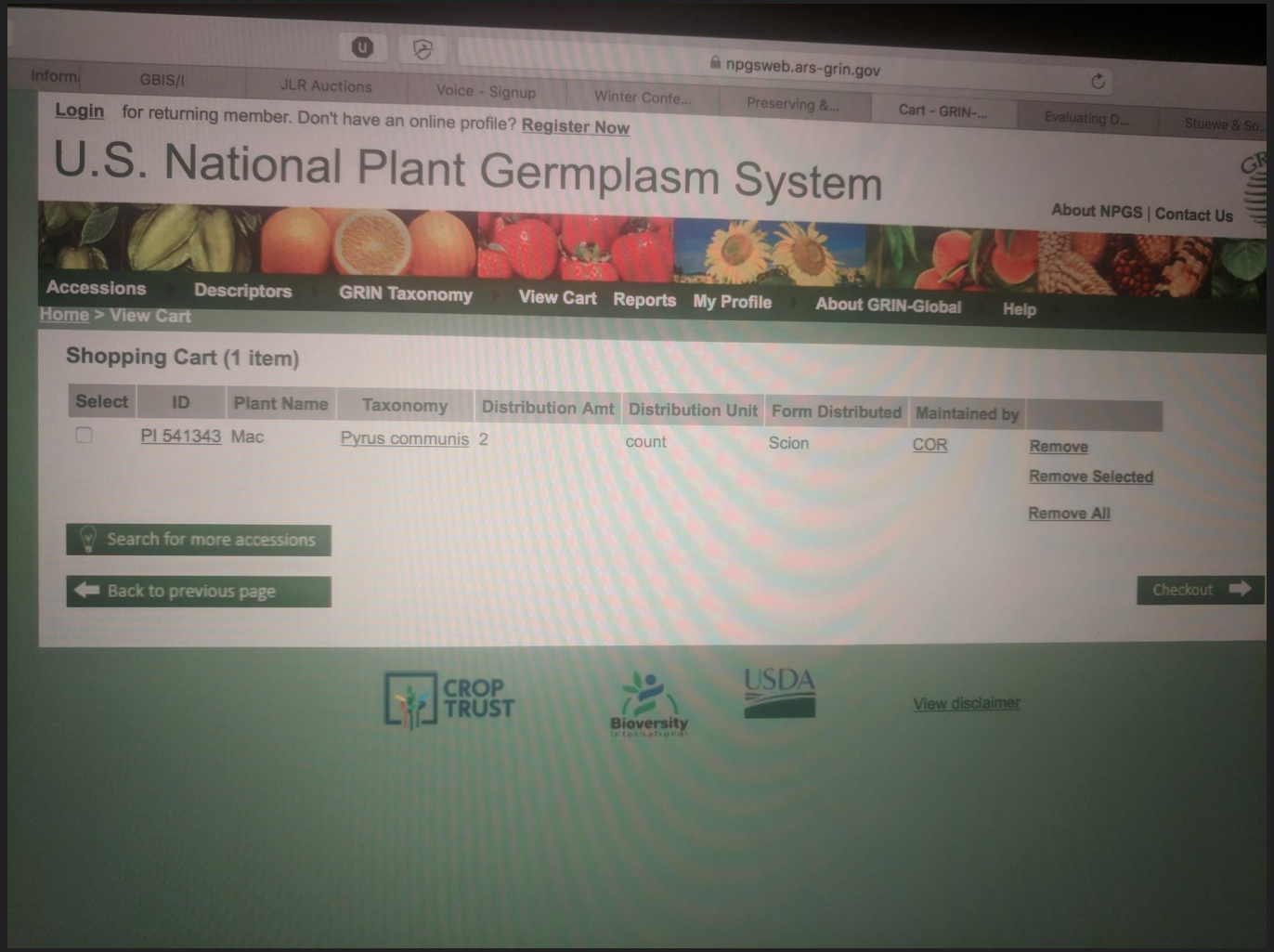
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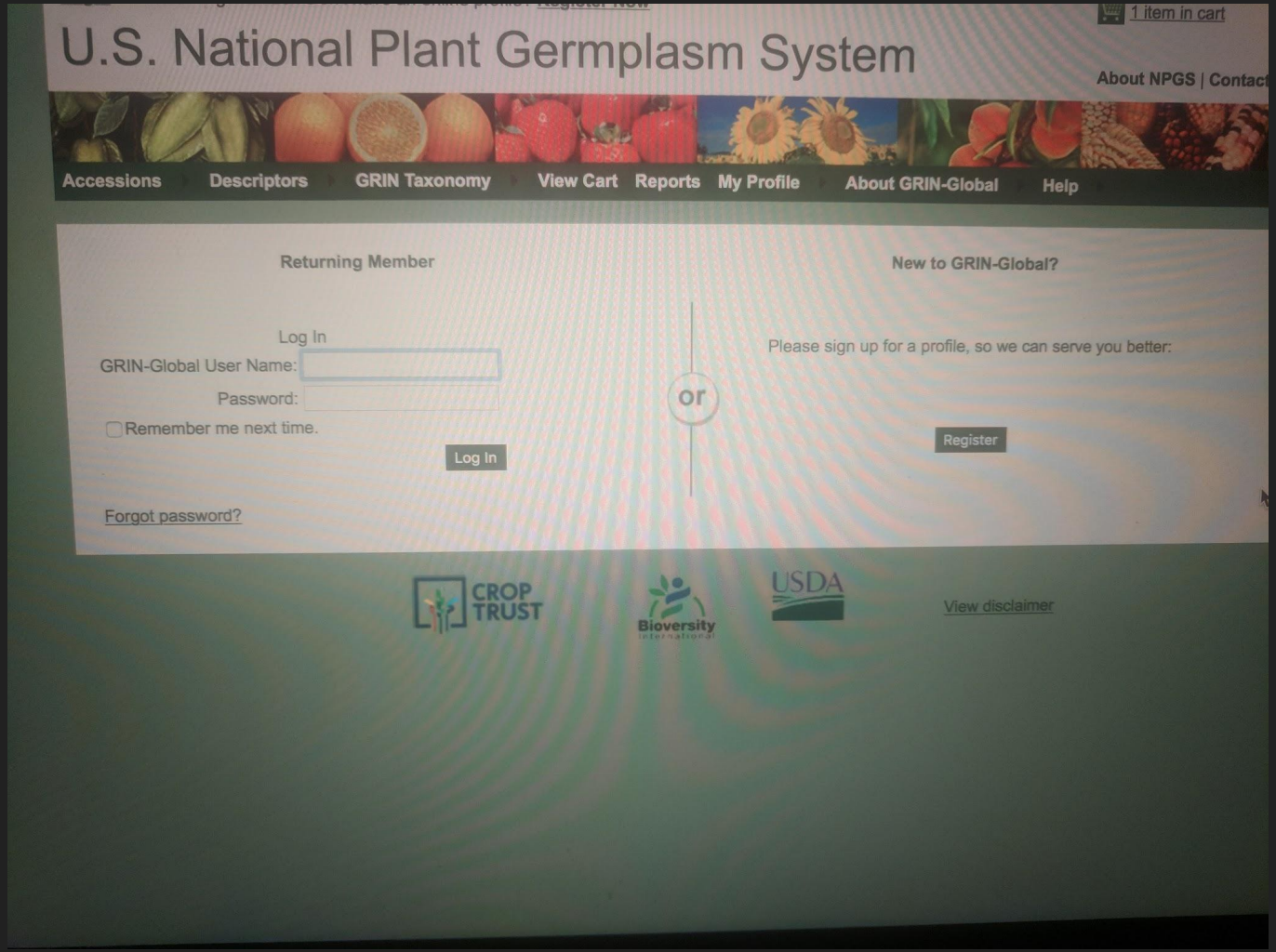
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PI 303658

Sorghum bicolor (L.) Moench subsp. bicolor

Status:	Available
Amt Distributed:	100 count
Type Distributed:	Seed

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Add to Order

Collected from:	Southern Sudan
Maintained by:	Plant Genetic Resources Conservation Unit, Griffin, GA
NPGS received:	11-Jan-1965
PI assigned:	1965
Inventory volume:	173
Backup location:	National Center for Genetic Resources Preservation
Life form:	
Pedigree:	
Improvement status:	
Reproductive uniformity:	
Form received:	

View original Plant Inventory data (PDF format)

Accession names and identifiers

Nerum Boer	
Type:	Unverified name
MN 4607	
Type:	Institute identifier
Group:	MN
Comment:	Sweet Sorghum MN numbers from the Meridian, Mississippi collection.

Type:	Unverified name

MN 4607

Type:	Institute identifier
Group:	MN
Comment:	Sweet Sorghum MN numbers from the Meridian, Mississippi collection.

Annotations

Action	Date	By	Old Name	New Name
NOM-CHANGE	06 Mar 2008		Sorghum bicolor	Sorghum bicolor subsp. bicolor

Action	Date	By	Old Name	New Name
RECEIVED	03 Feb 2006		Sorghum dochna	Sorghum bicolor

Source History

- Accession was collected. Southern Sudan
  Locality: Malakal
- Accession was donated. 11-Jan-1965.

  Donors:
  1. Foreign Relations Department

Observations

Click link below to see detailed observation data:
Detailed Accession Observation Page

Characterization and Evaluation Data:

Category	CHEMICAL			COMMENT	DISEASE	
Descriptor	**Brix**		**Sucrose**	**Desirability Rating**	**Anthracnose**	I
Value	16.22	16.83	9.57	3	1.0 - Resistant	1.0 - Res
Study/Environment	SORGHUM.BRIX	SWEET.SORGHUM.GENETIC.DIVERSITY.2009	SORGHUM.SUCROSE	SORGHUM.STC2006	SORGHUM.STC2006	SORGHU

Observations for accession PI 303658

Characterization and Evaluation Data:

Descriptor	Value	Study/Environment	Inventory ID
CHEMICAL Descriptors			
Brix	16.22	SORGHUM.BRIX	
Brix	16.83	SWEET.SORGHUM.GENETIC.DIVERSITY.2009	
Sucrose	9.57	SORGHUM.SUCROSE	
COMMENT Descriptors			
Desirability Rating	3	SORGHUM.STC2006	PI 303658 02 SD
DISEASE Descriptors			
Anthracnose	1.0 - Resistant	SORGHUM.STC2006	PI 303658 02 SD
Rust	1.0 - Resistant	SORGHUM.STC2006	PI 303658 02 SD
GROWTH Descriptors			
Height Uniformity	2.0 - (1.0 = Very uniform, 5.0 = Not uniform)	SORGHUM.STC2006	PI 303658 02 SD
Plant Height	84	SORGHUM.STC2006	PI 303658 02 SD
Plant Height	275	SWEET.SORGHUM.GENETIC.DIVERSITY.2009	
Vigor	5 - Average	SORGHUM.STC2006	PI 303658 02 SD
INSECT Descriptors			
Fall Army Worm	9 - Susceptible	SORGHUM.FAW.1993	
MORPHOLOGY Descriptors			
Basil Tiller	1	SORGHUM.STC2006	PI 303658 02 SD
Inflorescence Exsertion	3	SORGHUM.STC2006	PI 303658 02 SD
Lodging	5 - 0 Percent	SWEET.SORGHUM.GENETIC.DIVERSITY.2009	
Mid-Rib Color	2 - Green	SORGHUM.STC2006	PI 303658 02 SD
Nodal Tiller	2 - No	SORGHUM.STC2006	PI 303658 02 SD
Panicle Erectness	1 - Erect	SORGHUM.STC2006	PI 303658 02 SD
Panicle Length	11	SORGHUM.STC2006	PI 303658 02 SD
Plant Color	4 - Purple-red	SORGHUM.STC2006	PI 303658 02 SD
Sprouting Tendency	2 - No	SORGHUM.STC2006	PI 303658 02 SD
Stalk Juiciness	1 - Juicy	SORGHUM.STC2006	PI 303658 02 SD
Stalk Waxiness	1 - Bloom	SORGHUM.STC2006	PI 303658 02 SD
PHENOLOGY Descriptors			
Flowering Rating	4 - Late (75-90 days)	SORGHUM.PHOTOPERIOD.2000	
Flowering Rating	5 - Very late (90+ days)	SWEET.SORGHUM.GENETIC.DIVERSITY.2009	
Short Day Anthesis	56	SORGHUM.STC2006	PI 303658 02 SD
PRODUCTION Descriptors			
SEED WEIGHT	2.836	SORGHUM.WEIGHTS	PI 303658 02 SD
Yield Potential	3	SORGHUM.STC2006	PI 303658 02 SD
SUBSET Descriptors			
Image	Seed/Panicle - Image of Seed/Panicle	SORGHUM.IMAGE.SP41.2006	

Export Phenotype Data to Excel

Descriptor: Sucrose (SUCROSE)

Download list of accessions evaluated for this trait

Definition:	Sucrose percentage
Crop:	SORGHUM
Category:	Chemical composition descriptors
Status:	
Data Type:	Numeric descriptor
Maximum Length:	6
Data Format:	90.99
Responsible site:	Plant Genetic Resources Conservation Unit, Griffin, GA (S9)

Studies or environments for this trait

- SORGHUM.LITERATURE.REVIEW - (1 Accessions)
- SORGHUM.SUCROSE - (1211 Accessions)

Distribution of Values for Sucrose (SUCROSE)

Range	Number of Accessions
0.00000 - 1.37100	37
1.37100 - 2.74200	187
2.74200 - 4.11300	258
4.11300 - 5.48400	235
5.48400 - 6.85500	195
6.85500 - 8.22600	139
8.22600 - 9.59700	89
9.59700 - 10.96800	57
10.96800 - 12.33900	32
12.33900 - 13.71000	4

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SORGHUM accessions with values between 12.33900 and 13.71000 for descriptor SUCROSE

	Accession	Plant Name	Species	Value
1	PI 648213	IS 8267	Sorghum bicolor subsp. bicolor	12.60000
2	PI 173120	8493	Sorghum bicolor subsp. bicolor	12.60000
3	Grif 16302	MN 4004	Sorghum intrans	12.80000
4	PI 666069	Roma	Sorghum bicolor subsp. bicolor	13.71000

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PI 666069

Sorghum bicolor (L.) Moench subsp. bicolor

'Roma'

Status:	Available
Amt Distributed:	100 count
Type Distributed:	Seed

Add to My Favorites

Add to Order

Developed from:	Texas United States
Maintained by:	Plant Genetic Resources Conservation Unit, Griffin, GA
NPGS received:	26-Sep-2012
PI assigned:	2012
Inventory volume:	221
Backup location:	National Center for Genetic Resources Preservation
Life form:	Annual
Pedigree:	Developed from the progeny of a cross of Mer. 45-45 X MN 1060. Mer. 45-45 was selected from a cross of Early Folger 9097 X Hodo. MN 1060 was collected in Equatoria, Africa in 1945, and is resistant to downy mildew.
Improvement status:	Cultivar
Reproductive uniformity:	
Form received:	Seed

Accession names and identifiers

Roma	
Type:	Cultivar name
Mer. 64-3	
Type:	Developer identifier
Comment:	U.S. Sugar Crops Field Station, Meridian, Mississippi

Narrative

Roma matures about 10 days later than Rio. It is day length and temperature sensitive and should be planted about May 1 for maximum yield. Stalks are medium in diameter and grow to a height of 9 to 11 feet under favorable conditions. Stalks grow upright and straight and resist lodging under normal conditions. Stalks are juicy,

Narrative

Roma matures about 10 days later than Rio. It is day length and temperature sensitive and should be planted about May 1 for maximum yield. Stalks are medium in diameter and grow to a height of 9 to 11 feet under favorable conditions. Stalks grow upright and straight and resist lodging under normal conditions. Stalks are juicy, crush easily in milling and the juice has high total sugar and sucrose.The panicle is erect, semi-compact to lax and generally ellipsoid in form. Glumes vary at maturity from purplish to a bleached straw color; the glumes do not clasp the seed strongly at maturity. Seeds are basically white in color with an overwash of purple and frequently purple mottling in the portion not covered by the glumes. Point of attachment is typically dark purple to black and the apex is usually purple at the stylar scar. Resistant to downy mildew, anthracnose, red rot and rust. Roma is released as a higher yielding, later maturing companion with Rio as varieities for potential sugar production in Texas. Purity of juice was 75.08 (96% of Rio coefficient). Calculated sugar per acre was 3507 lbs. and per ton of stalks was 189 lbs.

Source History

- Accession was developed. 13-Apr-1971. Texas United States

  Developers:
  1. Broadhead, D. M., U.S. Sugar Crops Field Station
  2. Rosenow, Darrell T., Texas A&M University
  3. Freeman, Kelly C., USDA, ARS
  4. Coleman, Otto H., USDA, ARS
  5. Smith, B.A., USDA, ARS
  6. Zummo, Natale, USDA, ARS
  7. Cowley, W.R., Texas A&M University

  Comment: Developed in cooperation by the Texas Agricultural Experiment Station and the U.S. Department of Agriculture

- Accession was donated. Mississippi United States

  Donors:
  1. USDA, ARS

Pedigree

Developed from the progeny of a cross of Mer. 45-45 X MN 1060. Mer. 45-45 was selected from a cross of Early Folger 9097 X Hodo. MN 1060 was collected in Equatoria, Africa in 1945, and is resistant to downy mildew.

Observations

Click link below to see detailed observation data:
Detailed Accession Observation Page

Characterization and Evaluation Data:

Category	CHEMICAL		PHENOLOGY	PRODUCTION
Descriptor	Brix	Sucrose	Short Day Anthesis	SEED WEIGHT
Value	17.48	13.71	144	2.61
Study/Environment	SORGHUM.LITERATURE.REVIEW	SORGHUM.LITERATURE.REVIEW	SORGHUM.LITERATURE.REVIEW	SORGHUM.WEIGHTS

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NRCS

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Plant of the Week

Nootka lupine
Lupinus nootkatensis Donn ex Sims

Click on the photo for a full plant profile.

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2016 National Wetland Plant List
The wetland indicator status ratings from the 2016 National Wetland Plant List (NWPL) are now on our species profile pages and are fully searchable.

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See NRCS pollinator-related literature and documentation, including the updated Technical Note TN.190.B.78 - Using 2014 Farm Bill Programs for Pollinator Conservation.

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purple passionflower

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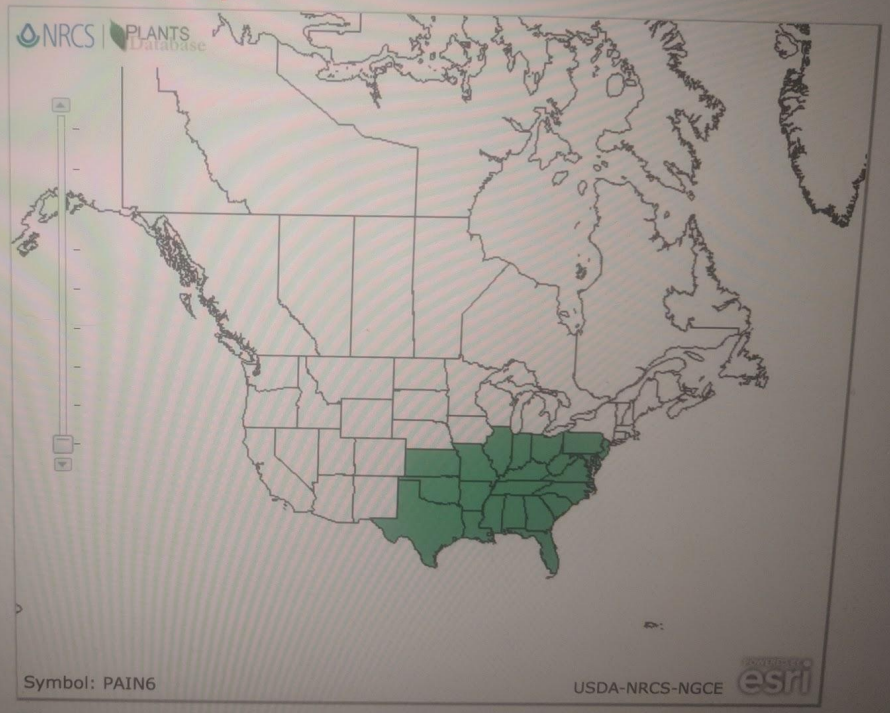
About our new maps



General Information	
Symbol:	PAIN6
Group:	Dicot
Family:	Passifloraceae
Duration:	Perennial
Growth Habit:	Forb/herb Vine
Native Status:	L48 N
Other Common Names:	maypop
Fact Sheet (pdf) (doc) **Plant Guide** (pdf) (doc)	
Data Source and Documentation	

GENERAL | IMAGES | CLASSIFICATION | LEGAL STATUS | RELATED LINKS | WILDLIFE

***Passiflora incarnata* L.**
purple passionflower

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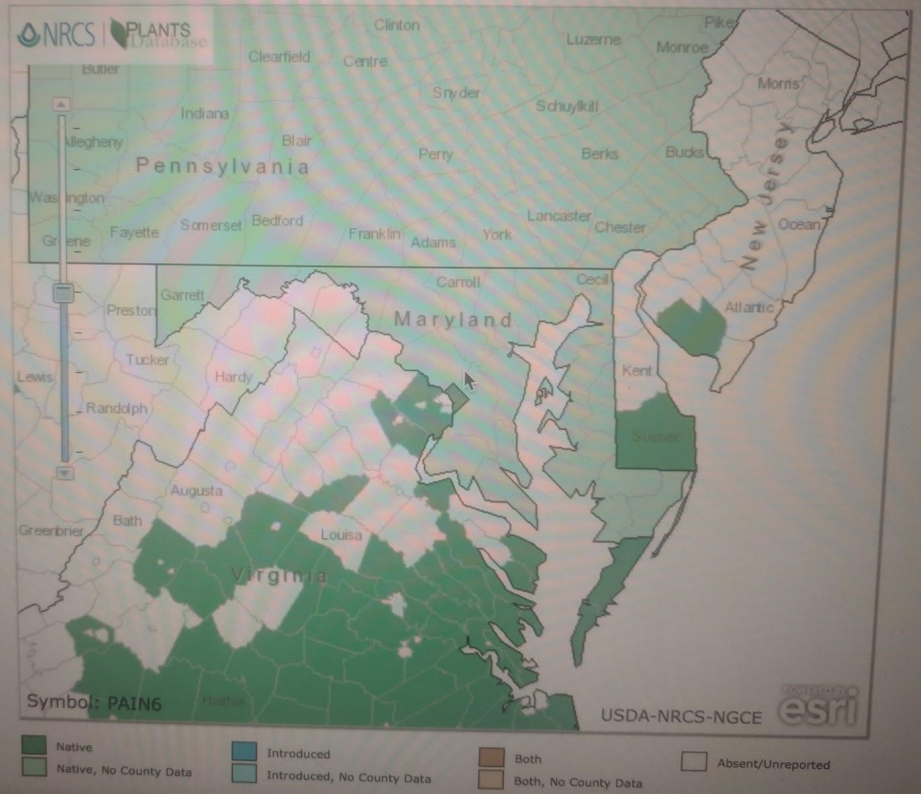

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Knapp, W.M., R.F.C. Naczi, W.D. Longbottom, C.A. Davis, W.A. McAvoy, C.T. Frye, J.W. Harrison, and P. Stango, III. 2011. Floristic discoveries in Delaware, Maryland, and Virginia. Phytoneuron 2011-64: 1–26. Published 15 December 2011. ISSN 2153 733X

FLORISTIC DISCOVERIES IN DELAWARE, MARYLAND, AND VIRGINIA

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Melothria pendula* L. var. *pendula

The collections cited below represent an addition to the flora of Delaware and the first report of this species from the Eastern Shore of Maryland (Maryland Natural Heritage Program pers. comm.). Both populations of this species are presumably non-native. The Delaware population is located along the base of a Mill Pond and the Maryland population is located in a heavily urbanized

area of Ocean City growing along a fence. Currently, *M. pendula* is extant to the south in Accomack and Northampton Counties, Virginia (V.B.A. 2010) and it is apparently expanding its range northward. In North America this species is ranges from Washington D.C., Maryland, and Virginia, west to Indiana, south to Florida and Texas (Weakley 2010).

Voucher specimens. **DELAWARE. Sussex Co.:** SW the town of Seaford at Craig's Mill Pond, at int. of Figgs Road and Craig's Mill Pond Road along edge of wooded swamp at base of dam, 30 Aug 2007, *Longbottom 10343* (DOV). **MARYLAND. Worcester Co.:** Town of Ocean City at the W end of 83rd Street, growing along fence, 25 Jul 2007, *Longbottom 9910* (DOV).

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