

Table 1: Numbers of SYs devoted to plant breeding arranged by employer and crop categories, 1994 & 2001.

Crop Category	Number of SYs employed by:								
	SAES 2001	SAES 1994	% change 1994-2001	ARS/USDA 2001	ARS/US DA 1994	% change 1994-2001	Total Public sector 2001	Total Public sector 1994	% change 1994-2001
Cereal	124.0	155.0	-20%	61.3	34.0	80%	185.3	189.0	-2%
Fiber	19.8	20.0	-1%	10.6	13.0	-19%	30.4	33.0	-8%
Forage	26.2	38.0	-31%	26.5	33.0	-20%	52.8	71.0	-26%
Fruit vegetable	18.8	38.0	-50%	7.3	8.0	-9%	26.1	46.0	-43%
Grain legume	56.2	67.0	-16%	22.1	14.0	58%	78.2	81.0	-3%
Lawn & turf	15.7	15.0	4%	0.1	0.0	--	15.8	15.0	5%
Leafy, bulbous, & stem vegetables	5.8	16.0	-64%	7.1	2.0	255%	12.9	18.0	-28%
Medicinal, spice, & special crops	2.6	6.0	-56%	1.0	4.0	-75%	3.6	10.0	-64%
Oilseed	20.1	24.0	-16%	6.1	6.0	1%	26.1	30.0	-13%
Ornamental	38.9	18.0	116%	24.9	5.0	398%	63.8	23.0	177%
Root & tuber	30.5	45.0	-32%	10.9	12.0	-9%	41.4	57.0	-27%
Stimulant	10.7	13.0	-18%	1.0	2.0	-50%	11.7	15.0	-22%
Sugar	4.4	4.0	10%	15.8	15.0	5%	20.2	19.0	6%
Temperate fruit & nut	33.4	50.0	-33%	18.4	23.0	-20%	51.8	73.0	-29%
Tropical fruit & nut	8.2	10.0	-18%	4.5	6.0	-25%	12.7	16.0	-21%
Miscellaneous	4.4	9.0	-51%	0.5	0.0		4.9	9.0	-46%
<b>Total</b>	<b>419.7</b>	<b>528.0</b>	<b>-21%</b>	<b>218.0</b>	<b>177.0</b>	<b>23%</b>	<b>637.7</b>	<b>705.0</b>	<b>-10%</b>

Table 2: Numbers of Plant Breeding SYs Employed in the Plant Materials Centers/USDA, 1994 & 2001.

Crop Group	SYs 2001	SYs 1994	% change 1994-2001
Grasses	10.7	24.5	-56%
Legumes	3.0	3.2	-6%
Shrubs	10.1	3.6	181%
Trees	6.2	3.1	100%
Miscellaneous	--	1.8	--
Totals	30.0	36.2	-17%

Table 3: Numbers and percentages, in parenthesis, of plant breeding SYs devoted to Plant Breeding Research, Germplasm Enhancement, Cultivar Development, and Biotechnology, SAES, USDA (including ARS & PMCs) and Private industry, 2001.

Category	SAES		ARS/USDA		Private industry	
Plant breeding research	85	20%	} 138	64%	180	13%
Germplasm enhancement	70	17%			96	7%
Cultivar development	144	34%			673	47%
Biotechnology R&D	121	29%	80	36%	476	33%
Totals	420	100%	218	100%	1425	100%

Table 4: Public sector SYs devoted to breeding cereal crops arranged by employer, 1994 & 2001.

Crop	SAES 2001	SAES 1994	SAES % change 1994-2001	ARS/ USDA 2001	ARS/ USDA 1994	ARS/USDA% change 1994- 2001	Total Public sector 2001	Total Public Sector 1994	Public Sector % change 1994- 2001
Barley	11.4	16.4	-31%	5.0	2.1	138%	16.4	18.0	-9%
Corn	29.2	27.1	8%	18.3	8.2	124%	47.5	35.0	36%
Millet (grain)	3.7	2.6	45%	0.0	0.0	--	3.7	3.0	23%
Oat	6.1	10.1	-40%	5.4	2.7	99%	11.5	13.0	-12%
Rice	8.9	13.8	-36%	9.9	6.3	58%	18.8	20.0	-6%
Rye	1.6	0.9	72%	0.2	0.0	--	1.8	1.0	79%
Sorghum	8.0	11.8	-33%	4.4	2.5	75%	12.3	15.0	-18%
Triticale	0.4	0.9	-53%	0.0	0.0	--	0.4	1.0	-60%
Wheat	54.7	64.5	-15%	18.1	12.0	51%	72.8	77.0	-6%
Wild rice	0.1	0.8	-88%	0.0	0.0	--	0.1	1.0	-90%
Totals	124.0	148.8	-17%	61.3	33.8	82%	185.3	184.0	-1%

Table 5: SYs devoted to breeding fruit vegetable crops arranged by employer, 1994 & 2001.

Crop	SAE S 2001	SAES 1994	SAES % change 1994-2001	ARS/ USDA 2001	ARS/ USDA 1994	ARS/USDA % change 1994-2001	Total Public sector 2001	Total Public Sector 1994	Public Sector % change 1994-2001
Cucumber	0.6	4.6	-87%	0.8	1.4	-39%	1.4	6.0	-76%
Eggplant	0.0	1.3	-100%	0.0	0.0	--	0.0	1.3	-100%
Green bean	0.5	0.0	--	0.0	0.1	-100%	0.5	0.1	400%
Muskmelon	0.6	0.8	-25%	2.0	1.6	31%	2.6	2.4	12%
Okra	0.1	0.2	-50%	0.0	0.0	--	0.1	0.2	-50%
Pepper	3.7	5.5	-33%	0.4	0.5	-11%	4.1	6.0	-31%
Pumpkin	0.0	1.0	-100%	0.0	0.0	--	0.0	1.0	-100%
Squash	1.3	0.4	225%	0.0	0.0	--	1.3	0.4	225%
Tomato	7.0	20.7	-66%	4.0	4.6	-12%	11.0	25.2	-56%
Vegetable & Fruit (Misc.)	4.0	0.0	--	0.0	0.0	--	4.0	0.0	--
Watermelon	1.1	3.6	-71%	0.0	0.0	--	1.1	3.6	-71%
Totals	18.8	38.0	-50%	7.3	8.1	-9%	26.1	46.1	-43%

Table 6. SYs devoted to breeding grain legume crops arranged by employer, 1994 & 2001.

Crop	SAES 2001	SAES 1994	SAES % change 1994- 2001	ARS/ USDA 2001	ARS/ USDA 1994	ARS/USDA % change 1994-2001	Total Public sector 2001	Total Public Sector 1994	Public Sector % change 1994-2001
Beans	9.0	13.3	-33%	2.0	2.0	-1%	11.0	15.3	-28%
Cowpea	2.9	2.6	10%	0.0	0.0	--	2.9	2.6	12%
Lentil	0.0	0.1	-100%	0.8	0.4	100%	0.8	0.5	60%
Lima bean	0.05	0.1	-50%	0.0	0.0	--	0.1	0.1	0%
Pea (Pisum)	0.3	2.1	-86%	1.4	1.9	-28%	1.7	4.0	-58%
Pigeonpea	0.6	2.9	-79%	0.0	0.0	--	0.6	2.9	-79%
Soybean	43.3	45.0	-4%	16.9	9.6	76%	60.2	54.6	10%
Misc. Legumes	0.1	0.7	-86%	1.1	0.3	253%	1.2	1.0	20%
Totals	56.2	66.8	-16%	22.1	14.2	55%	78.5	81.0	-3%

Table 7. SYs devoted to breeding fiber crops arranged by employer, 1994 & 2001.

Crop	SAES 2001	SAES 1994	SAES % change 1994- 2001	ARS/ USDA 2001	ARS/ USDA 1994	ARS/USDA % change 1994- 2001	Total Public sector 2001	Total Public Sector 1994	Public Sector % change 1994- 2001
Cotton	18.8	19.2	-2%	10.6	11.7	-9%	29.4	30.9	-5%
Crotalaria	0	0	--	0	0.2	-100%	0.0	0.2	-100%
Kenaf	0	0.3	-100%	0.0	0.8	-100%	0.0	1.1	-100%
Poplar	1.0	0.2	400%	0.0	0.0	0%	1.0	0.2	400%
Totals	19.8	19.7	1%	10.6	12.7	-16%	30.4	32.4	-6%

Table 8. SYs devoted to breeding forage crops arranged by employer.

Crop	SAES 2001	SAES 1994	SAES % change 1994-2001	ARS/ USDA 2001	ARS/ USDA 1994	ARS/USDA % change 1994-2001	Total Public sector 2001	Total Public Sector 1994	Public Sector % change 1994-2001
<b>Forage Grasses</b>									
Bahiagrass	2.0	0.5	300%	0.0	0.9	-100%	2.0	1.4	48%
Bermudagrass	2.8	0.6	367%	0.0	0.2	-100%	2.8	0.8	250%
Bluestem	0.0	0.6	-100%	3.9	1.0	311%	3.9	1.6	152%
Bluegrass (Poa)	0.0	0.2	-100%	0.3	0.2	50%	0.3	0.4	-25%
Bromegrass	0.0	1.5	-100%	0.0	0.3	-100%	0.0	1.8	-100%
Buffelgrass	0.0	0.6	-100%	0.0	0.3	-100%	0.0	0.9	-100%
Dallisgrass	0	1.1	-100%	0.0	0.3	-100%	0.0	1.4	-100%
Elephantgrass	0.2	0.5	-60%	0.0	0.0	--	0.2	0.5	-60%
Grasses (misc.)	6.5	1.8	259%	3.7	5.5	-32%	10.2	7.3	40%
Gamagrass	0.0	0.0	0%	3.3	2.5	35%	3.3	2.5	35%
Leucina	0.2	0.0	--	0.0	0.0	--	0.2	0.0	--
Millet	0.1	0.0	--	0.0	1.5	-100%	0.1	1.5	-93%
Pearl Bush	0.1	0.0	--	0.0	0.0	0%	0.1	0.0	--
Ryegrass	1.3	0.7	79%	0.0	1.2	-100%	1.3	1.9	-34%
Switchgrass	0.0	0.9	-100%	0.3	0.3	20%	0.3	1.2	-74%
Tall fescue	0.2	3.6	-94%	0.0	0.2	-100%	0.2	3.8	-95%
Timothy	0.0	0.5	-100%	0.0	0.0	--	0.0	0.5	-100%
Tropical grasses	0.3	0.4	-25%	2.9	0.0	--	3.2	0.4	700%
Total forage grass	13.6	13.5	1%	14.4	14.0	3%	28.0	27.5	2%
<b>Forage legumes</b>									
Alfalfa	7.7	15.2	-50%	7.0	11.9	-41%	14.7	27.1	-46%
Birdsfoot trefoil	0.3	0.9	-72%	1.2	1.7	-29%	1.5	2.6	-44%
Cicer	0.0	0.1	-100%	0.0	0.3	-100%	0.0	0.4	-100%
Clover (red/ mammoth/white)	0.6	5.8	-91%	0.3	4.9	-94%	0.9	10.7	-92%
Kura Clover	0.1	0.0	--	0.0	0.0	0%	0.1	0.0	--
Lespedeza	0.0	0.2	-100%	0.2	0.0	--	0.2	0.2	0%
Lupin	0.7	0.3	133%	0.0	0.0	0%	0.7	0.3	133%
Pea	1.0	0.0	--	0.0	0.0	0%	1.0	0.0	--
Velvet Bean	0.1	0.0	--	0.0	0.0	0%	0.1	0.0	--
Vetch	0.0	1.0	-100%	0.0	0.0	--	0.0	1.0	-100%
Legumes (Misc.)	2.3	0.8	188%	3.5	0.0	--	5.8	0.8	620%
Total forage legume	12.5	24.3	-49%	12.1	18.8	-35%	24.8	43.1	-42%
<b>Forages Totals</b>	<b>26.1</b>	<b>37.8</b>	<b>-31%</b>	<b>26.5</b>	<b>32.8</b>	<b>-19%</b>	<b>52.8</b>	<b>70.6</b>	<b>-25%</b>

Table 9. SYs devoted to breeding oilseed crops arranged by employer.

Crop	SAES 2001	SAES 1994	SAES % change 1994- 2001	ARS/ USDA 2001	ARS/ USDA 1994	ARS/USDA% change 1994- 2001	Total Public sector 2001	Total Public Sector 1994	Public Sector % change 1994- 2001
Canola	2.5	5.7	-56%	0.0	1.0	-100%	2.5	6.7	-63%
Flax	1.3	1.3	-4%	0.0	0.0	0%	1.3	1.3	-4%
Mustard	0.4	0.5	-20%	0.0	0.0	0%	0.4	0.5	-20%
Peanut	14.4	14.0	3%	3.2	2.5	28%	17.6	16.5	7%
Rape	0.2	0.0	--	0.0	0.0	0%	0.2	0.0	--
Safflower	0.0	0.0	0%	0.0	0.0	0%	0.0	0.0	0%
Sunflower	0.4	0.6	-33%	2.5	2.6	-4%	2.9	3.2	-8%
Oilseeds	0.9	0.0	--	0.4	0.0	--	1.3	0.0	--
Totals	20.1	22.1	-9%	6.1	6.1	0%	26.1	28.2	-7%

Table 10. SYs devoted to breeding temperate fruit and nut crops arranged by employer.

Crop	SAES 2001	SAES 1994	SAES % change 1994-2001	ARS/ USDA 2001	ARS/ USDA 1994	ARS/USDA % change 1994-2001	Total Public sector 2001	Total Public Sector 1994	Public Sector % change 1994-2001
Almond	1.1	0.6	83%	0.2	0.0	--	1.3	0.6	114%
Apple	4.0	4.2	-5%	0.4	0.0	--	4.4	4.2	5%
Apricot	0.1	0.1	0%	0.4	0.0	--	0.4	0.1	330%
Blackberry	1.0	1.5	-33%	0.0	1.2	-100%	1.0	2.7	-62%
Blueberry	5.3	4.9	8%	3.8	4.6	-17%	9.1	9.5	-4%
Cherry	1.3	0.5	160%	0.0	0.0	0%	1.3	0.5	160%
Chestnut	0.4	0.0	--	0.0	0.0	0%	0.4	0.0	--
Cranberry	0.0	0.6	-100%	0.2	0.0	--	0.2	0.6	-64%
Deciduous & Small Fruit	1.4	0.0	--	0.0	0.0	0%	1.4	0.0	--
Fruit crops (misc.)	0.0	0.0	0%	0.3	0.0	--	0.3	0.0	--
Fruit trees (misc.)	0.1	0.0	--	0.0	0.0	0%	0.1	0.0	--
Grapes	3.9	7.1	-45%	3.1	1.5	107%	7.0	8.6	-18%
Nectarine	0.2	0.9	-78%	0.8	0.5	60%	1.0	1.4	-27%
Peach	4.4	5.9	-25%	2.5	4.8	-48%	6.9	10.7	-36%
Pear	0.2	5.1	-96%	1.6	2.3	-30%	1.7	7.4	-77%
Pecan	2.1	1.0	110%	1.7	1.4	21%	3.8	2.4	58%
Pistachio	0.2	1.0	-80%	0.0	0.0	0%	0.2	1.0	-80%
Plum	1.1	0.7	57%	1.0	4.1	-76%	2.1	4.8	-57%
Raspberry	1.5	6.7	-78%	0.2	0.2	0%	1.7	6.9	-75%
Citrus rootstock	0.5	0.0	--	0.0	0.0	0%	0.5	0.0	--
Strawberry	2.5	7.4	-66%	2.4	2.3	4%	4.9	9.7	-49%
Stone Fruit	1.2	0.0	--	0.0	0.0	0%	1.2	0.0	--
Walnut	1.0	0.9	111%	0.0	0.0	0%	1.0	0.9	11%
<b>Totals</b>	<b>33.4</b>	<b>49.1</b>	<b>-32%</b>	<b>18.5</b>	<b>22.7</b>	<b>-19%</b>	<b>51.9</b>	<b>71.8</b>	<b>-28%</b>



Table 11. Top twenty crops with the most breeding SYs employed in SAES and ARS/USDA, 2001.

Crop	Total Public sector 2001	% Public sector SYs	Public Sector % change 1994-2001	SAES 2001	% SAES SYs	SAES % change 1994-2001	ARS/USDA 2001	% ARS/USDA SYs	ARS/USDA % change 1994-2001
Wheat	68.8	11%	-11%	51.0	12%	-22%	17.9	10%	49%
Soybean	60.2	10%	9%	43.3	10%	-4%	16.9	9%	69%
Corn	47.5	8%	36%	29.2	7%	8%	18.3	10%	129%
Cotton	29.4	5%	-5%	18.8	4%	-1%	10.6	6%	-12%
Potato	28.0	5%	-32%	18.6	4%	-40%	9.3	5%	-7%
Rice	18.8	3%	-6%	8.9	2%	-36%	9.9	5%	66%
Peanut	17.6	3%	3%	14.4	3%	3%	3.2	2%	6%
Barley	16.0	3%	-11%	11.1	3%	-31%	4.9	3%	144%
Alfalfa	14.6	2%	-46%	7.7	2%	-50%	7.0	4%	-41%
Sorghum	12.3	2%	-14%	8.0	2%	-33%	4.4	2%	75%
Oat	11.5	2%	-10%	6.1	1%	-40%	5.4	3%	99%
Tomato	11.0	2%	-56%	7.0	2%	-66%	4.0	2%	-12%
Bean	10.9	2%	-28%	9.0	2%	-33%	2.0	1%	-1%
Blueberry	9.1	1%	-4%	5.3	1%	8%	3.8	2%	-16%
Grapes	7.0	1%	-18%	3.9	1%	-45%	3.1	2%	112%
Peach	6.9	1%	-36%	4.4	1%	-25%	2.5	1%	-48%
Strawberry	4.9	1%	-49%	2.5	1%	-66%	2.4	1%	5%
Apple	4.4	1%	5%	4.0	1%	-4%	0.4	0%	--
Pepper	4.1	1%	-31%	3.7	1%	-33%	0.4	0%	-11%
Pecan	3.8	1%	58%	2.1	1%	110%	1.7	1%	21%
Totals	386.9	64%	-12%	238.3	57%	-22%	117.5	62%	29%