

*The  
Connecticut  
Agricultural  
Experiment  
Station,  
New Haven*

Seed Germination  
and Purity  
Analysis 1989

BY SHARON M. DOUGLAS

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During 1989, official samples of 362 vegetable and 17 lawn grass seed were collected by inspectors from the Marketing Division of the Connecticut Department of Agriculture for testing. As the official state seed-testing laboratory, The Connecticut Agricultural Experiment Station performed germination and purity analyses for compliance with the Connecticut Seed Law Regulations and the Federal Seed Act.

Table 1 shows the results of germination tests for individual vegetable seed samples from 14 companies. Results are presented by plant type, variety, germination claim, germination found, and compliance with the standards of germination for Connecticut. These standards are set by the Federal Seed Act. The categories for label compliance are: 1) seeds meet label claims for germination within allowable tolerances and 2) seeds do not meet label claims for germination. All tests were replicated twice. If a seed lot failed label claims it was retested. In addition to germination percentages, seedlings from these seeds must also appear "normal", i.e., they have to be free from decay, have well-developed primary root systems, have well-developed and intact hypocotyls and/or epicotyls, and have healthy cotyledons. Of the 362 vegetable seeds that were tested, five did not meet their claims for germination. In addition to germination testing, seeds were examined for prohibited noxious weed seeds. No vegetable samples contained weed contaminants.

The total number of germination claims and the percentage of claims in each category for compliance are summarized for each vegetable seed company in Table 2. Table 3 summarizes the average percent germination claim, found, and the standard set by the Federal Seed Act for each type of vegetable.

Table 4 shows the results of purity and germination tests for individual lawn grass seed samples from six companies. These are presented by company, brand name and/or seed type or variety mixture. The categories for both purity and germination are as previously described for the vegetable seeds. Lawn seed samples that were labelled with several varieties within a species or with several species within a genus were separated by genus. Purity results are therefore reported as the sum for that genus. For example, Hart's seed mixture "Evergreen Lawn Seed" has a label claim of 29.49% Annual Rye and 24.56% Crown Perennial Rye for purity. Table 4 reports our findings of 57.19% purity. As long as this sum is equal to or exceeds the sum of the individual components, it meets label claims. Of the 17 lawn samples tested, all met claims for seed purity. Only one sample did not meet its claim for germination.

In addition to germination and purity tests, label claims for the percentages of inert matter, crop seed (other than lawn grass seed), weed seed, and the presence of noxious weeds were also evaluated. All samples met label claims for these criteria.

Analyses were performed by Drs. Gerald S. Walton and Sharon M. Douglas, and Mary Inman and Karen Century. Samples were collected by John Chapman and Raymond Weller under the direction of Alton Van Dyke, seed control official. The Seed Law is administered by the seed control official for the Commissioner of the Department of Agriculture.

Sharon M. Douglas

Table 1. Germination of vegetable seeds.

Plant	Variety	Seed Company	Germination	
			claim	found *
Basil	Basilcone	Green Valley Seed	75	99
Bean	Blackeye pea	Comstock-Ferry	90	99
Bean	Bush	Crosman	75	92
Bean	Cherokee Wax	Crosman	75	98
Bean	Cherokee Wax	New England Seed Co.	75	98
Bean	Fordhook 242	Comstock-Ferry	70	65
Bean	Garden Gator Green 15	Ferry Morse	75	93
Bean	Jumbo	Comstock-Ferry	85	91
Bean	Kentucky Wonder	Page	75	100
Bean	King of the Garden	Comstock-Ferry	88	93
Bean	Navy Pea	Comstock-Ferry	75	70
Bean	Pencil Pod Black Wax	Comstock-Ferry	90	99
Bean	Roma	Hart	89	98
Bean	Royal Burgundy	Comstock-Ferry	90	89
Bean	Slenderette	Page Seed Co.	75	93
Bean	Tendergreen	Page	75	96
Bean	Tendergreen	Crosman	75	99
Bean, bush	Blue Lake 274	Hart	82	98
Bean, bush	Fava	Comstock-Ferry	85	*52
Bean, field	Yellow Eye	Hart	75	98
Bean, lima	Fordhook	Page Seed Co.	70	64
Bean, pole	Scarlet Runner	Comstock-Ferry	90	99
Bean, pole	Scarlet Runner	Hart	90	98
Beet	Cylindra	New England Seed Co.	65	100
Beet	Detroit Dark Red	Agway	65	94
Beet	Detroit Dark Red	Bentley	65	93
Beet	Detroit Dark Red	Burpee	65	99
Beet	Detroit Dark Red	Crosman	65	85
Beet	Detroit Dark Red	Excel	65	90
Beet	Detroit Dark Red	Hart	86	97
Beet	Detroit Dark Red	Ferry Morse	65	83
Beet	Detroit Red	New England Seed Co.	65	94
Beet	Early Wonder	Agway	65	99
Beet	Early Wonder	Green Valley Seed	65	92
Beet	Early Wonder	Hart	81	97
Beet	Early Wonder	Page Seed Co.	65	89
Beet	Red Ace	New England Seed Co.	65	100
Beet	Red Ball	Burpee	65	91
Beet	Ruby Queen	Comstock-Ferry	72	68
Bok choy		Comstock-Ferry	90	99
Broccoli	Calabrese	Excel	75	90
Broccoli	Calabrese	Hart	86	90
Broccoli	DeCiccio	Hart	88	90
Broccoli	Green Sprouting	Bentley	75	89
Broccoli	Green Sprouting	Page Seed Co.	75	99
Broccoli	Spartan Early	Agway	75	96

Table 1. Germination of vegetable seeds (continued).

Plant	Variety	Seed Company	Germination	
			claim	found *
Broccoli	Waltham 29	Agway	75	70
Broccoli	Waltham 29	Comstock-Ferry	90	98
Brussel sprout	Catskill	Agway	70	83
Brussel sprout	Jade Cross	New England Seed Co.	70	82
Brussel sprout	Long Island Improved	Hart	80	92
Cabbage	Copenhagen Market	Bentley	75	98
Cabbage	Danish Ball Head	Hart	90	98
Cabbage	Danish Ball Head	New England Seed Co.	75	99
Cabbage	Danish Round Head	Comstock-Ferry	90	99
Cabbage	Earliana	Burpee	75	97
Cabbage	Early Jersey	Page Seed Co.	75	77
Cabbage	Early Jersey Wakefield	Crosman	75	95
Cabbage	Golden Acre	Green Valley Seed	75	98
Cabbage	Late Flat Dutch	Bentley	75	97
Cabbage	Late Flat Dutch	Hart	80	96
Cabbage	Mammoth Red Rock	J. B. Rice	75	76
Cabbage	Penn State Ball Head	Comstock-Ferry	87	93
Cabbage	Red Acre	Agway	75	90
Cabbage	Red Acre	Hart	85	94
Cabbage	Stonehead	New England Seed Co.	75	100
Cabbage	Wisconsin Golden Acre	Agway	75	87
Carrot	Coreless Nantes	Crosman	55	85
Carrot	Danvers Half Long	Bentley	55	96
Carrot	Danvers Half Long	Burpee	55	82
Carrot	Imperator #58	Crosman	55	95
Carrot	Imperator #58	Ferry Morse	55	88
Carrot	Imperator Long	New England Seed Co.	55	58
Carrot	Nantes Half Long	Comstock-Ferry	80	82
Carrot	Nantes Improved	Hart	74	85
Carrot	Nantes Long	Agway	55	86
Carrot	Nantes Scarlet	Excel	55	77
Carrot	Orbit	Comstock-Ferry	88	84
Carrot	Red Cored Chantenay	J. B. Rice	55	86
Carrot	Royal Chantenay	Agway	55	74
Carrot	Royal Chantenay	Hart	63	84
Carrot	Short'n Sweet	Burpee	55	93
Carrot	Small Round	Weeks	55	76
Cauliflower	Early Purple Head	Hart	86	96
Cauliflower	Early Snowball	Green Valley Seed	75	96
Cauliflower	Early Snowball	Hart	90	93
Cauliflower	Early Snowball A	Crosman	75	98
Cauliflower	Snow Crown	Agway	75	87
Cauliflower	Snow King	New England Seed Co.	75	94
Celery	Golden self-blanching	Agway	55	80
Celery	Tall Utah 52-70R	Burpee	55	74
Chicory	Catogna	New England Seed Co.	65	84
Chinese cabbage	Michili	New England Seed Co.	75	100

Table 1. Germination of vegetable seeds (continued).

Plant	Variety	Seed Company	Germination	
			claim	found *
Chinese greens	Pak choi	Agway	75	100
Collards	Georgia	Burpee	80	96
Collards	Vates	Comstock-Ferry	84	98
Corn	Biqueen	Comstock-Ferry	80	97
Corn	Butter and Sugar	Comstock-Ferry	90	100
Corn	Butter and Sugar	Page	75	98
Corn	Calypso	Comstock-Ferry	90	99
Corn	Country Gentleman	Hart	84	93
Corn	Golden Bantam	Comstock-Ferry	82	90
Corn	Golden Bantam	Crosman	75	99
Corn	Golden Bantam 12 Row	Hart	89	92
Corn	Golden Cross Bantam	Bentley	75	98
Corn	Golden Cross Bantam	Crosman	75	99
Corn	Iochief	Comstock-Ferry	86	97
Corn	Kandy Korn	Page	75	98
Corn	Ornamental	Hart	75	93
Corn	Seneca Chief	Crosman	75	100
Corn	Seneca Chief	Hart	90	98
Corn	Silver Queen	Comstock-Ferry	88	93
Corn	Silver Queen	Crosman	75	99
Corn	Silver Queen	Page	75	97
Corn	Sugar and Gold	Hart	86	96
Cowpea	California Blackeye	Hart	88	100
Cucumber	Boston Pickling	New England Seed Co.	80	98
Cucumber	Burpless	New England Seed Co.	80	100
Cucumber	Burpless	Weeks	80	100
Cucumber	Burpless True Lemon	Comstock-Ferry	90	99
Cucumber	Early Russian	Hart	90	99
Cucumber	Improved Long Green	Hart	82	90
Cucumber	Marketer	Comstock-Ferry	90	99
Cucumber	Marketmore	Hart	90	99
Cucumber	Marketmore 76	Crosman	80	99
Cucumber	National Pickling	J. B. Rice	80	100
Cucumber	Picarow	Agway	80	94
Cucumber	Pioneer	New England Seed Co.	80	94
Cucumber	Poinsett 76	Ferry Morse	80	100
Cucumber	Scabmosaic Res. 58	Crosman	80	98
Cucumber	Slicemaster	Comstock-Ferry	90	100
Cucumber	Spacemaster	Agway	80	94
Cucumber	Straight Eight	Burpee	80	99
Cucumber	Straight Eight	Green Valley Seed	80	100
Cucumber	Straight Eight	New England Seed Co.	80	99
Cucumber	Sumter	Ferry Morse	80	99
Cucumber	Table Green 72	Agway	80	94
Cucumber	Table Green 77	Page Seed Co.	80	90
Cucumber	Wisconsin SMR 18	Agway	80	98

Table 1. Germination of vegetable seeds (continued).

Plant	Variety	Seed Company	Germination	
			claim	found *
Eggplant	Black Beauty	Bentley	60	88
Eggplant	Black Beauty	Ferry Morse	60	94
Eggplant	Black Beauty	Page Seed Co.	60	93
Eggplant	Dusky	New England Seed Co.	60	84
Eggplant	Early Long Purple	Comstock-Ferry	90	97
Eggplant	Early Long Purple	Comstock-Ferry	90	94
Eggplant	Superhybrid	Agway	60	97
Endive	Full Heart Batavian	New England Seed Co.	70	*49
Endive	Green Curled	Burpee	70	92
Endive	Green Curled	Crosman	70	87
Endive	Salad King	Comstock-Ferry	81	86
Kale	Blue Scotch	Agway	75	99
Kale	Blue Scotch Curled	Hart	80	99
Kale	Vates	Comstock-Ferry	90	99
Kale	Vates	New England Seed Co.	75	99
Kohlrabi	Early White Vienna	Burpee	75	98
Kohlrabi	White Vienna	Agway	75	92
Kohlrabi	White Vienna	J. B. Rice	75	85
Leek	American Broad Flag	New England Seed Co.	60	91
Leek	American Flag	Hart	87	91
Leek	Carina	Agway	60	85
Leek	Musselburgh	Thompson & Morgan	60	86
Lettuce	Bibb	Comstock-Ferry	90	97
Lettuce	Bibb	Hart	90	98
Lettuce	Big Boston	Hart	90	98
Lettuce	Big Boston	New England Seed Co.	80	91
Lettuce	Black Seeded Simpson	Agway	80	97
Lettuce	Black Seeded Simpson	Burpee	80	99
Lettuce	Black Seeded Simpson	Green Valley Seed	80	100
Lettuce	Black Seeded Simpson	J. B. Rice	80	100
Lettuce	Black Seeded Simpson	New England Seed Co.	80	97
Lettuce	Buttercrunch	Comstock-Ferry	90	98
Lettuce	Buttercrunch	Hart	90	97
Lettuce	Great Lakes	Green Valley Seed	80	100
Lettuce	Iceberg	Crosman	80	97
Lettuce	Iceburg	Hart	87	84
Lettuce	Iceburg	Page Seed Co.	80	95
Lettuce	Ithaca	Agway	80	95
Lettuce	Romaine	Crosman	80	98
Lettuce	Romaine	Hart	82	79
Lettuce	Romaine	New England Seed Co.	80	100
Lettuce	Salad Bowl	Agway	80	93
Lettuce	Salad Bowl	Comstock-Ferry	90	96
Lettuce	Salad Bowl	Excel	80	77
Lettuce	Salad Bowl	New England Seed Co.	80	95
Lettuce	Simpson's Curled	Bentley	80	97

Table 1. Germination of vegetable seeds (continued).

Plant	Variety	Seed Company	Germination	
			claim	found *
Lima Bean	Henderson	Crosman	70	91
Lima Bean	Henderson's Bush	Bentley	70	97
Melon	Honeyshaw	Agway	75	98
Muskmelon	Classic	Agway	75	90
Muskmelon	Delicious	Comstock-Ferry	90	94
Muskmelon	Delicious 51	Agway	75	95
Muskmelon	Delicious 51	Hart	76	95
Muskmelon	Iriquois	Hart	80	87
Mustard	Florida Broadgreens	Comstock-Ferry	90	98
Mustard	Fordhook Fancy	Burpee	75	98
Mustard	Southern Curled	Page Seed Co.	75	100
Okra	Burgundy	Comstock-Ferry	71	83
Okra	Clemson Spineless	Agway	50	60
Okra	Clemson Spineless	Burpee	50	89
Okra	Clemson Spineless	Page Seed Co.	50	97
Okra	Dwarf Long Pod Green	Crosman	50	87
Okra	Dwarf Stalk Long Green	Hart	80	72
Onion	Downing Yellow Globe	Crosman	70	97
Onion	Early Yellow Globe	Hart	77	96
Onion	Green Scallion	Green Valley Seed	70	96
Onion	Hardy White Bunching	New England Seed Co.	70	74
Onion	Long White Bunching	Agway	70	96
Onion	Red Globe	Crosman	70	86
Onion	Southport Red Globe	Agway	70	93
Onion	Sweet Spanish	Agway	70	79
Onion	Sweet Spanish	Excel	70	94
Onion	Sweet Spanish	Ferry Morse	70	81
Onion	Utah Sweet Spanish	Burpee	70	87
Onion	Utah Sweet Spanish	New England Seed Co.	70	*48
Onion	White Bunching	Bentley	70	84
Onion	White Bunching	Bentley	70	84
Onion	White Bunching	Comstock-Ferry	90	97
Onion	White Bunching	J. B. Rice	70	96
Onion	White Lisbon	Excel	70	92
Onion	White Sweet Spanish	Hart	80	94
Onion	Yellow Spanish	Page Seed Co.	70	95
Onion	Yellow Sweet Spanish	Bentley	70	95
Parsley	Moss Curled	Agway	60	82
Parsley	Moss Curled	Comstock-Ferry	70	69
Parsley	Plain Leaf	Agway	60	64
Parsley	Plain Leaf	Hart	78	81
Parsnip	All American	Comstock-Ferry	85	76
Parsnip	All American	New England Seed Co.	60	81
Parsnip	Hollow Crown	Burpee	60	90
Parsnip	Hollow Crown	J. B. Rice	60	74



Table 1. Germination of vegetable seeds (continued).

Plant	Variety	Seed Company	Germination	
			claim	found *
Pea	Dwarf White Sugar	Page Seed Co.	80	100
Pea	Frosty	Hart	90	98
Pea	Greenarrow	Comstock-Ferry	88	96
Pea	Laxton's Progress	Bentley	80	100
Pea	Laxton's Progress	Page	80	99
Pea	Little Marble	Comstock-Ferry	80	96
Pea	Snow pea	Weeks	80	97
Pea	Sparkle	Comstock-Ferry	82	98
Pea	Sugar Snap	Comstock-Ferry	86	94
Pea	Sweet Snap	Crosman	80	95
Pea	Telephone	New England Seed Co.	80	98
Pea	Wando	Crosman	80	97
Pea	Wando	Hart	82	88
Pea	Wando	Page	80	92
Pea, snap	Sugar Mel	Hart	88	89
Pepper	Banana Sweet	Comstock-Ferry	90	93
Pepper	California Wonder	Bentley	55	84
Pepper	California Wonder	Ferry Morse	55	90
Pepper	California Wonder	Hart	80	93
Pepper	California Wonder	J. B. Rice	55	*0
Pepper	California Wonder Red	Comstock-Ferry	90	98
Pepper	Cubanelle	Crosman	55	91
Pepper	Cubanelle	Hart	75	83
Pepper	Cubanelle	New England Seed Co.	55	90
Pepper	Cubanelle	Page Seed Co.	55	84
Pepper	Early Calwonder	Agway	55	98
Pepper	Early Calwonder	Comstock-Ferry	82	97
Pepper	Eastern Rocket	Agway	55	48
Pepper	Green Boy	Agway	55	99
Pepper	Hungarian Wax Hot	Hart	90	93
Pepper	Jalapeno	Burpee	55	90
Pepper	Jalapeno Hot	Crosman	75	93
Pepper	Large Red Cayenne	New England Seed Co.	55	99
Pepper	Large Red Cherry Hot	New England Seed Co.	55	86
Pepper	Long Red Cayenne	Bentley	55	89
Pepper	Midway	Comstock-Ferry	83	88
Pepper	Yellow Banana	Page Seed Co.	55	81
Pepper	Yellow Wonder	Comstock-Ferry	90	97
Popcorn	Strawberry	Comstock-Ferry	80	86
Pumpkin	Baby Pam	Agway	75	74
Pumpkin	Big Max	Hart	85	*60
Pumpkin	Connecticut Field	Hart	85	97
Pumpkin	Jack O'Lantern	Hart	90	98
Pumpkin	Neck Pumpkin	Agway	75	90
Pumpkin	Small Sugar	Hart	90	99
Pumpkin	Thomas Halloween	Agway	75	87



Table 1. Germination of vegetable seeds (continued).

Plant	Variety	Seed Company	Germination	
			claim	found *
Radish	Champion	Bentley	75	99
Radish	Champion	Page Seed Co.	75	100
Radish	Cherry Belle	Comstock-Ferry	90	100
Radish	Cherry Belle	Hart	90	99
Radish	Cherry Belle	J. B. Rice	75	97
Radish	Cherry Belle	New England Seed Co.	75	99
Radish	Early Scarlet Globe	Agway	75	99
Radish	Early Scarlet Globe	Comstock-Ferry	90	100
Radish	Long Black Spanish	Hart	90	95
Radish	Mixed Varieties	Thompson & Morgan	75	92
Radish	Round Black Spanish	Page Seed Co.	75	92
Radish	Scarlet Turnip	Excel	75	99
Radish	Sparkler	Burpee	75	99
Radish	White Icicle	Agway	75	98
Radish	White Icicle	Crosman	75	95
Roquette		Burpee	75	95
Rutabaga	American Purple Top	Agway	75	97
Rutabaga	American Purple Top	Page Seed Co.	75	98
Rutabaga	American Purple Top	Hart	90	100
Rutabaga	Improved Purple Top	Comstock-Ferry	90	100
Rutabaga	Purple Top Yellow	Burpee	75	100
Spinach	America	Crosman	60	97
Spinach	Bloomsdale Long Standing	Page Seed Co.	60	93
Spinach	Bloomsdale Savoy	J. B. Rice	60	87
Spinach	Early Hybrid 30	Agway	60	98
Spinach	New Zealand	Agway	40	95
Spinach	New Zealand Everlasting	Burpee	40	86
Spinach	VA Blight Resistant	Comstock-Ferry	90	98
Squash	Acorn	Bentley	75	80
Squash	Ambassador	Comstock-Ferry	90	97
Squash	Black Beauty	Agway	75	95
Squash	Black Zucchini	Hart	84	84
Squash	Blue Hubbard	Hart	90	91
Squash	Blue Hubbard	Page Seed Co.	75	98
Squash	Buttercup	Hart	87	88
Squash	Butternut	Hart	90	96
Squash	Cocozelle	Crosman	75	82
Squash	Green Hubbard	Hart	86	77
Squash	Puritan Butternut	Agway	75	98
Squash	Straightneck	Crosman	75	100
Squash	Straightneck Prolific	Agway	75	99
Squash	Straightneck Prolific	Comstock-Ferry	90	96
Squash	Table Green	Agway	75	97
Squash	Vegetable Spaghetti	Agway	75	100
Squash	Vegetable Spaghetti	Comstock-Ferry	90	99
Squash	Zucchini	Bentley	75	97
Squash	Zucchini Black	Comstock-Ferry	80	93

Table 1. Germination of vegetable seeds (continued).

Plant	Variety	Seed Company	Germination	
			claim	found *
Sunflower	Mammoth Russian	Hart	86	95
Swiss chard	Fordhook Giant	J. B. Rice	65	100
Swiss chard	Fordhook Giant	Agway	65	89
Swiss chard	Fordhook Giant	Burpee	65	97
Swiss chard	Fordhook Giant	Hart	90	88
Swiss chard	G.T. Lucullus	New England Seed Co.	65	80
Swiss chard	Rhubarb	Comstock-Ferry	90	98
Swiss chard	Rhubarb	Page Seed Co.	60	94
Swiss chard	Ruby Red	Agway	65	91
Tomato	Beefsteak	Bentley	75	95
Tomato	Bonny Best	Hart	90	95
Tomato	Burpee Big Boy	Agway	75	97
Tomato	Climbing	Crosman	75	95
Tomato	Delicious	Green Valley Seed	75	95
Tomato	Delicious	Weeks	75	88
Tomato	Golden Jubilee	J. B. Rice	75	76
Tomato	Large Red Cherry	Comstock-Ferry	87	99
Tomato	Long-keeper	Burpee	75	84
Tomato	Midget Tiny Tim	Weeks	75	92
Tomato	Red Cherry	Burpee	75	97
Tomato	Red Cherry	Hart	90	95
Tomato	Roma VF	Agway	75	94
Tomato	Roma VF	Comstock-Ferry	90	98
Tomato	Roma VF	Crosman	75	96
Tomato	Rutgers	Bentley	75	88
Tomato	Rutgers	Green Valley Seed	75	94
Tomato	Rutgers	Hart	83	82
Tomato	Supersteak	Burpee	75	94
Turnip	Large Yellow Globe	Comstock-Ferry	80	95
Turnip	Purple Top White Globe	Burpee	80	98
Turnip	Purple Top White Globe	Hart	90	92
Turnip	Seven Top	J. B. Rice	80	99
Turnip	White Globe	Excel	80	92
Turnip	Yellow Globe	Hart	90	99
Watermelon	Charleston Gray	Burpee	70	96
Watermelon	Crimson Sweet	Hart	85	90
Watermelon	Jubilee	Weeks	70	98
Watermelon	Sugar Baby	Comstock-Ferry	90	97
Watermelon	Tender Sweet	Weeks	70	89
		Average	76	92

\* = does not meet label claims

Table 2. Summary for each seed company of total number of germination claims and the percentage of claims in each compliance category.

Seed Company	Claims	% Samples in Each Compliance Category*	
		1	2
Agway	52	100	0
Bentley	20	100	0
Burpee	26	100	0
Comstock-Ferry	62	98	2
Crosman's	31	100	0
Excel	8	100	0
Ferry Morse	8	100	0
Green Valley	10	100	0
Hart	64	98	2
New England	32	94	6
Page	27	100	0
J.B. Rice	13	92	8
Thompson & Morgan	2	100	0
Weeks	7	100	0

\* Compliance Categories: 1= meets label claims; 2= does not meet label claims

Table 3. Summary by vegetable type of average percent germination claimed, found, and set standard.

Vegetable	No. of Samples	Claimed	Average % Found	Germination Standard*
Basil	1	75	99	
Bean	22	80	90	70
Beet	16	68	92	65
Bok choy	1	90	99	
Broccoli	8	80	90	75
Brussel sprout	3	73	86	70
Cabbage	16	78	93	75
Carrot	16	60	83	55
Cauliflower	6	79	94	75
Celery	2	55	77	55
Chicory	1	65	84	65
Chinese cabbage	2	75	100	75
Collards	2	82	97	80
Corn	19	81	96	75
Cowpea	1	88	100	75
Cucumber	23	82	97	80
Eggplant	7	68	92	60
Endive	4	73	78	70
Kale	4	80	99	75
Kohlrabi	3	75	92	75
Leek	4	67	88	60
Lettuce	24	79	95	80
Lima bean	2	70	94	70
Melon	1	75	98	75
Muskmelon	5	79	92	75
Mustard	3	80	99	75
Okra	6	58	81	50
Onion	20	84	88	70
Parsley	4	67	74	60
Parsnip	4	66	80	60
Pea	15	82	96	80
Pepper	23	66	85	55
Popcorn	1	80	86	
Pumpkin	7	82	86	75
Radish	15	79	97	75
Roquette	1	75	95	
Rutabaga	5	81	99	75
Spinach	7	58	93	40
Squash	19	81	93	75
Sunflower	1	86	95	
Swiss chard	8	71	92	65
Tomato	19	78	92	75
Turnip	6	83	96	80
Watermelon	5	77	94	70

\* Standards are provided for by the rules and regulations of the Federal Seed Act; Blanks indicate standards are not available for that vegetable.

Table 4. Germination and purity of lawn seed.

Company	Mixture	Purity Claim	Purity Found <sup>1</sup>	Germination Claim	Germination Found <sup>1,2</sup>
Hart	<i>Banff Kentucky Bluegrass</i>	98.29	98.98	85	88
Hart	<i>Evergreen Lawn Seed</i>				
	Annual Rye	29.49		90	
	Crown Perennial Rye	24.56	57.19	90	88
	Creeping Red Fescue	34.37	33.67	85	96
	Kentucky Bluegrass	8.62	8.60	80	82
Hart	<i>Small Spot Lawn Seed</i>				
	Annual Rye	29.49		90	
	Crown Perennial Rye	24.56	50.31	90	86
	Creeping Red Fescue	34.37	38.58	85	86
	Kentucky Bluegrass	8.62	10.17	80	81
Hart	<i>Shade Lawn Seed</i>				
	Fiesta II Perennial Rye	24.53	25.03	90	89
	Penn Lawn Red Fescue	29.54		85	
	Creeping Red Fescue	29.51		85	
	Shadow Chewings Fescue	14.73	73.66	85	95
Wilamette	<i>Kentucky Bluegrass</i>	86.96	97.95	80	*58
Agri Turf	<i>Imperial Perennial Rye</i>	98.88	99.25	85	92
Lofts	<i>Creeping Red Fescue</i>	98.50	99.42	90	91
Lofts	<i>Lawn Seed</i>				
	Kentucky 31 Tall Fescue	97.00	98.65	85	85
Scotts	<i>Family Favorite</i>				
	Koket Chewings Fescue	14.79		90	
	Banner Chewings Fescue	9.86	24.73	90	94
	Victa Kentucky Bluegrass	29.58	32.70	87	87
	Pennant Perennial Rye	44.16	41.91	92	96
Scotts	<i>Shady Area</i>				
	Banner Chewings Fescue	44.36		90	
	Koket Chewings Fescue	14.79	62.34	90	91
	Coventry Kentucky Bluegrass	24.65	22.51	87	87
	Ovation Perennial Rye	14.72	14.62	92	95
Scotts	<i>Play Time</i>				
	Derby Perennial Rye	29.44		92	
	Ovation Perennial Rye	24.54		92	
	Pennant Perennial Rye	24.54	78.92	92	96
	Victa Kentucky Bluegrass	19.72	20.55	87	92
Scotts	<i>Sun/Shade</i>				
	Perennial Rye	51.90	52.45	92	95
	Chewings Fescue	24.50	26.09	90	96
	Kentucky Bluegrass	19.60	20.96	87	87
Scotts	<i>Sun Mix</i>				
	Red Fescue	24.47	25.31	90	91
	Kentucky Bluegrass	73.43	73.91	84	85

Table 4. Germination and purity of lawn seed (continued).

Company	Mixture	Purity Claim	Purity Found <sup>1</sup>	Germination Claim	Germination Found <sup>1,2</sup>
Scotts	<i>Quick Fix</i>				
	Annual Rye	79.45		90	
	Perennial Rye	19.86	99.59	90	94
Cadwell & Jones	<i>Chewings Fescue</i>	98.83	99.66	85	85
Cadwell & Jones	<i>Putters Delight</i>				
	Ranger Perennial Rye	32.88		90	
	Caliente Perennial Rye	31.82		85	
	Dillon Perennial Rye	33.14	98.93	85	93
Cadwell & Jones	<i>Hard Fescue</i>	98.51	99.60	85	97

<sup>1</sup>Results for seeds which were separated by genus and not by species or by variety are reported as the sum for that genus

<sup>2</sup> \* = does not meet label claims



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