

APPENDIX A. Supporting tables on NE-9 crop importance and the PGRU conservation and distribution activities, US Production Data from National Agricultural Statistics Service (2012).

Table 1. Importance of the PGRU's fruits to the US. The PGRU's crops in **bold**.

Fruit	Value paid to grower in millions of dollars, 2010
Citrus (all)	2973.6
Grapes	3626.8
Apples	2220.8
Peaches/Nectarines	744.0
Pears	381.7
Sweet Cherries	721.2
Tart Cherries	40.5
Total Non-citrus fruit	12071.0

Table 2. Importance of the PGRU's vegetable crops to the US. The PGRU's crops in **bold**.

Vegetable	Value paid to grower in millions of dollars, 2011
Squash	283.2
Sweet Corn	1049.7
Lettuce	2341.7
Alliums (all)	762.1
Tomatoes	2228.7
Brassicas (vegetable)	1440.7
Carrots	758.5
Snap Beans	464.4
Total Vegetable	11856.0

Table 3. Importance of the PGRU's fruits worldwide (FAOSTAT, 2012). The PGRU's crops in **bold**.

Fruit	Production in million metric tons, 2010
Citrus (all)	123.7
Bananas and Plantains	138.7
Grapes	68.3
Apples	69.6
Mangoes	38.7
Tart Cherries	1.2

Table 4. Importance of the PGRU's vegetable crops worldwide (FAOSTAT, 2012). The PGRU's crops in **bold**.

Vegetable	Production in million metric tons, 2010
Squash	22.4
Tomatoes	148.8
Brassicas	94.3
Alliums (all)	79.8
Carrots	33.7
Eggplant	41.8
Peppers (all)	30.6
Lettuce & chicory	23.6

Table 5. Summary of conservation activities for the collections at the PGRU for the period 2007-2011.

Year	New Accessions Received	Total Accessions Maintained	Accessions for Which Seed Was Increased
2007	315	20,584	430
2008	36	20,620	300
2009	47	20,667	406
2010	39	20,706	460
2011	46	20,752	350
Annual Average	97	--	389

Table 6. Distribution of accessions from the seed collections at the PGRU for 2007-2011

classified by cooperator type.

Cooperator Type	2007	2008	2009	2010	2011	Total
Foreign, Commercial Companies	596	433	220	1030	213	2125
Foreign genebank/genetic resources unit	0	50	327	6285	4	6441
Foreign Individuals	6	25	1	28	19	78
CGIAR International Agriculture Research Centers	0	0	0	0	0	0
Foreign Public Organizations (gov)	371	754	334	525	821	1936
US State Agencies & All Universities	348	481	1080	1045	515	2548
US Agency for International Development	0	0	0	0	10	10
USDA, ARS	2020	204	124	434	60	2640
USA Commercial Companies	1229	344	620	935	1269	3286
Other USA Federal Agencies	9	5	20	0	4	31
USA Individuals	628	629	631	529	537	1937
US Non-profit Organizations	91	141	97	106	99	466
Total	4349	2300	2665	8286	2703	9959

Table 7. Distribution of samples from the seed collections at the PGRU for 2007-2011 classified by cooperator type.

Cooperator Type	2007	2008	2009	2010	2011	Total
Foreign, Commercial Companies	626	486	230	1105	215	2662
Foreign genebank/genetic resources unit	0	50	327	6292	4	6673
Foreign Individuals	6	25	1	29	20	81
CGIAR International Agriculture Research Centers	0	0	0	0	0	0
Foreign Public Organizations (gov)	397	906	337	559	994	3193
US State Agencies & All Universities	379	551	1237	1200	608	3975
US Agency for International Development	0	0	0	0	10	10
USDA, ARS	2036	206	129	453	62	2886
USA Commercial Companies	1338	371	650	1068	1430	4857
Other USA Federal Agencies	9	5	20	0	4	38
USA Individuals	813	881	1012	779	1107	4592
US Non-profit Organizations	97	142	102	107	100	548
Total	5701	3623	4045	11592	4554	29515

Table 8. Distribution of accessions by category for clonal collections at the PGRU for 2007-2011, classified by cooperator type.

Cooperator Type	2007	2008	2009	2010	2011	Total
Foreign, Commercial Companies	0	0	0	5	0	5
Foreign genebank/genetic resources unit	0	25	13	0	0	38
Foreign Individuals	0	4	8	9	12	21
CGIAR International Agriculture Research Centers	0	0	0	0	0	0
Foreign Public Organizations (gov)	303	1427	165	119	1157	2381
US State Agencies & All Universities	644	611	457	536	724	1734
USDA, ARS	2608	2338	378	951	490	3753
USA Commercial Companies	581	505	496	508	517	1309
Other USA Federal Agencies	0	0	0	1	0	1
USA Individuals	1184	1080	1169	1264	1136	2407
US Non-profit Organizations	128	155	205	129	200	499
Total	3195	3143	1987	2347	2559	4078

Table 9. Distribution of samples by category for clonal collections at the PGRU for 2007-2011, classified by cooperator type.

Cooperator Type	2007	2008	2009	2010	2011	Total
Foreign, Commercial Companies	0	0	0	5	0	5
Foreign genebank/genetic resources unit	0	253	13	0	0	266
Foreign Individuals	0	4	12	20	24	60
CGIAR International Agriculture Research Centers	0	0	0	0	0	0
Foreign Public Organizations (gov)	607	1796	165	124	1246	3938
US State Agencies & All Universities	1004	998	739	903	2042	5686
USDA, ARS	6435	4831	627	1359	920	14172
USA Commercial Companies	757	648	630	640	633	3308
Other USA Federal Agencies	0	0	0	1	0	1
USA Individuals	2066	2113	2472	2267	2029	10947
US Non-profit Organizations	140	176	247	153	248	964
Total	11009	10819	4905	5472	7142	39347

Table 10. Number of germplasm orders filled and number of accessions sent by the PGRU to

states in the Northeast, 2007-2011.

State	Orders Filled	Accessions Sent
Connecticut	21	87
Delaware	3	17
Maine	28	122
Maryland	41	251
Massachusetts	25	178
New Hampshire	25	385
New Jersey	23	91
New York	317	5410
Pennsylvania	93	736
Rhode Island	5	17
Vermont	13	168
West Virginia	54	436
Total	648	2557

Table 11. Number of germplasm samples sent by the PGRU to states in the Northeast, 2007-2011.

State	Samples Sent
Connecticut	95
Delaware	17
Maine	143
Maryland	345
Massachusetts	212
New Hampshire	527
New Jersey	105
New York	10055
Pennsylvania	900
Rhode Island	17
Vermont	181
West Virginia	1032
Total	13629

Appendix B: Recent Selected References of PGRU

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APPENDIX C: Recent (2007-2012) relevant selected publications of NE-9 Regional Technical Advisory Committee Members.

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Varieties Released:

WINTER SQUASH VARIETIES (F₁ HYBRIDS)

Eclipse: 2006; classic kabocha squash (*C. maxima*) with restricted vine; excellent eating quality; produced by Rupp Seeds.

Honey Bear: 2009; small acorn on a bush plant with exceptional eating quality; homozygous PMR; All America Selections winner, 2009; produced by Johnny's Selected Seeds.

Space Station: 2008; buttercup squash with small blossom scar; restricted vine; high quality; produced by Rupp Seeds.

Sugar Dumpling: 2009; a 'Sweet Dumpling' type of squash on a semi-bush plant, but slightly smaller with more shallow ribbing; homozygous PMR; excellent eating quality; produced by High Mowing Organic Seeds.

Thunder: 2006; classic kabocha squash (*C. maxima*) with slightly restricted vine; very productive and high quality; widely adapted; produced by Rupp Seeds.

TOMATO VARIETIES (F₁ HYBRIDS)

Orange Blossom: 2005; determinate and first early, orange slicing tomato (6 to 8 oz. with ground culture; 8 to 12 oz. when trellised) with good flavor; produced by Johnny's Selected Seeds.

Sunkist: 2007; indeterminate midseason orange slicing tomato (8 to 12 oz.) with superb flavor and nice appearance; produced by High Mowing Organic Seeds.

Tang: 2011; indeterminate, open-pollinated, mid to late season orange slicing tomato; unique combination of tangerine and beta-carotene gene for higher levels of beta carotene combined with cis-lycopene; produced by High Mowing Organic Seeds.

Appendix D: Facilities and Equipment

Facilities

1. The Plant Genetic Resources Unit's Buildings - the PGRU is divided between three buildings located on the campus of the New York State Agriculture Experiment Station, Cornell University, Geneva, New York.
 - a. USDA Building (592 m² or 6,372 sq ft) houses the laboratory, administration, components as well as facilities for clonal crops
 - i. Five offices (114 m² or 1,227 sq ft), including Research Leader, Computer Specialist, Molecular Biologist, Computer support staff and Administrative Support Staff.
 - ii. Laboratory Space (157 m² or 1,690 sq ft)
 - iii. Three Clonal Greenhouses (160 m² or 1,722 sq ft)
 - iv. Headhouse (92 m² or 990 sq ft)
 - v. Characterization room (30 m² or 323 sq ft)
 - vi. Nematode Laboratory (12 m² or 129 sq ft)
 - vii. Cold Storage (26 m² or 280 sq ft)
 - b. Clonal Office Building was finished in July 2001 with 4 scientist offices at 100 sq ft each. Technician room with 10 cubicle workstations for the clonal program technicians and breeding program technicians at 400 sq ft. One unisex bathroom and open storage area.
 - c. The Seed Processing Building houses the NERPIS office, seed processing and storage facilities
 - i. Office space (858 sq ft), contains three enclosed offices for Vegetable Curator/Horticulturist, Statistician and the Operations Manager. Desk space for Greenhouse Manager, three Agricultural Science Technicians and a Biological Science Aid.
 - ii. Vernalization chamber (291 sq ft) held at 20 °C and ambient humidity.
 - iii. Seed cold storage room (47 m² or 529 sq ft) held at 0° C and 20% relative humidity.
 - iv. Cold storage anteroom (27 m² or 330 sq ft) held at 4° C and 30% relative humidity.

- v. Restrooms (47 m² or 506 sq ft) handicap equipped, separate for male and female.
 - vi. Conference room-736 sq ft is equipped with an overhead projector, whiteboard, PC, television and VCR for seminars and presentations. Room can be divided to separate conference part from kitchenette. Seating for 26.
 - vii. Hallway (109 m² or 1,173 sq ft) used for miscellaneous storage and access area for office.
2. Crop and seed production facilities include approximately 24.1 ha of land and 0.10 ha of greenhouses.
- a. Wellington farm (14 ha or 34.58 acres), is located 1.2 km (about 1 mile) north of the NYSAES campus. The PGRU has a lease-to-own contract with Cornell University. The following site improvements have been made:
 - i. Comprehensive field drainage system was installed in 1988.
 - ii. 1105 m² (11,895 sq ft) field laboratory which includes a 277 m² (2,982 sq ft) rodent proof storage area for pollination cages and bee keeping equipment, an 483 m² (5,200 sq ft) farm equipment storage and workshop area and a 350 m² (3,768 sq ft) heated field lab for planting, harvesting and seed cleaning operations was built in 1989.
 - iii. Twenty-five hive apiary on a gravel pad was established in 1992.
 - iv. Trickle irrigation was installed in 1992. The farm was divided into 8 irrigation zones which can be individually scheduled using electronic timers. The system includes a 18,920 liter (4,000 gallon) water storage tank and an injection fertigation system.
 - v. Electrified deer fence was installed in 1992. A deer fence now encloses both the Wellington Farm and the adjacent McCarthy Farm which is used by the NCGR.
 - vi. 3-sided equipment shed
 - b. McCarthy Farm (Approximately 20 ha or 50 acres) is located 1.3 km (about 1 mile) North of the NYSAES Campus. The PGRU maintains a long-term lease with Cornell University for this property.
 - i. Comprehensive field drainage system was installed in 1984-85.
 - ii. Trickle irrigation was installed in 1984-85. There are 9 risers from the system which are normally controlled.
 - iii. Electrified deer fenced was installed in 1984-85. The fence was modified/extended in

1992 to encompass the Wellington Farm.

- iv. 4.05 ha (10 acres) are leased from Cornell University on the Station Nursery Farm which is located 0.4 km (0.2 mile) north of the Wellington farm. Site improvements include trickle irrigation and field tile drainage.

c. Greenhouse Facilities

- i. Design is complete for remodeling clonal germplasm greenhouses (160 m² or 1,800 sq ft) and construction will commence in 2003.
- ii. Construction was completed on two permanent USDA, ARS greenhouses (450 m² or 5,000 sq ft) in 1992. One house (PGH-1) is equipped with aluminum-framed rolling benches, the other (PGH-2), has sand bed floors to accommodate pollination cages. Both greenhouses contain computerized environmental controls, automated drip irrigation systems, ratio:feeder fertilizer injector, hot water bottom heat for benches and ground beds and 1,000 watt sodium lights and are heated with steam. Approximate capacity is 5,000 1-gallon pots.
- iii. Construction was complete in 2002 on a permanent USDA, ARS greenhouse (2,000 sq ft). The house (PGH-3) is equipped with sand bed floors and computerized environmental controls.
- iv. Adjoining headhouse (148 m² or 1,600 sq ft) contains 12.43 m² (134 sq ft) potting bench space, 11 soil bins (4.5 hl), 2 walk-in vernalization coolers (92 m² or 990 sq ft), steel shelving (30 m² or 323 sq ft) for storage, and vented steel chemical storage cabinet for pesticide storage and was completed in 2004.

3. Information Management

- a. List of computers/equipment (see equipment)
- b. Computers at The PGRU are connected in a local area network (LAN) and the Wide Area Network (WAN) via Cornell University's network backbone. Software tools available on the network include:
 - i. Electronic mail (e-mail) is available to all network users using Microsoft Exchange.
 - ii. Word processing - Microsoft Word
 - iii. Database – Microsoft Access relational database management systems are available.
 - iv. Spreadsheet application – Microsoft Excel
 - v. Internet browsers – Windows Internet Explorer or Mozilla Firefox for Internet access.
 - vi. Cornell University information – available via the Bear Access suite of applications.
 - vii. Germplasm Resources Information Network (GRIN) – PGRU information in the GRIN National Database is accessed by administration, management, and 2 staff workstations.
- viii. Presentation application – Microsoft PowerPoint
- ix. Digital imaging – Adobe Photoshop and Microsoft Picture Manager

Equipment

Farm Equipment		
Description	Manufacturer	Model Number
Brush Machine	Westrop	LA-H
Cleaner & Tester Mill Seed Clipper	Blount/Ferrell	250
Clipper	Bluefton Agri.	
Cultivator	Monroe	265
Cultivator - Vineyard	Kongskilde	WB
Cutter Mower – Sickle-bar	O’Neill	BCS605
Debarder	Dayton	5K440C
Drill	Tye	104-6010
Forklift	Hyster	30
Mower Walk Behind	BCS	SV30W
Mower	John Deere	609
Mower	Bush Hog	3209
Crop care Mulch lifter	Paul B	PR250
Mulch Layer	Holland	1265
Mulch Transplanter	Holland	1265
Mulcher Pulvi/Teeth Notched	Brillion	M124
Multi-Crop Shredder	Loftness	144BP-HNG
Plow Coulter-Chisels SL	Brillion	CD-73
Rotary Mower	Bush Hog	3209
Air Column	South Dakota	757
Air Column (2)	Hoffman	OSB4
Air Column (2)	Erickson	Model D
Seed Counter	Oll Mill Co.	850-2
Snowmobile	Polaris	440
Boom Sprayer 110 gallon	Demco	RMR1
Herbicide Sprayer	Kuker	

Farm Equipment		
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Description	Manufacturer	Model Number
Herbicide Sprayer, 100 gal	Kuker	
Sprayer	AGtech	300PC
Air blast sprayer	Agtech	2104
Straw Mulcher	Gooshen	DB586(3N26)
Thresher (3)	Almaco	CBT
Gravity Separator	Oliver	30MB
Rotovator	Land pride	RTA2562
Tiller, 68" Rotovator	Land Pride	RTA3568
Tiller, 42" Rotovator	Land Pride	RTA 1542
Brush Chopper, 5'	Perfect	
Auger	Kubota	80A
Power Pruners, 4 Gun		
3 pt. hitch Spinner Spreader	Lely	Model H
Tractor (2)	Farmall	140
Tactor	Case IH	M-95
Tractor	International	265 Offset
Tractor	New Holland	4230
Tractor	John Deere	5200 W/Loader
Tractor (2)	John Deere	2252
Tractor	Ford	8240Powerstar
Tractor Wagon	H&S Mtg. Co	HS-400
Tractor - 2Wheel Drive (2)	Kubota	L245H
Tractor	Kubota	2255
Tractor	Kubota	7200
Tractor	New Holland	4040F
Tractor	New Holland	TN 90
Tractor	New Holland	TN95F
Trailer, Tow behind		

Farm Equipment		
Description	Manufacturer	Model Number
Trailer	Haulmark	K72BT
Vegetable Seed Separator (2)	Millet's	Custom product
Generator	Honda	EU3000
Welder	Miller	MM150
Rotary cutter	Land Pride	RCR 2572
4 Bottom Plow	Case	720
Disk	Krause	2242A
Ventilation bin controller	Artic Refrigeration	SBC
ATV	Honda	Rincon/Forman
ATV	Suzuki	250
Kawasaki Mule (2)	Kawasaki	3010, 4010

Laboratory Equipment		
Description	Manufacturer	Model Number
Balance	Mettler	PE1600
Balance, analytical	Mettler	AE163
Centrifuge, vacuum	Eppendorf	Vacufuge
Centrifuge (refrigerated)	Sigma	4K15
Centrifuge, micro	Baxter	Biofuge A
Centrifuge, micro	Fisher Scientific	Marathon 16 km
Centrifuge, micro	Eppendorf	5415C
Centrifuge, micro	Eppendorf	5424
Cold Chamber	Forma Scientific	Reach-in
Digital imaging/analysis system	Alpha Innotech	FluorChem 8900
Dishwasher	Labconco	SteamScrubber
Freezer, -20	Lab Line	Explosion Proof

Laboratory Equipment		
Description	Manufacturer	Model Number
Freezer, -20	Lab Line	Frigid-Cab Flammable storage
Freezer, -80	Forma Sci	H9300
Freezer, -80	Am Sci Prod	Cryo-fridge
Freezer, -80	Harris	
Freezer, -80	Harris	
Freezer, -80	Thermo Scientific	
Freezer, -80	Thermo Scientific	
Freezer, -80	Thermo Scientific	
Genetic Analyzer	ABI	3130xl
GenoGrinder	Spex Certiprep	
Ice Machine	Hoshizaki	F-300 BAF
Incubator	Labline	Imperial III
Laminar Flow Hood	Baker Co.	EdgeGard
Lyophilizer System	Labconco	77585-00
Microplate Reader	Tecan	Spectrafluor
Oven, Mechanical Convection	Precision	
PCR Machine	MJ Research	Tetrad2
PCR Machine	Biorad	iCycler
PCR Machine	Biorad	iCycler
pH Meter	Accumet	AR20
Refractometer	Fisher	13 963
Robotic Liquid Handler	Tecan	Genesis RSP150
Rotor	Sigma	30 x 1.5 ml
Rotor	Sigma	12 x 15 ml
Rotor	Sigma	8 x 50 ml
Rotor	Sigma	2 x microplate

Laboratory Equipment		
Description	Manufacturer	Model Number
Rotor	Sigma	8 x 30 ml
Shaker, Environmental	Labline	3525
Shaker, Junior Orbital	Labline	3520
Speedvac	Thermosavant	SPD
Titrator, Automated	Metrohm	862 Compact Titrosampler
Tristimulus Colorimeter	Minolta	CR400
Tristimulus Colorimeter	Minolta	CR300
Uninterrupted Power Supply	Franek Tech.	
Vacuum System	Thermosavant	UVS400
Water Filtration System	Barnstead	Nanopure II
Autoclave	Amsco Scientific	SV-116
Balance	Mettler	PE1600
Balance	Mettler	AE163
Calculator, DNA/RNA	Pharmacia	GenequantII
Centrifuge	Sigma	4K15
Centrifuge, micro	Baxter	Biofuge A
Centrifuge, micro	Marathon	16 km
Centrifuge, micro	Eppendorf	5415C
Cold Chamber	Forma	
Cryo Tank	Minn Valley	XLC-1830
Digital Imager	Kodak	EDAS290
DNA Sequencer	ABI	3100
Fotosystem 1000	Fotodyne, Inc.	3-1000
Freezer, -80	Forma Sci	H9300
Freezer, -80	Am Sci Prod	Cryo-fridge
GenoGrinder	Spex Certiprep	
Hybridization Oven	Hybaid	Mini

Laboratory Equipment		
Description	Manufacturer	Model Number
Hybridization Oven	Hybaid	Mini
Ice Machine	Hoshizaki	F-300 BAF
Incubator	Labline	Imperial III
Laminar Flow Hood	Baker Co.	EdgeGard
Lyophilizer System	Labconco	77585-00
Oven, Mechanical Convection	Precision	
PCR Machine	Perkin Elmer	9600
PCR Machine	Perkin Elmer	9600
PCR Machine	Biorad	iCycler
PCR Machine	Biorad	iCycler
PCR Machine	Biorad	
pH Meter	Accumet	AR20
Plate Reader	Tecan	Spectrafluor
Refractometer	Fisher	13 963
Robotic Liquid Handler	Tecan	Genesis RSP150
Rotor	Sigma	30 x 1.5ml
Rotor	Sigma	6 x 50ml
Rotor	Sigma	2 x microplate
Shaker, Environmental	Labline	3525
Shaker, Junior Orbital	Labline	3520
Speedvac	Thermosavant	SPD
Still	Sybron/Barnstead	A1054
Transfer Lamp	Fotodyne, Inc.	2-1500
Tristimulus Colorimeter	Minolta	CR300
Uninterrupted Power Supply	Franek Tech.	
Vacuum System	Thermosavant	UVS400
Water Filtration System	Barnstead	Nanopure II
Printer	StyleWriter II	

Laboratory Equipment

Description	Manufacturer	Model Number
Printer	Panasonic	KXP4450
Repeater Thin/Thin	Canary	CP 2003-2

Vehicles

Description	Manufacturer	Model Number
2008 Pick up, extended	Ford	F-150
2009 Pick up	Chevrolet	Silverado 1500
2005 Pick up, extended	Chevrolet	Colorado
2006 Pick up, extended	Chevrolet	Colorado
2000 Flat bed	Ford	F350
2010 Cargo Van	Ford	Van
2010 Van	Dodge	Caravan
2010 Sedan	Chevrolet	Impala
2005 Sedan	Dodge	Stratus

Computer Equipment		
Description	Model Number	Number
Communication Switch	Cisco 2924	1
Communication Switch	Cisco 2960	3
Firewall	Cisco ASA 5505	1
Handheld	Toshiba	2
Handheld	Handspring Visor	1
Laptop	Acer	3
Laptop	Dell Latitude	4
Laptop	HP	2
Laptop	Motion/Bar code scanner	1
Laptop	Dell Latitude	4
Laptop	Sony	2
Local printer	HP 4050	1
Local printer	HP 2055	1
Local printer	HP 4100	1
Local printer	HP1200	1
Local printer	Lexmark X363DN	1
Local printer	Zebra thermal	1
Macintosh	PowerMac G4	1
Networked printer	HP 2005N	1
Networked printer	HP CP4525	1
Networked printer	HP 3005N	2
Networked printer	HP Color LJ 5550	1
Networked printer	HP OfficeJet 7310	1
Networked printer	Xerox 6115MFP	1
Networked printer	Zebra thermal	1
PC	Dell	40

Computer Equipment			
Description	Model Number	Number	
PC	IBM	2	
PC	HP	4	
Scanner	Microtek Scanmaker 5950	1	
Server	Dell 2650	1	
Server	IBM System x3400 M3	1	

APPENDIX E: Project participants for the NE-9 Regional Research Project

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APPENDIX F: Projected participation, allocation of resources of state and federal participants for Regional Research Project NE-9: Plant Genetic Resources Conservation and Utilization.

Participant Name, Email Address and Phone Number	Institution and Department	Research						Objectives					
		CRIS Codes			Personnel			1	2	3	4	5	
		RPA	SOI	FOS	SY	PY	TY						
Gan-Yuan Zhong GanYuan.zhong@ars.usda.gov 315-787-2482	PGRU, USDA, ARS	202-1110-1080; 202-1112-1080 202-1130-1080; 202-1131-1080 202-1132-1080; 202-1139-1080				0.25	-	1.25		X	X	X	
Larry Robertson larry.robertson@ars.usda.gov 315-787-2356	PGRU, USDA, ARS	202-1429-1080; 202-1430-1080 202-1451-1080; 202-1460-1080 202-1469-1080				1.00	-	5.60	X	X	X	X	X
C. Thomas Chao c.thomas.chao@ars.usda.gov 315-787-2454	PGRU, USDA, ARS	202-1110-1080; 202-1112-1080 202-1130-1080; 202-1131-1080 202-1132-1080; 202-1139-1080				1.00	-	4.60	X	X	X	X	X
Joanne Labate joanne.labate@ars.usda.gov 315-787-2438	PGRU, USDA, ARS	202-1429-1080; 202-1430-1080 202-1451-1080; 202-1460-1080 202-1469-1080				1.00	-	1.00		X	X	X	X
Angela Baldo angela.baldo@ars.usda.gov 315-787-2413	PGRU, USDA, ARS	202-1110-1080; 202-1112-1080 202-1130-1080; 202-1131-1080 202-1132-1080; 202-1139-1080 202-1429-1080; 202-1430-1080 202-1451-1080; 202-1460-1080 202-1469-1080				0.80	-	-		X	X	X	X
Peter Bretting peter.bretting@ars.usda.gov 301-504-5541	NPS, USDA, ARS, National Program Leader NP301	202-1110-1080; 202-1112-1080 202-1130-1080; 202-1131-1080 202-1132-1080; 202-1139-1080 202-1429-1080; 202-1430-1080 202-1451-1080; 202-1460-1080 202-1469-1080				0.10	-	-	X	X	X	X	X
Gary Kinard gary.kinard@ars.usda.gov 301-504-5951	National Germplasm Resources Laboratory USDA, ARS	202-1110-1080; 202-1112-1080 202-1130-1080; 202-1131-1080 202-1132-1080; 202-1139-1080 202-1429-1080; 202-1430-1080 202-1451-1080; 202-1460-1080 202-1469-1080				0.15	1.00	-	X		X		X

Participant Name, Email Address and Phone Number	Institution and Department	Research					Objectives							
		CRIS Codes			Personnel			1	2	3	4	5		
		RPA	SOI	FOS	SY	PY	TY							
Edward Garvey edward.garvey@ ars.usda.gov 301-504-7511	National Germplasm Resources Laboratory USDA, ARS	202-1110-1080; 202-1112-1080 202-1130-1080; 202-1131-1080 202-1132-1080; 202-1139-1080 202-1429-1080; 202-1430-1080 202-1451-1080; 202-1460-1080 202-1469-1080				0.15	-	0.15	X					X
Karen Williams karen.williams@ ars.usda.gov 301-504-5421	National Germplasm Resources Laboratory USDA, ARS	202-1110-1080; 202-1112-1080 202-1130-1080; 202-1131-1080 202-1132-1080; 202-1139-1080 202-1429-1080; 202-1430-1080 202-1451-1080; 202-1460-1080 202-1469-1080				0.15	-	0.15	X					X
David Ellis david.ellis@ars.usda.gov	National Center for Genetic Resources Preservation; USDA, ARS	202-1110-1080; 202-1112-1080 202-1130-1080; 202-1131-1080 202-1132-1080; 202-1139-1080 202-1429-1080; 202-1430-1080 202-1451-1080; 202-1460-1080 202-1469-1080				0.10	0.10	2.00	X					X
Christina Walters christina.walters@ ars.usda.gov 970-495-3202	National Center for Genetic Resources Preservation; USDA, ARS	202-1110-1080; 202-1112-1080 202-1130-1080; 202-1131-1080 202-1132-1080; 202-1139-1080 202-1429-1080; 202-1430-1080 202-1451-1080; 202-1460-1080 202-1469-1080				0.10	0.10	0.05	X					X
Christopher Richards christopher.richards@ ars.usda.gov 970-495-3201	National Center for Genetic Resources Preservation; USDA, ARS	202-1110-1080; 202-1112-1080 202-1130-1080; 202-1131-1080 202-1132-1080; 202-1139-1080 202-1429-1080; 202-1430-1080 202-1451-1080; 202-1460-1080 202-1469-1080				0.10	0.05	X	X				X	X
Total SY, PY, TY and FTE	X	X							X	X	X	X		

¹ Research Problem Area(s) (RPA), Subject(s) of Investigation (SOI), and Field(s) of Science (FOS) ² SY = scientist years, PY = professional years, TY = technician years