

Methods Table 1: Current Active CRIS Projects Utilizing Plant Genetic Resources:

| North Central Region State | AFRI       | Evans-Allen | Hatch      | McIntire-Stennis | NRI       | Other     | Small Business | Special Grant | State     | USDA Contract | USDA Coop Agreement | USDA Inhouse | Total      |
|----------------------------|------------|-------------|------------|------------------|-----------|-----------|----------------|---------------|-----------|---------------|---------------------|--------------|------------|
| Illinois                   | 19         | 0           | 23         | 1                | 5         | 11        | 2              | 0             | 0         | 1             | 15                  | 15           | 92         |
| Indiana                    | 11         | 0           | 20         | 0                | 0         | 6         | 1              | 0             | 0         | 0             | 12                  | 3            | 53         |
| Iowa                       | 20         | 0           | 19         | 0                | 3         | 10        | 1              | 0             | 1         | 0             | 13                  | 36           | 103        |
| Kansas                     | 9          | 0           | 15         | 0                | 0         | 7         | 0              | 0             | 1         | 0             | 7                   | 10           | 49         |
| Michigan                   | 9          | 0           | 46         | 0                | 0         | 6         | 1              | 1             | 0         | 1             | 6                   | 3            | 73         |
| Minnesota                  | 8          | 0           | 24         | 0                | 2         | 17        | 0              | 0             | 20        | 2             | 6                   | 16           | 95         |
| Missouri                   | 12         | 2           | 7          | 0                | 0         | 8         | 2              | 0             | 0         | 1             | 18                  | 16           | 66         |
| Nebraska                   | 9          | 0           | 11         | 2                | 0         | 4         | 1              | 0             | 0         | 2             | 15                  | 13           | 57         |
| North Dakota               | 2          | 0           | 14         | 0                | 0         | 4         | 1              | 0             | 13        | 2             | 8                   | 13           | 57         |
| Ohio                       | 2          | 0           | 13         | 0                | 0         | 9         | 1              | 1             | 2         | 1             | 23                  | 23           | 75         |
| South Dakota               | 6          | 0           | 21         | 0                | 1         | 4         | 1              | 2             | 5         | 1             | 2                   | 9            | 52         |
| Wisconsin                  | 7          | 0           | 18         | 0                | 1         | 7         | 1              | 0             | 0         | 0             | 17                  | 20           | 71         |
| <b>Totals</b>              | <b>114</b> | <b>2</b>    | <b>231</b> | <b>3</b>         | <b>12</b> | <b>93</b> | <b>12</b>      | <b>4</b>      | <b>42</b> | <b>11</b>     | <b>142</b>          | <b>177</b>   | <b>843</b> |

## **Appendix Table 1: Abbreviations and Definitions:**

|         |   |
|---------|---|
| AES     | Agricultural Experiment Station   |
| ARS     | Agricultural Research Service   |
| AFLP    | Amplified Fragment Linked Polymorphism                                    |
| CALS    | College of Agriculture and Life Sciences                                  |
| CGC     | Crop Germplasm Committee  |
| CRIS    | Current Research Information System                                       |
| CSR     | Crop Science Registration   |
| CuGenDB | Cucurbit Genomics Database  |
| DH      | Double haploid  |
| DNA     | Dioxyribonucleic Acid   |
| GBS     | Genotyping by Sequencing  |
| GEM     | Germplasm Enhancement of Maize  |
| GG      | GRIN-Global   |
| GRIN    | Germplasm Research Information Network                                    |
| GUI     | Graphic User Interface  |
| GWAS    | Genome Wide Association Study   |
| G x E   | Genotype by Environment Interaction                                       |
| ISU     | Iowa State University   |
| ITPGRFA | International Treaty for Plant Genetic Resources for Food and Agriculture |
| MGI     | Maturity Group I  |
| MSU     | Michigan State University   |
| NCR     | North Central Region  |
| NCRPIS  | North Central Regional Plant Introduction Station                         |
| NDSU    | North Dakota State University   |
| NIMSS   | National Information Management and Support System                        |
| NLGRP   | National Laboratory for Genetic Resource Preservation                     |
| NPGS    | National Plant Germplasm System   |
| OPGC    | Ornamental Plant Germplasm Center   |
| PCR     | Polymerase chain reaction   |
| PGR     | Plant Genetic Resources, also for accessions or germplasm                 |
| PI      | Principal Investigator  |
| PIRU    | Plant Introduction Research Unit  |
| PVP     | Plant Variety Protection  |
| QTL     | Quantitative Trait Locus  |
| RH      | Relative Humidity   |
| RTAC    | Regional Technical Advisory Committee                                     |
| SA      | Shoot Architecture  |
| SCMV    | Sugarcane Mosaic Virus  |
| SNP     | Single Nucleotide Polymorphism  |
| U.S.    | United States   |
| USDA    | U.S. Department of Agriculture  |

**Appendix Table 2: International Origins of NC-007 Accessions**

| Country of Origin        | Accessions (#) | Country of Origin         | Accessions (#) | Country of Origin               | Accessions (#) |
|--------------------------|----------------|---------------------------|----------------|---------------------------------|----------------|
| Afghanistan              | 646            | Greece                    | 182            | Oman                            | 45             |
| Albania                  | 46             | Greenland                 | 5              | Pakistan                        | 828            |
| Algeria                  | 57             | Grenada                   | 15             | Palestinian Territory           | 39             |
| Angola                   | 21             | Guadeloupe                | 11             | Panama                          | 33             |
| Anguilla                 | 1              | Guatemala                 | 329            | Papua New Guinea                | 5              |
| Antigua and Barbuda      | 9              | Guinea                    | 140            | Paraguay                        | 31             |
| Argentina                | 693            | Guyana                    | 4              | Peru                            | 2,287          |
| Armenia                  | 65             | Haiti                     | 34             | Philippines                     | 24             |
| Australia                | 369            | Honduras                  | 48             | Poland                          | 450            |
| Austria                  | 46             | Hong Kong, SAR China      | 26             | Portugal                        | 439            |
| Azerbaijan               | 29             | Hungary                   | 614            | Réunion                         | 6              |
| Bangladesh               | 35             | India                     | 4,591          | Russian Federation              | 518            |
| Barbados                 | 9              | Indonesia                 | 23             | Rwanda                          | 3              |
| Belarus                  | 1              | Iran, Islamic Republic of | 664            | Saint Lucia                     | 3              |
| Belgium                  | 54             | Iraq                      | 57             | Saint Vincent and Grenadines    | 9              |
| Belize                   | 6              | Ireland                   | 14             | Saudi Arabia                    | 14             |
| Benin                    | 6              | Israel                    | 315            | Senegal                         | 6              |
| Bhutan                   | 47             | Italy                     | 303            | Serbia                          | 76             |
| Bolivia                  | 398            | Jamaica                   | 10             | Seychelles                      | 4              |
| Bosnia and Herzegovina   | 23             | Japan                     | 344            | Sierra Leone                    | 2              |
| Botswana                 | 23             | Jordan                    | 15             | Slovakia                        | 27             |
| Brazil                   | 724            | Kazakhstan                | 81             | Slovenia                        | 16             |
| British Virgin Islands   | 15             | Kenya                     | 131            | South Africa                    | 378            |
| Bulgaria                 | 147            | Korea (North)             | 12             | Spain                           | 1,157          |
| Burkina Faso             | 191            | Korea, South              | 420            | Sri Lanka                       | 4              |
| Burundi                  | 55             | Kyrgyzstan                | 12             | Sudan                           | 11             |
| Cambodia                 | 2              | Latvia                    | 2              | Suriname                        | 8              |
| Cameroon                 | 50             | Lebanon                   | 51             | Swaziland                       | 1              |
| Canada                   | 1,065          | Libya                     | 9              | Sweden                          | 135            |
| Central African Republic | 2              | Lithuania                 | 21             | Switzerland                     | 50             |
| Chad                     | 3              | Macedonia, Republic of    | 498            | Syrian Arab Republic (Syria)    | 219            |
| Chile                    | 689            | Madagascar                | 11             | Taiwan                          | 155            |
| China                    | 1,042          | Malawi                    | 68             | Tajikistan                      | 63             |
| Colombia                 | 2,116          | Malaysia                  | 6              | Tanzania, United Republic of    | 32             |
| Congo, (Kinshasa)        | 39             | Maldives                  | 28             | Thailand                        | 53             |
| Costa Rica               | 113            | Mali                      | 23             | Togo                            | 88             |
| Côte d'Ivoire            | 6              | Malta                     | 6              | Trinidad and Tobago             | 26             |
| Croatia                  | 51             | Martinique                | 7              | Tunisia                         | 169            |
| Cuba                     | 118            | Mauritania                | 1              | Turkey                          | 2,387          |
| Cyprus                   | 27             | Mauritius                 | 3              | Turkmenistan                    | 98             |
| Czech Republic           | 93             | Mexico                    | 4,073          | Uganda                          | 5              |
| Denmark                  | 49             | Moldova                   | 18             | Ukraine                         | 147            |
| Dominican Republic       | 113            | Monaco                    | 4              | Uncertain                       | 1,795          |
| Ecuador                  | 318            | Mongolia                  | 112            | United Kingdom                  | 144            |
| Egypt                    | 174            | Montenegro                | 5              | United States                   | 14,798         |
| El Salvador              | 51             | Morocco                   | 234            | Uruguay                         | 504            |
| Eritrea                  | 6              | Mozambique                | 2              | Uzbekistan                      | 133            |
| Estonia                  | 10             | Myanmar                   | 11             | Venezuela (Bolivarian Republic) | 119            |
| Ethiopia                 | 349            | Namibia                   | 6              | Viet Nam                        | 1              |
| Finland                  | 48             | Nepal                     | 391            | Yemen                           | 21             |
| France                   | 469            | Netherlands               | 308            | Zambia                          | 576            |
| French Guiana            | 6              | New Zealand               | 32             | Zimbabwe                        | 225            |
| Gambia                   | 1              | Nicaragua                 | 46             |                                 |                |
| Georgia                  | 197            | Niger                     | 4              |                                 |                |
| Germany                  | 545            | Nigeria                   | 231            |                                 |                |
| Ghana                    | 26             | Norway                    | 18             |                                 |                |
|                          |                |                           |                | <b>Grand Total</b>              | <b>54,490</b>  |

**Appendix Table 3: U.S. National Plant Germplasm System Collection Holdings - By Site**

| Site | Site Name  | Collection Size    |                | # Accessions with Inventory |                |
|------|--|--------------------|----------------|-----------------------------|----------------|
|      |  | Accessions (#)     | % of Total     | Accessions (#)              | % of Total     |
| BRW  | Natl. Germplasm Repository - Brownwood                 | 4,066              | 0.68%          | 2,112                       | 0.39%          |
| COR  | Natl. Germplasm Repository - Corvallis                 | 12,692             | 2.11%          | 9,350                       | 1.71%          |
| COT  | Cotton Collection                                      | 10,496             | 1.75%          | 9,468                       | 1.73%          |
| DAV  | Natl. Germplasm Repository - Davis                     | 7,072              | 1.18%          | 5,552                       | 1.02%          |
| DLEG | Desert Legume Program                                  | 2,655              | 0.44%          | 2,510                       | 0.46%          |
| GEN  | Natl. Germplasm Repository - Geneva                    | 7,656              | 1.27%          | 4,024                       | 0.74%          |
| GSOR | Rice Genetic Stock Center                              | 38,374             | 6.38%          | 38,187                      | 6.99%          |
| GSPI | Pea Genetic Stock Collection                           | 712                | 0.12%          | 712                         | 0.13%          |
| GSZE | Maize Genetic Stock Center                             | 8,506              | 1.41%          | 3                           | 0.00%          |
| HILO | Natl. Germplasm Repository - Hilo                      | 902                | 0.15%          | 374                         | 0.07%          |
| MAY  | Natl. Germplasm Repository - Mayaguez                  | 1,255              | 0.21%          | 1,092                       | 0.20%          |
| MIA  | Natl. Germplasm Repository - Miami                     | 3,392              | 0.56%          | 2,073                       | 0.38%          |
| NA   | National Arboretum                                     | 9,366              | 1.56%          | 5,153                       | 0.94%          |
| NC7  | North Central Regional PI Station                      | 54,490             | 9.06%          | 54,404                      | 9.95%          |
| NE9  | Northeast Regional PI Station                          | 12,726             | 2.12%          | 9,835                       | 1.80%          |
| NR6  | Potato Germplasm Introduction Station                  | 5,867              | 0.98%          | 5,735                       | 1.05%          |
| NSGC | National Small Grains Collection                       | 147,838            | 24.58%         | 147,697                     | 27.02%         |
| NSSL | National Laboratory for Genetic Resources Preservation | 11,521             | 1.92%          | 8,850                       | 1.62%          |
| NTSL | Forest Service National Seed Lab                       | 8,168              | 1.36%          | 6,637                       | 1.21%          |
| OPGC | Ornamental Plant Germplasm Center                      | 7,377              | 1.23%          | 7,272                       | 1.33%          |
| PARL | National Arid Land Plant Genetic Resources Unit        | 1,511              | 0.25%          | 1,230                       | 0.23%          |
| PGQO | Plant Germplasm Quarantine Program                     | 949                | 0.16%          | 28                          | 0.01%          |
| PVPO | Plant Variety Protection Voucher Collection            | 9,020              | 1.50%          | 164                         | 0.03%          |
| RIV  | Natl. Germplasm Repository - Riverside                 | 1,814              | 0.30%          | 4                           | 0.00%          |
| S9   | Plant Genetic Resources Conservation Unit, Griffin, GA | 104,063            | 17.30%         | 99,828                      | 18.26%         |
| SOY  | Soybean Collection                                     | 22,571             | 3.75%          | 22,148                      | 4.05%          |
| TGRC | C.M. Rick Tomato Genetics Resource Center              | 4,050              | 0.67%          |                             |                |
| TOB  | US Nicotiana Germplasm Collection                      | 2,227              | 0.37%          | 2,215                       | 0.41%          |
| W6   | Western Regional PI Station                            | 100,082            | 16.64%         | 99,946                      | 18.28%         |
|      |  | <b>Grand Total</b> | <b>601,418</b> | <b>100.00%</b>              | <b>546,603</b> |
|      |  |                    |                |                             |                |

\*Incomplete 2021, Data as captured in GRIN-Global as of Nov 04, 2021.

**Appendix Table 4: Distributions of NC-007 and NPGS Germplasm, by U.S. Region**

| Date            | Region                | NC7         |            | NPGS-wide   |
|-----------------|-----------------------|-------------|------------|-------------|
|                 |                       | Order Items | % of Total | Order Items |
| 2012            | International         | 17,801      | 13.20%     | 134,867     |
|                 | North Central         | 16,077      | 22.14%     | 72,603      |
|                 | Northeast             | 2,136       | 19.15%     | 11,156      |
|                 | Southern              | 3,995       | 10.13%     | 39,448      |
|                 | Western               | 5,333       | 11.28%     | 47,276      |
|                 | US & Outlying Regions | 24          | 1.17%      | 2,043       |
|                 | Annual Total          | 45,366      | 14.76%     | 307,393     |
| 2013            | International         | 14,492      | 19.61%     | 73,911      |
|                 | North Central         | 13,328      | 20.41%     | 65,290      |
|                 | Northeast             | 1,321       | 12.22%     | 10,806      |
|                 | Southern              | 9,088       | 17.27%     | 52,629      |
|                 | Western               | 3,695       | 10.14%     | 36,422      |
|                 | US & Outlying Regions |             |            | 2,455       |
|                 | Annual Total          | 41,924      | 17.36%     | 241,513     |
| 2014            | International         | 18,721      | 23.61%     | 79,292      |
|                 | North Central         | 11,778      | 15.43%     | 76,311      |
|                 | Northeast             | 2,025       | 17.54%     | 11,548      |
|                 | Southern              | 4,987       | 9.41%      | 52,998      |
|                 | Western               | 6,107       | 14.31%     | 42,673      |
|                 | US & Outlying Regions | 15          | 1.49%      | 1,010       |
|                 | Annual Total          | 43,633      | 16.54%     | 263,832     |
| 2015            | International         | 11,475      | 18.80%     | 61,043      |
|                 | North Central         | 12,652      | 18.22%     | 69,432      |
|                 | Northeast             | 882         | 8.05%      | 10,958      |
|                 | Southern              | 5,289       | 8.51%      | 62,126      |
|                 | Western               | 3,972       | 11.12%     | 35,733      |
|                 | US & Outlying Regions |             |            | 1,642       |
|                 | Annual Total          | 34,270      | 14.22%     | 240,934     |
| 2016            | International         | 17,412      | 22.65%     | 76,867      |
|                 | North Central         | 9,794       | 19.98%     | 49,007      |
|                 | Northeast             | 2,123       | 16.16%     | 13,140      |
|                 | Southern              | 5,399       | 8.74%      | 61,762      |
|                 | Western               | 4,824       | 12.80%     | 37,699      |
|                 | US & Outlying Regions |             |            | 1,134       |
|                 | Annual Total          | 39,552      | 16.51%     | 239,609     |
| 2012-2016 Total |                       | 204,745     | 15.83%     | 1,293,281   |
| 2016            | International         | 17,412      | 23%        | 76,867      |
|                 | North Central         | 9,794       | 20%        | 49,007      |
|                 | Northeast             | 2,123       | 16%        | 13,140      |
|                 | Southern              | 5,399       | 9%         | 61,762      |
|                 | Western               | 4,824       | 13%        | 37,699      |
|                 | US & Outlying Regions |             |            | 1,134       |
|                 | Annual Total          | 39,552      | 17%        | 239,609     |
| 2017            | International         | 21,702      | 26%        | 84,434      |
|                 | North Central         | 12,831      | 19%        | 65,887      |
|                 | Northeast             | 5,364       | 34%        | 15,963      |
|                 | Southern              | 11,191      | 16%        | 68,473      |
|                 | Western               | 4,531       | 14%        | 32,859      |
|                 | US & Outlying Regions | 8           | 1%         | 710         |
|                 | Annual Total          | 55,627      | 21%        | 268,326     |
| 2018            | International         | 29,301      | 28%        | 104,105     |
|                 | North Central         | 17,389      | 26%        | 66,965      |
|                 | Northeast             | 2,516       | 18%        | 14,138      |
|                 | Southern              | 7,890       | 15%        | 54,385      |
|                 | Western               | 4,335       | 11%        | 40,296      |
|                 | US & Outlying Regions |             |            | 800         |
|                 | Annual Total          | 61,431      | 22%        | 280,689     |
| 2019            | International         | 16,089      | 27%        | 59,077      |
|                 | North Central         | 14,484      | 22%        | 65,204      |
|                 | Northeast             | 5,377       | 25%        | 21,102      |
|                 | Southern              | 7,467       | 16%        | 46,862      |
|                 | Western               | 4,909       | 15%        | 32,505      |
|                 | US & Outlying Regions |             |            | 796         |
|                 | Annual Total          | 48,326      | 21%        | 225,546     |
| 2020            | International         | 22,450      | 46%        | 49,252      |
|                 | North Central         | 9,398       | 16%        | 58,544      |
|                 | Northeast             | 2,680       | 24%        | 10,966      |
|                 | Southern              | 6,031       | 17%        | 35,602      |
|                 | Western               | 2,872       | 11%        | 27,127      |
|                 | US & Outlying Regions | 1           | 0%         | 543         |
|                 | Annual Total          | 43,432      | 24%        | 182,034     |
| 2021            | International         | 19,561      | 27%        | 71,757      |
|                 | North Central         | 9,574       | 19%        | 49,406      |
|                 | Northeast             | 1,306       | 20%        | 6,511       |
|                 | Southern              | 4,078       | 12%        | 33,885      |
|                 | Western               | 4,322       | 16%        | 26,497      |
|                 | US & Outlying Regions | 485         | 33%        | 1,472       |
|                 | Annual Total          | 39,326      | 21%        | 189,528     |
| 10-Year Total   |                       | 497,680     | 19%        | 2,686,140   |

\*Incomplete 2021 Distributions. Data from GRIN-Global as of November 5, 2021

**Appendix Table 5: Distributions from U.S. National Plant Germplasm Sites, 2012-2021**

| Site        | Site Name  | 2012    | 2013    | 2014    | 2015    | 2016    | 2017    | 2018    | 2019    | 2020    | 2021    | Grand Total | % of Total |
|-------------|--|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|-------------|------------|
| BRW         | Natl. Germplasm Repository - Brownwood                 | 0       |         |         |         |         |         |         |         |         |         | 0           | 0.0%       |
| COR         | Natl. Germplasm Repository - Corvallis                 | 5,465   | 4,690   | 7,557   | 6,488   | 4,610   | 5,990   | 7,094   | 8,598   | 5,930   | 4,053   | 60,475      | 2.5%       |
| COT         | Cotton Collection                                      | 1,751   | 1,375   | 97      |         |         |         |         |         | 608     | 821     | 4,652       | 0.3%       |
| DAV         | Natl. Germplasm Repository - Davis                     | 6,826   | 5,571   | 7,926   | 9,442   | 2,514   | 2,702   | 5,533   | 6,824   | 2,545   | 3,199   | 53,082      | 2.2%       |
| GEN         | Natl. Germplasm Repository - Geneva                    | 7,812   | 5,750   | 6,263   | 6,810   | 6,035   | 6,419   | 8,014   | 8,006   | 4,265   | 600     | 59,974      | 2.5%       |
| GSOR        | Rice Genetic Stock Center                              | 9,515   | 8,654   | 11,637  | 16,553  | 8,209   | 8,420   | 20,910  | 4,800   | 2,813   | 2,715   | 94,226      | 3.8%       |
| GSPI        | Pea Genetic Stock Collection                           | 513     | 209     | 211     | 12      | 89      | 26      | 1       | 81      | 549     | 735     | 2,426       | 0.1%       |
| HILO        | Natl. Germplasm Repository - Hilo                      | 114     | 199     | 136     | 122     | 480     | 354     | 251     | 260     | 113     | 73      | 2,102       | 0.1%       |
| MAY         | Natl. Germplasm Repository - Mayaguez                  | 176     | 248     | 178     | 307     | 529     | 123     | 156     | 233     | 695     | 389     | 3,034       | 0.1%       |
| MIA         | Natl. Germplasm Repository - Miami                     | 289     | 115     | 184     | 80      | 456     | 688     | 712     | 695     | 178     | 159     | 3,556       | 0.1%       |
| NA          | National Arboretum                                     | 6       | 1       | 2       | 190     | 424     | 337     | 358     | 93      | 220     | 28      | 1,659       | 0.1%       |
| NC7         | North Central Regional PI Station                      | 45,366  | 41,924  | 43,633  | 34,270  | 39,552  | 55,627  | 61,431  | 48,326  | 43,432  | 39,326  | 452,887     | 18.5%      |
| NE9         | Northeast Regional PI Station                          | 14,244  | 4,767   | 6,141   | 7,349   | 8,223   | 6,618   | 13,617  | 10,241  | 5,030   | 12,918  | 89,148      | 3.5%       |
| NR6         | Potato Germplasm Introduction Station                  | 8,834   | 6,540   | 6,603   | 10,186  | 13,141  | 10,019  | 8,486   | 6,398   | 4,528   | 4,674   | 79,409      | 3.1%       |
| NSGC        | National Small Grains Collection                       | 97,710  | 53,202  | 68,979  | 57,080  | 50,847  | 51,087  | 31,255  | 31,592  | 29,621  | 17,222  | 488,595     | 20.7%      |
| NSSL        | National Laboratory for Genetic Resources Preservation | 1,253   | 222     | 304     | 710     | 2,363   | 3,833   | 283     | 897     | 365     | 1,008   | 11,238      | 0.4%       |
| NTSL        | Forest Service National Seed Lab                       | 421     | 1,509   | 866     | 300     |         |         |         |         | 150     |         | 3,246       | 0.1%       |
| OPGC        | Ornamental Plant Germplasm Center                      | 1,181   | 773     | 768     | 379     | 1,496   | 592     | 939     | 1,002   | 155     |         | 7,285       | 0.3%       |
| PARL        | National Arid Land Plant Genetic Resources Unit        | 581     | 796     | 955     | 677     | 300     | 304     | 520     | 381     | 253     | 7       | 4,774       | 0.2%       |
| S9          | Plant Genetic Resources Conservation Unit, Griffin, GA | 40,444  | 33,067  | 34,768  | 35,359  | 43,729  | 49,341  | 47,109  | 34,112  | 23,333  | 41,416  | 382,678     | 15.5%      |
| SOY         | Soybean Collection                                     | 33,738  | 34,830  | 29,262  | 26,230  | 23,030  | 22,271  | 28,666  | 26,320  | 20,789  | 27,098  | 272,234     | 11.1%      |
| TOB         | US Nicotiana Germplasm Collection                      |         |         |         | 10      | 400     | 381     | 218     | 264     | 299     | 180     | 1,752       | 0.1%       |
| W6          | Western Regional PI Station                            | 31,154  | 37,071  | 37,362  | 28,380  | 33,182  | 43,194  | 45,136  | 36,273  | 36,313  | 32,907  | 360,972     | 14.5%      |
| Grand Total |  | 307,393 | 241,513 | 263,832 | 240,934 | 239,609 | 268,326 | 280,689 | 225,546 | 182,034 | 189,528 | 2,439,404   | 100.0%     |

\*2021 Incomplete stats, data from GRIN-Global as of November 05,2021

Year      Multiple values

## **Appendix Table 6. NC-007 Participant Publications for Project Period to Date**

### **Connecticut**

Apicella P, Gardner JA, Mahoney J, Brand M. 2018. Diversity of Fruit Quality Traits in Aronia. Hort Science 53(9):S388-S388.

Brand MH, Connolly BA, Levine LH, Richards JT, Shine SM, Spencer LE. 2017. Anthocyanins, total phenolics, ORAC and moisture content of wild and cultivated dark-fruited Aronia species. Scientia Horticulturae 224:332-42. <https://doi.org/10.1016/j.scienta.2017.06.021>

Hoke O, Campbell B, Brand M, Hau T. 2017. Impact of information on northeastern US consumer willingness to pay for aronia berries. HortScience 52(3):395-400.

<https://doi.org/10.21273/HORTSCI11376-16>

Mahoney JD, Hau TM, Connolly BA, Brand MH. 2019. Sexual and apomictic seed reproduction in Aronia species with different ploidy levels. HortScience 54(4):642-6.

<https://doi.org/10.21273/HORTSCI13772-18>

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Pandey J, Scheuring DC, Koym JW, Coombs J, Novy RG, Thompson AL, Holm DG, Douches DS, Miller JC, Vales MI. 2021. Genetic diversity and population structure of advanced clones selected over forty years by a potato breeding program in the USA. *Scientific Reports*. 11:8344.  
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<https://doi.org/10.1016/j.ufug.2019.02.008>

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Griesmann M, Chang Y, Liu X, Song Y, Haberer G, Crook MB, Billault-Penneteau B, Lauressergues D, Kass, LB, Coe EH, Cook MN, Smith ME, Singer JL (Eds.) 2019. Founding of the Maize Genetics Cooperation News Letter at Cornell University: A 90th Anniversary

## **Appendix Table 6. NC-007 Participant Publications for Project Period to Date**

Tribute. (Foreword by E.S. Buckler) [e-book] Internet-First University Press, Ithaca, New York. <https://hdl.handle.net/1813/66550>

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Vatanparast M, Powell A, Doyle JJ, Egan AN. 2018. Targeting legume loci: A comparison of three methods for target enrichment bait design in Leguminosae phylogenomics. *Applications in Plant Sciences* 6(3):e1036. <https://doi.org/10.1002/aps3.1036>

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## **Appendix Table 6. NC-007 Participant Publications for Project Period to Date**

metal transporter and chelator genes involved in the genetic control of element levels in maize grain. G3: Genes| Genomes| Genetics 11:jkab059. <https://doi.org/10.1093/g3journal/jkab059>

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Vollmer J, Johnson BL, Deckard EL, Rahman M. 2020. Evaluation of simulated hail damage on seed yield and agronomic traits in canola (*Brassica napus* L.). Canadian Journal of Plant Science 100(6):597-608. <https://doi.org/10.1139/cjps-2020-0036>

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Bilbrey EA, Williamson K, Hatzakis E, Miller DD, Fresnedo-Ramírez J, Cooperstone JL. 2021. Integrating genomics and multiplatform metabolomics enables metabolite quantitative trait loci detection in breeding-relevant apple germplasm. New Phytologist. <https://doi.org/10.1111/nph.17693>

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<https://doi.org/10.17660/ActaHortic.2018.1224.5>

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Wei N, Cronn R, Liston A, Ashman TL. 2019. Functional trait divergence and trait plasticity confer polyploid advantage in heterogeneous environments. *New Phytologist* 221(4):2286-97. <https://doi.org/10.1111/nph.15508>

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Weitemier K, Straub SCK, Fishbein M, Bailey CD, Cronn RC, Liston A. 2019. A draft genome and transcriptome of common milkweed (*Asclepias syriaca*) as resources for evolutionary, ecological, and molecular studies in milkweeds and Apocynaceae. *PeerJ* 7:e7649 <https://doi.org/10.7717/peerj.7649>

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### **South Dakota**

Ali, S., Kleinjan, J., Yabwalo, D. N., Graham, C., Caffe-Treml, M., Mueller, N. D., Rickertsen, J., & Berzonsky, W. A. 2019. Winter Wheat Grain Yield Response to Fungicide Application is Influenced by Cultivar and Rainfall. *The plant pathology journal*, 35(1), 63–70.  
<https://doi.org/10.5423/PPJ.OA.04.2018.0056>

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<https://doi.org/10.1093/genetics/iyaa043>

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Elverson TR, Kontz BJ, Markell SG, Harveson RM, Mathew FM. 2020. Quantitative polymerase chain reaction assays developed for *Diaporthe helianthi* and *D. gulyae* for Phomopsis stem canker diagnosis and germplasm screening in sunflower (*Helianthus annuus*). Plant Dis. 104 (3): 793-800. <https://doi.org/10.1094/pdis-09-19-1827-RE>

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### **Wisconsin**

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Allam M, Ordás B, Djemel A, Tracy WF, Revilla P. 2019. Linkage disequilibrium between fitness QTLs and the sugary1 allele of maize. *Molecular Breeding* 39(1):1-1.

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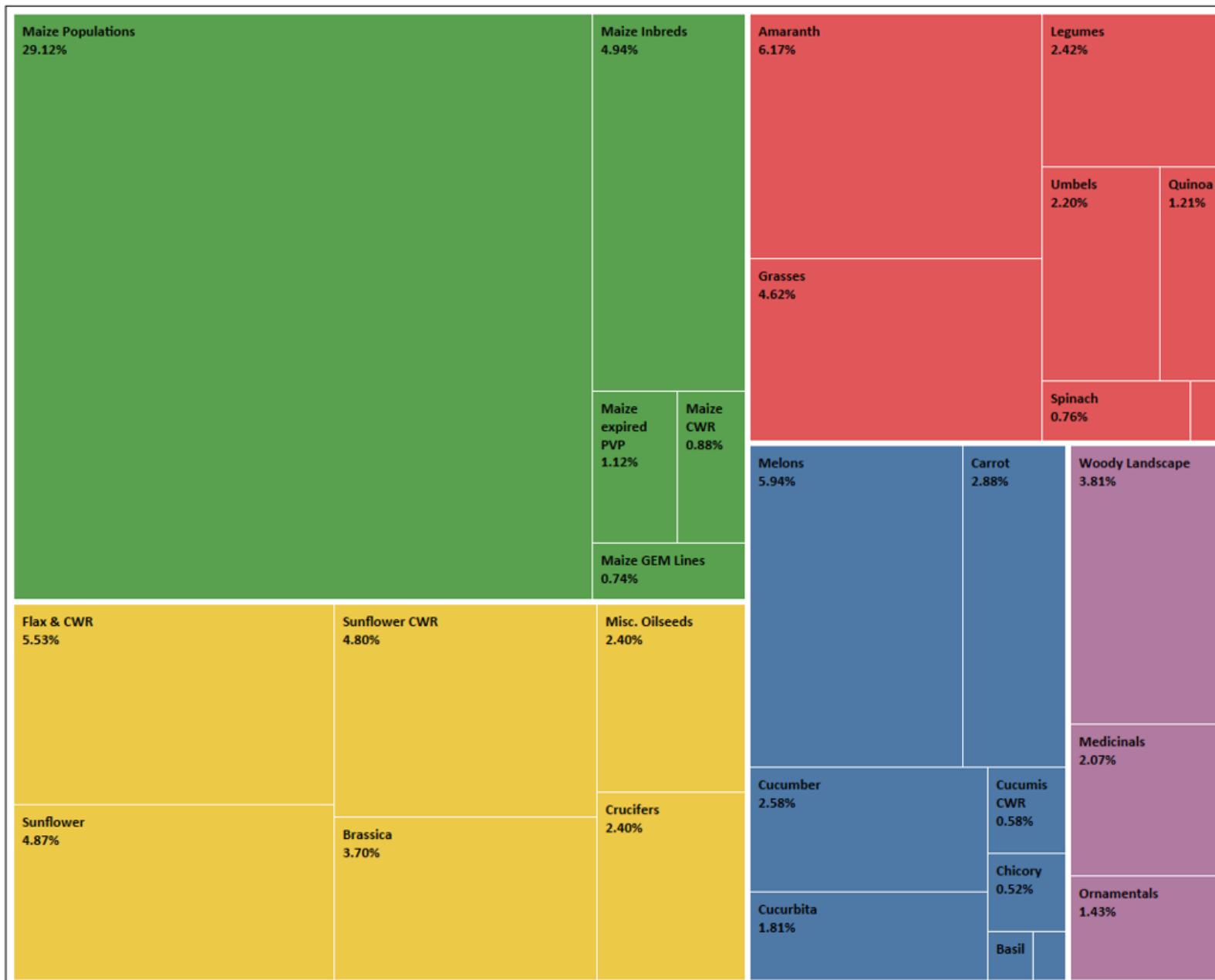
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Appendix Figure 1: Composition of the NC-007 Crop Collections Curated at the North Central Regional Plant Introduction Station



Curator    ■ Brenner    ■ Carstens    ■ Marek    ■ Millard    ■ Reitsma

\*Data as of November 5, 2021

**Appendix Figure 2: North Central Regional Plant Introduction Station Staff**

