

**NRSP/IR BUDGET REQUESTS -- ATTACHMENT I  
ACCOMPLISHMENTS CY1997**

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

Introduction: A total of 158 new accessions were added to the collection. The new protocol for increasing germplasm at Sturgeon Bay concurrent with quarantine testing was applied to Dr. Spooner's collections from Bolivia. Dr. Bamberg led two trips to the southwest USA to obtain new materials for the intergenebank research project. As a result, new germplasm from Utah and Colorado was added to the collection. Dr. Spooner planned and conducted a collecting trip to Mexico and arranged collecting in Peru in Spring 1998. Classification: Dr. Spooner continues to resolve problems in taxonomic classification which impede efficient documentation and use of the germplasm. This year, an extensive study of the *S. canasense* complex of species was continued. Molecular analysis of relationships of *S. astleyi* and *boliviense* were completed. Insights gained from this study 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: 972, Virus tests: 700, seed increases: 238, summer field and greenhouse plots reared for seed multiplication, purity checks, evaluation and other research: 2,508. Progress was made on an intergenebank project to measure genetic diversity in two model wild potato species using RAPDs. Materials were collected from the extremes of the range of these US species (see *Introduction* above). Correlation of ecogeographic data with genetic diversity is in progress. Evaluation and genetic research 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. Advancements in genebank technology were made by using DNA markers to reveal which collections contain the most biodiversity, and the best way to preserve it. Distribution: Over 8,443 units of germplasm were sent in nearly 140 orders from requesters worldwide. Intergenebank Collaboration: A meeting of the Association of Potato Intergenebank Collaborators (APIC) was organized in Scotland, resulting in exchange of technology and plans for continued cooperation on problems of mutual interest. All of these activities significantly increased the

quality and quantity of genetic resources available to US scientists for the improvement of the potato crop, the top US vegetable.

## NRSP/IR BUDGET REQUESTS -- ATTACHMENT II GOALS CY1998

### 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 first of five yearly collecting expeditions in Peru will be conducted. Classification: Experiments to better understand species relationships will continue. Preservation: Research to identify less expensive, easier, and more reliable ways to grow and increase potato germplasm will continue: the potential of remote OP seed increases, freezing berries, straw mulch for weed control, improved potting media. Genetic analysis of dynamics of genetic diversity in the genebank. 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 freely and quickly available here. Intergenebank Collaboration: The intergenebank research project will continue to use RAPDs to assess the dynamics of genetic diversity in model US species, this year looking for variables which are the best predictors of genetic diversity. We will plan another meeting of the association (APIC), probably in India.

## JUSTIFICATION

Since 1987, the actual budget allocations to NRSP-6 have been equivalent to only a 1.5485% constant annual increase (see table below). Obviously, costs per unit of labor and supplies have increased more than this, resulting in a net loss in buying power. To make matters worse, the 1998 allocation was \$8,252 **below** average. This was a **zero-increase** from the 1996 allocation, which was already substantially below the average. Our budget today is less than five years ago, while the genebank's size and obligation continues to grow. If the FY 1999 budget is equal to, or only a small percentage increase over the very low 1998 budget, NRSP-6 impact will have regressed dramatically.

**FY 1999 Budget needs to be \$161,917 just to maintain the past 11-year average yearly increase of 1.5485%**

FY	Actual budget	Constant +1.5485% budget	Deviation from Constant
1987	134,651		
1988	132,251	136,736	-4,485
1989	138,200	138,853	-653
1990	144,990	141,003	3,987
1991	142,014	143,187	-1,173
1992	147,552	145,404	2,148
1993	151,241	147,656	3,585
1994	153,498	149,942	3,556
1995	153,590	152,265	1,325
1996	151,196	154,623	-3,427
1997	160,405	157,016	3,389
1998	151,196	159,448	-8,252
Total '88-'98	1,626,133	1,626,133	0
1999	161,917	161,917	0

# NRSP/IR BUDGET REQUESTS

## SUMMARY

### NRSP-6: Interregional Potato Introduction Project

Description	Regional Research Funding						Other Sources of Funding			
	Authorized <sup>a</sup> FY 1997		Authorized FY 1998		Proposed FY 1999		Authorized FY 1998		Proposed FY 1999	
	Dollars	FTE	Dollars	FTE	Dollars	FTE	Dollars	FTE	Dollars	FTE
Salaries	87,011	3.3	90,491	3.3	93,207	3.3	118,702	3.1	122,267	3.1
Fringe Benefits (Salary Only)	21,802		22,675		23,355		38,000		39,140	
Wages (+ wage fringe)	10,959		10,000		12,000		0		0	
Travel	5,607		4,000		4,000		8,000		8,250	
Supplies	23,000		16,000		19,000		0		0	
Maintenance	12,026		8,030		10,355		0		0	
Equipment/Capital Imp.	0		0		0		0		0	
UW Contribution (est.)	0		0		0		58,750		60,500	
<b>TOTAL</b>	<b>160,405</b>		<b>151,196</b>		<b>161,917</b>		<b>223,452</b>		<b>230,157</b>	

<sup>a</sup> actual spending

<sup>b</sup> overall increase of 7.1% over FY98 requested -- see appendix: JUSTIFICATION

**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 <sup>a</sup> FY 1997		Authorized FY 1998		Proposed FY 1999		Authorized FY 1998		Proposed FY 1999	
	Dollars	FTE	Dollars	FTE	Dollars	FTE	Dollars	FTE	Dollars	FTE
Admin. Project Assistant	19,602	0.6	20,386	0.6	20,998	0.6	13,591	0.4	14,000	0.4
Technician (Specialist)	24,475	1.0	25,454	1.0	26,218	1.0	0		0	
Technician	19,910	1.0	20,706	1.0	21,327	1.0	0		0	
Gardener	5,216	0.2	5,425	0.2	5,588	0.2	21,700	0.8	22,351	0.8
½ Research Assistant	17,808	0.5	18,520	0.5	19,076	0.5	0		0	
Secretary / Clerical	0		0		0		14,888	0.6	15,335	0.6
ARS Research Leader	0		0		0		6,797	0.1	7,000	0.1
ARS Geneticist / Proj. Leader	0		0		0		37,943	0.8	39,081	0.8
ARS Research Botanist	0		0		0		23,783	0.4	24,500	0.4
Total Salaries	87,011		90,491		93,207		118,702		122,267	
Fringe Benefits (Salaries only)	21,802		22,675		23,355		38,000		39,140	
<b>TOTAL</b>	<b>108,813</b>	<b>3.3</b>	<b>113,166</b>	<b>3.3</b>	<b>116,562</b>	<b>3.3</b>	<b>156,702</b>	<b>3.1</b>	<b>161,407</b>	<b>3.1</b>

FY 1998 % Salary increase..... 4%

FY 1998 Actual % Salary and Fringe increase.....

FY 1999 Anticipated (requested) Salary increase.... 3%

<sup>a</sup> actual spending