

USDA SOYBEAN GERmplasm COLLECTION REPORT -- 2003

February 2004

In 2003, we distributed 28,112 seed lots from 16,720 accessions from the USDA Soybean Germplasm Collection in response to 424 requests from 215 individuals. There were 386 domestic requests (91% of the total) with a total of 27,224 seed packets representing 16,588 accessions sent to 180 researchers from 29 states. Domestically, public scientists made 292 requests and scientists with commercial companies made 124 requests. There were 888 seed packets of 807 accessions in 38 orders sent to 35 scientists in 21 countries. We also sent seeds of 582 accessions to the National Center for Genetic Resources Preservation for backup. During the year we had requests for 13,000 samples from two large requests that were not sent in 2003. We were able to send over 6,000 samples to these requestors and are still processing the remaining samples as time permits.

We planted 1635 four-row plots of *G. max* for seed replacement in the Collection. These plots were planted at two locations: 1064 at Urbana and 571 at Stoneville. Plots for pure lining new accessions were planted in Urbana, Stoneville, and Costa Rica. Approximately 310 new pure line accessions from Brazil, China, North Korea, Myanmar, and Vietnam were added to the Collection.

We received seeds of 34 *G. max* plant introductions from Vietnam and Japan, 9 domestic cultivars, 20 germplasm releases, and 6 genetic types.

All accessions added to the Collection prior to 2000 have been grown in evaluation trials. However, accessions from maturity groups V to VIII will be grown again this summer in Stoneville to verify some of the descriptors. Seed trait notes and chemical evaluations are still in progress. All of the data summarized to date has been added to the National Plant Germplasm GRIN database.

There is now sufficient seed available for distribution of 98% of the perennial *Glycine* accessions in the collection. The remaining accessions needing increasing are growing in pots in the greenhouse. We presently have no accessions of *G. albicans*, *G. aphyonota*, *G. dolichocarpa*, *G. hirticaulis*, *G. lactovirens*, *G. peratosa*, and *G. pullenii* in the collection. Twenty-one seed requests were made for 269 seed packets of 139 accessions.

We were asked by those establishing the new system for soybean cyst nematode classification to be the sole supplier of seeds for SCN typing. In 2001, we grew large increase blocks of each line. In 2003, we responded to 35 requests and distribution more than 44,000 seeds of each line.

In 2003 the official papers were signed to establish cooperation with Dr. Luu Ngoc Trinh, Director of National Plant Genetic Resources Center, Vietnam Agriculture and Science Institute (VASI) to collect additional primitive soybean varieties for northern Vietnam with funds provided by the Plant Exchange Office. The agreement is in place with Mr. Truong Trong Ngon of Can Tho University. Mr. Ngon is currently working on a Ph.D. degree in South Korea so the collecting in southern and central Vietnam will be delayed until he returns in approximately 2 years.

We have not received approval from the Chinese Ministry of Agriculture to establish a new germplasm exchange project.

Greenhouse planning for a new ARS greenhouse to built on the University of Illinois campus were delayed because of redesigns required by budget restrictions. The contractor has been selected and we hope that construction will begin soon. The final greenhouse plans includes approximately half of the space that was originally planned. The space that we will have was reduced by 25%. The new facility will allow us to shorten photoperiod with black-out curtains as well as lengthen photoperiod with lights.

We have advertised for a new full time technical staff person who will work approximately 75% on germplasm collection activities and 25% on germplasm research.

As of December 31, 2003, the Collection contained the following entries:

USDA Soybean Germplasm Collection Inventory

Annual subcollection	Entries
Introduced <i>G. max</i>	16706
<i>G. soja</i>	1115
Germplasm releases	168
Modern cultivars	497
Old cultivars	208
Private cultivars	31
All isolines	593
<u>Genetic types</u>	<u>188</u>
Annual sub-total	19506

Perennial species	Entries	Core
<i>G. arenaria</i>	3	3
<i>G. argyrea</i>	12	3
<i>G. canescens</i>	119	20
<i>G. clandestina</i>	83	16
<i>G. curvata</i>	6	4
<i>G. cyrtoloba</i>	44	5
<i>G. falcata</i>	25	5
<i>G. latifolia</i>	43	8
<i>G. latrobeana</i>	6	6
<i>G. microphylla</i>	33	9
<i>G. pescadrensis</i>	71	2
<i>G. pindanica</i>	1	0
<i>G. rubiginosa</i>	33	2
<i>G. stenophita</i>	25	0
<i>G. tabacina</i>	136	13
<i>G. tomentella</i>	276	21
<i>G. sp.</i>	1	0
Perennial subtotal	917	117

Collection total **20423**

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