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Seed Germination
and Purity
Analysis
2007

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SEED GERMINATION AND PURITY ANALYSIS 2007

By Sharon M. Douglas and Mary K. Inman

Official samples of 324 vegetable and 13 lawn seeds were collected by inspectors from the Bureau of Regulation and Inspection of the Connecticut Department of Agriculture for testing in 2007. 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 12 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 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 324 vegetable seed samples tested, 8 did not meet their label claims for germination. Two samples were retested and failed the second test. Six samples were not retested because of insufficient numbers of seeds. Seed samples were examined for prohibited noxious weed seeds and 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. Five of the 13 lawn seed samples tested met label claims for both purity and germination. Seven samples passed label claims for germination but did not meet claims for purity. One sample 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	Standard	Germ. Found	Status	Seed Company
Arugula	Rocket	75	98		W. Atlee Burpee and Co.
Asparagus	Mary Washington	70	68		NK Lawn and Garden Company
Bean	Triomphe de Farcy (Heirloom)	70	88		W. Atlee Burpee and Co.
Bean	Contender	70	91		W. Atlee Burpee and Co.
Bean	Blue Lake FM1K Pole	70	57+11 H	*	Ferry-Morse Seed Company
Bean	Kentucky Wonder Yellow Wax	70	91		Charles C. Hart Seed Company
Bean	Petite Filet Bush	70	94		New England Seed Company
Bean	King Horn Wax Bush	70	72		New England Seed Company
Bean	Kentucky Wonder Pole (Organic)	70	95		Ferry-Morse Seed Company
Bean	Flavor Sweet Bush	70	83		Lowes Garden Club Select/Ferry-Morse Seed
Bean	Sequoia Bush	70	78		Burpee's Signature/W. Atlee Burpee and Co.
Bean	French's Horticultural	70	51	*	Agway Brand, Seedway Inc.
Bean	Blue Lake 274	70	75+1 H		NK Lawn and Garden Company
Bean	Blue Lake 274 Bush	70	89		Botanical Interests, Inc.
Bean	Borlotto Dwarf	70	67		Thompson and Morgan Inc.
Bean	Gold Rush	70	83		Livingston Seed Company
Bean, lima	Jackson Wonder	70	83		Charles C. Hart Seed Company
Bean, lima	Fordhook 242	70	49	*	New England Seed Company
Bean, lima	Fordhook 242	70	86		Agway Brand, Seedway Inc.
Beet	Detroit Dark Red	65	85		W. Atlee Burpee and Co.
Beet	Tall Top Early Wonder	65	74		Ferry-Morse Seed Company
Beet	Early Wonder	65	64		Charles C. Hart Seed Company
Beet	Cylindra	65	77		New England Seed Company
Beet	Early Wonder	85	84		Carolina Seed Division of New England Seed
Beet	Ruby Queen	65	65		NK Lawn and Garden Company
Beet	Early Wonder	65	73		Botanical Interests, Inc.
Beet	Detroit Dark Red	65	73		Thompson and Morgan Inc.
Beet	Detroit Dark Red	65	71		Livingston Seed Company
Broccoli	Green Goliath	75	94		W. Atlee Burpee and Co.
Broccoli	DeCicco	75	97		Ferry-Morse Seed Company
Broccoli	Waltham	75	96		Charles C. Hart Seed Company
Broccoli	Waltham 29	75	94		New England Seed Company
Broccoli	Super Blend	90@	80		Carolina Seed Division of New England Seed
Broccoli	Calabrese Green Sprouting (Organic)	75	82		Ferry-Morse Seed Company
Broccoli	Green Goliath	75	93		Burpee's Signature/W. Atlee Burpee and Co.
Broccoli	Southern Comet	75	97		Agway Brand, Seedway Inc.
Broccoli	Early Dividend Hybrid	75	97		NK Lawn and Garden Company
Broccoli	DiCicco	75	96		Botanical Interests, Inc.
Broccoli	Calabrese Green Sprouting	75	92		Livingston Seed Company
Brussels sprouts	Long Island Improved	70	80		New England Seed Company
Brussels sprouts	Catskill	70	78		Agway Brand, Seedway Inc.

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	Standard	Germ. Found	Status	Seed Company
Cabbage	Copenhagen Market Early	75	97		Ferry-Morse Seed Company
Cabbage	Copenhagen	75	96		Charles C. Hart Seed Company
Cabbage	Danish Ball Head	75	98		New England Seed Company
Cabbage	Early Jersey Wakefield	85@	95		Carolina Seed Division of New England Seed
Cabbage	King's Ransom	75	100		Agway Brand, Seedway Inc.
Cabbage	Copenhagen Market	75	95		Botanical Interests, Inc.
Cantaloupe	Hale's Best	75	97		Charles C. Hart Seed Company
Cantaloupe	Delicious 51	75	88		New England Seed Company
Cantaloupe	Hearts of Gold (Organic)	75	97		Ferry-Morse Seed Company
Cantaloupe	Gold Rush Hybrid	75	100		Lowes Garden Club Select/Ferry-Morse Seed
Cantaloupe	Hale's Best Jumbo	75	91		NK Lawn and Garden Company
Cantaloupe	Honey Rock	75	95		Livingston Seed Company
Carrot	Touchon (Heirloom)	55	86		W. Atlee Burpee and Co.
Carrot	Chantenay (Organic)	55	72		W. Atlee Burpee and Co.
Carrot	Big Top	55	75		W. Atlee Burpee and Co.
Carrot	Red Cored Chantenay	55	78		Ferry-Morse Seed Company
Carrot	Little Finger	55	76		Charles C. Hart Seed Company
Carrot	Red Cored Chantenay	55	75		Charles C. Hart Seed Company
Carrot	Danvers Half Long	55	84		New England Seed Company
Carrot	Danvers #126 (Organic)	55	92		Ferry-Morse Seed Company
Carrot	Rainbow Hybrid	55	73		Burpee's Signature/W. Atlee Burpee and Co.
Carrot	Purple Haze	55	78		Agway Brand, Seedway Inc.
Carrot	Tendersweet	55	67		NK Lawn and Garden Company
Carrot	Scarlet Nantes	55	86		Botanical Interests, Inc.
Carrot	Sugarsnax 54 F1 Hybrid	55	86		Thompson and Morgan Inc.
Carrot	Nantes	55	64		Livingston Seed Company
Cauliflower	Early Snowball A	75	92		Ferry-Morse Seed Company
Cauliflower	Early Snowball	75	81		Charles C. Hart Seed Company
Cauliflower	Early Snowball	75	86		New England Seed Company
Cauliflower	Snow Crown	91@	89		Carolina Seed Division of New England Seed
Cauliflower	Early Dawn Hybrid	75	84		NK Lawn and Garden Company
Cauliflower	Chef's Choice Blend	75	91		Botanical Interests, Inc.
Celery	Utah	55	79		New England Seed Company
Celery	Tall Utah 52/70 Improved	55	85		Botanical Interests, Inc.
Chicory	Witloof	65	87		Charles C. Hart Seed Company
Chicory	Radicchio Verona Red	65	88		New England Seed Company
Chinese cabbage	Bok choi	75	96		Charles C. Hart Seed Company
Chinese cabbage	Michili	75	97		New England Seed Company
Chinese cabbage	Jade Pagoda	75	93		Agway Brand, Seedway Inc.
Chinese cabbage	Bok Choy	75	95		Botanical Interests, Inc.

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	Standard	Germ. Found	Status	Seed Company
Collards	Georgia Southern	80	98		Ferry-Morse Seed Company
Collards	Georgia Green	80	85		Charles C. Hart Seed Company
Collards	Georgia	80	94		New England Seed Company
Collards	Vates	80	93		Agway Brand, Seedway Inc.
Corn	Silver Queen	75	89		W. Atlee Burpee and Co.
Corn	Seneca Chief	75	91		Charles C. Hart Seed Company
Corn	Peaches and Cream	75	95		Charles C. Hart Seed Company
Corn	Quickie	75	89		New England Seed Company
Corn	Silver Queen	75	84		New England Seed Company
Corn	Sweet Chorus Hybrid	75	95		Lowes Garden Club Select/Ferry-Morse Seed
Corn	Ecstase II Hybrid	75	89		Agway Brand, Seedway Inc.
Corn	Jubilee Hybrid	75	67		NK Lawn and Garden Company
Corn	Early Sunglow	75	86		Livingston Seed Company
Cornsalad	Big Seeded	70	81		Botanical Interests, Inc.
Cress	Garden	75	94		New England Seed Company
Cucumber	Straight Eight (Heirloom)	80	97		W. Atlee Burpee and Co.
Cucumber	Marketmore 76	80	97		Ferry-Morse Seed Company
Cucumber	Straight Eight	80	99		Charles C. Hart Seed Company
Cucumber	Wisconsin SMR Pickling	80	97		Charles C. Hart Seed Company
Cucumber	Boston Pickling	80	98		New England Seed Company
Cucumber	Orient Express Burpless Hybrid	80	95		New England Seed Company
Cucumber	Straight Eight (Organic)	80	79		Ferry-Morse Seed Company
Cucumber	Greensleeves Hybrid	80	96		Lowes Garden Club Select/Ferry-Morse Seed
Cucumber	Picklebush	80	95		Burpee's Signature/W. Atlee Burpee and Co.
Cucumber	Wisconsin SMR-58	80	92		Agway Brand, Seedway Inc.
Cucumber	Marketmore 76	80	98		Agway Brand, Seedway Inc.
Cucumber	Straight Eight	80	88		NK Lawn and Garden Company
Cucumber	Homemade Pickles	80	91		Botanical Interests, Inc.
Cucumber	Boston Pickling	80	78		Livingston Seed Company
Dill	Bouquet (Organic)	60	85		W. Atlee Burpee and Co.
Dill	Fernleaf	60	67		W. Atlee Burpee and Co.
Dill	Bouquet	60	66		Ferry-Morse Seed Company
Dill	Bouquet	60	74		Charles C. Hart Seed Company
Dill	Bouquet	60	69		New England Seed Company
Dill	Bouquet (Organic)	60	67		Ferry-Morse Seed Company
Dill	Mammoth	60	75		Burpee's Signature/W. Atlee Burpee and Co.
Dill	Dukat	60	74		Agway Brand, Seedway Inc.
Dill	Long Island Mammoth	60	77		NK Lawn and Garden Company
Dill	Mammoth	60	76		Livingston Seed Company
Eggplant	Black Beauty	60	81		Ferry-Morse Seed Company
Eggplant	Black Beauty	60	64		Charles C. Hart Seed Company
Eggplant	Long Purple	60	65		New England Seed Company
Eggplant	Early Long Purple (Organic)	60	57		Ferry-Morse Seed Company

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Plant	Variety	Standard	Germ. Found	Status	Seed Company
Eggplant	Burpee's Garden Medley	60	60		Burpee's Signature/W. Atlee Burpee and Co.
Eggplant	Black Beauty	60	63		NK Lawn and Garden Company
Eggplant	Black Beauty	60	76		Botanical Interests, Inc.
Endive	Green Curled	70	86		Charles C. Hart Seed Company
Endive	Batavian Full Hearted	70	71		New England Seed Company
Endive	Green Ruffic	70	81		Agway Brand, Seedway Inc.
Endive	Green Curled Ruffec	70	83		Botanical Interests, Inc.
Kale	Red Russian	75	93		W. Atlee Burpee and Co.
Kale	Vates Blue Curled	75	96		Charles C. Hart Seed Company
Kale	Dwarf Blue Curled Vates	75	90		New England Seed Company
Kale	Blue Scotch	75	95		Agway Brand, Seedway Inc.
Kale	Red Winter	75	96		Botanical Interests, Inc.
Kohlrabi	White	75	99		Charles C. Hart Seed Company
Kohlrabi	Winner Hybrid	75	95		New England Seed Company
Kohlrabi	Early Purple Vienna	75	94		Agway Brand, Seedway Inc.
Kohlrabi	Early White Vienna	75	87		NK Lawn and Garden Company
Leek	American Flag	60	91		Charles C. Hart Seed Company
Leek	American Broad Flag	60	85		New England Seed Company
Leek	Carina	75@	87		Agway Brand, Seedway Inc.
Leek		60	86		Botanical Interests, Inc.
Leek	Musselburgh Improved	60	92		Thompson and Morgan Inc.
Lettuce	Merveille des Quatre Saisons (Heirloom)	80	91		W. Atlee Burpee and Co.
Lettuce	Tom Thumb (Heirloom)	80	96		W. Atlee Burpee and Co.
Lettuce	Black-Seeded Simpson (Organic)	80	95		W. Atlee Burpee and Co.
Lettuce	Lolla Rossa	80	98		W. Atlee Burpee and Co.
Lettuce	Black-Seeded Simpson	80	86		W. Atlee Burpee and Co.
Lettuce	Little Caesar Romaine	80	81		W. Atlee Burpee and Co.
Lettuce	Vivian Romaine	80	92		W. Atlee Burpee and Co.
Lettuce	Bibb	80	97		Ferry-Morse Seed Company
Lettuce	Grand Rapids	80	95		Ferry-Morse Seed Company
Lettuce	Bibb	80	98		Charles C. Hart Seed Company
Lettuce	Black Seeded Simpson	80	97		Charles C. Hart Seed Company
Lettuce	Iceberg	80	97		Charles C. Hart Seed Company
Lettuce	Oakleaf	80	97		Charles C. Hart Seed Company
Lettuce	Red Sails	80	99		New England Seed Company
Lettuce	Simpson Elite	80	97		New England Seed Company
Lettuce	Big Boston	80	97		New England Seed Company
Lettuce	Buttercrunch	80	97		New England Seed Company
Lettuce	Great Lakes	80	97		New England Seed Company
Lettuce	Bibb (Organic)	80	98		Ferry-Morse Seed Company
Lettuce	Green Towers Romaine	80	98		Lowes Garden Club Select/Ferry-Morse Seed
Lettuce	Oakleaf	80	93		Agway Brand, Seedway Inc.
Lettuce	Salad Bowl	80	99		Agway Brand, Seedway Inc.

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Plant	Variety	Standard	Germ. Found	Status	Seed Company
Lettuce	Parris Island Cos	80	90		NK Lawn and Garden Company
Lettuce	Black Seeded Simpson	80	38	*	NK Lawn and Garden Company
Lettuce	Redina	80	99		Botanical Interests, Inc.
Lettuce	Tango	80	96		Botanical Interests, Inc.
Lettuce	Buttercrunch	80	96		Thompson and Morgan Inc.
Lettuce	Royal Red	80	94		Livingston Seed Company
Mustard	Southern Giant Curled	75	97		Ferry-Morse Seed Company
Mustard	Florida Broadleaf	75	92		Charles C. Hart Seed Company
Mustard	Green Wave	75	95		New England Seed Company
Mustard	Early Mazuna (Organic)	75	97		Ferry-Morse Seed Company
New Zealand spinach		40	53		New England Seed Company
Okra	Clemson Spineless	50	85		Ferry-Morse Seed Company
Okra	Clemson Spineless	50	82		Charles C. Hart Seed Company
Okra	Clemson Spineless	50	89		New England Seed Company
Okra	Clemson Spineless #80 (Organic)	50	95		Ferry-Morse Seed Company
Onion	Evergreen Bunching (Organic)	70	87		W. Atlee Burpee and Co.
Onion	Utah Sweet Spanish Yellow	70	92		Ferry-Morse Seed Company
Onion	Yellow Sweet Spanish	70	87		Charles C. Hart Seed Company
Onion	Utah Sweet Spanish Yellow	70	77		New England Seed Company
Onion	White Bunching	70	86		New England Seed Company
Onion	Parade	70	92		Burpee's Signature/W. Atlee Burpee and Co.
Onion	Candy	70	89		Agway Brand, Seedway Inc.
Onion	White Lisbon Bunching	70	59		NK Lawn and Garden Company
Onion	Walla Walla	70	87		Botanical Interests, Inc.
Onion	Evergreen Bunching	70	87		Livingston Seed Company
Parsley	Moss Curled (Organic)	60	86		W. Atlee Burpee and Co.
Parsley	Single Italian Plain Leaf	60	82		W. Atlee Burpee and Co.
Parsley	Extra Tripled Curl	60	79		Ferry-Morse Seed Company
Parsley	Plain Leaf Italian	60	86		Charles C. Hart Seed Company
Parsley	Moss Curled	60	84		New England Seed Company
Parsley	Moss Curled (Organic)	60	82		Ferry-Morse Seed Company
Parsley	Catalogno	60	89		Burpee's Signature/W. Atlee Burpee and Co.
Parsley	Dark Moss Curled	60	4	*	NK Lawn and Garden Company
Parsley	Italian Dark Green Flat	60	85		Botanical Interests, Inc.
Parsley	Triple Curled	60	80		Livingston Seed Company
Parsnip	Hollow Crown	60	69		Charles C. Hart Seed Company
Parsnip	All American	60	86		New England Seed Company
Parsnip	All American	60	83		Agway Brand, Seedway Inc.
Pea	Mammoth Melting Sugar (Heirloom)	80	75		W. Atlee Burpee and Co.
Pea	Wando	80	91		Ferry-Morse Seed Company
Pea	Dwarf Grey Sugar	80	98+1 H		Charles C. Hart Seed Company
Pea	Early Frosty	80	92		Charles C. Hart Seed Company

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Plant	Variety	Standard	Germ. Found	Status	Seed Company
Pea	Tall Telephone	80	84		New England Seed Company
Pea	Dwarf Grey Sugar	80	96+2 H		New England Seed Company
Pea	Maestro	80	95		Burpee's Signature/W. Atlee Burpee and Co.
Pea	Mr. Big	80	83		Agway Brand, Seedway Inc.
Pea	Dwarf White Sugar	80	92		Agway Brand, Seedway Inc.
Pea	Oregon Sugar Pod II	80	78		NK Lawn and Garden Company
Pea	Oregon Sugar Pod II	80	82		Botanical Interests, Inc.
Pea	Oregon Sugar Pod II	80	88		Thompson and Morgan Inc.
Pea	Sugar Snap	80	85		Livingston Seed Company
Pepper	Big Dipper	55	72		W. Atlee Burpee and Co.
Pepper	Jalapeno M	55	86		W. Atlee Burpee and Co.
Pepper	Anaheim Chile	55	72		Ferry-Morse Seed Company
Pepper	Long Thin Cayenne	55	73		Ferry-Morse Seed Company
Pepper	Jalapeno M	55	92		Ferry-Morse Seed Company
Pepper	California Wonder	55	80		Charles C. Hart Seed Company
Pepper	Cubanelle	55	63		Charles C. Hart Seed Company
Pepper	Hungarian Hot Wax	55	64		Charles C. Hart Seed Company
Pepper	Jalapeno	55	86		Charles C. Hart Seed Company
Pepper	Red Cherry Hot	55	51		Charles C. Hart Seed Company
Pepper	Sweet Banana	55	90		New England Seed Company
Pepper	Golden Calwonder	55	66		New England Seed Company
Pepper	Habanero Red	55	64		New England Seed Company
Pepper	Anaheim TMR 23 Hot	87@	91		Carolina Seed Division of New England Seed
Pepper	Scotch Bonnet Orange	85@	77		Carolina Seed Division of New England Seed
Pepper	Cardinal Hybrid	55	94		Burpee's Signature/W. Atlee Burpee and Co.
Pepper	Sweet Banana	55	88		Agway Brand, Seedway Inc.
Pepper	Jalapeno Chili	55	70		NK Lawn and Garden Company
Pepper	California Wonder	55	41	*	NK Lawn and Garden Company
Pepper	Early Jalapeno Chili	75@	88		Botanical Interests, Inc.
Pepper	Yolo Wonder Sweet	55	82		Botanical Interests, Inc.
Pepper	Long Red Cayenne	55	83		Livingston Seed Company
Pepper	California Wonder	55	88		Livingston Seed Company
Pumpkin	Connecticut Field	75	67		Charles C. Hart Seed Company
Pumpkin	Small Sugar	75	87		Charles C. Hart Seed Company
Pumpkin	Appalachian Hybrid	94@	62	*	Carolina Seed Division of New England Seed
Pumpkin	Big Moon	90@	78	*	Carolina Seed Division of New England Seed
Radish	French Breakfast (Heirloom)	75	96		W. Atlee Burpee and Co.
Radish	White Icicle	75	99		W. Atlee Burpee and Co.
Radish	Sparkler	75	98		Ferry-Morse Seed Company
Radish	White Tipped Scarlet	75	97		Charles C. Hart Seed Company
Radish	White Icicle	75	95		New England Seed Company
Radish	Cherry Belle (Organic)	75	96		Ferry-Morse Seed Company

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Plant	Variety	Standard	Germ. Found	Status	Seed Company
Radish	Red Silk	75	96		Lowes Garden Club Select/Ferry-Morse Seed
Radish	Pink Beauty	75	97		Burpee's Signature/W. Atlee Burpee and Co.
Radish	Early Scarlet Globe	75	97		Agway Brand, Seedway Inc.
Radish	Early Scarlet Globe	75	91		NK Lawn and Garden Company
Radish	Cherry Belle	80@	94		Botanical Interests, Inc.
Radish	Cherry Belle	75	96		Thompson and Morgan Inc.
Rutabaga	American Purple Top	75	87		Charles C. Hart Seed Company
Rutabaga	Laurentian	75	98		New England Seed Company
Rutabaga	American Purple Top	75	98		Agway Brand, Seedway Inc.
Sage	Common	60	74		W. Atlee Burpee and Co.
Sage	Broadleaf	60	77		Ferry-Morse Seed Company
Sage	Broadleaf	60	64		New England Seed Company
Sage	Broadleaf (Organic)	60	73		Ferry-Morse Seed Company
Sage	Broadleaf	60	73		Agway Brand, Seedway Inc.
Sage	Broadleaf	60	90		NK Lawn and Garden Company
Sage	Broadleaf	60	93		Botanical Interests, Inc.
Sage		60	50		Livingston Seed Company
Scallion	Ishikuro	70	77		Thompson and Morgan Inc.
Soybean	Edamame Green Butterbean	75	82		Botanical Interests, Inc.
Soybean	Edamame	75	93		Livingston Seed Company
Spinach	Bloomsdale Longstanding	60	79		W. Atlee Burpee and Co.
Spinach	Bloomsdale Longstanding	60	94		Ferry-Morse Seed Company
Spinach	Bloomsdale	60	85		Charles C. Hart Seed Company
Spinach	Melody Hybrid	60	95		New England Seed Company
Spinach	Baby Leaf Hybrid	60	85		Burpee's Signature/W. Atlee Burpee and Co.
Spinach	Melody	75@	95		Agway Brand, Seedway Inc.
Spinach	Correnta	60	95		Botanical Interests, Inc.
Spinach	Bloomsdale Longstanding	60	91		Livingston Seed Company
Squash	Zucchini, Dark Green	75	80		Charles C. Hart Seed Company
Squash	Waltham Butternut	75	93		Charles C. Hart Seed Company
Squash	Early Prolific Straightneck	75	97		New England Seed Company
Squash	Turks Turban	75	73		New England Seed Company
Squash	Puritan Butternut	75	86		Agway Brand, Seedway Inc.
Squash	Black Beauty	75	99		Agway Brand, Seedway Inc.
Squash	Early Prolific Straightneck	75	93		NK Lawn and Garden Company
Squash	Zucchini	75	91		Botanical Interests, Inc.
Swiss chard	Burpee's Rhubarb Chard	65	85		W. Atlee Burpee and Co.
Swiss chard	Lucullus	65	75		Charles C. Hart Seed Company
Swiss chard	Rainbow Mix	65	77		New England Seed Company
Swiss chard	Ruby (Organic)	65	78		Ferry-Morse Seed Company
Swiss chard	Ruby Red	65	75		Agway Brand, Seedway Inc.
Swiss chard	Bright Lights	65	95		Botanical Interests, Inc.
Swiss chard	Perpetual Spinach	65	83		Thompson and Morgan Inc.

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Plant	Variety	Standard	Germ. Found	Status	Seed Company
Swiss chard	Fordhook Giant	65	89		Livingston Seed Company
Tomatillo	Purple	85@	91		Carolina Seed Division of New England Seed
Tomatillo	Toma Verde	50	63		Botanical Interests, Inc.
Tomato	Roma	75	88		W. Atlee Burpee and Co.
Tomato	Super Beefsteak	75	89		W. Atlee Burpee and Co.
Tomato	Large Red Cherry	75	84		Ferry-Morse Seed Company
Tomato	Marglobe	75	88		Charles C. Hart Seed Company
Tomato	Roma VF	75	94		Charles C. Hart Seed Company
Tomato	Roma VF	75	91		New England Seed Company
Tomato	Large Cherry	75	92		New England Seed Company
Tomato	Tiny Tim	75	73		New England Seed Company
Tomato	Big Beef Hybrid	95@	94		Carolina Seed Division of New England Seed
Tomato	Siberian	85@	88		Carolina Seed Division of New England Seed
Tomato	Beefsteak (Organic)	75	75		Ferry-Morse Seed Company
Tomato	Burpee's Big Boy Hybrid	75	91		Burpee's Signature/W. Atlee Burpee and Co.
Tomato	Crimson Cushion Beefsteak	75	84		Livingston Seed Company
Turnip	Purple Top White Globe	80	95		W. Atlee Burpee and Co.
Turnip	Seven Top	80	97		Ferry-Morse Seed Company
Turnip	Seven Top	80	95		Charles C. Hart Seed Company
Turnip	Purple Top White Globe	80	91		New England Seed Company
Turnip	Purple Top White Globe (Organic)	80	98		Ferry-Morse Seed Company
Turnip	Purple Top White Globe	80	96		NK Lawn and Garden Company
Turnip	Seven Top	80	97		Botanical Interests, Inc.
Turnip	Purple Top White Globe	80	97		Livingston Seed Company
Watercress	True Water	40	78		New England Seed Company
Watercress		40	90		Botanical Interests, Inc.
Watermelon	Sugar Baby	70	94		Charles C. Hart Seed Company
Watermelon	Yellow Doll	90@	88		Carolina Seed Division of New England Seed
Watermelon	Orange Tendersweet	70	86		Burpee's Signature/W. Atlee Burpee and Co.
Watermelon	Black Diamond	70	89		Livingston Seed Company

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
Agway Brand, Seedway Inc.	30	97	3
Botanical Interests, Inc.	30	100	0
Burpee's Signature/W. Atlee Burpee and Co.	14	100	0
Carolina Seed Division of New England Seed	12	83	17
Charles C. Hart Seed Company	50	100	0
Ferry-Morse Seed Company	41	98	2
Livingston Seed Company	21	100	0
Lowes Garden Club Select/Ferry-Morse Seed	6	100	0
New England Seed Company	54	98	2
NK Lawn and Garden Company	23	87	13
Thompson and Morgan Inc.	9	100	0
W. Atlee Burpee and Co	34	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
Arugula	1	75	98
Asparagus	1	70	68
Bean	14	70	80
Bean, lima	3	70	73
Beet	9	65	74
Broccoli	11	75	93
Brussels sprouts	2	70	79
Cabbage	6	75	97
Cantaloupe	6	75	95
Carrot	14	55	78
Cauliflower	6	75	87
Celery	2	55	82
Chicory	2	65	88
Chinese cabbage	4	75	95
Collards	4	80	93
Corn	9	75	87
Cornsalad	1	70	81
Cress	1	75	94
Cucumber	14	80	93
Dill	10	60	73
Eggplant	7	60	67
Endive	4	70	80
Kale	5	75	94
Kohlrabi	4	75	94
Leek	5	60	88
Lettuce	28	80	93
Mustard	4	75	95
New Zealand spinach	1	40	53
Okra	4	50	88
Onion	10	70	84
Parsley	10	60	76
Parsnip	3	60	79
Pea	13	80	88
Pepper	23	55	77
Pumpkin	4	75	74
Radish	12	75	96
Rutabaga	3	75	94
Sage	8	60	74
Scallion	1	70	77
Soybean	2	75	88
Spinach	8	60	90
Squash	8	75	89
Swiss chard	8	65	82
Tomatillo	2	50	77
Tomato	13	75	87
Turnip	8	80	96
Watercress	2	40	84
Watermelon	4	70	89

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
Pennington Seed Inc.	<i>Pennington Contractors' Mix</i>						
	Gulf Annual Ryegrass	32.75				90	92
	Applaud Perennial Ryegrass	32.75				90	92
	total ryegrass	65.50	67.60	2.10	3.14		
	Boreal Red Fescue	31.30	31.04	-0.26	3.14	80	69
Pennington Seed Inc.	<i>Pennington Rebel Supreme Tall Fescue Blend</i>						
	Penn 1901 Tall Fescue	29.00				90	86
	Rebel Sentry Tall Fescue	49.00				90	86
	Rebel Exeda Tall Fescue	19.55				90	86
	total tall fescue	97.55	98.57	1.02	0.95		
Barenburg USA	<i>Vigoro Tall Fescue Grass Blend</i>						
	Barlexus II Tall Fescue	37.25				85	88
	Barrington Tall Fescue	36.39				85	88
	Falcon IV Tall Fescue	14.91				85	88
	Labyrinth Tall Fescue	9.31				85	88
	total tall fescue	97.86	98.84	0.98	0.89		
The Scotts Company	<i>Scotts Turf Builder Sun and Shade Mix</i>						
	South Dakota Kentucky Bluegrass	19.34	19.81	0.47	2.24	85	82
	Evening Shade Perennial Ryegrass	42.23	40.86	-1.37	4.66	90	89
	Boreal Red Fescue	33.95	37.46	3.51	3.81	85	88
The Scotts Company	<i>Scotts Pure Premium Sun and Shade Mix</i>						
	Envicta Kentucky Bluegrass	27.67	29.40	1.73	3.19	87	91
	Divine Perennial Ryegrass	22.84				90	85
	Splendid Perennial Ryegrass	22.67				90	85
	total ryegrass	45.51	40.09	-5.42	4.66*		
	Badger Creeping Red Fescue	25.33	26.26	0.93	3.66	87	89
	Inert matter	1.49	4.25*				
Lesco, Inc.	<i>Lesco Premium Sun and Shade Mixture</i>						
	Wellington Kentucky Bluegrass	31.75	38.55	6.80	3.94*	90	85
	Pacesetter Perennial Ryegrass	30.99	28.76	-2.23	4.86	90	87
	Brittany Chewings Fescue	17.65				90	90
	Creeping Red Fescue	17.59				90	90
	total fine fescue	35.24	30.84	-4.40	4.31*		
Lesco, Inc.	<i>Lesco Double Eagle Blend</i>						
	Greenville Perennial Ryegrass	33.56				90	87
	Pacesetter Perennial Ryegrass	32.43				90	87
	Prospect Perennial Ryegrass	31.49				90	87
	total ryegrass	97.48	98.87	1.39	0.95		
Valley Green, Inc.	<i>Valley Green Athletic and Park Mix</i>						
	Blue Chip Kentucky Bluegrass	34.65	48.04	13.39	4.53*	90	81
	Topgun Perennial Ryegrass	34.65	28.47	-6.18	5.44*	90	86
	Jamestown IV Chewings Fescue	14.85				90	93
	Pathfinder Creeping Red Fescue	14.85				90	93
	total fine fescue	29.70	21.12	-8.58	4.19*		
	Inert matter	0.65	2.37*				

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
Agriculver Seeds	<i>DeCran Tasty Green Plus</i>						
	Ginger Kentucky Bluegrass	39.80	49.45	9.65	3.60*	89	81
	Herbie Perennial Ryegrass	25.78	15.20	-10.58	5.77*	88	88
	N/C Climax Timothy	25.48	25.21	-0.27	3.04	90	82
	Galaxy Alfalfa	3.75	3.82	0.07	1.34	80+8 HS	69+25 HS
	Ladino Jumbo Clover	3.85	3.54	-0.31	2.94	81+9 HS	82+5 HS
	Inert matter	1.00	2.39*				
Forest First Research Seeds, Inc.	<i>Jump Start Pasture Mix</i>						
	Aubisque Tetraploid Perennial Ryegrass	24.95				90	86
	Sierra Diploid Perennial Ryegrass	24.01				90	86
	Bestfar Intermediate Perennial Ryegrass	19.69				90	86
	Zorro Italian Tetraploid Perennial Ryegrass	10.41				90	86
	total rye	79.06					
	Spring Green Festulolium	19.84				90	86
	total pure seed	98.90	97.04	-1.86	1.01*		
Weed seed	0.00	2.13*					
Southern States Coop.	<i>Agway Sunny Green Lawn Mixture</i>						
	Blue Chip Kentucky Bluegrass	24.71	31.61	6.90	3.32*	85	82
	Federation Perennial Ryegrass	58.34	53.02	-5.32	4.53*	90	93
	Silverlawn Creeping Red Fescue	14.82	14.04	-0.78	3.10	85	87
Southern States Co-op.	<i>Agway Spot Green Mixture</i>						
	Kentucky Bluegrass	24.80	24.97	0.17	2.81	85	85
	Winger Perennial Ryegrass	30.03				90	85
	Omega 3 Perennial Ryegrass	24.46				90	85
	total ryegrass	54.49	53.28	-1.21	4.53		
Silverlawn Creeping Red Fescue	18.11	19.63	1.52	2.42	85	70*	
New England Seed Company	<i>Putnam Co-op. Landscape Mix</i>						
	Kentucky Bluegrass	18.34	22.09	3.75	2.44*	80	69
	Annual Ryegrass	14.98				90	91
	Nexus Perennial Ryegrass	14.74				90	91
	total ryegrass	29.72	28.09	-1.63	4.28		
	Creeping Red Fescue	24.63				85	93
	Chewings Fescue	9.84				85	93
total fine fescue	34.47	33.05	-1.42	3.29			
Genesis Tall Fescue	14.66	14.71	0.05	3.69	85	86	

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