

ANNUAL REPORT OF COOPERATIVE REGIONAL PROJECTS  
Supported by Allotments of the Regional Research Fund,  
Hatch Act, as Amended August 11, 1955  
January 1 to December 31, 1958

1. PROJECT: NORTH CENTRAL REGIONAL PROJECT NC-7

The Introduction, Multiplication, Preservation and Evaluation of New Plants for Industrial and Agricultural Use.

2. COOPERATING AGENCIES AND PRINCIPAL LEADERS:

State Experiment Stations

South Dakota  
Alaska  
Illinois  
Indiana  
Iowa  
Kansas  
Michigan  
Minnesota  
Missouri  
Nebraska  
North Dakota  
Ohio  
Wisconsin

Representatives

S. A. McCrory, Chairman  
M. F. Babb  
E. B. Patterson  
H. H. Kramer  
I. J. Johnson  
R. V. Olson  
C. M. Harrison  
A. N. Wilcox  
A. D. Hibbard  
W. R. Kehr  
T. E. Stoa  
F. S. Howlett  
W. H. Gabelman

Administrative Adviser

E. F. Frolik

U. S. Department of Agriculture

New Crops Research Branch  
Crop Development Section  
Plant Introduction Section  
State Experiment Station Division  
  
Soil Conservation Service

C. O. Erlanson, In Charge  
W. E. Whitehouse  
H. L. Hyland  
N. F. Farris  
W. C. Kennard  
A. D. Stoesz

North Central Regional Plant Introduction Station, Ames, Iowa

Regional Coordinator  
Technical Assistant  
Plant Pathologist

W. H. Skrdla  
A. F. Dodge  
E. E. Leppik

3. PROGRESS OF WORK AND PRINCIPAL ACCOMPLISHMENTS

a. Regional Station Program.

(1) Production program. The year 1958 was the eleventh crop year since the establishment of the North Central Regional Station.

During 1958, field plantings at the Regional Station consisted of 2484 accessions of 118 genera. The number of biennial and perennial accessions carried over from 1957 totaled 1218. This makes a grand total of 3702 accessions planted, grown, and harvested during the year. Most perennials planted in the spring produced seed during the first year because of having been started early in the greenhouse and having had a favorable growing season.

Notes on plant characteristics as well as disease incidence were made on all accessions several times during the season.

The following is a breakdown of the crop groups grown in 1958 and number of genera and accessions in each:

<u>Crop</u>	<u>No. of Genera</u>	<u>No. of Accessions</u>
Grasses	35	653
Legumes	11	496
Vegetables	12	1170
Ornamental and Special	60	165
Total (new)	118	2484
Carryover of perennial accessions from 1957		1218
Total for 1958		3702

Sib pollinations were made on cucumbers, squash, pumpkins, and corn. On corn alone, over 6000 sib pollinations were made. Several times this number of pollinations were made collectively on cucumbers, squash, and pumpkins.

Beets, carrots, onions, and celery were grown in cages for pollination using bees, and also in the field in separated plantings.

Many new accessions will appear on the 1958 seed list because we had a favorable growing season and good seed harvests were obtained.

(2) Introductions received. As a result of a foreign exploration during 1958 into the Mediterranean and near East countries primarily for forage crops, and another into Angola and Belgian Congo for vegetables, our inventory was increased considerably with new introductions. However, many introductions were also received through other sources, such as, contributions from cooperators, transfers from other regions, and various foreign sources other than through special exploration. The following breakdown shows the number of genera and accessions received:

<u>Crop</u>	<u>No. of Genera</u>	<u>No. of Accessions</u>
Grasses	27	390
Legumes	14	322
Vegetables	15	409
Ornamental and Special	7	73
Total	63	1194

(3) Plant Pathology Program. The primary duties of the Regional Station plant pathologist is to make field observations of all accessions being grown, in the field and greenhouse. This provides an opportunity to evaluate them for naturally occurring diseases under field conditions and also to keep a constant watch for new and little known diseases which might have been introduced with seed. In 1958, more than 3700 accessions were evaluated in this way, most of them as much as 5 to 6 times during the season.

With the cooperation of the Department of Botany, Iowa State College, 98 corn accessions were inoculated in the field with Puccinia sorghi (rust) and Helminthosporium turcicum (blight). Subsequent evaluations were made and the more promising ones will be included in probable future testing. The work is being continued in the greenhouse during the winter months.

As a result of field and greenhouse observations, 2 diseases previously unreported in this country were found. One is Cercospora traversiana Sacc. on Trigonella foenum-graecum and the other is what appears to be a new race of Ascochyta pisi Lib. on Lathyrus sativa and L. cicera accessions from Ethiopia. In accordance with a request by the Division of Plant Quarantine, these accessions will not be distributed until a complete screening of all accessions of these three species can be made to determine which are infected and which are not. This work is now being carried out in the greenhouse. In this connection we are also trying to determine whether or not disease-free material can be obtained from an infected accession. Due to an interest in Trigonella foenum-graecum by the Northern Utilization Laboratory, this work is considered justified and necessary.

(4) Seed distributed by Regional Station. During the calendar year 1958, a total of 8871 packets of seed were distributed to cooperators in all 4 regions and foreign countries. This included 1913 packets of grass, 1450 legumes, 5490 vegetables, and 18 special. A complete breakdown, including the total of woody plants distributed, is given in Appendix B.

(5) Woody Ornamentals Program. The woody ornamental program is continuing on about the same basis as in past years. Some interest is being shown in herbaceous ornamentals. Introduced ornamental material available from Glenn Dale is being tested if it is considered to be hardy in this region.

For the second consecutive year since the inception of the woody ornamental program, disease notes and evaluations are being made at the Regional Station. This assistance is of value for the preliminary screening and observation of material prior to using it for regional testing.

More than 100 accessions of introduced Japanese chrysanthemums were received from the Glenn Dale Plant Introduction Station in August. These were potted for greenhouse propagation. Seven spring planted chrysanthemum accessions received in 1957 were observed in flower under better than normal fall conditions. Distribution of propagation material of these was made in 1958.

A meeting of the Woody Ornamental Subcommittee was attended by specialists from 11 states. The committee completed the first five-year revision of the cooperative work outline for regional test planting of woody ornamentals. In addition, 37 trees and shrubs were recommended for future regional test planting.

An inventory of material being held and/or propagated at the regional station and of material distributed during 1958 is given in Appendix B.

(6) Industrial Utilization of Crops Program. In 1958, the station continued to participate in growing and observing plant materials concerned with possible industrial use. New crop plants are being sought through introduction and also through more extensive study of native species for sources of starch, oil, waxes, proteins, and fiber. This research work is closely cooperative between project leaders of the several state experiment stations, the Regional Plant Introduction Station, and the Northern Utilization Laboratory at Peoria, Illinois.

In 1958, the following special crops were grown at the Regional Station for observation and increase:

Crambe abyssinica  
Cyamopsis tetragonolobus  
Helianthus annuus  
Helianthus macrophyllus x tuberosus  
Helianthus strumosus  
Lallemantia sp.  
Mentha species  
Perilla frutescens  
Ricinus communis  
Sesamum indicum  
Symphytum peregrinum

Additional crops will be grown as they are obtained.

(7) Public Relations. During the year the station was host to a considerable number of visitors. Many were individual visitors and small groups representing private interests, foreign countries, and state and federal organizations. The station also cooperated in holding organized tours of the station for various groups having meetings on the campus at Iowa State College. During the year, January 1, 1958 through December 31, 1958, approximately 687 visitors have seen the station. The following is a general breakdown of the visiting groups:

Horticulture Propagating class	March 6, 1958	17
Experiment Station Directors of North Central Region	March 19, 1958	20
Iowa county agent supervisors and staff	May 26, 1958	350
Iowa Seed Dealers association	June 10, 1958	60
4-H Club Boys	June 24/25, 1958	200
Horticulture Vegetable Crops Class	October 15, 1958	12
Other individuals and small groups		28
Total		<hr/> 687

b. Evaluation Program

Evaluation of Plant Introductions customarily has been accomplished through (1) observational notes taken at the Regional Station, (2) evaluation information received from cooperators who used the material, (3) seed contract evaluations negotiated by the coordinator with state experiment station research personnel, and (4) through contributing state projects which receive NC-7 assistance with Regional Research funds. The information obtained from these sources is consolidated and distributed through special reports or reported in the annual seed list.

Among many evaluations made in 1958 by cooperators who requested material from this station, the following evaluations are listed since they involved sizeable numbers of introductions:

(1) 1300 tomato accessions for evaluation for Phytophthora capsici root rot.

(2) 1300 tomato accessions for evaluation for tolerance to heat, salt and curly top disease in California.

(3) An interest in our beet accessions has developed from the standpoint of resistance to sugar beet nematode, Aphanomyces cochlioides and Rhizotonia solani. Many of our accessions are now being screened by federal and commercial workers for these characters.

(4) An interest has developed in our collection of garden leafy beets, heretofore considered worthless. In sugar breeding work, hybrids of sugar beet and Beta procumbens produced non-viable hybrids. However, viable hybrids have been obtained by hybridizing Beta procumbens and a leafy beet from Turkey. Many accessions of our beets have been requested for further study along this line.

(5) The Libby McNeil company has begun a screening program of certain cucurbit accessions. They are looking for fruit with high total solids, desirable color and flavor.

(6) As a result of the establishment of the NCR-10 turf research committee an interest has developed in our turfgrass genera, like Poa, Festuca, Agrostis, and Lolium for germ plasm for use in turf breeding work. Evaluation data is being taken at this station as to the possible value these accessions may have for turf use.

(7) In cooperation with the European Corn Borer Research Laboratory at Ankeny, Iowa, all corn accessions grown for seed increase at this station were evaluated for resistance to corn borer.

Through the efforts of the NC-7 Vegetable Crops subcommittee a systematized and coordinated screening and evaluation program is being effected.

Through the use of NC-7 seed contract and evaluation funds, the following screening and evaluation work was provided assistance in 1958:

(1) Kansas State College - Screening 100 plant introductions of Cucurbita for resistance to squash bug.

(2) Illinois - Screening the world collection of oat varieties for resistance to Yellow Dwarf virus disease.

Toward the end of the 1958 calendar year, over 100 requests for performance of accessions were distributed to cooperators who have been furnished with Plant Introduction material during the year. Replies were received from most cooperators. This information will be summarized and distributed to cooperators.

Evaluation and screening work being accomplished through state contributing projects will be discussed later in this report.

c. Domestic exploration in the North Central Region.

The collection of raspberries and blackberries made in Minnesota and Wisconsin in 1957 were catalogued and a portion of the seed of each collection is now in storage at this station.

d. State contributing projects.

A report of progress on state contributing projects which receive NC-7 assistance with Regional Research funds is given below. Additional details on each project is given in Appendix A. Abbreviated titles are used below.

(1) Illinois: "Maintenance of Maize Tester Stocks." In 1958, about 25,000 plants, representing about 2000 families were grown. Additional plantings were made in the greenhouse or in Florida during the winter and individual pedigrees kept on all stocks. A complete inventory of each year's harvest is made from which a catalogue of available stocks is prepared and submitted to the Maize Genetics Cooperation News Letter, whose recipients use it as a basis for seed requests.

(2) Illinois: "The Collection and Evaluation of Grasses and Legumes." Through this project, evaluations of Dactylis, Trifolium, Lotus and Melilotus introductions supplied by this station are being obtained from southern Illinois and/or central Illinois (Urbana). Detailed summary reports of Melilotus evaluated prior to 1958 were prepared and are now available. A report on Lotus introductions is now in preparation. Dactylis introductions are now being evaluated. No new Trifolium introductions were evaluated in 1958.

(3) Indiana: "Evaluation of Legume and Grass Introductions." Through this project, agronomic and disease evaluation is being obtained on Medicago, Bromus, Phalaris, Phleum, Sorghum, and Dactylis introductions. Progress in 1958 has included new field plantings, continued evaluations, and progress reports on material tested. Indications are that the introductions are offering an excellent source of new germ plasm for the breeding program at that station.

(4) Iowa: "Evaluation of Dactylis, Phalaris, and Lotus introductions." Seventy-nine Dactylis and 10 Phalaris introductions were evaluated in 1957-58 for stand establishment, spring growth rate, hay vigor, recovery after cutting, bloom date, leafiness, disease, seedling and fall vigor, winter injury, shattering resistance, etc. A complete report was received and the project will terminate June 30, 1959.

(5) Kansas: "Multiplication, Preservation and Determination of Potential Value of Forage Grasses and Legumes." To collect and preserve native and introduced grasses having potential value is one phase of the project. In 1958, 344 accessions of grasses (18 species) and 84 forb accessions (12 species) were added to the evaluation nursery.

(6) Kansas: "Evaluation of Legumes, Native and Introduced, other than Alfalfa." This project involves the evaluation and maintenance of valuable native and introduced legumes having potential agronomic value. In 1958, 664 accessions of native legumes (22 species) were collected and added to the evaluation nursery.

(7) Michigan: "Pea evaluation." A total of 617 pea introductions were tested for *Fusarium* root rot and a report of results was submitted. Twenty-eight (28) lines appeared to be highly resistant to this disease under the conditions of the test.

(8) Minnesota: "Stone Fruits". Approximately 600 clones, including plums, peaches, cherries and apricots are maintained. Of these 159 appear in the Regional Breeders' Inventory. The work of evaluation, description, and photographing was continued in 1958 for the publication of a bulletin in 1959.

(9) Nebraska: "Preservation of Alfalfa Clones." Seedlings of 31 new Plant Introductions were transplanted to the P.I. nursery in the spring of 1958, making a total of 141 introductions under current evaluation and a total of 414 observed during the period 1949 to 1958. All materials were found susceptible to leafhopper, but 4 selections were found to be resistant to the spotted aphid and are available for distribution. Further tests are being made with selections showing resistance to potato leafhopper and spotted aphid. More tests under controlled conditions will be made on leafhopper reaction.

(10) Nebraska: "Native Grasses." Maintained in nurseries are clonal materials and selected lines of crested wheatgrass, intermediate wheatgrass, tall wheatgrass, and bromegrass from recent introductions; and switchgrass, bluestems, grama grass, and lovegrass from 1949-1957 domestic collections. Information on heritabilities of 7 agronomic characters of switchgrass and a comparison of bluestem and switchgrass types under different clipping management at 3 locations is being obtained.

(11) Nebraska: "Special Legumes". The objective of this project is to assemble, grow and evaluate species, strains, and varieties of legumes and to increase them as may be valuable for special purpose plantings in the Central Great Plains. In 1958, 83 additional accessions were planted in the introduction and preliminary evaluation nursery. Seed of several accessions are now plentiful enough for limited distribution.

(12) North Dakota. "Maintenance of Flax Rust." The purpose of this project is to preserve in the uredinial (repeating) stage races of flax rust having desired genes for virulence on selected flax varieties. These are used to test purity of varieties, identify specific rust genes, to discover new genes for rust resistance and to study genetics of rust resistance. Seventy-five races of *Melampsora lini* are being maintained by propagation on their host (flax) and by a process of lyophyllization.

(13) Ohio: "Pear Preservation." The evaluation of newly introduced varieties was continued in 1958. This included for the first time the varieties Calebrasse de Turlemont, Charnin, Colette, Coxa de Freira, Hoskins, Mooers, Nebraska City, New Zealand Winter Bartlett, Passe Crassane (red strain), and Parker. From the point of view of fruit characteristics Charnin, Colette, and New Zealand Winter Bartlett were most noteworthy.

(14) Ohio: "Tomato Preservation." This is a cooperative project whereby new introductions are classified and described at Wooster. The seed is stored at the Regional Station. In 1958, 23 introductions were classified. In addition, 24 new gene marker stocks have been verified and seed placed in storage at the Regional Station in Ames, Iowa. In addition, 37 commercial varieties, both old and new, have been collected, classified, and stored at the Regional Station.

(15) South Dakota: "Hardy Fruit Preservation." This project concerns maintenance, distribution, and evaluation (adaptability, quality, genetic value, disease resistance, etc.) of a collection of fruit plants at the South Dakota Agricultural Experiment Station, consisting of plants from domestic and foreign origin. In 1957 and 1958, 68 items of propagation material were distributed to fruit breeders. Information collected on these plants during the past 10 years was published as a Regional Bulletin and distributed.

(16) Wisconsin: "Yellow Dwarf Virus on Barley". With the aid of this project, the World Barley Collection is being screened for resistance to the Yellow Dwarf Virus. In 1957, 1200 accessions were given a preliminary screening in the field. Of these, 117 entries appeared to have some tolerance. Again, using aphids to transmit the virus, they were tested in the greenhouse during the winter of 1957-58. Of these, 25 showed at least a fair degree of tolerance; all are from Ethiopia. Further tests are being made.

#### 4. USEFULNESS OF FINDINGS:

a. State contributing projects: The evaluation of plant introductions through state contributing projects is a very useful means of obtaining information on germ plasm which eventually is of benefit to many research workers and ultimately, the public through the release of new and improved crop varieties. This is accomplished through free exchange of information (gained from contributing projects and individual reports on material used) among respective crop workers. The Regional Plant Introduction Station is the central clearing house for this exchange and also is a constant source of seed supply for crop research workers.

b. Evaluation program: As a result of evaluation and screening programs through contributing projects and individual reports from cooperators using introduced material the following introductions are of special interest which are among those reported in 1958:

##### (1) Alfalfa

The following accessions were reported by R. L. Davis, Purdue, to have a rhizomatous habit of growth.

204461	206572	222112
204885	206573	222113
204389	212859	FC 24355

W. R. Kehr, Nebraska, reported selections from the following alfalfa accessions as being resistant to the spotted aphid.

201864	204459 (segregating)
208115 (segregating)	212858 (segregating)

##### (2) Apple

Kensib crab, described on page 13 of North Central Regional Bul. 90, "Preliminary Evaluation and Descriptions of Domestic and Introduced Fruit Plants," 1958, is an introduction from Russia made in 1897. This variety is a true dwarf which has shown nothing but desirable characteristics to date and is considered to be valuable as parent stock in dwarf apple breeding.



(3) Canarygrass (*Phalaris arundinacea*) reported by R. R. Kalton, Iowa. PI225116 and 235483 approached the check strain (Ph-12) in general vigor and growth.

PI 235483 appears to have a somewhat prostrate habit of growth.

PI 235023, though not vigorous, was quite free of leaf disease and may carry disease resistant genes.

(4) Corn

PI 185664 from Haiti shows considerable resistance to corn borer as reported by F. F. Dicke, Ankeny, Iowa Corn Borer Lab.

(5) Cucumber. J. C. Gilbert (Hawaii) reports the following accessions to be resistant to powdery mildew:

212233                      197088                      197085

He also reports the following to be partially resistant:

227208                      234517                      202801

(6) Lotus. C. N. Hittle reported the following PI to be outstanding in general appearance:

226798

(7) Orchardgrass. R. L. Davis, R. C. Pickett, and K. L. Athow report the following PI's of orchardgrass had second generation progenies that were outstanding in rust resistance:

172407                                      189388

180831                                      204700

(8) Peas. According to observations made at the Regional Station, the following 3 accessions have yellow pods:

244150                      244151                      236491

The first two are introductions from Holland and grown here for the first time.

244092, also from Holland has flowers in clusters of 2, 3, 4 and 5.

J. L. Lockwood reported 28 introductions to be resistant to Fusarium root rot. These are on record at the Regional Station and may be obtained on request.

(9) Pumpkins and squash. W. R. Sitterly, South Carolina, reported 10 accessions and selections from 10 others to be sufficiently tolerant to squash mosaic virus to warrant incorporation of this tolerance into commercial lines.

Tolerant lines

165558	216032
181878	169454
183232	169477
212006	172870
212060	172872

Individual Plant Selections

212002	169426
222247	169442
227237	169474
229688	171627
167053	176536

(10) Sweet Clover (*Melilotus segetalis*). P. C. Sandal, North Dakota, reports the following accession as being the only one out of 20 which was not attacked by sweet clover weevil.

202512

(11) Tomato. J. M. Walters, Florida, reports the following resistance of 3 accessions to potato virus Y:

195006 - may be highly resistant.

128887 - little infection and may be another source of resistance.

117897 - a possible source of resistance plus other favorable characteristics.

Additional evaluation reports will be distributed in a separate report.

#### 5. WORK PLANNED FOR NEXT YEAR:

In general, there is no material change anticipated in emphasis or direction of work reported above, with one exception. There will be greater emphasis directed toward Industrial Utilization of Crops. The NC-7 Technical Committee made Regional Research funds available for FY 60 for initiation of work along this line. Plans are now being developed for this work.

#### 6. PUBLICATIONS ISSUED OR MANUSCRIPTS PREPARED DURING THE YEAR:

##### Illinois

Patterson, E. B. (Title not available, but a brief report on the NC-7 contributing project on maintenance of maize tester stocks and a catalogue of available stocks was published). 1958 Maize Genetics Cooperative News Letter.

##### Kansas

Hackerott, H. L., Harvey, T. L., Sorensen, E. L., and R. H. Painter. Varietal differences in survival of alfalfa seedlings infested with spotted alfalfa aphids. *Agronomy Journal* 50: 139-141. 1958.

Peters, D. C. and Reginald H. Painter. Studies on the biologies of three related legume aphids in relation to their host plants. *Kansas Agricultural Experiment Station Technical Bulletin* 93, May 1958.

##### Michigan

Peterson, C. E., and Weigle, J. L. A new method for producing hybrid cucumber seed. *Quarterly Bulletin of the Michigan Agricultural Experiment Station* 40: 960-965, May 1958.

##### Nebraska

Eberhart, Steve A. An evaluation of plant variation in selected populations of switchgrass, *Panicum virgatum* L. M. S. Thesis, 1958.

\_\_\_\_\_ and Newell, L. C. Variation in domestic collections of switchgrass, *Panicum virgatum* L. (In press).

North Dakota

Flor, H. H. Mutations to wider virulence in Melampsora lini. Phytopathology 48 (In press).

Ohio

Alexander, L. J. Progress Report of National Screening Committee for Disease Resistance in the tomato for 1954-1957. Plant Disease Reporter. (In press).

South Dakota

McCrorry, S. A. Preliminary Evaluation and Description of Domestic and Introduced Fruit Plants. North Central Regional Bulletin No. 90; South Dakota State College Bul. No. 471, 1958.

Regional Station

1957 Seed list.

7. APPROVED:

January 16, 1959

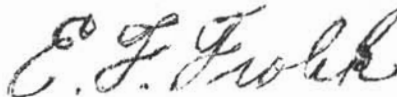
Date



Chairman, Technical Committee

January 16, 1959

Date



Regional Administrative Adviser

NC-7 STATE CONTRIBUTING PROJECTS, 1958-59  
WHICH RECEIVE ASSISTANCE WITH REGIONAL RESEARCH FUNDS

1. Illinois: The Assembly, Evaluation, and Seed Increase of New Introductions and Genetic Chromosomal Tester Stocks of Maize. Initiated 7/1/53, \$3500 annually. Project 15-382.
2. Illinois: The Collection, Preservation, and Extensive Evaluation of Trifolium, Lotus, Melilotus, and Dactylis Introductions. Initiated 7/1/56, \$500 annually.
3. Indiana: Evaluation of Legume and Grass Introductions. Initiated 7/1/56, \$900 annually, Project 890.
4. Iowa: Evaluation of Grasses and Legumes. Initiated 7/1/56, \$500 annually, Project 1333, Grasses and 1048, Legumes.
5. Kansas: Multiplication, Preservation, and Determination of Potential Value of Forage Grasses and Legumes. Initiated 7/1/49, \$2000 annually, Project 287.
6. Kansas: Evaluation of Legumes, Native and Introduced, other than Alfalfa. Initiated 7/1/56, \$500 annually, Project 492.
7. Michigan: Evaluation of Peas for Horticultural Characteristics and Resistance to Root Rots and Viruses. Initiated 7/1/56, \$900 annually, Project Hatch 837.
8. Minnesota: Introduction, Preservation and Evaluation of Stone Fruits of Probable Potential Value to the North Central Region. Initiated 7/1/50, \$1,000 annually, Project 2119 RRF, Hort 2221.
9. Nebraska: Preservation of Alfalfa Clones and Seed Stocks Needed in Alfalfa Improvement and Preliminary Evaluation of Plant Introductions. Initiated 7/1/49, \$700 annually, Project 347.
10. Nebraska: The Introduction, Multiplication, Preservation, and Determination of Potential Value of New Accessions and Strains of Native and Exotic Grasses. Initiated 7/1/49, \$1500 annually, Project 348.
11. Nebraska: Introduction and Preliminary Evaluation of Legumes other than alfalfa and sweetclover. Initiated 7/1/56, \$500 annually, Project 542.
12. North Dakota: Preservation of certain Physiologic Races of Flax Rust - Melampsora lini. Initiated 7/1/50. \$500 annually, Project Hatch 13-IR.
13. Ohio: Multiplication, Preservation, and Determination of Potential Value of Pear Varieties of North Central States Introduced into and collected within the United States. Initiated 7/1/49, \$500 annually, Project Hatch 73.
14. Ohio: The Evaluation of the Collection of Domestic and Wild Species of Tomato, and the Maintenance of the Desirable Accessions and Valuable Breeding Stocks. Initiated 7/1/49, \$1000 annually, Project Hatch 72.
15. South Dakota: The Collecting, Preserving, Cataloguing, Propagating, and Testing of Fruit Plants having Potential Genetic Value. Initiated 7/1/49, \$2500 annually, Project 174.
16. Wisconsin: Reaction of Accessions of Barley (Hordeum spp.) in the World Collection of Small Grains to the Yellow Dwarf Virus. Initiated 7/1/56, \$1000 annually, Project 761.

Table I. Summary of accessions received through 1958 and their present status of utilization.

Genera	1957 total cumulative	Removed from inven- tory*	Received 1958	1958 net cumu- lative	Seed list 1958	To be grown	Packets distri- buted
<b>Grasses and Field Crops</b>							
Aegilops	103	-	4	107	101	6	128
Agropyron	155	3	17	169	113	56	60
Agrostis	60	-	19	79	40	39	11
Alopecurus	20	-	6	26	11	15	23
Apera	4	-	1	5	4	1	-
Arrhenatherum	3	-	8	11	3	8	10
Beckmannia	2	-	-	2	-	2	2
Bouteloua	3	-	-	3	-	3	-
Brachypodium	20	-	1	21	11	10	22
Bromus	240	1	97	336	178	158	176
Calamagrostis	7	-	2	9	6	3	-
Cynosurus	1	-	6	7	1	6	1
Dactylis	240	-	50	290	151	139	323
Danthonia	2	-	4	6	-	6	-
Echinochloa	13	4	11	20	8	12	15
Elymus	5	-	-	5	3	2	13
Enneapogon	2	-	-	2	1	1	-
Eremopoa	1	-	-	1	-	1	-
Euchlaena	1	-	-	1	1	-	1
Festuca	99	-	40	139	73	66	76
Guadiniopsis	-	-	1	1	-	1	-
Helictotrichon	4	-	-	4	-	4	-
Henrardia	1	-	-	1	-	1	-
Hesperochloa	1	-	-	1	-	1	-
Hordeum	6	-	2	8	6	2	9
Koeleria	1	-	6	7	-	7	-
Lolium	100	-	12	112	75	37	37
Melica	2	-	-	2	2	-	2
Milium	-	-	1	1	-	1	-
Nardus	-	-	2	2	-	2	-
Panicum	119	-	27	146	103	43	101
Phacelurus	1	-	-	1	1	-	-
Phalaris	106	56	22	72	49	23	162
Phleum	42	-	5	47	34	13	21
Poa	53	2	-	51	42	9	32
Polypogon	1	-	-	1	1	-	-
Puccinellia	-	-	1	1	-	1	-
Rottboellia	1	-	-	1	-	1	-
Schedonnardus	1	-	-	1	-	1	-
Secale	2	-	4	6	-	6	1

\*Removed because of transfer to other regions, to Glenn Dale storage, or loss of seed due to inability to obtain increase seed and/or complete loss of viability.

Table I. Continued.

Genera	1957 total cumulative	Removed from inven- tory*	Received 1958	1958 net cumu- lative	Seed list 1958	To be grown	Packets distrib- uted
<u>Grasses and Field Crops, Cont'd.</u>							
Setaria	74	-	8	82	70	12	101
Sorghum	11	-	-	11	11	-	26
Sporobolus	2	-	-	2	-	2	2
Triodia	1	-	-	1	-	1	-
Zea							
Introductions	1308	9	33	1332	1309	23	558**
O.P. Collec- tions	450	-	-	450	450	-	-
Total Zea	<u>1758</u>	-	-	<u>1782</u>	<u>1759</u>	-	-
Totals: Genera 46	3268	75	390	3583	2858	725	1913
<u>Legumes</u>							
Astragalus	27	5	15	37	9	28	26
Coronilla	10	-	4	14	7	7	20
Crotalaria	1	1	-	-	-	-	1
Dalea	1	-	2	3	1	2	3
Desmodium	-	-	1	1	-	1	-
Glycine	1	-	-	1	-	1	-
Hedysarum	1	-	-	1	-	1	1
Lathyrus	77	2	7	82	63	19	85
Lotus	54	2	29	81	46	35	118
Medicago	332	3	102	431	255	176	744
Melilotus	141	1	12	152	110	42	141
Onobrychis	26	-	2	28	14	14	23
Psoralea	-	-	5	5	-	5	-
Scopiurus	3	-	3	6	2	4	-
Tetragonolobus	1	-	1	1	-	1	-
Trifolium	254	3	122	373	167	206	273
Trigonella	105	-	17	122	10	112	15
Totals: Genera 17	1034	17	322	1338	684	654	1450
<u>Fruits and Vegetables</u>							
Allium	180	20	31	191	75	116	52
Apium	53	1	2	54	10	44	-
Asparagus	9	-	7	16	9	7	11
Beta	242	11	6	237	201	36	755
Crepis	-	-	1	1	-	1	-
Cucumis	342	2	14	354	233	121	418
Cucurbita	473	12	7	468	455	13	438
Daucus	169	8	8	169	94	75	118
Frageria	2	-	-	2	-	2	-
Lactuca	153	-	19	172	138	34	354

\*Removed because of transfer to other regions, to Glenn Dale storage, or loss of seed due to inability to obtain increase and/or loss of viability.

\*\*Total of introduced and open pollinated corn distributed.

Table I. Continued.

Genera	1957 total cumulative	Removed from inven- tory*	Received 1958	1958 net cumu- lative	Seed list 1958	To be grown	Packets distri- buted
<u>Fruits and Vegetables, Cont'd.</u>							
Luffa	1	-	1	2	-	2	-
Lycopersicon	1324	-	73	1397	1348	49	1671
Phaseolus	-	-	9	9	-	9	-
Pisum	661	1	224	884	836	48	1505
Prunus	4	1	-	3	3	-	-
Pyrus	4	-	-	4	2	2	-
Rheum	3	-	4	7	1	6	2
Spinacea	<u>154</u>	-	<u>3</u>	<u>157</u>	<u>153</u>	<u>4</u>	<u>166</u>
Totals: Genera 18	3774	<u>56</u>	409	4127	3558	569	5490
<u>Ornamental, Oil and Special</u>							
<u>Group I. Oil and Special</u>							
Crambe	-	-	1	1	-	1	-
Cyamopsis	-	-	5	5	-	5	-
Helianthus annuus	155	-	39	194	158	36	6
Helianthus spp.	4	-	-	4	4	-	6
Lallemantia	2	-	-	2	-	2	2
Mentha	16	-	-	16	10	6	-
Ononis	-	-	2	2	-	2	-
Perilla	-	-	11	11	-	11	-
Ricinus	-	-	10	10	-	10	-
Rosa	1	-	-	1	1	-	-
Sesamum	-	-	5	5	-	5	-
Symphytum	<u>1</u>	-	-	<u>1</u>	<u>1</u>	-	<u>4</u>
Totals: Genera 12	179	<u>0</u>	73	252	174	78	18

\*Removed because of transfer to other regions, to Glenn Dale storage, or loss of seed due to inability to obtain increase and/or loss of viability.

Table I. Continued.

Genera	Cumulative on hand	Status*	No. Accessions available 1958	No. plants distributed 1958	
Group II. <u>Woody and Herbaceous Ornamentals</u>					
205643	Abelia	1	P	0	0
227681	Abies	1	G	0	0
	Acanthopanax	1	D&P	1	35
	Acer	7	D,G	2	134
	Amorpha	2	D,G	1	79
	Atraphaxis	1	H	0	0
	Berberis	1	G	0	0
PI	Betula	2	G	0	0
	Buxus	1	G	0	0
	Callicarpa	2	H	0	0
	Caragana	3	D,H	2	144
102295	Carpinus	1	G	0	0
	Caryopteris	2	H	0	0
	Ceanothus	1	G	0	0
	Cercidiphyllum	1	H	0	0
	Cercis	1	H	1	5
	Chaenomeles	2	G	0	0
PI	Chrysanthemum	130	P	7	7
	Colutea	1	D	1	52
	Cornus	5	G,H,F	0	0
	Cotoneaster	3	G,H,F	0	0
PI	Cydonia	2	G	0	0
PI	Elaeagnus	4	G	0	0
	Elsholtzia	1	G,P	0	0
PI	Dianthus	1	G	0	0
	Ephedra	1	G	0	0
	Euonymus	6	D,G,H	1	59
PI	Euphorbia	1	H	0	0
	Exochorda	1	H	0	0
	Forsythia	1	H	0	0
	Fraxinus	1	D	1	82
	Hedera	1	D	1	113
	Hypericum	1	H	0	0
	Ilex	1	G	0	0
PI	Iris	1	G	0	0
	Ixia	1	G	0	0
	Larix	1	G	0	0
PI	Ligustrum	1	G	0	0
PI	Lithocarpus	1	G	0	0
	Lonicera	6	D,G	4	286
	Mahonia	1	D	1	66
	Malus	8	D,G	4	214
PI	Melicope	1	G	0	0
	Morus	1	G	0	0
	Pachystima	1	H	0	0
PI	Philadelphus	2	G	0	0
	Photinia	1	G	0	0
	Physocarpus	1	H	0	6
PI	Populus	9	G	0	0
PI	Prinsepia	1	G	0	0



Table I. Continued.

Genera		Cumulative on hand	Status*	No. Accessions available 1958	No. plants distributed 1958
Group II. Woody and Herbaceous Ornamentals, Cont'd.					
PI	Quercus	1	G	0	0
	Rhus	1	H	0	0
	Ribes	1	H	0	0
PI	Rosa	1	D	1	81
PI	Rubus	11	G	0	0
	Salix	3	D,H	1	76
	Securinega	1	D,H	1	82
PI	Shepherdia	2	H	0	0
	Spiraea	2	D	2	146
PI	Thuja	1	P	0	0
	Tilia	2	D,G	1	71
PI	Vaccinium	5	H	0	0
	Vitex	1	H	0	0
Totals: Genera 63		260		33	1738

\*D - Distributed. G - Growing on at Regional Station (not distributed).

H - Holding (distributed in past). P - In propagation.

Table II. Summary of information given in Table I.

Crop	No. Genera	1957 total cumulative	Removed from inventory	Received 1958	1958 net cumulative	Seed list 1958	To be grown	Packets or plants distributed
Grasses	46	3268	75	390	3583	2858	725	1913
Legumes	17	1034	17	322	1338	684	654	1450
Vegetables	18	3774	56	409	4127	3558	569	5490
Ornamental, Oil & Special								
Group I.								
Special	12	179	0	73	252	174	78	18
Totals	93	8255	148	1194	9300	7274	2026	8871
Group II.*								
Ornamentals	63				260	33		1738
Totals	156	8255	148	1194	9560	7307	2026	10,609

\*Group II. Woody and herbaceous ornamentals do not appear on the published seed list. A list of available stock is circulated to interested cooperators and orders are filled from their requests.