

June 23, 2005

Washington State

**W6 State Technical Advisory Summary- Washington State
Representative:
Stephen S. Jones**

In 2004, ninety-six National Plant Germplasm orders were requested by various Washington State agencies, farmers, nurseries and scientists in disciplines such as genetics, horticulture, botany, plant pathology and agronomy. The following is a summary of information regarding the performance of the genetic material Washington State groups have requested from the National Plant Germplasm System (NPGS).

Summary

A memo was sent out on February 16, 2005 to the 96 groups in Washington State that requested germplasm from the NPGS. The request asked for information regarding the performance of the germplasm received, i.e. germination success or percent germinated, grafting success, propagation success, etc. We received 31 responses to our request.

The majority of the responses were positive stating that those with requests for seed had 90% or greater germination and those with rootstock requests had a 90% or greater success rate. Several groups stated that the material they requested arrived in excellent condition and appreciated the efforts of the NPGS to send them high quality material. There were, however, some specific issues with germination/weed seed contamination etc. Please reference the Summary Table of Responses for details regarding germination problems with specific accessions/NPGS orders.

The research material from NPGS was used for the following research/projects: 31 of the 31 responses gave details on the specific research, they are listed below:

Summary Table of Responses

Respondent	Details
Babb, Sheri	All germinated as expected; wild chickpea, usually pretty difficult to germinate. All plants obtained are doing great-flowering, setting, etc. Accessions are being used in a chickpea crossability study to determine which accessions are cross-compatible.
Baldwin, Bill	Seeds will be used in a demonstration of five major US crops to be grown in a local park they include; corn, cotton, rice, soybeans and wheat. Purpose is to demonstrate what these major crops look like in the field. Local Master Gardener Foundation will be in charge of the demonstration and growing in the "warm climate" crops in a greenhouse and transplanting in May.
Chen, Xianming	Wheat germplasms from Aberdeen. Received 1,500 entries of winter wheat in September 2004. Entries planted at Mt. Vernon and Whitlow Farm near Pullman. Germplasms emerged ok at Whitlow. Should know plant condition in Mt. Vernon location two weeks from 3.1.2005, in the greenhouse, about 5% of the entries had germination problems.
Chilvers, Martin	Regarding Vicia hisuta accessions order # 169507. PI 420171; small hard seed- did not germinate within 3 days on moist filter paper - subsequent sowing of seed that had swollen did result in good seedling establishment. PI 422499; small hard seed - did not germinate within 3 days on moist filter paper - subsequent sowing of seed that had swollen did result in good seedling establishment. PI 628303 - >90% germinated within 2 days when incubated on moist filter paper. PI 628304 - > 90% germinated within 2 days when incubated on moist filter paper.
Clement, Stephen	Great germination. Material used for locating "non-toxic fungal endophytes" in tall fescue accessions.
Cruea, Gary	The Cuthbut Raspberry is doing fine it's about 3 inches tall and has survived the winter

Freston, Shelle	Plant germplasms performed satisfactorily under lab conditions. Pleased with the data and will continue to utilize the database and the germplasm request options currently available.
Gioia, Scott	Got seeds from NPGS for non-profit organization in order to grow them to multiply for more seeds in order to become more self sufficient and to teach others to do the same. Just begun and hardly used any seeds. Did grow the grains from NSGC and most grew up fine. Didn't keep track of the individual varieties because only interested in them for food purposes to help the needy and even not so needy to eat better.
Hall, Alan B.	7 <i>Malus domestica</i> ; between rabbits and deer only 3 survived and the summer bulb wood has not bulbed yet.
Hardesty, Linda	21 <i>Phalaris arundinacea</i> ; all did well except # PI241065 none of which germinated in the greenhouses
Hilson, Jerry	Ref: order # 162219. The scion wood arrived in very shape, the grafting had a great success rate, and it was very responsive to the request.
Hitchin, Randall	All material was sown in the fall and as yet (3.21.2005) there has been no germination observed.
Howell, Bill	Received White Jersey cider apple from NPGS last year. Was established here by grafting onto a seedling rootstock and grew well.
Ketchum, Ray	Order # 167366 from NE9. Germination was slow 12-14 days. Flowering was about 6 weeks from planting the seed. Plants were tall and spindly, compared to other commercial cultivars grown at the same time. None of the plants from any of the cultivars set fruit. Plants ere kept for 10-11 weeks before being discarded. Three varieties from Turkey were the fastest growing of all varieties.
Kirby, Elizabeth	<i>M. polymorpha</i> PI 494565 `Serena' burr medic; <i>T. subterraneum</i> Mix 3 ('Howard' PI 277436, 'Mt. Barker' PI 279012 and 'Tallarook' PI 277439); <i>Medicago lupulina</i> PI 251150 Yugoslavia black medic; <i>Trifolium</i>

ambiguum PI 325489 'Rhizo' kura clover; Trifolium abiguum PI 427121 'Prairie' kura clover; Lotus corniculatus PI 234670 'Kalo' Birdsfoot trefoil; Lotus corniculatus PI 592427 'Norce' Birdsfoot trefoil... Trial was a screening for living mulches used in orchard tree rows under hot, shady, irrigated conditions. Report is preliminary- reseeding of the annual medics and subclovers will be observed in spring 2005. Spring planted kura clovers and subclovers did not establish well b/c of heavy weed pressure. Did try a fall planting of the kura and trefoils and subclovers with much better results. Fall planted Mt. Barker subclover was established well, over wintered well and is putting on growth this spring. Afghanistan black medic established slowly but was healthy and set seed. The Yugoslavian black medic accession did not like shady irrigated conditions and died down with powdery mildew. Will be taking additional data later this year. Are planting a new trail with larger pots.

Konzak, Dr. Calvin

Several lots of germplasm received and evaluated and was able to identify sources that had hoped to discover; even though the effort required was somewhat challenging. Seeds from the selected accessions germinated rather well and we were able to harvest seeds from the selected plants, grown in our greenhouses.

Lee, Mark

1 Pinus lambertiana: 80% germination after 90 days in 38 degree F, growing in nursery bed outside; 1 vitis cinerea, 3 vitis hybrid, 1 vitis vinifera subsp. Sylvestris, 2 vitis vinifera subsp. Vinifera: 1st round failed to germinate after 60 days in 38 degree F. 2nd round still in cold and will be planted soon; 1 Citrus reticulata, 1 Citrus junos, 1 Citrus keraji: all germinated >80% at 80 degree F. currently growing under lights; 1 Allium natans, 1 Allium pskemense, 1 Allium scorodoprasum, 1 Allium galanthum, 1 Allium ledebourianum: 80% germination growing outside in nursery bed; 1 X Sorbaronia sorbifolia: has rooted, high humidity under lights; 1 Pyrus regelii: 80% germination in 38 degree F. moist conditions; 1 Crataegus azarolus, 3 Fragaria vesca, 1 sorbus pallescens: grafts did not take Fragaria still in 38 degree F. awaiting planting

Lovejoy, Don	Lactuca virosa, PI 261651, good germination and vigorous plants but a few weeds seeds were mixed in; Mirabilis multiflora, PI 303388, moderate germination rates; Phalaris aquatica, PI 306772 and PI 383725, good germination; Phalaris arundinacea, PI 380965, fairly good germination; Desmodium gangeticum, PI 319362, good germination; Ipomoea parasitica, PI 319362, moderate germination; Lespedeza bicolor, PI 349415, very good germination; Lespedeza bicolor var. bicolor, PI 286477, moderate germination; Lespedeza japonica, PI 349423, good germination.
Lyon, Steve	Germination was sufficient.
Massa, Alicia	Performed very well under our standard conditions of germination.
McClendon, Melissa	"Owens" (Citr 17413) and "Urquie" (Citr 17904) has not been planted to date (2.25.2005) Do not have any info at this time
McDonald, Scott	49 Aegilops searsii: everything fine, good and viable, increase- screening for disease resistance to eye spot evaluated for growth habit.
McPhee, Kevin	accessions performed well and according to our purposes. Data that has been collected from this material has been submitted to GRIN for general access by all interested parties.
Meredith, Ted	Order # 167983, Allium sativum: cloves grew well
Miklas, Phillip	All PI lines from W6-NPGS germinated well, conducted planned experiments and crosses.
Muehlbauer, Fred J.	383 accessions of Lens culinaris ssp. Culinaris were obtained to determine the size and shape of red lentils from Turkey. Selected accessions will be used in the crossing program. Cicer arietinum accessions have very good resistance to ascochyta blight and have been used in the crossing program. Cicer arietinum accessions received are differentials from reaction to Fusarium wilt races. They were used in evaluations made in the growth chamber for wilt reaction. The two Lens culinaris accessions were shown to be resistant to Pea Enation Mosaic Virus at

Corvallis, Oregon. The accessions are being used in the crossing program to develop virus resistant lentil varieties.

Pak, Jongkuk

For introgression of resistant gene to Ascochyta blight from wild Cicer species to *C. arietinum*, we need wide crosses between wild species and cultivated type. *Cicer echinospermum*, and three accessions of *C. arietinum* were planted to make interspecific crosses, 4.27.2004. *Cicer. echinospermum* was screened for resistance to Ascochyta blight from 5.10.2004. Accessions which showed resistance were used for crossing to the cultigens, *C. arietinum* from 7.9.2004 to 8.2.2004. Seeds were harvested from 8.18.2004. These F1 hybrid seeds were germinated and are grown in hydroponics to make backcross to susceptible parents.

Ryan, H.

Lactuca sativa seeds, including Victoria and Dark Green Boston Market: both planted as a late summer/early fall crop in raised beds. Germination for the victoria was good at around 60%; harvested average crop. Saw no difference in performance from other lettuces planted at the same time other than Victoria did seem to be a favorite for neighborhood pests. Dark Green Boston was planted a week later and aided by floating row covers. Germination was around 70%. Performed very well with little loss due to insect or disease-a new garden favorite.

Simpson, Eric

13 *Malus domestica*: plant germplasm scion wood arrived in excellent shape.

Sivam, Gowsala

Order # 16921: 1 *Allium sativum* var. *sativum* Oswego white. Not planted used for research studies, behaved similar to previously obtained material.

Stout, Dave

1 *Citrullus lantatus*; Watermelon called Ice Cream. Planted by several people in St. John, WA. Planted directly into the ground, so it matured fairly late and weren't able to get the size watermelon they should have. Still have seeds to plant in 2005 and plan to start transplants this year.

REFEREED PUBLICATIONS For Stephen Jones, 2004:

- 2004 Lammer, D., Cai, Xiwen, Arterburn, M., Chatelain, J., Murray, T.D., and Jones, S.S. A single chromosome addition from perennial *Thinopyrum elongatum* confers a polycarpic, perennial habit to annual wheat. *Journal of Experimental Botany*. *In Press June, 2004*
- 2004 Murphy, K., Lammer, D., Lyon, S., Carter, B., Jones, S.S. Breeding for organic and low-input farming systems: An evolutionary-participatory breeding method for inbred cereal grains. *Renewable Agriculture and Food Systems*. *Accepted with minor revisions, June 2004*
- 2004 Li, H.J., M. Arterburn, S.S. Jones and T.D. Murray. A new source of resistance to *Tapesia yallundae* associated with a homoeologous group 4 chromosome in *Thinopyrum ponticum*. *Phytopathology*. *Accepted March, 2004*
- 2004 Greco, A., Lammer, D., Murray, T.D., Jones, S.S. Carbohydrate allocation strategies and yield components of polycarpic and monocarpic wheat. *Journal of Experimental Botany*. *Submitted June, 2004*
- 2004 Campbell, K.A. Garland, Allan, R.E., Anderson, J., Pritchett, J.A., Little, L.M., Morris, C.F., Line, R.F., Chen, X., Walker-Simmons, M.K., Carter, B.P., Burns, J.W., Jones, S.S., Reisenhauer, P.E. Registration of 'Finch' Wheat. *Crop Science*. *Submitted, June 2004*
- 2004 Campbell, K.A. Garland, Allan, R.E., Anderson, J., Pritchett, J.A., Little, L.M., Morris, C.F., Line, R.F., Chen, X., Walker-Simmons, M.K., Carter, B.P., Burns, J.W., Jones, S.S., Reisenhauer, P.E. Registration of 'Chukar' Wheat. *Crop Science*. *Submitted, June 2004*
- 2004 Jones, SS. Progress without patents: Agricultural research, no strings attached. *Journal of Environmental Law and Litigation*. (*Invited April 14, 2004, submitted July 10, 2004*).