

# Seed Germination and Purity

## Analysis 2013

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## SEED GERMINATION AND PURITY ANALYSIS 2013

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Official samples of 355 vegetable, 7 lawn, and 6 crop seeds were collected by inspectors from the Bureau of Regulation and Inspection of the Connecticut Department of Agriculture for testing in 2013. 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 17 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. 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 355 vegetable seed samples tested, 24 did not meet their label claims for germination. They 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. 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 seven lawn seed samples tested met label claims for both purity and germination. One sample failed purity claims but passed germination claims. One sample failed germination claims but passed purity claims. None of the 2013 lawn samples contained seeds of noxious weeds.

Table 5 shows the results of purity and germination tests on crop seed samples. All six seed samples passed claims for both purity and germination. No noxious weeds were identified in the samples.

Mary K. Inman and Dr. Sharon M. Douglas performed the analyses following Connecticut Regulations. Wayne S. Nelson, Seed Control Official, 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. H= Seeds hard because they did not absorb water due to an impermeable seed coat. \* = Does not meet label claim.

<b>Plant</b>	<b>Cultivar</b>	<b>Seed Company</b>	<b>Standard</b>	<b>Found</b>
Artichoke	Romanesco	La Semiorto Sementi	60	58
Asparagus	Mary Washington	Baker Creek Heirloom Seeds	70	96
Asparagus	Mary Washington	NK Lawn and Garden	70	90
Bean	Black Valentine	Comstock, Ferre and Co.	70	84
Bean	Blue Lake Bush	The Charles C. Hart Seed Company	70	85+1H
Bean	Blue Lake Bush	Livingston Seed Company	70	70
Bean	Blue Lake Stringless Pole	New England Seed Company	70	64+24H
Bean	Borlotto Lingua di Fuoco	La Semiorto Sementi	70	49 *
Bean	Burro Di Rocquencourt	La Semiorto Sementi	70	99
Bean	Field Soldier	The Charles C. Hart Seed Company	70	93
Bean	Golden Bush	New England Seed Company	70	87
Bean	Golden Butterwax	Seedway Inc.	70	95
Bean	Golden Wax	Comstock, Ferre and Co.	70	95+1H
Bean	Kentucky Dreamer	Seedway Inc.	70	85
Bean	Kitchen King	Burpee Garden Products Co.	70	88
Bean	Pencil Pod Wax	Botanical Interests Inc.	70	84
Bean	Romano	Plantation Products	70	13 *
Bean	Romano Pole	The Charles C. Hart Seed Company	70	93
Bean	Royal Burgundy	Botanical Interests Inc.	70	90+1H
Bean	Royalty Purple Pod	Seedway LLC- Olds Seed	70	93
Bean	Tendergreen	Ferry-Morse Seed Company	70	94
Bean	Top Crop	NK Lawn and Garden	70	67
Bean, Lima	Fordhook	The Charles C. Hart Seed Company	70	6 *
Bean, Lima	Fordhook 242	Seedway Inc.	70	86
Bean, Lima	Jackson Wonder	New England Seed Company	70	93+1 H
Beet	Bull's Blood	Botanical Interests Inc.	65	94
Beet	Chioggia	Plantation Products	65	75
Beet	Cylindra	New England Seed Company	65	89
Beet	Cylindra	Burpee Garden Products Co.	65	92
Beet	Da Orto D'Egitto	La Semiorto Sementi	65	85
Beet	Detroit Dark Red	The Charles C. Hart Seed Company	65	82
Beet	Detroit Dark Red	Ferry-Morse Seed Company	65	70
Beet	Detroit Dark Red	The Page Seed Co. - Valley Greene	65	80
Beet	Detroit Golden	Livingston Seed Company	65	80
Beet	Early Wonder Tall Top	Seedway LLC- Olds Seed	65	88
Beet	Flat of Egypt	Baker Creek Heirloom Seeds	65	89
Beet	Golden	Comstock, Ferre and Co.	65	89
Beet	Guardsmark	Seedway Inc.	65	81
Beet	Red Acre	The Charles C. Hart Seed Company	65	96
Beet	Tall Top Early Wonder	Ferry-Morse Seed Company - Organic	65	83
Broccoli	Calabrese	Plantation Products	75	71
Broccoli	Calabrese	Ferry-Morse Seed Company - Organic	75	85
Broccoli	Calabrese	The Page Seed Co. - Valley Greene	75	91
Broccoli	De Cicco	Ferry-Morse Seed Company	75	93
Broccoli	DiCicco	Comstock, Ferre and Co.	75	89

Table 1 (continued). Germination of vegetable seeds. Standards are provided by the rules and regulations of the Federal Seed Act. H= Seeds hard because they did not absorb water due to an impermeable seed coat. \* = Does not meet label claim.

<b>Plant</b>	<b>Cultivar</b>	<b>Seed Company</b>	<b>Standard</b>	<b>Found</b>	
Broccoli	Southern Comet	Seedway Inc.	75	86	
Broccoli	Spigariello	La Semiorto Sementi	75	89	
Broccoli	Waltham 29	Baker Creek Heirloom Seeds	75	93	
Broccoli	Waltham 29	Burpee Garden Products Co.	75	93	
Broccoli raab	Early Pugliese	New England Seed Company	75	96	
Broccoli raab	Fall Raab	The Charles C. Hart Seed Company	75	84	
Broccoli raab	Rapini	Botanical Interests Inc.	75	99	
Broccoli raab	Spring Raab	The Charles C. Hart Seed Company	75	80	
Brussels sprouts	Catskill	Seedway Inc.	70	72	
Brussels sprouts	Catskill	Ferry-Morse Seed Company	70	98	
Brussels sprouts	Long Island Improved	The Charles C. Hart Seed Company	70	81	
Brussels sprouts	Long Island Improved	New England Seed Company	70	86	
Brussels sprouts	Long Island Improved	Burpee Garden Products Co.	70	96	
Brussels sprouts	Long Island Improved	Livingston Seed Company	70	95	
Cabbage	Copenhagen	The Charles C. Hart Seed Company	75	77	
Cabbage	Da Napoli Tardivo	La Semiorto Sementi	75	86	
Cabbage	Danish Ballhead	Comstock, Ferre and Co.	75	92	
Cabbage	Earliana	Burpee Garden Products Co.	75	79	
Cabbage	Early Golden Acre	NK Lawn and Garden	75	56	*
Cabbage	Early Jersey	Baker Creek Heirloom Seeds	75	97	
Cabbage	Golden Acre	New England Seed Company	75	91	
Cabbage	Mammoth Red Rock	The Charles C. Hart Seed Company	75	84	
Cabbage	Red Acre	Botanical Interests Inc.	75	96	
Cabbage	Red Acre	Seedway LLC- Olds Seed	75	98	
Cabbage	Royal Savoy	Seedway Inc.	75	100	
Cantaloupe	Delicious	The Charles C. Hart Seed Company	75	79	
Cantaloupe	Delicious 51	New England Seed Company	75	87	
Cantaloupe	Hale's Best Jumbo	Burpee Garden Products Co.	75	94	
Cantaloupe	Hale's Best Jumbo	NK Lawn and Garden	75	83	
Cantaloupe	Honey Rock	Livingston Seed Company	75	90	
Carrot	Cosmic Purple	Botanical Interests Inc.	55	76	
Carrot	Danver 126 Half Long	Baker Creek Heirloom Seeds	55	68	
Carrot	Nantes Coreless	New England Seed Company	55	76	
Carrot	Nantes Coreless	The Page Seed Co. - Valley Greene	55	80	
Carrot	Rainbow	The Charles C. Hart Seed Company	55	88	
Carrot	Short'n Sweet	Burpee Garden Products Co.	55	76	
Carrot	White Belgian	Comstock, Ferre and Co.	55	38	*
Carrot	Yellowstone	Seedway Inc.	55	86	
Cauliflower	Chef's Choice Blend	Botanical Interests Inc.	75	83	
Cauliflower	Di Sicilia Violeto	La Semiorto Sementi	75	58	*
Cauliflower	Early Snowball	The Charles C. Hart Seed Company	75	90	
Cauliflower	Early Snowball	New England Seed Company	75	97	
Cauliflower	Early Snowball Y	Ferry-Morse Seed Company - Organic	75	93	
Cauliflower	Jade	Burpee Garden Products Co.	75	95	

Table 1 (continued). Germination of vegetable seeds. Standards are provided by the rules and regulations of the Federal Seed Act. H= Seeds hard because they did not absorb water due to an impermeable seed coat. \* = Does not meet label claim.

<b>Plant</b>	<b>Cultivar</b>	<b>Seed Company</b>	<b>Standard</b>	<b>Found</b>
Cauliflower	Purple of Sicily	Baker Creek Heirloom Seeds	75	79
Celeriac	Giant Prague	Comstock, Ferre and Co.	55	43
Celery	Dorato D'Asti	La Semiorto Sementi	55	77
Celery	Giant Pascal	The Charles C. Hart Seed Company	55	97
Celery	Tall Utah	New England Seed Company	55	79
Celery	Tall Utah	Botanical Interests Inc.	55	88
Celery	Tendercrisp	Baker Creek Heirloom Seeds	55	82
Chicory	Catalogna	New England Seed Company	65	86
Chicory	Italian Dandelion	The Charles C. Hart Seed Company	65	84
Chinese cabbage	Bok choi	The Charles C. Hart Seed Company	75	96
Chinese cabbage	Michili	New England Seed Company	75	91
Chinese cabbage	Pak Choi	Seedway Inc.	75	100
Collards	Georgia	New England Seed Company	80	78
Collards	Georgia Green	The Charles C. Hart Seed Company	80	87
Collards	Vates	Seedway Inc.	80	98
Collards		Seeds of Change	80	89
Corn	Argent	Seedway Inc.	75	93
Corn	Butter and Sugar	Seedway Inc.	75	97
Corn	Country Gentleman	The Page Seed Co. - Valley Greene	75	91
Corn	Early Sunglow	Burpee Garden Products Co.	75	93
Corn	Early Sunglow	Livingston Seed Company	75	92
Corn	Golden Bantam	Seeds of Change	75	88
Corn	Golden Bantam 8 Row	Botanical Interests Inc.	75	92
Corn	Golden Beauty	The Charles C. Hart Seed Company	75	94
Corn	Golden Cross Bantam	Ferry-Morse Seed Company	75	96
Corn	Kandy Korn	New England Seed Company	75	98
Corn	Peaches and Cream	The Charles C. Hart Seed Company	75	95
Corn	Quikie	New England Seed Company	75	90
Corn	Silver Queen	The Charles C. Hart Seed Company	75	92
Corn	Stowells Evergreen	Baker Creek Heirloom Seeds	75	90
Cornsalad	Dutch	Baker Creek Heirloom Seeds	75	74
Cowpea	California Blackeye	The Charles C. Hart Seed Company	75	47 *
Cress	Curled	Comstock, Ferre and Co.	75	100
Cucumber	Armenian	Livingston Seed Company	80	79
Cucumber	Bianco	La Semiorto Sementi	80	89
Cucumber	Boston Pickling	The Charles C. Hart Seed Company	80	99
Cucumber	Boston Pickling	New England Seed Company	80	97
Cucumber	Carosello Barese	La Semiorto Sementi	80	95
Cucumber	Improved Long Green	The Charles C. Hart Seed Company	80	99
Cucumber	Lemon	Botanical Interests Inc.	80	90

Table 1 (continued). Germination of vegetable seeds. Standards are provided by the rules and regulations of the Federal Seed Act. H= Seeds hard because they did not absorb water due to an impermeable seed coat. \* = Does not meet label claim.

Plant	Cultivar	Seed Company	Standard	Found
Cucumber	Marketmore 76	The Charles C. Hart Seed Company	80	98
Cucumber	Marketmore 76	New England Seed Company	80	97
Cucumber	Marketmore 76	Seedway Inc.	80	94
Cucumber	Marketmore 76	Ferry-Morse Seed Company	80	94
Cucumber	Mila	Burpee Garden Products Co.	80	84
Cucumber	National Pickling	NK Lawn and Garden	80	79
Cucumber	Straight Eight	Burpee Garden Products Co.	80	92
Cucumber	Straight Eight	Ferry-Morse Seed Company	80	96
Cucumber	Straight Eight	Livingston Seed Company	80	98
Cucumber	Sumter	Seeds of Change	80	88
Cucumber	Sumter	Ferry-Morse Seed Company - Organic	80	79
Cucumber	Tendergreen	Burpee Garden Products Co.-Burpee Organic	80	91
Cucumber	Tortarello Verde Scuro	La Semiorto Sementi	80	82
Cucumber	Wisconsin SMR-58	Seedway Inc.	80	97
Dill	Bouquet	The Charles C. Hart Seed Company	60	78
Dill	Bouquet	Ferry-Morse Seed Company	60	72
Dill	Dukat	Seedway Inc.	60	74
Dill	Long Island Mammoth	NK Lawn and Garden	60	67
Dill	Mammoth	Seedway LLC- Olds Seed	60	82
Dill	Mammoth Long Island	The Page Seed Co. - Valley Greene	60	98
Dill	Tetra	Botanical Interests Inc.	60	55
Dill		Comstock, Ferre and Co.	60	78
Dill		Seeds of Change	60	86
Eggplant	Black Beauty	New England Seed Company	60	78
Eggplant	Black Beauty	Botanical Interests Inc.	60	67
Eggplant	Black Beauty	NK Lawn and Garden	60	75
Eggplant	High Bush Select	Seedway Inc.	60	15 *
Eggplant	Romanesca	La Semiorto Sementi	60	24 *
Eggplant	Rosa Bianca	The Charles C. Hart Seed Company	60	19 *
Endive	Batavian Full Heart	New England Seed Company	70	81
Endive	Broad-leaved Batavian	Comstock, Ferre and Co.	70	86
Endive	Green Curled	The Charles C. Hart Seed Company	70	84
Endive	Green Ruffic	Seedway Inc.	70	92
Endive	Olesh Tres Fine	Botanical Interests Inc.	70	74
Endive	Riccia Santantuono	La Semiorto Sementi	70	37 *
Kale	Blue Scotch	Seedway Inc.	75	86
Kale	Dwarf Blue Curled	Botanical Interests Inc.	75	92
Kale	Red Winter	Burpee Garden Products Co.-Burpee Organic	75	56 *
Kale	Siberian	Comstock, Ferre and Co.	75	96
Kale	Vates	New England Seed Company	75	96
Kale	Vates Blue Curled	The Charles C. Hart Seed Company	75	91
Kohlrabi	Early Purple Vienna	Seedway Inc.	75	98
Kohlrabi	Early White Vienna	Burpee Garden Products Co.	75	96
Kohlrabi	Early White Vienna	Plantation Products	75	89
Kohlrabi	Early White Vienna	NK Lawn and Garden	75	83

Table 1 (continued). Germination of vegetable seeds. Standards are provided by the rules and regulations of the Federal Seed Act. H= Seeds hard because they did not absorb water due to an impermeable seed coat. \* = Does not meet label claim.

<b>Plant</b>	<b>Cultivar</b>	<b>Seed Company</b>	<b>Standard</b>	<b>Found</b>
Kohlrabi	Purple Vienna	Seedway LLC- Olds Seed	75	97
Kohlrabi	White	The Charles C. Hart Seed Company	75	77
Kohlrabi	White Vienna	New England Seed Company	75	96
Leek	American Broad Flag	New England Seed Company	60	94
Leek	American Flag	The Charles C. Hart Seed Company	60	93
Leek	American Flag	Burpee Garden Products Co.-Burpee Organic	60	77
Leek	American Flag	Livingston Seed Company	60	69
Leek	Arkansas	Seedway Inc.	60	89
Leek	Extra Large Carentan	Comstock, Ferre and Co.	60	80
Lettuce	Big Boston	New England Seed Company	80	79
Lettuce	Black Seeded Simpson	The Charles C. Hart Seed Company	80	98
Lettuce	Black Seeded Simpson	NK Lawn and Garden	80	100
Lettuce	Black Seeded Simpson	Ferry-Morse Seed Company	80	91
Lettuce	Black Seeded Simpson	The Page Seed Co. - Valley Greene	80	94
Lettuce	Burpee Bibb	Burpee Garden Products Co.	80	90
Lettuce	Buttercrunch	Seedway Inc.	80	89
Lettuce	Buttercrunch	Burpee Garden Products Co.-Burpee Organic	80	91
Lettuce	Buttercrunch	Livingston Seed Company	80	93
Lettuce	Buttercrunch	The Page Seed Co. - Valley Greene	80	96
Lettuce	Cavolo Di Napoli	La Semiorto Sementi	80	1 *
Lettuce	Deer Tongue Red	Seedway LLC- Olds Seed	80	87
Lettuce	Freckles Romaine	Botanical Interests Inc.	80	72
Lettuce	Grand Rapids	NK Lawn and Garden	80	96
Lettuce	Iceberg	Comstock, Ferre and Co.	80	94
Lettuce	Marvel of Four Seasons	Botanical Interests Inc.	80	90
Lettuce	Nevada	Seeds of Change	80	94
Lettuce	Oakleaf	Baker Creek Heirloom Seeds	80	86
Lettuce	Parris Island Cos	New England Seed Company	80	95
Lettuce	Parris Island Cos	NK Lawn and Garden	80	92
Lettuce	Parris Island Cos	The Page Seed Co. - Valley Greene	80	96
Lettuce	Red Sails	New England Seed Company	80	92
Lettuce	Silvia	Burpee Garden Products Co.-Burpee Organic	80	60 *
Lettuce	Summer Bibb	Seedway LLC- Olds Seed	80	91
Mustard	Green Wave	New England Seed Company	75	97
Mustard	Mizuna	Botanical Interests Inc.	75	81
Mustard	Red Giant	Burpee Garden Products Co.-Burpee Organic	75	99
Mustard	Southern Curled	The Charles C. Hart Seed Company	75	95
Mustard	Southern Giant Curled	Baker Creek Heirloom Seeds	75	97
New Zealand Spinach		New England Seed Company	40	51
Okra	Clemson Spineless	The Charles C. Hart Seed Company	50	75
Okra	Clemson Spineless	New England Seed Company	50	79
Okra	Clemson Spineless	Burpee Garden Products Co.	50	90
Okra	Clemson Spineless	Ferry-Morse Seed Company	50	81
Onion	Ailsa Craig	Baker Creek Heirloom Seeds	70	79



Table 1 (continued). Germination of vegetable seeds. Standards are provided by the rules and regulations of the Federal Seed Act. H= Seeds hard because they did not absorb water due to an impermeable seed coat. \* = Does not meet label claim.

Plant	Cultivar	Seed Company	Standard	Found
Onion	Evergreen Bunching	Ferry-Morse Seed Company	70	82
Onion	Granex	Burpee Garden Products Co.	70	89
Onion	Ringmaster	Botanical Interests Inc.	70	80
Onion	Spanish Utah Strain	NK Lawn and Garden	70	78
Onion	Tropeana Lunga	La Semiorto Sementi	70	66
Onion	Valencia	Seeds of Change	70	96
Onion	White Bunching	New England Seed Company	70	94
Onion	White Lisbon	Comstock, Ferre and Co.	70	78
Onion	White Lisbon	Botanical Interests Inc.	70	95
Onion	Yellow Sweet Spanish	The Charles C. Hart Seed Company	70	65
Onion	Yellow Sweet Spanish	New England Seed Company	70	89
Parsley	Double Curled	Burpee Garden Products Co.-Burpee Organic	60	76
Parsley	Extra Triple Curled	Ferry-Morse Seed Company	60	5 *
Parsley	Forest Green	Seedway Inc.	60	89
Parsley	Gigante	La Semiorto Sementi	60	93
Parsley	Italian Giant	Seedway LLC- Olds Seed	60	86
Parsley	Italian Plain Leaf	The Page Seed Co. - Valley Greene	60	78
Parsley	Moss Curled	Botanical Interests Inc.	60	94
Parsley	Plain	Comstock, Ferre and Co.	60	67
Parsnip	All American	New England Seed Company	60	44 *
Parsnip	All American	Seedway Inc.	60	81
Parsnip	Hollow Crown	The Charles C. Hart Seed Company	60	63
Pea	Early Frosty	The Charles C. Hart Seed Company	80	91
Pea	Lincoln	New England Seed Company	80	89+5 H
Pea	Little Marvel	The Page Seed Co. - Valley Greene	80	90
Pea	Mammoth Melting	Burpee Garden Products Co.-Burpee Organic	80	81
Pea	Melting Sugar	Ferry-Morse Seed Company	80	80
Pea	Oregon Sugar Pod II	The Charles C. Hart Seed Company	80	90
Pea	Sugar Daddy	New England Seed Company	80	89+1 H
Pea	Sugar Snap	Seedway Inc.	80	72
Pea	Wando	Botanical Interests Inc.	80	85
Pepper	California Wonder	The Charles C. Hart Seed Company	55	30 *
Pepper	California Wonder	Burpee Garden Products Co.	55	39 *
Pepper	California Wonder	Livingston Seed Company	55	63
Pepper	Calwonder	New England Seed Company	55	46
Pepper	Cayenne	Plantation Products	55	65
Pepper	Ciliegia Piccante	La Semiorto Sementi	55	50
Pepper	Giapponese	La Semiorto Sementi	55	59
Pepper	Jalapeno	Plantation Products	55	90
Pepper	Jalapeno M	The Charles C. Hart Seed Company	55	61
Pepper	Keystone Resistant Giant	The Page Seed Co. - Valley Greene	55	44
Pepper	Long Red Cayenne	New England Seed Company	55	53
Pepper	Marconi Rosso	La Semiorto Sementi	55	83
Pepper	Numex Big Jim Chili	The Page Seed Co. - Valley Greene	55	16 *
Pepper	Serrano Chili	Ferry-Morse Seed Company	55	84
Pepper	Sweet Banana	New England Seed Company	55	64

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<b>Plant</b>	<b>Cultivar</b>	<b>Seed Company</b>	<b>Standard</b>	<b>Found</b>	
Pepper	Sweet Banana	Seedway Inc.	55	40	*
Pepper	Sweet Banana	Ferry-Morse Seed Company	55	67	
Pepper	Yolo Wonder	Botanical Interests Inc.	55	33	*
Pumpkin	Big Max	The Charles C. Hart Seed Company	75	52	*
Pumpkin	Big Max	New England Seed Company	75	84	
Pumpkin	Bumpkin F1 Hybrid	New England Seed Company	75	97	
Pumpkin	Connecticut Field	The Charles C. Hart Seed Company	75	92	
Pumpkin	Dill's Atlantic Giant	New England Seed Company	75	32	*
Pumpkin	Gooligan	New England Seed Company	75	100	
Pumpkin	Jack O'Lantern	The Charles C. Hart Seed Company	75	95	
Pumpkin	Small Sugar	The Charles C. Hart Seed Company	75	98	
Radish	Champion	Ferry-Morse Seed Company	75	98	
Radish	Champion	The Page Seed Co. - Valley Greene	75	93	
Radish	Early Scarlet Globe	Comstock, Ferre and Co.	75	98	
Radish	Early Scarlet Globe	Seedway Inc.	75	94	
Radish	Early Scarlet Globe	The Page Seed Co. - Valley Greene	75	96	
Radish	French Breakfast	Baker Creek Heirloom Seeds	75	93	
Radish	Lungo Di Napoli	La Semiorto Sementi	75	91	
Radish	Sparkler	NK Lawn and Garden	75	97	
Radish	Watermelon	New England Seed Company	75	92	
Radish	Watermelon	Livingston Seed Company	75	94	
Rutabaga	American Purple Top	Botanical Interests Inc.	75	92	
Rutabaga	Laurentian	Baker Creek Heirloom Seeds	75	99	
Rutabaga	Laurentian	New England Seed Company	75	71	
Sage	Broadleaf	Seedway Inc.	60	89	
Salsify	Mammoth Sandwich Island	Comstock, Ferre and Co.	65	77	
Soybean	Asian (Edamame)	Livingston Seed Company	75	78	
Soybean	Envy Edamame	Botanical Interests Inc.	75	74	
Spinach	Bloomsdale	Comstock, Ferre and Co.	60	91	
Spinach	Bloomsdale Long Standing	Ferry-Morse Seed Company	60	62	
Spinach	Bloomsdale Long Standing	Livingston Seed Company	60	86	
Spinach	Bloomsdale Long Standing	The Page Seed Co. - Valley Greene	60	77	
Spinach	Bordeaux	Botanical Interests Inc.	60	78	
Spinach	Correnta	Plantation Products	60	84	
Spinach	Melody	Seedway Inc.	60	89	
Squash	Black Beauty	Seedway Inc.	75	90	
Squash	Black Beauty	Ferry-Morse Seed Company	75	87	
Squash	Blue Hubbard	The Charles C. Hart Seed Company	75	78	
Squash	Buttercup	NK Lawn and Garden	75	81	
Squash	Buttercup	Seedway LLC- Olds Seed	75	84	
Squash	Buttercup Burgess	The Charles C. Hart Seed Company	75	89	
Squash	Cocozelle	New England Seed Company	75	91	

Table 1 (continued). Germination of vegetable seeds. Standards are provided by the rules and regulations of the Federal Seed Act. H= Seeds hard because they did not absorb water due to an impermeable seed coat. \* = Does not meet label claim.

<b>Plant</b>	<b>Cultivar</b>	<b>Seed Company</b>	<b>Standard</b>	<b>Found</b>
Squash	Dark Green Zucchini	NK Lawn and Garden	75	49 *
Squash	Dark Green Zucchini	Livingston Seed Company	75	90
Squash	Early Prolific Crookneck	NK Lawn and Garden	75	74
Squash	Early Summer Crookneck	New England Seed Company	75	87
Squash	Early Yellow Crookneck	Botanical Interests Inc.	75	87
Squash	Grey Zucchini	Plantation Products	75	79
Squash	Puritan Butternut	Seedway Inc.	75	87
Squash	Queensland Blue	New England Seed Company	75	86
Squash	Round Zucchini	The Charles C. Hart Seed Company	75	83
Squash	Vegetable Spaghetti	Burpee Garden Products Co.	75	95
Squash	Waltham Butternut	The Charles C. Hart Seed Company	75	90
Squash	Yellow Summer Crookneck	Ferry-Morse Seed Company	75	80
Squash	Zucchini Di Faenza	La Semiorto Sementi	75	84
Squash	Zucchini San Pasquale	La Semiorto Sementi	75	81
Swiss chard	Fordhook Giant	New England Seed Company	65	84
Swiss chard	Fordhook Giant	Seedway Inc.	65	82
Swiss chard	Fordhook Giant	Livingston Seed Company	65	84
Swiss chard	Lucullus	Comstock, Ferre and Co.	65	70
Swiss chard	Ruby	Ferry-Morse Seed Company - Organic	65	94
Tomatillo	Purple	Seeds of Change	50	90
Tomato	Cherry	The Page Seed Co. - Valley Greene	75	95
Tomato	Large Red Cherry	Plantation Products	75	89
Tomato	Marglobe	The Charles C. Hart Seed Company	75	83
Tomato	Marglobe	Livingston Seed Company	75	92
Tomato	Mr. Stripe	New England Seed Company	75	88
Tomato	Nano San Marzano	La Semiorto Sementi	75	95
Tomato	Principe Borghese	La Semiorto Sementi	75	94
Tomato	Roma VF	The Charles C. Hart Seed Company	75	94
Tomato	Rutgers	Burpee Garden Products Co.-Burpee Organic	75	94
Tomato	Rutgers	The Page Seed Co. - Valley Greene	75	86
Tomato	San Marzano	Plantation Products	75	73
Tomato	Small Red Cherry	New England Seed Company	75	72
Tomato	Super Beefsteak	Burpee Garden Products Co.	75	96
Tomato	Sweet 100	Seedway Inc.	75	93
Tomato	Tami 6	Seedway Inc.	75	98
Turnip	Early Purple Milan	Comstock, Ferre and Co.	80	89
Turnip	Purple Top White Globe	New England Seed Company	80	94
Turnip	Purple Top White Globe	Burpee Garden Products Co.	80	87
Turnip	Purple Top White Globe	Seedway LLC- Olds Seed	80	92
Turnip	Purple Top White Globe	The Page Seed Co. - Valley Greene	80	91
Turnip	Seven Top	The Charles C. Hart Seed Company	80	95
Turnip	Seven Top	Plantation Products	80	91
Turnip	Seven Top	The Page Seed Co. - Valley Greene	80	95
Turnip	Shogoin	Baker Creek Heirloom Seeds	80	97
Watermelon	Charleston Grey	New England Seed Company	70	70

Table 1 (continued). Germination of vegetable seeds. Standards are provided by the rules and regulations of the Federal Seed Act. H= Seeds hard because they did not absorb water due to an impermeable seed coat. \* = Does not meet label claim.

<b>Plant</b>	<b>Cultivar</b>	<b>Seed Company</b>	<b>Standard</b>	<b>Found</b>
Watermelon	Jubilee	Burpee Garden Products Co.	70	68
Watermelon	Jubilee	Ferry-Morse Seed Company	70	80
Watermelon	Sugar Baby	The Charles C. Hart Seed Company	70	91
Watermelon	Sugar Baby	New England Seed Company	70	93

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

<b>Seed Company</b>	<b>Total Number of Claims</b>	<b>% Meeting Claims</b>	<b>% Not Meeting Claims</b>
Baker Creek Heirloom Seeds	15	100	0
Botanical Interests Inc.	26	96	4
Burpee Garden Products Co.	20	95	5
Burpee Garden Products Co.-Burpee Organic	9	78	22
Comstock, Ferre and Co.	20	95	5
Ferry-Morse Seed Company	20	95	5
Ferry-Morse Seed Company - Organic	5	100	0
La Semiorto Sementi	24	79	21
Livingston Seed Company	16	100	0
New England Seed Company	52	96	4
NK Lawn and Garden	16	88	12
Plantation Products	11	91	9
Seeds of Change	7	100	0
Seedway Inc.	33	94	6
Seedway LLC- Olds Seed	10	100	0
The Charles C. Hart Seed Company	52	90	10
The Page Seed Co. - Valley Greene	19	95	5

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.

<b>Plant</b>	<b>Samples Tested</b>	<b>Standard Germination</b>	<b>Average Germination</b>
Artichoke	1	60	58
Asparagus	2	70	93
Bean	19	70	82
Bean, Lima	3	70	62
Beet	15	65	85
Broccoli	9	75	88
Broccoli raab	4	75	90
Brussels sprouts	6	70	88
Cabbage	11	75	87
Cantaloupe	5	75	87
Carrot	8	55	74
Cauliflower	7	75	85
Celeriac	1	55	43
Celery	5	55	85
Chicory	2	65	85
Chinese cabbage	3	75	96
Collards	4	80	88
Corn	14	75	93
Cornsalad	1	75	74
Cowpea	1	75	47
Cress	1	75	100
Cucumber	21	80	91
Dill	9	60	77
Eggplant	6	60	46
Endive	6	70	76
Kale	6	75	86
Kohlrabi	7	75	91
Leek	6	60	84
Lettuce	24	80	86
Mustard	5	75	94
New Zealand Spinach	1	40	51
Okra	4	50	81
Onion	12	70	83
Parsley	8	60	74
Parsnip	3	60	63
Pea	9	80	86
Pepper	18	55	55
Pumpkin	8	75	81
Radish	10	75	95
Rutabaga	3	75	87
Sage	1	60	89
Salsify	1	65	77
Soybean	2	75	76
Spinach	7	60	81
Squash	21	75	83
Swiss chard	5	65	83
Tomatillo	1	50	90
Tomato	15	75	89
Turnip	9	80	92
Watermelon	5	70	80

Table 4. Germination and purity of lawn seed. Purity Claimed =Pur C; Purity Found =Pur F; Variance =Var; Tolerance =Tol; Germination Claimed (Germ C); Germination Found (Germ F). \* = Does not meet label claim.

Seed Company	Seed Mixture	Pur C	Pur F	Var	Tol	Germ C	Germ F
Kent Nutrition Group	<i>Blue Seal Early Green Lawn Mixture</i>						
	Kentucky bluegrass VNS	12.75	14.57	1.82	1.68	80	81
	Perennial Ryegrass VNS	47.38				85	87
	Annual Ryegrass VNS	9.97				90	87
	total ryegrass	57.35	58.16	0.81	4.19		
	Aruba Red Fescue	24.62	23.56	-1.06	3.05	90	82
Kent Nutrition Group	<i>Blue Seal Classic Lawn Mixture</i>						
	Alene Kentucky Bluegrass	26.83	33.27	6.44	3.51	85	78
	Accent Perennial Ryegrass	25.48				85	93
	All-Star 3 Perennial Ryegrass	23.48				90	93
	total ryegrass	48.96	45.36	-3.60	5.11		
	Boreal Creeping Red Fescue	22.58	20.11	-2.47	2.55	85	93
New England Seed Co.	<i>Southern New England Pasture Mix</i>						
	Tetraploid Perennial Ryegrass	18.29				90	96
	Tetraploid Annual Ryegrass	3.00				90	96
	Festolium Grass	7.33				85	96
	total ryegrass	28.62	27.36	-1.26	4.84		
	Climax Timothy	44.91	47.19	2.28	4.19	90	98
	Orchardgrass	15.44	14.94	-0.50	3.10	85	30 *
	Medium Red Clover	9.98	9.99	0.01	3.12	90	93
New England Seed Co.	<i>Shagbark Contractor's Mix</i>						
	Annual Ryegrass	67.10	64.93	2.17	3.14	90	98
	Creeping Red Fescue	32.12	34.45	-2.33	3.14	85	92
Southern States Co-op Inc.	<i>Agway Sun and Shade Mixture</i>						
	Kentucky Bluegrass VNS	19.80	18.19	-1.61	2.27	85	92
	ASP6003 Perennial Ryegrass	34.53				90	94
	ASP1001 GL Perennial Ryegrass	34.53				90	94
	total ryegrass	58.96	63.22	4.26	3.70		
	Chewings Fescue VNS	9.82				85	90
	Creeping Red Fescue VNS	9.76				85	90
	total fine fescue	19.58	15.97	-3.61	2.65 *		
Southern States Co-op Inc.	<i>Agway Shady Green Mixture</i>						
	Blue Chip Plus Kentucky Bluegrass	10.41	10.41	0.00	1.33	85	87
	ASP6003 Perennial Ryegrass	25.77				90	93
	ASP6001 Perennial Ryegrass	17.43				90	93
	total ryegrass	43.20	43.22	0.02	4.17		
	Frazer Chewings Fescue	30.31				85	87
	Boreal Creeping Red Fescue	14.47				85	87
	total fine fescue	44.78	44.61	-0.17	3.50		
X Seed	<i>Kentucky 31 Tall Fescue</i>						
	Kentucky 31 Tall Fescue	98.69	98.52	-0.17	0.86	88	86

Table 5. Germination and purity of crop seed. \* = Does not meet label claim.

<b>Seed Company</b>	<b>Seed</b>	<b>Purity Claim</b>	<b>Purity Found</b>	<b>Germ Claim</b>	<b>Germ Found</b>
Crop Production Services	Rye	98.00	97.83	92	93
Semican International	Rye	99.89	99.95	90	95
Michigan Agricultural Commodities Inc.	Rye	97.00	99.34	89	95
Crop Production Services	Rye		98.83		91
Michigan Agricultural Commodities Inc.	Rye	97.00	96.89	89	96
Seedway Inc.	Rye	98.00	99.58	80	94





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