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Seed Germination
and Purity
Analysis
2006

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Seed Germination and Purity Analysis 2006

Sharon M. Douglas and Mary K. Inman

Official samples of 350 vegetable and 15 lawn seeds were collected by inspectors from the Bureau of Regulation and Inspection of the Connecticut Department of Agriculture for testing in 2006. As the official 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 13 companies. Results are presented by plant type, variety, germination found, germination standard, and compliance with the standard. Germination standards are set by the Federal Seed Act, although this year some companies had higher label claims than the standard. The categories for label compliance are: 1) seeds meet label claims for germination and 2) seeds do not meet label claims for germination within allowable tolerance. Tests were replicated twice. In addition, seedlings 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 350 vegetable seed samples tested, 11 did not meet their label claims for germination. Eight samples were retested and failed the second test. Three samples were not retested because of insufficient numbers of seeds. Seed samples were also examined for prohibited noxious weed seeds. No vegetable samples contained weed contaminants.

The total number of germination claims and the percentage of claims that met or failed label claims are summarized for each vegetable seed company in Table 2. In some

cases, specific label claims were higher than federal seed standards. Table 3 summarizes the total number of samples tested and the average germination for each type of vegetable.

Table 4 shows the results of purity and germination tests for individual lawn grass seed samples. 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 vegetable seeds. Lawn seed samples that were labeled with several varieties within a species or with several species within a genus were separated by genus. Purity and germination results are, therefore, reported as the sum for that genus. The label claim is met as long as this sum equals or exceeds the sum of the individual components for a genus listed on the label. One of the 15 lawn seed samples tested met label claims for both purity and germination. Two samples failed label claims for both purity and germination. Nine samples passed label claims for germination but did not meet claims for purity. Three samples passed purity claims but failed germination claims.

Mary K. Inman and Dr. Sharon M. Douglas performed the analyses per Connecticut Regulations. Alton A. Blodgett, Seed Control Official, and Wayne S. Nelson collected the samples. 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. Standards are provided by the rules and regulations of the Federal Seed Act unless otherwise noted (+) since some samples had claims higher than the standard. H= Seeds remained hard at the end of the test period because they did not absorb water due to an impermeable seed coat. * = Does not meet label claim.

Plant	Variety	Seed Company	Standard	Germ. Found
Bean	Blue Lake 274	Ferry-Morse Seed Company	70	92
Bean	Blue Lake 274	Seedway Inc.	70	95
Bean	Blue Lake Pole	The Charles C. Hart Company	70	50+11H*
Bean	Cherokee Wax	Comstock, Ferre and Company	70	99
Bean	Cherokee Wax	Plantation Products Inc./American Seed	70	97
Bean	Contender	Walmart Gardens/Ferry-Morse Seed Co.	70	96
Bean	Kentucky Wonder	Plantation Products Inc./American Seed	70	87
Bean	Kentucky Wonder Pole	Ferry-Morse Seed Company	70	93
Bean	King Horn Wax Bush	New England Seed Company	70	72
Bean	Provider	The Cook's Garden	70	94
Bean	Romano Pole	New England Seed Company	70	92
Bean	Royalty Purple Pod	The Charles C. Hart Company	70	82
Bean	Tendergreen	Comstock, Ferre and Company	70	99
Bean, lima	Fordhook Bush	Comstock, Ferre and Company	70	55*
Bean, lima	Fordhook Bush 242	Walmart Gardens/Ferry-Morse Seed Co.	70	67
Bean, lima	Henderson	The Charles C. Hart Company	70	87
Beet	Bulls Blood	Comstock, Ferre and Company	65	91
Beet	Burpee's Golden	Burpee Select/ W. Atlee Burpee and Co.	65	84
Beet	Detroit Dark Red	Seedway Inc.	65	94
Beet	Detroit Dark Red	Plantation Products Inc./American Seed	65	86
Beet	Detroit Dark Red	The Charles C. Hart Company	65	84
Beet	Detroit Dark Red Medium Top	W. Atlee Burpee and Company	65	89
Beet	Detroit Dark Red Morse's Strain	Walmart Gardens/Ferry-Morse Seed Co.	65	95
Beet	Detroit Dark Red, Morse's Strain	Ferry-Morse Seed Company	65	97
Beet	Iride	The Cook's Garden	65	94
Beet	Ruby Queen	NK Lawn and Garden Company	65	74
Beet	Scarlet Supreme	New England Seed Company	65	84
Beet	Tall Top Early Wonder	Ferry-Morse Organic	65	73
Broccoli	Barbados Hybrid	Walmart Gardens/Ferry-Morse Seed Co.	75	92
Broccoli	Blend	Seedway Inc.	75	90
Broccoli	Calabrese	The Charles C. Hart Company	75	90
Broccoli	Calabrese Green Sprouting	Ferry-Morse Organic	75	91
Broccoli	DeCicco	Ferry-Morse Seed Company	75	98
Broccoli	Premium Crop Hybrid	New England Seed Company	75	91

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Plant	Variety	Seed Company	Standard	Germ. Found
Broccoli	Romanesco	Comstock, Ferre and Company	75	100
Broccoli	Waltham 29	NK Lawn and Garden Company	75	91
Brussels sprouts	Catskill	Seedway Inc.	70	92
Brussels sprouts	Catskill	Walmart Gardens/Ferry-Morse Seed Co.	70	81
Brussels sprouts	Catskill	Ferry-Morse Seed Company	70	83
Brussels sprouts	Long Island Improved	The Charles C. Hart Company	70	77
Cabbage	Copenhagen Market Early	Walmart Gardens/Ferry-Morse Seed Co.	75	97
Cabbage	Copenhagen Market Early	Ferry-Morse Seed Company	75	93
Cabbage	Danish Ball Head	New England Seed Company	75	95
Cabbage	Danish Round Ball Head	Comstock, Ferre and Company	75	94
Cabbage	Early Golden Acre	NK Lawn and Garden Company	75	89
Cabbage	Mammoth Red Rock	The Charles C. Hart Company	75	97
Cabbage	Royal Savoy	Seedway Inc.	75	89
Cantaloupe	Alaska	Comstock, Ferre and Company	75	97
Cantaloupe	Delicious 51	The Charles C. Hart Company	75	76
Cantaloupe	Hale's Best Jumbo	Walmart Gardens/Ferry-Morse Seed Co.	75	93
Cantaloupe	Hale's Best Jumbo	Ferry-Morse Seed Company	75	95
Carrot	Big Top	The Cook's Garden	55	80
Carrot	Burpee A #1 Hybrid	Burpee Select/ W. Atlee Burpee and Co.	55	90
Carrot	Chantenay	Plantation Products Inc./American Seed	55	72
Carrot	Danvers	Comstock, Ferre and Company	55	78
Carrot	Danvers 126	Seedway Inc.	55	89
Carrot	Danvers 126	Walmart Gardens/Ferry-Morse Seed Co.	55	80
Carrot	Danvers 126	Ferry-Morse Organic	55	90
Carrot	Danvers Half Long	New England Seed Company	55	81
Carrot	Little Finger	The Charles C. Hart Company	55	77
Carrot	Little Finger	Comstock, Ferre and Company	55	71
Carrot	Long Imperator 58	Ferry-Morse Seed Company	55	92
Carrot	Purple Haze	Seedway Inc.	55	78
Carrot	Red Cored Chantenay	The Charles C. Hart Company	55	75
Carrot	Tendersweet	NK Lawn and Garden Company	55	72
Cauliflower	Blend	Seedway Inc.	75	82
Cauliflower	Early Snowball	New England Seed Company	75	87
Cauliflower	Early Snowball A	Ferry-Morse Seed Company	75	94
Cauliflower	Self Blanching	The Charles C. Hart Company	75	88
Cauliflower	Snowball Improved	Comstock, Ferre and Company	75	94

Table 1 (continued). Germination of vegetable seeds. Standards are provided by the rules and regulations of the Federal Seed Act unless otherwise noted (+) since some samples had claims higher than the standard. H= Seeds remained hard at the end of the test period because they did not absorb water due to an impermeable seed coat. * = Does not meet label claim.

Plant	Variety	Seed Company	Standard	Germ. Found
Celery	Utah	New England Seed Company	55	85
Celery	Tall Utah	Comstock, Ferre and Company	55	26*
Celery	Tall Utah 527 OR Improved	Ferry-Morse Seed Company	55	58
Chicory	Catalogna Italian Dandelion	New England Seed Company	65	71
Chicory	Ruby Catalogna	Comstock, Ferre and Company	65	90
Chinese cabbage	Bok Choi	The Charles C. Hart Company	75	95
Chinese cabbage	Jade Pagoda	Seedway Inc.	75	96
Chinese cabbage	Michili	New England Seed Company	75	96
Chinese cabbage	Michili	Comstock, Ferre and Company	75	99
Chinese cabbage	Pak Choi	Seedway Inc.	75	93
Chinese cabbage	Pak Choi	Comstock, Ferre and Company	75	98
Collards	Georgia	New England Seed Company	80	99
Collards	Georgia	Walmart Gardens/Ferry-Morse Seed Co.	80	90
Collards	Georgia	W. Atlee Burpee and Company	80	96
Collards	Georgia	Ferry-Morse Seed Company	80	92
Collards	Georgia Green	The Charles C. Hart Company	80	96
Collards	Vates	Seedway Inc.	80	83
Corn	Chubby Checkers Hybrid	Burpee Select/ W. Atlee Burpee and Co.	75	97
Corn	Early Golden Bantam	Plantation Products Inc./American Seed	75	95
Corn	Early Sunglow	New England Seed Company	75	96
Corn	Fantastic	Seedway Inc.	75	96
Corn	Golden Bantam	Comstock, Ferre and Company	75	93
Corn	Golden Bantam Eight Row	The Charles C. Hart Company	75	90
Corn	Golden Cross Bantam Hybrid	W. Atlee Burpee and Company	75	97
Corn	Golden Cross Bantam Hybrid	Ferry-Morse Seed Company	75	99
Corn	Kandy Korn	The Charles C. Hart Company	75	97
Corn	Silver Bullet Hybrid	Walmart Gardens/Ferry-Morse Seed Co.	75	96
Corn	Sugar Dots Hybrid	Walmart Gardens/Ferry-Morse Seed Co.	75	97
Corn	Sugar Dots Hybrid	Ferry-Morse Seed Company	75	95
Corn	Yellow Bodacious	Comstock, Ferre and Company	75	95
Cowpea	Pinkeye Purple Hull	Walmart Gardens/Ferry-Morse Seed Co.	75	67
Cowpea	Pinkeye Purple Hull	Ferry-Morse Seed Company	75	80

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Plant	Variety	Seed Company	Standard	Germ. Found
Cress	Curled Garden	Comstock, Ferre and Company	75	98
Cucumber	Armenian Yard Long	Comstock, Ferre and Company	80	94
Cucumber	Boston Pickling	New England Seed Company	80	96
Cucumber	Boston Pickling	The Charles C. Hart Company	80	95
Cucumber	Double Feature Hybrid	Burpee Select/ W. Atlee Burpee and Co.	80	96
Cucumber	Marketmore	Plantation Products Inc./American Seed	80	91
Cucumber	Marketmore 76	New England Seed Company	80	97
Cucumber	Marketmore 76	Ferry-Morse Seed Company	80	96
Cucumber	Marketmore 86	The Charles C. Hart Company	80	99
Cucumber	National Pickling	Plantation Products Inc./American Seed	80	91
Cucumber	Poinsett 76	Walmart Gardens/Ferry-Morse Seed Co.	80	96
Cucumber	Poinsett 76	Ferry-Morse Seed Company	80	96
Cucumber	Straight Eight	Seedway Inc.	80	95
Cucumber	Straight Eight	Walmart Gardens/Ferry-Morse Seed Co.	80	96
Cucumber	West Indian Gherkin	Comstock, Ferre and Company	80	91
Cucumber	Wisconsin SMR-58	Seedway Inc.	80	96
Dill	Boquet	Carolina Seed Division of New England Seed	85+	93
Dill	Bouquet	The Charles C. Hart Company	60	91
Dill	Bouquet	Ferry-Morse Seed Company	60	70
Dill	Bouquet	Ferry-Morse Organic	60	74
Dill	Dukat	Seedway Inc.	60	82
Dill	Fernleaf	W. Atlee Burpee and Company	60	75
Dill	Long Island Mammoth	NK Lawn and Garden Company	60	91
Dill	Mammoth	Walmart Gardens/Ferry-Morse Seed Co.	60	85
Dill	Mammoth	Comstock, Ferre and Company	60	100
Eggplant	Black Beauty	New England Seed Company	60	63
Eggplant	Black Beauty	Walmart Gardens/Ferry-Morse Seed Co.	60	52
Eggplant	Black Beauty	The Charles C. Hart Company	60	62
Eggplant	Black Beauty	Ferry-Morse Seed Company	60	62
Eggplant	Long Purple	Comstock, Ferre and Company	60	47
Endive	Batavian Full Heart	New England Seed Company	70	91
Endive	Batavian Full Heart	Comstock, Ferre and Company	70	87
Endive	Green Curled	The Charles C. Hart Company	70	90
Endive	Green Curled Ruffle	Ferry-Morse Seed Company	70	93

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Plant	Variety	Seed Company	Standard	Germ. Found
Kale	Blue Scotch	Seedway Inc.	75	95
Kale	Vates	Comstock, Ferre and Company	75	98
Kale	Vates Blue Curled	The Charles C. Hart Company	75	96
Kale	Vates Dwarf Blue Curled	New England Seed Company	75	92
Kale	Vates Dwarf Blue Curled	Walmart Gardens/Ferry-Morse Seed Co.	75	97
Kale	Vates Dwarf Blue Curled	Ferry-Morse Seed Company	75	96
Kohlrabi	Early Purple Vienna	Seedway Inc.	75	97
Kohlrabi	Early Purple Vienna	Comstock, Ferre and Company	75	98
Kohlrabi	Early White Vienna	Walmart Gardens/Ferry-Morse Seed Co.	75	94
Kohlrabi	Early White Vienna	Ferry-Morse Seed Company	75	90
Kohlrabi	Early White Vienna	NK Lawn and Garden Company	75	75
Kohlrabi	Winner Hybrid	New England Seed Company	75	98
Leek	American Broad Flag	New England Seed Company	60	91
Leek	American Flag	Walmart Gardens/Ferry-Morse Seed Co.	60	93
Leek	American Flag	The Charles C. Hart Company	60	90
Leek	American Flag	Comstock, Ferre and Company	60	85
Leek	American Flag	Ferry-Morse Seed Company	60	93
Leek	Carina	Seedway Inc.	60	86
Lettuce	All Season Romaine Mix	The Cook's Garden	80	95
Lettuce	Bibb	Walmart Gardens/Ferry-Morse Seed Co.	80	95
Lettuce	Big Boston	New England Seed Company	80	90
Lettuce	Black Seeded Simpson	New England Seed Company	80	96
Lettuce	Black Seeded Simpson	Plantation Products Inc./American Seed	80	17*
Lettuce	Black Seeded Simpson	The Charles C. Hart Company	80	98
Lettuce	Black Seeded Simpson	Ferry-Morse Organic	80	91
Lettuce	Black Seeded Simpson	NK Lawn and Garden Company	80	89
Lettuce	Burgundy Ice	W. Atlee Burpee and Company	80	17*
Lettuce	Burpee Bibb	W. Atlee Burpee and Company	80	98
Lettuce	Buttercrunch	Plantation Products Inc./American Seed	80	76
Lettuce	Buttercrunch	The Charles C. Hart Company	80	94
Lettuce	Esmerelda	Carolina Seed Division of New England Seed	90+	95
Lettuce	Fall and Winter Mix	The Cook's Garden	80	95
Lettuce	Giant Caesar	Burpee Select/ W. Atlee Burpee and Co.	80	97
Lettuce	Giant Caesar	The Cook's Garden	80	98
Lettuce	Gourmet Mix	New England Seed Company	80	93
Lettuce	Grand Rapids	Ferry-Morse Seed Company	80	96
Lettuce	Grand Rapids	NK Lawn and Garden Company	80	96
Lettuce	Great Lakes	New England Seed Company	80	89

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Plant	Variety	Seed Company	Standard	Germ. Found
Lettuce	Great Lakes 118	Walmart Gardens/Ferry-Morse Seed Co.	80	96
Lettuce	Great Lakes 118	Ferry-Morse Seed Company	80	99
Lettuce	Iceberg	The Charles C. Hart Company	80	81
Lettuce	Oakleaf	Seedway Inc.	80	97
Lettuce	Parris Island Cos	Walmart Gardens/Ferry-Morse Seed Co.	80	97
Lettuce	Prizehead	Seedway Inc.	80	94
Lettuce	Red Sails	New England Seed Company	80	99
Lettuce	Romaine	The Charles C. Hart Company	80	96
Lettuce	Royal Oak Leaf	The Cook's Garden	80	96
Lettuce	Salad Bowl	Ferry-Morse Seed Company	80	97
Lettuce	Summertime	Seedway Inc.	80	100
Mustard	Early Mazuna	Ferry-Morse Organic	75	98
Mustard	Florida Broadleaf	The Charles C. Hart Company	75	92
Mustard	Green Wave	New England Seed Company	75	95
Mustard	Greenwave	Comstock, Ferre and Company	75	98
Mustard	India	Ferry-Morse Seed Company	75	83
Mustard	Tendergreen	Plantation Products Inc./American Seed	75	97
New Zealand Spinach		The Charles C. Hart Company	40	55
Okra	Clemson Spineless	New England Seed Company	50	99
Okra	Dwarf Green	Plantation Products Inc./American Seed	50	64
Okra	Emerald	Walmart Gardens/Ferry-Morse Seed Co.	50	82
Onion	Evergreen Bunching	Ferry-Morse Organic	70	86
Onion	Granex Hybrid	W. Atlee Burpee and Company	70	96
Onion	He-Ski-Ko	Comstock, Ferre and Company	70	100
Onion	Lisbon White Bunching	Plantation Products Inc./American Seed	70	59
Onion	Long White Bunching	Seedway Inc.	70	92
Onion	Portugal	The Charles C. Hart Company	70	86
Onion	Utah Sweet Spanish	NK Lawn and Garden Company	70	90
Onion	Utah Yellow Spanish	New England Seed Company	70	83
Onion	Utah Yellow Spanish Jumbo	Walmart Gardens/Ferry-Morse Seed Co.	70	74
Onion	Walla Walla	Ferry-Morse Seed Company	70	90
Parsley	Catalogno	The Cook's Garden	60	93
Parsley	Extra Triple Curled	Walmart Gardens/Ferry-Morse Seed Co.	60	85
Parsley	Hamburg	The Charles C. Hart Company	60	82
Parsley	Italian	Plantation Products Inc./American Seed	60	74
Parsley	Italian Flat Leaf	NK Lawn and Garden Company	60	62

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Plant	Variety	Seed Company	Standard	Germ. Found
Parsley	Italian Plain Leaf	Seedway Inc.	60	91
Parsley	Moss Curled	Comstock, Ferre and Company	60	84
Parsley	Moss Curled	Ferry-Morse Organic	60	82
Parsley	Plain	Ferry-Morse Seed Company	60	93
Parsley	Single Italian Plain Leafed	W. Atlee Burpee and Company	60	93
Parsnip	All American	New England Seed Company	60	69
Parsnip	Harris Model	Ferry-Morse Seed Company	60	76
Parsnip	Hollow Crown	Comstock, Ferre and Company	60	73
Pea	Alaska	Plantation Products Inc./American Seed	80	92
Pea	Alaska	The Charles C. Hart Company	80	97
Pea	Alaska	Ferry-Morse Seed Company	80	87
Pea	Burpeeana Early	W. Atlee Burpee and Company	80	83
Pea	Dwarf Grey Sugar	Seedway Inc.	80	95
Pea	Melting Sugar	Walmart Gardens/Ferry-Morse Seed Co.	80	81
Pea	Sugar Daddy	The Charles C. Hart Company	80	89
Pea	Sugar Snap	New England Seed Company	80	93
Pea	Sugar Snap	Comstock, Ferre and Company	80	85
Pea	Sugar Snap	Ferry-Morse Seed Company	80	85
Pea	Sugar Sprint	The Cook's Garden	80	88
Pea	Tall Telephone	New England Seed Company	80	80
Pea	Wando	Walmart Gardens/Ferry-Morse Seed Co.	80	92
Pepper	Habanero Red	New England Seed Company	55	15*
Pepper	Anaheim Chili	Ferry-Morse Seed Company	55	47
Pepper	Big Dipper	W. Atlee Burpee and Company	55	91
Pepper	Big Dipper Hybrid	The Cook's Garden	55	91
Pepper	California Wonder	Plantation Products Inc./American Seed	55	40*
Pepper	California Wonder	The Charles C. Hart Company	55	88
Pepper	Cayenne Long Red Thin	Plantation Products Inc./American Seed	55	52
Pepper	Cubanelle	Walmart Gardens/Ferry-Morse Seed Co.	55	53
Pepper	Cubanelle Sweet Fryer	New England Seed Company	55	71
Pepper	Early Calwonder	New England Seed Company	55	84
Pepper	Early Jalapeno	Comstock, Ferre and Company	55	89
Pepper	Jalapemo M	Walmart Gardens/Ferry-Morse Seed Co.	55	87
Pepper	Jalapeno	New England Seed Company	55	93
Pepper	Jalapeno	The Charles C. Hart Company	55	84
Pepper	Jalapeno M	W. Atlee Burpee and Company	55	91
Pepper	King of the North	Comstock, Ferre and Company	55	77

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Plant	Variety	Seed Company	Standard	Germ. Found
Pepper	Large Cherry Red Hot	Carolina Seed Division of New England Seed	90+	1*
Pepper	Large Red Cherry Hot	Comstock, Ferre and Company	55	88
Pepper	Long Red Cayenne	The Charles C. Hart Company	55	72
Pepper	Long Thin Cayenne	Ferry-Morse Seed Company	55	75
Pepper	Red Habanero	The Charles C. Hart Company	55	25*
Pepper	Scotch Bonnet	Comstock, Ferre and Company	55	60
Pepper	Serrano Chili	Walmart Gardens/Ferry-Morse Seed Co.	55	77
Pepper	Serrano Chili	Ferry-Morse Seed Company	55	76
Pepper	Serrano Chili	NK Lawn and Garden Company	55	73
Pepper	Staddon's Select	Seedway Inc.	55	82
Pepper	Sweet Banana	Plantation Products Inc./American Seed	55	83
Pepper	Sweet Banana	Walmart Gardens/Ferry-Morse Seed Co.	55	89
Pepper	Sweet Banana	NK Lawn and Garden Company	55	92
Pepper	Thai Dragon	New England Seed Company	55	74
Pumpkin	Big Max	Carolina Seed Division of New England Seed	90+	78*
Pumpkin	Big Max	Comstock, Ferre and Company	75	68
Pumpkin	Connecticut Field	The Charles C. Hart Company	75	92
Pumpkin	Small Sugar	The Charles C. Hart Company	75	95
Pumpkin	Small Sugar	Comstock, Ferre and Company	75	65
Radish	Champion	New England Seed Company	75	98
Radish	Champion	Seedway Inc.	75	99
Radish	Cherry Belle	Plantation Products Inc./American Seed	75	96
Radish	Cherry Belle	W. Atlee Burpee and Company	75	96
Radish	Cherry Belle	Ferry-Morse Seed Company	75	97
Radish	Cherry Belle	Ferry-Morse Organic	75	96
Radish	China Rose	Comstock, Ferre and Company	75	98
Radish	Crimson Giant	W. Atlee Burpee and Company	75	97
Radish	Fire and Ice	The Cook's Garden	75	85
Radish	French Breakfast	NK Lawn and Garden Company	75	96
Radish	Icicle	Walmart Gardens/Ferry-Morse Seed Co.	75	99
Radish	Salad Giant	Burpee Select/ W. Atlee Burpee and Co.	75	98
Radish	Scarlet Globe	The Charles C. Hart Company	75	96
Radish	Sparkler	Walmart Gardens/Ferry-Morse Seed Co.	75	100
Radish	White Icicle	Seedway Inc.	75	98
Rutabaga	American Purple Top	Seedway Inc.	75	98

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Plant	Variety	Seed Company	Standard	Germ. Found
Rutabaga	American Purple Top Yellow	The Charles C. Hart Company	75	93
Rutabaga	Improved Purple Top Yellow	New England Seed Company	75	96
Sage	Broadleaf	Seedway Inc.	60	44*
Sage	Broadleaf	Walmart Gardens/Ferry-Morse Seed Co.	60	65
Sage	Common	W. Atlee Burpee and Company	60	92
Sage		The Charles C. Hart Company	60	89
Sage	Broadleaf	Comstock, Ferre and Company	60	82
Sage	Broadleaf	Ferry-Morse Seed Company	60	93
Sage	Broadleaf	Ferry-Morse Organic	60	75
Sage	Broadleaf	NK Lawn and Garden Company	60	87
Salsify	Mammoth Sandwich Island	Comstock, Ferre and Company	75	83
Spinach	Bloomsdale Longstanding	Walmart Gardens/Ferry-Morse Seed Co.	60	85
Spinach	Bloomsdale Longstanding	W. Atlee Burpee and Company	60	83
Spinach	Bloomsdale Longstanding	Ferry-Morse Organic	60	90
Spinach	Correnta Hybrid	Plantation Products Inc./American Seed	60	97
Spinach	Harmony Hybrid	The Cook's Garden	60	97
Spinach	Hybrid No. 7	Comstock, Ferre and Company	60	88
Spinach	Melody	New England Seed Company	60	92
Spinach	Melody	Seedway Inc.	60	76
Spinach	Teton Hybrid	Ferry-Morse Seed Company	60	91
Squash	Black Beauty	Seedway Inc.	75	85
Squash	Blue Hubbard	The Charles C. Hart Company	75	85
Squash	Buttercup	Seedway Inc.	75	85
Squash	Cocozelle	Comstock, Ferre and Company	75	84
Squash	Early Summer Crookneck	The Charles C. Hart Company	75	91
Squash	Goldbar Hybrid	New England Seed Company	75	96
Squash	Table Queen	Comstock, Ferre and Company	75	70
Squash	Turks Turban	New England Seed Company	75	90
Squash	Waltham Butternut	The Charles C. Hart Company	75	77
Squash	White Scallop	Comstock, Ferre and Company	75	79
Squash	Yellow Crookneck	Walmart Gardens/Ferry-Morse Seed Co.	75	85
Swiss chard	Bright Lights Mix	The Cook's Garden	65	90
Swiss chard	Fordhook Giant	Seedway Inc.	65	97
Swiss chard	Fordhook Giant	W. Atlee Burpee and Company	65	93

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Plant	Variety	Seed Company	Standard	Germ. Found
Swiss chard	Fordhook Giant	Comstock, Ferre and Company	65	88
Swiss chard	Giant Lucullus	New England Seed Company	65	92
Swiss chard	Large Ribbed Dark Green	Walmart Gardens/Ferry-Morse Seed Co.	65	90
Swiss chard	Large Ribbed Dark Green	Ferry-Morse Seed Company	65	77
Swiss chard	Rhubarb	The Charles C. Hart Company	65	85
Swiss chard	Ruby	Ferry-Morse Organic	65	76
Tomatillo	Mexican Husk	Ferry-Morse Seed Company	50	88
Tomatillo	Pineapple	Comstock, Ferre and Company	50	82
Tomato	Tiny Tim	New England Seed Company	75	72
Tomato	Early Girl	New England Seed Company	75	84
Tomato	Best Boy	The Charles C. Hart Company	75	91
Tomato	Big Beef Hybrid	Seedway Inc.	75	93
Tomato	Burpee Big Boy	Seedway Inc.	75	91
Tomato	Fourth of July Hybrid	Burpee Select/ W. Atlee Burpee and Co.	75	94
Tomato	Giant Belgium Pink	Comstock, Ferre and Company	75	74
Tomato	Husky Gold	Carolina Seed Division of New England Seed	90+	91
Tomato	Jet Star	The Charles C. Hart Company	75	90
Tomato	Jubilee	Ferry-Morse Seed Company	75	71
Tomato	Oregon Spring	Comstock, Ferre and Company	75	81
Tomato	Red Cherry, Large Fruited	Walmart Gardens/Ferry-Morse Seed Co.	75	98
Tomato	Roma VF	The Charles C. Hart Company	75	96
Tomato	Roma VFN	Walmart Gardens/Ferry-Morse Seed Co.	75	94
Tomato	Rutgers	Ferry-Morse Seed Company	75	77
Tomato	Super Marmande	Plantation Products Inc./American Seed	75	87
Turnip	Golden Ball	Comstock, Ferre and Company	80	96
Turnip	Purple Top White Globe	Seedway Inc.	80	98
Turnip	Purple Top White Globe	Walmart Gardens/Ferry-Morse Seed Co.	80	99
Turnip	Purple Top White Globe	W. Atlee Burpee and Company	80	97
Turnip	Seven Top	New England Seed Company	80	94
Turnip	Seven Top	The Charles C. Hart Company	80	98
Turnip	Seven Top	NK Lawn and Garden Company	80	99
Watermelon	Crimson Sweet	Comstock, Ferre and Company	70	94
Watermelon	Sugar Baby	New England Seed Company	70	80
Watermelon	Sugar Baby	The Charles C. Hart Company	70	97

Table 2. Summary for each seed company of total number of germination claims and the percentage that met or failed label claims.

Seed Company	Total Number of Claims	% Meeting Claims	% Not Meeting Claims
Burpee Select/ W. Atlee Burpee and Co.	7	100	0
Carolina Seed Division of New England Seed	5	60	40
Comstock, Ferre and Company	49	96	4
Ferry-Morse Organic	12	100	0
Ferry-Morse Seed Company	41	100	0
New England Seed Company	45	98	2
NK Lawn and Garden Company	15	100	0
Plantation Products Inc./American Seed	20	90	10
Seedway Inc.	36	97	3
The Charles C. Hart Company	50	96	4
The Cook's Garden	13	100	0
W. Atlee Burpee and Company	17	94	6
Walmart Gardens/Ferry-Morse Seed Co.	40	100	0

Table 3. Summary by vegetable type of number of samples tested, average percent germination found, and germination standards. Standards are provided for by the rules and regulations of the Federal Seed Act.

Plant	Samples Tested	Standard	Average Germination
Bean	13	70	88
Bean, lima	3	70	70
Beet	12	65	87
Broccoli	8	75	93
Brussels sprouts	4	70	83
Cabbage	7	75	93
Cantaloupe	4	75	90
Carrot	14	55	80
Cauliflower	5	75	89
Celery	3	55	57
Chicory	2	65	80
Chinese cabbage	6	75	81
Collards	6	80	93
Corn	13	75	96
Cowpea	2	75	73
Cress	1	75	78
Cucumber	15	80	95
Dill	9	60	85
Eggplant	5	60	57
Endive	4	70	90
Kale	6	75	96
Kohlrabi	6	75	92
Leek	6	60	90
Lettuce	31	80	89
Mustard	6	75	94
New Zealand Spinach	1	40	55
Okra	3	50	82
Onion	10	70	86
Parsley	10	60	84
Parsnip	3	60	73
Pea	13	80	88
Pepper	30	55	71
Pumpkin	5	75	80
Radish	15	75	95
Rutabaga	3	75	96
Sage	8	60	78
Salsify	1	75	83
Spinach	9	60	89
Squash	11	75	84

Table 3. (Continued) Summary by vegetable type of number of samples tested, average percent germination found, and germination standards. Standards are provided for by the rules and regulations of the Federal Seed Act.

Plant	Samples Tested	Standard	Average Germination
Swiss chard	9	65	88
Tomatillo	2	50	85
Tomato	16	75	86
Turnip	7	80	97
Watermelon	3	70	90

Table 4. Germination and purity of lawn seed. Results for purity and germination are for seeds separated by genus and not by species or variety are reported for that genus. Tolerance (Tol) is calculated according to the rules for seed testing published by the Association of Official Seed Analysts (AOSA). Variance (Var) is calculated as Purity Found (Pur F) minus Purity Claimed (Pur C). Germination Claimed (Germ C); Germination Found (Germ F). H= Seeds remained hard at the end of the test period because they did not absorb water due to an impermeable seed coat. * = Does not meet label claim.

Seed Company	Seed Mixture	Pur C	Pur F	Var	Tol	Germ C	Germ F	
New England Seed Co.	<i>New England Shade</i>							
	Nexus Perennial Ryegrass	19.55	19.86	0.31	3.35	90	89	
	Creeping Red Fescue	29.55				85	54	*
	Chewings Fescue	29.53				85	54	*
	total fine fescue	59.08	56.94	-2.14	4.19			
	Genesis Tall Fescue	19.96	21.98	2.02	5.21	85	84	
New England Seed Co.	<i>Putnam Co-op Conservation</i>							
	Perennial Ryegrass	19.26				90	93	
	Annual Ryegrass	19.97				90	93	
	total ryegrass	39.23	44.63	5.40	3.79	*		
	Creeping Red Fescue	19.70	19.71	0.01	2.42	85	82	
	Tall Fescue	33.96	28.08	-5.88	3.78	*	85	88
	White Clover	4.95	5.36	0.41	1.00	85	78+10 H	
Southern States Cooperative, Inc.	<i>Agway Fall Seeding Mix</i>							
	Kentucky Bluegrass	21.93	22.51	0.58	3.12	80	67	*
	Partner Perennial Ryegrass	24.67				90	94	
	Enterprise Perennial Ryegrass	24.09				90	94	
	Cadence Perennial Ryegrass	23.86				90	94	
	total ryegrass	72.62	74.14	1.52	2.69			

Table 4 (continued). Germination and purity of lawn seed. Results for purity and germination are for seeds separated by genus and not by species or variety are reported for that genus. Tolerance (Tol) is calculated according to the rules for seed testing published by the Association of Official Seed Analysts (AOSA). Variance (Var) is calculated as Purity Found (Pur F) minus Purity Claimed (Pur C). Germination Claimed (Germ C); Germination Found (Germ F). H= Seeds remained hard at the end of the test period because they did not absorb water due to an impermeable seed coat. * = Does not meet label claim.

Seed Company	Seed Mixture	Pur C	Pur F	Var	Tol	Germ C	Germ F		
Southern States Cooperative, Inc.	<i>Agway Sunny Green Lawn Mixture</i>								
	Blue Chip Kentucky Bluegrass	24.68	30.14	5.46	3.12	*	85	76	
	Partner Perennial Ryegrass	59.30	56.12	-3.18	4.53		90	93	
	Evergreen Creeping Red Fescue	14.90	12.94	-1.96	2.95		85	73	*
Loft's Seed	<i>Pennington Supreme Blend</i>								
	Rebel Sentry Tall Fescue	49.92					90	95	
	Rebel Exeda Tall Fescue	34.15					90	95	
	Rebel Pro Tall Fescue	14.93					90	95	
	total tall fescue	99.00	99.14	0.14	0.16				
The Scotts Co.	<i>Scotts Turf Builder Sun and Shade Mix</i>								
	Alene Kentucky Bluegrass	19.34	25.48	6.14	2.62	*	85	85	
	Paragon GLR Perennial Ryegrass	47.23	46.01	-1.22	4.66		90	91	
	Boreal Creeping Red Fescue	28.95	27.27	-1.68	3.72		85	89	
The Scotts Co.	<i>Scotts Turf Builder Contractor's All Purpose Mix</i>								
	Kelly Kentucky Bluegrass	9.71	12.78	3.07	1.50	*	85	86	
	Nui Perennial Ryegrass	29.76					90	93	
	Gulf Annual Ryegrass	29.65					90	93	
	total ryegrass	59.41	57.94	-1.47	3.83				
	Boreal Creeping Red Fescue	29.33	27.83	-1.50	3.19		85	80	
The Charles C. Hart Seed Co.	<i>Holdridge Custom Lawn Seed Mixture</i>								
	Kentucky Bluegrass	13.35	10.48	-2.87	1.50	*	80	53	*
	Express Perennial Ryegrass	34.58					90	90	
	Fiesta Perennial Ryegrass	14.74					90	90	
	total ryegrass	49.32	54.93	5.61	3.83	*			
	Creeping Red Fescue	34.14	31.52	-2.62	3.29		85	92	

Table 4 (continued). Germination and purity of lawn seed. Results for purity and germination are for seeds separated by genus and not by species or variety are reported for that genus. Tolerance (Tol) is calculated according to the rules for seed testing published by the Association of Official Seed Analysts (AOSA). Variance (Var) is calculated as Purity Found (Pur F) minus Purity Claimed (Pur C). Germination Claimed (Germ C); Germination Found (Germ F). H= Seeds remained hard at the end of the test period because they did not absorb water due to an impermeable seed coat. * = Does not meet label claim.

Seed Company	Seed Mixture	Pur C	Pur F	Var	Tol	Germ C	Germ F	
The Charles C. Hart Seed Co.	<i>Holdridge Special Lawn Seed Mixture</i>							
	Kentucky Bluegrass	26.69	29.01	2.32	3.19	85	56	*
	Blazer 4 Perennial Ryegrass	24.70				90	92	
	Fiesta 3 Perennial Ryegrass	19.56				90	92	
	total ryegrass	44.26	44.29	0.03	4.66			
	Creeping Red Fescue	24.39	21.76	-2.63	3.54	85	77	
Lesco, Inc.	<i>Lesco Eagle and Blue Mixture</i>							
	Shamrock Kentucky Bluegrass	29.70	39.51	9.81	3.68	* 89	82	
	Pavillion Perennial Ryegrass	24.78				90	92	
	Laredo Perennial Ryegrass	24.10				90	92	
	Greenville Perennial Ryegrass	19.68				90	92	
	total ryegrass	68.56	57.01	-11.55	4.17	*		
Lesco, Inc.	<i>Lesco Park and Athletic Mixture</i>							
	Shamrock Kentucky Bluegrass	33.14	38.46	5.32	3.94	* 88	85	
	Laredo Perennial Ryegrass	32.41	34.58	2.17	4.88	90	95	
	Shademark Red Fescue	32.68	26.00	-6.68	4.28	* 90	87	
Jonathan Green & Sons, Inc.	<i>Jonathan Green Fall Magic Grass Seed Mixture</i>							
	Deepblue Kentucky Bluegrass	9.85	12.03	2.18	1.47	* 90	85	
	Darkstar II Perennial Ryegrass	19.65	20.32	0.67	3.55	92	85	
	Salem Creeping Red Fescue	9.80				90	86	
	Carmen Chewings Fescue	9.80				90	86	
	total fine fescue	19.60	23.86	4.24	2.86	*		
	Black Magic Tall Fescue	24.65				90	91	
	Montauk Tall Fescue	24.60				90	91	
total tall fescue	49.25	42.10	-7.15	4.17	*			

Table 4 (continued). Germination and purity of lawn seed. Results for purity and germination are for seeds separated by genus and not by species or variety are reported for that genus. Tolerance (Tol) is calculated according to the rules for seed testing published by the Association of Official Seed Analysts (AOSA). Variance (Var) is calculated as Purity Found (Pur F) minus Purity Claimed (Pur C). Germination Claimed (Germ C); Germination Found (Germ F). H= Seeds remained hard at the end of the test period because they did not absorb water due to an impermeable seed coat. * = Does not meet label claim.

Seed Company	Seed Mixture	Pur C	Pur F	Var	Tol	Germ C	Germ F	
Jonathan Green & Sons, Inc.	<i>Jonathan Green Pro-Green Sun-Thru-Shade Mixture</i>							
	Kenblue Kentucky Bluegrass	9.80	10.42	0.62	1.30	87	82	
	Jockey Perennial Ryegrass	24.65				92	92	
	Plymouth Perennial Ryegrass	24.55				92	92	
	total ryegrass	49.15	71.45	22.30	3.07	*		
	Salem Creeping Red Fescue	24.55				90	94	
	Carmen Chewings Fescue	14.25				90	94	
	total fine fescue	39.30	17.15	-22.15	2.64	*		
New Enland Seed Co.	<i>Melzen's Athletic Blend</i>							
	Nobility Perennial Ryegrass	29.65	30.01	0.36	3.19	90	92	
	Creeping Red Fescue	14.64				85	87	
	Chewings Fescue	14.92				85	87	
	total fine fescue	29.56	30.96	1.40	3.14			
	Ninja Tall Fescue	39.22	37.13	-2.09	3.81	85	95	
Inert matter	0.84	1.84	*					
Lebanon Seaboard Corp.	<i>Mackey's Premium Finest Mixture</i>							
	Bordeaux Kentucky Bluegrass	24.45	29.53	5.08	3.12	*	85	89
	Charismatic Perennial Ryegrass	29.56				90	92	
	Affirmed Perennial Ryegrass	29.47				90	92	
	total ryegrass	59.03	55.25	-3.78	4.53			
	Creeping Red Fescue	14.70	12.49	-2.21	2.95	85	76	
	Inert matter	1.51	2.73	*				

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