

NRSP/IR BUDGET REQUESTS -- ATTACHMENT I
ACCOMPLISHMENTS CY1998

**NRSP-6: Introduction, Classification, Preservation, Evaluation and Distribution of
tuber-bearing *Solanum* species germplasm.**

Introduction: A total of 97 new accessions were added to the collection. The protocol for increasing germplasm at Sturgeon Bay concurrent with quarantine testing was applied to Dr. Spooner's collections from Peru. Dr. Bamberg led two trips to the southwest USA to obtain new materials for the collaborative intergenebank project. As a result, germplasm from new locations in New Mexico and Arizona was added to the collection. Dr. Spooner planned and conducted collecting in Peru.

Classification: Dr. Spooner continues to resolve problems in taxonomic classification which impede efficient documentation and use of the germplasm. This year a study was conducted which suggests several species in the series *Longipedicellata* are not actually significantly different. Insights gained from this and similar studies will allow accessions to be assigned stable species names based on empirical differences.

Preservation: The following were performed in conjunction with maintenance of top quality *Solanum* germplasm at NRSP-6: Germination tests: 948, Virus tests: 678, seed increases: 128, summer field and greenhouse plots reared for seed multiplication, purity checks, and evaluation: 1,324. RAPD markers were used to assess the vulnerability of nearly 600 loci within two species in the genebank. While some RAPD bands were rare within populations, most of these were fixed in some other population. Thus no bands were detected which we would expect to be vulnerable to accidental loss using the current seed increase method. This information is crucial because it provides objective evidence that diversion of precious resources toward more fastidious seed increase methods is not necessary.

Evaluation was continued: Combining frost tolerance with good tuber type, selection for plants fertile in heat stress, vigorous rooting, improved tuber calcium, tuber and foliar glycoalkaloids which could be used as natural insecticides, late blight resistance and hormone mutants that might elucidate physiology of sprouting, tuberization, dormancy etc.

Distribution: Over 8,150 units of germplasm were sent in 122 orders from requesters worldwide.

Intergenebank Collaboration: A meeting of the Association of Potato Intergenebank Collaborators (APIC) was organized for New Delhi, India in 1999.

**NRSP/IR BUDGET REQUESTS -- ATTACHMENT II
GOALS CY1999**

**NRSP-6: Introduction, Classification, Preservation, Evaluation and Distribution of
tuber-bearing *Solanum* species germplasm.**

Introduction: We will continue efforts to identify elite late blight breeding stocks and other valuable germplasm, and work with quarantine to efficiently import them. We will strengthen our collaborative ties with other genebanks. The second of five yearly collecting expeditions in Peru will be conducted.

Classification: Experiments to better understand species boundaries will continue.

Preservation: Efforts to identify less expensive, easier, and more reliable ways to grow and increase potato germplasm will continue. Samples of new germplasm will be transferred to NSSL and/or the University of Wisconsin for backup. Rigorous disease prevention and monitoring practices (mainly for viruses) will be continued. We will continue bacterial ring rot screening as a health monitoring protocol for the in vitro collection.

Evaluation: We will continue evaluating potato germplasm for frost tolerance, glycoalkaloid characteristics, tuber calcium accumulation, hormone mutants, male fertility in heat stress, root characters, late blight. Evaluation is a high priority for the genebank, since it is the key to mining the value of the germplasm in which we have invested so much effort for preservation.

Distribution: Potato is the world's most important vegetable crop, and the genebank at Sturgeon Bay is the world's most comprehensive and accessible collection. Germplasm and technical assistance for researchers and breeders will continue to be rapidly and impartially available here.

Intergenebank Collaboration: The cooperative intergenebank project will continue to use RAPDs to assess the dynamics of genetic diversity in model US species, this year assessing genebank practices which may promote inadvertent selection during seed multiplication. A meeting of the association (APIC), is scheduled for December, 1999 at the Global Potato Conference in India (at which APIC has been invited to organize a symposium).

NRSP-6 Appendix
JUSTIFICATION

The genebank's size and service obligations, as well as costs per unit of labor and supplies have increased much more rapidly than our budget increases. Even with an anticipated 7% increase in 1999, we will still be in a catch-up situation financially in FY2000. This results largely from 1998 and 1996 budgets that regressed to below the level of the 1993 budget. The requested 7% base increase for FY2000 to \$173,250 would raise our 13-year average annual increase to only about 1.6% (see table below). Salaries (75% of the budget) are expected to go up by 5%. Thus, only about half of the proposed increase will be available for deferred repairs, upgrades, and associated extra temporary labor. We also need a ONE TIME CAPITAL APPROPRIATION of \$5,000 for a new field sprayer. We currently use a 1981 model which is inefficient, unsafe, and needs constant repair. Many other capital and non-capital items that we depend on heavily are old--even antique (e.g., Project's only vehicle = 1985 pickup with 106K miles, newest tractor = 1962 model, Xerox machine = 1985), but we feel the sprayer is top priority.

FY	Actual budget	Constant +1.61197% budget	Deviation from Constant
1987	134,651		
1988	132,251	136,822	-4,571
1989	138,200	139,027	-827
1990	144,990	141,268	3,722
1991	142,014	143,545	-1,531
1992	147,552	145,859	1,693
1993	151,241	148,210	3,031
1994	153,498	150,600	2,898
1995	153,590	153,027	563
1996	151,196	155,494	-4,298
1997	160,405	158,000	2,405
1998	151,196	160,547	-9351
1999	161,931	163,135	-1,218
2000	173,250	165,756	7,484
Total '88- '00	1,961,300	1,961,300	0

NRSP/IR BUDGET REQUESTS

SUMMARY

NRSP-6: Interregional Potato Introduction Project

Description	Regional Research Funding						Other Sources of Funding			
	Authorized ^a FY 1998		Authorized FY 1999		Proposed ^b FY 2000		Authorized FY 1999		Proposed ^c FY 2000	
	Dollars	FTE	Dollars	FTE	Dollars	FTE	Dollars	FTE	Dollars	FTE
Salaries	90,550	3.3	93,207	3.3	97,867	3.3	122,267	3.1	127,158	3.1
Fringe Benefits (Salary Only)	21,067		23,355		24,523		39,140		40,706	
Wages (+ wage fringe)	13,013		12,000		15,000		0		0	
Travel	1,436 ^e		4,014		4,000		8,250		8,580	
Supplies	16,100		19,000		20,500		0		0	
Maintenance	9,030		10,355		11,360		0		0	
Equipment/Capital Imp.	0		0		5,000 ^d		0		0	
UW Contribution (est.)	0		0		0		60,500		62,920	
TOTAL	151,196		161,931		178,250		230,157		239,364	

^a actual spending

^b overall 7.0% base increase over FY99 -- see appendix: JUSTIFICATION

^c estimated 4% increase

^d Replace 1981 field sprayer which is inefficient and unsafe

^e Over \$5,300 in 1998 Project travel expenses were paid on other accounts due to lack of NRSP-6 funds.

NRSP-6 BUDGET REQUESTS
NRSP-6: Interregional Potato Introduction Project

DETAILED INFORMATION ON POSITIONS, SALARIES, AND FRINGE BENEFITS

Description	Regional Research Funding						Other Sources of Funding			
	Authorized ^a FY 1998		Authorized FY 1999		Requested FY 2000		Authorized FY 1999		Requested FY 2000	
	Dollars	FTE	Dollars	FTE	Dollars	FTE	Dollars	FTE	Dollars	FTE
Admin. Project Assistant	21,336	0.6	20,998	0.6	22,048	0.6	14,000	0.4	14,560	0.4
Technician (Specialist)	26,616	1.0	26,218	1.0	27,529	1.0	0		0	
Technician ^b	13,017 ^b	1.0	21,327	1.0	22,393	1.0	0		0	
Gardener	5,512	0.2	5,588	0.2	5,867	0.2	22,351	0.8	23,245	0.8
½ Research Assistant	24,069	0.5	19,076	0.5	20,030	0.5	0		0	
Secretary / Clerical	0		0		0		15,335	0.6	15,950	0.6
ARS Research Leader	0		0		0		7,000	0.1	7,280	0.1
ARS Geneticist / Proj. Leader	0		0		0		39,081	0.8	40,644	0.8
ARS Research Botanist	0		0		0		24,500	0.4	25,480	0.4
Total Salaries	90,550		93,207		97,867		122,267		127,159	
Fringe Benefits (Salaries only)	21,067		23,355		24,523		39,140		40,706	
TOTAL	111,617	3.3	116,562	3.3	122,390	3.3	161,407	3.1	167,865	3.1

FY 1999 % Salary increase estimate..... 4.4%

FY 1999 Actual % Salary and Fringe increase.....

FY 2000 Anticipated (requested) RRF Salary increase.... 5%

^a actual spending

^b maternity leave in 1998