**BUDGET REQUEST**

# NRSP6 - the US Potato Genebank:

**Acquisition, classification, preservation, evaluation and distribution of potato (*Solanum*) germplasm**

| NRSP-6 US Potato Genebank Project, FY13 | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| MRF (in $K) | | | | | | | | | | |
| MRF inputs | Actual FY11 (year 1) | | Expected FY12 (year 2) | | Proposed FY13 (year 3)[1] | | Proposed FY14 (year 4) | | Proposed FY15 (year 5) | |
| | Dollars | FTE | Dollars | FTE | Dollars | FTE | Dollars | FTE | Dollars | FTE |
| SALARIES | 69.2 | 1.3 | 69.2 | 1.3 | 69.2 | 1.3 | | | | |
| Sal Fringe | 27.3 | | 27.3 | | 27.3 | | | | | |
| WAGES & WageFringe | 44.5 | 1.3 | 44.5 | 1.3 | 44.5 | 1.3 | | | | |
| TRAVEL | 1.5 | | 1.5 | | 1.5 | | | | | |
| SUPPLIES & Maintenance | 5.5 | | 5.5 | | 5.5 | | | | | |
| EQUIPMENT/ CAPITAL IMPROVEMENT* | 2.0 | | 2.0 | | 2.0 | | | | | |
| TOTAL | **150.0** | 2.6 | **150.0** | 2.6 | **150.0** | 2.6 | | | | |

NOTES

[1] Expecting FY13 similar to FY11 and FY12 (see detail sheets)

Budgets of past projects, FY06-12 = $150K except FY07 = $110K

*Annual payment to UW host site Peninsular Agricultural Research Station

| NRSP-6 Potato Genebank Project FY 11 – 15 | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| **USDA/ARS (in $K)** | | | | | | | | | | |
| **ARS inputs** | **Actual FY 11 (year 1)** | | **Actual FY 12 (year 2)** | | **Proposed FY 13 (year 3)** | | **Proposed FY 14 (year 4)** | | **Proposed FY 15 (year 5)** | |
| | **Dollars** | **FTE** | **Dollars** | **FTE** | **Dollars** | **FTE** | **Dollars** | **FTE** | **Dollars** | **FTE** |
| **ARS SALARIES + fringe** | 364.4 | 4.05 | 371.7 | 4.05 | 379.1 | 4.05 | | | | |
| **Other salary + fringe** | 0 | | 0 | | 0 | | | | | |
| **Wages + fringe** | | | | | | | | | | |
| **TRAVEL** | 8.0 | | 8.0 | | 8.0 | | | | | |
| **Supplies & maintenance** | 88.9 | | 81.6 | | 72.0 | | | | | |
| **Equipment/ capital impr.** | 0 | | 0 | | 0 | | | | | |
| **Indirect research costs** | 65.2 | | 65.2 | | 67.4 | | | | | |
| **TOTAL** | 526.5 | | 526.5 | | 526.5 | | | | | |

Assuming 2.0% salary increases

**ARS salaries**: Bamberg 1.00, Schartner 1.00, Stoneman 0.75, vice-Fernandez 1.00, Spooner 0.15, Jansky 0.15

# FY11 detail as example of ongoing spending expectation[1]

**Academic Staff (Salaries + Fringe): $96.5K**

Martin: Assists in all admin and tech. Purchasing, staff records, tissue culture collection, shipping, maintenance (80%)
del Rio: diversity assessment, germplasm collecting, liaison with UW and international collaborators (reduced to 50%)

**Other staff (Wage and Wage Fringe): $44.5K**

Douglass (LTE): Greenhouse and field work propagating, crossing, harvesting.
Wagner (LTE): Maintenance and order propagation of tissue culture stocks
Ad hoc summer student help: Facilities maintenance and extra work associated with summer screenhouse and field plots

**Supplies and Services: $7.5K**

General: NRSP6 Supplies and Service funds supply only about 20% of the funds needed; remaining funds are provided by USDA.

Phone for contacting genebank clients ($1100)—we pay for one phone line and fax line, the PARS research farm pays for a second line. USDA provides genebank internet line that serves the entire facility.

Postage only for genebank ($360)—for sending germplasm samples to clients. USDA pays much more for FedEx and similar courier services.

Lab, office and greenhouse supplies ($4040), including culture media chemicals and glassware for the tissue culture collection, virus test kits, envelopes and bags, office supplies, stakes, fertilizer and sprays.

Peninsula Agricultural Experiment Station ($2000). For many years this has been the genebank's expected contribution to the host UW Agric Experiment Station.

**Travel: $1.5K**

State staff ad-hoc in-state meetings and field work on campus and other potato research farms. Annual Technical Advisory Committee Meeting was on-site in FY11, so no Project Assistant travel.

---

[1] The only expected changes: As salary costs increase, sacrifices will have to be made in ad hoc staff and supplies.

# UW CRIS REPORT submitted 12/29/2011

**PROGRESS:** 2011/01 TO 2011/12

OUTPUTS: Availability of potato germplasm is important to the progress of basic research and breeding. The genebank at Sturgeon Bay, in cooperation with worldwide collaborators, filled this need by providing viable, disease free stocks in a timely manner, and further evaluating and documenting valuable traits. A total of 217 accessions were increased as botanical seed populations and 154 clonally. About 500 potato spindle tuber viroid (PSTVd) tests were performed on seed increase parents, seedlots and research materials. Germination tests were performed on 1433 accessions, ploidy determinations were made on 31 accessions, and tetrazolium seed viability tests were done on 30 seedlots. A total of 6977 units of germplasm were distributed through 197 orders to the US and 29 orders to foreign countries. With various national and international collaborators, we tested germplasm for disease, pest, and stress resistance, and conducted DNA-based analyses to assure that the genetic diversity is being optimally collected and maintained (both in the wild and in the genebank). We imported 14 elite cultivated breeding stocks from other countries. We conducted an expedition to Arizona to collect 32 wild populations (BdRB), and received 2 additional as donations. A total of 17 new accessions from the wild species *microdontum* were imported from CGN Netherlands and VIR Russian Federation. We published research results, kept characterization data current and available through our website, and gave formal presentations and much ad hoc technical advice and service to promote and facilitate germplasm use.

IMPACTS:

The project maintained the only domestic genebank for potatoes, the nation's #1 value vegetable. Since potato is quarantine prohibited, this project is the only practical source of exotic breeding stocks meeting the needs US breeders. Our in-house research also continued to uncover valuable traits in our stocks which breeders will be able to use to improve grower profits and product quality. We discovered sources of nutritional factors that promise to reduce the suffering and associated economic healthcare burden of serious human diseases like hypertension and cancer. Our in-house R&D work revealed ways to improve the techniques for germplasm collection, storage, and propagation, which will result in maximized genebank services within the resources available. Complete details are available at the project website http://www.ars-grin.gov/nr6/.

PARTICIPANTS

Germplasm was distributed to 140 individual cooperators in 34 states of the USA, and 16 foreign countries.

TARGET AUDIENCES

We presented genebank mission and progress to scientists, educators, and members of the general public, notably at the Potato Association of America (Wilmington, NC), and to 12 visiting potato scientists from China.

PUBLICATIONS

**Bamberg, JB** and AH del Rio. 2011. Diversity relationships among wild potato collections from seven “Sky Island” mountain ranges in the Southwest USA. *American Journal of Potato Research* 88(6):493-499

**Bamberg, JB,** AH del Rio and J Penafiel. 2011. Successful prediction of genetic richness at wild potato collection sites in Southeastern Arizona. *American Journal of Potato Research* 88:398-402.

**Bamberg, JB** and AH del Rio. 2011. Use of native potatoes for research and breeding. *Hortscience Proceedings* 46(11):1444-1445.