

# Seed Germination and Purity Analysis 2012

*Sharon M. Douglas, Ph.D. and Mary K. Inman  
Department of Plant Pathology & Ecology*



*The Connecticut Agricultural Experiment Station  
New Haven, CT*



*Technical Bulletin 8  
November 2012*



## SEED GERMINATION AND PURITY ANALYSIS 2012

### Sharon M. Douglas, Ph.D. and Mary K. Inman

Official samples of 343 vegetable, 7 lawn, and 10 crop seeds were collected by inspectors from the Bureau of Regulation and Inspection of the Connecticut Department of Agriculture for testing in 2012. 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 14 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 343 vegetable seed samples tested, 12 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. Three of the seven lawn seed samples tested met label claims for both purity and germination. One sample failed claims for both germination and purity. Three samples failed purity claims but passed germination claims. None of the 2012 lawn samples contained seeds of noxious weeds.

Table 5 shows the results of purity and germination tests on crop seed samples. Of the ten seed samples, eight samples passed claims for both purity and germination. One sample passed label claims for germination, but failed purity claims. Another crop sample passed label claims for purity, but failed germination claims. 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. Assistance with germination tests was provided by Shalon Hinojosa and Lizett Sarmiento, summer research assistants for the Experiment Station.

Sharon M. Douglas

Table 1. Germination of vegetable seeds. Standards are provided by the rules and regulations of the Federal Seed Act. \* = Does not meet label claim.

Plant	Cultivar	Seed Company	Standard	Found	
Artichoke	Romanesco	La Semiorto Sementi	60	57	
Bean	Black Valentine	Comstock, Ferre and Company	70	89	
Bean	Blue Lake 274	Botanical Interests, Inc.	70	60	
Bean	Blue Lake Bush	Livingston Seed Company	70	92	
Bean	Borlotto Lingua Di Fuoco Nano	La Semiorto Sementi	70	86	
Bean	Burpees Stringless Green Pod	Burpee Garden Products Company	70	91	
Bean	Cherokee Wax	New England Seed	70	93	
Bean	Cherokee Wax	Plantation Products Inc.	70	91	
Bean	Coco Bianco	La Semiorto Sementi	70	56	
Bean	Fordhook 242	New England Seed	70	30	*
Bean	Green Bush Romano #14	Hart's Seed Company	70	73	
Bean	Kentucky Wonder	Ferry Morse	70	97	
Bean	Kentucky Wonder Wax	New England Seed	70	95	
Bean	Roma II	Seedway LLC	70	92	
Bean	Romano Pole	Hart's Seed Company	70	23	*
Bean	Tendergreen Improved	Ferry Morse	70	94	
Bean, lima	Burpee Improved	Hart's Seed Company	70	95	
Bean, lima	Burpees Improved	Burpee Garden Products Company	70	37	*
Bean, lima	Henderson's Bush	Baker Creek Heirloom Seed Company	70	42	*
Beet	Albino	Comstock, Ferre and Company	65	85	
Beet	Burpees Golden	Burpee Garden Products Company	65	27	*
Beet	Chioggia Guardsmark	Seedway LLC	65	85	
Beet	Cylindra	Livingston Seed Company	65	92	
Beet	Detroit Dark Red	Hart's Seed Company	65	92	
Beet	Detroit Dark Red	Burpee Garden Products Company/Organic	65	76	
Beet	Detroit Dark Red	The Page Seed Company	75	68	
Beet	Detroit Dark Red, Morse's Strain	Ferry Morse	65	88	
Beet	Early Wonder	Hart's Seed Company	65	94	
Beet	Early Wonder	Botanical Interests, Inc.	65	85	
Beet	Early Wonder	Ferry Morse/Martha Stewart Living	65	89	
Beet	Mammoth Red Mangel	Baker Creek Heirloom Seed Company	65	72	
Beet	Piatta D'Eggito	La Semiorto Sementi	65	82	
Beet	Red Ace F1	New England Seed	65	62	
Broccoli	Calabrese	Hart's Seed Company	75	94	
Broccoli	Calabrese	Comstock, Ferre and Company	75	74	
Broccoli	Calabrese	Ferry Morse/Martha Stewart Living	75	94	
Broccoli	Calabrese	The Page Seed Company	75	97	
Broccoli	DeCicco	Ferry Morse	75	96	
Broccoli	Di Ciccio	Burpee Garden Products Company	75	92	
Broccoli	DiCicco	Botanical Interests, Inc.	75	99	
Broccoli	DiCicco	Burpee Garden Products Company/Organic	75	92	
Broccoli	Romanesco Italia	Baker Creek Heirloom Seed Company	75	91	
Broccoli	Waltham 29	New England Seed	75	94	
Brussels sprouts	Catskill	Baker Creek Heirloom Seed Company	70	98	
Brussels sprouts	Catskill	Ferry Morse	70	91	
Brussels sprouts	Long Island Improved	Hart's Seed Company	70	72	

Table 1 (continued). Germination of vegetable seeds. Standards are provided by the rules and regulations of the Federal Seed Act. \* = Does not meet label claim.

Plant	Cultivar	Seed Company	Standard	Found
Brussels sprouts	Long Island Improved	New England Seed	70	83
Brussels sprouts	Long Island Improved	Comstock, Ferre and Company	70	73
Brussels sprouts	Long Island Improved	Burpee Garden Products Company	75	84
Brussels sprouts	Long Island Improved	Livingston Seed Company	70	97
Cabbage	Brunswick	Baker Creek Heirloom Seed Company	75	76
Cabbage	Chieftain	New England Seed	75	88
Cabbage	Copenhagen Market	Comstock, Ferre and Company	75	90
Cabbage	Earliana	Burpee Garden Products Company	75	90
Cabbage	Early Golden Acre	Plantation Products Inc.	75	94
Cabbage	Ferry's Round Dutch	Ferry Morse	75	94
Cabbage	Mammoth Red Rock	Hart's Seed Company	75	98
Cabbage	Michili	New England Seed	75	95
Cabbage	Perfection Drumhead Savoy	Comstock, Ferre and Company	75	76
Cabbage	Royal Savoy	Seedway LLC	75	99
Cantaloupe	Delicious	Hart's Seed Company	75	87
Cantaloupe	Hale's Best Jumbo	Ferry Morse	75	78
Cantaloupe	Hearts of Gold	Ferry Morse/Martha Stewart Living	75	93
Cantaloupe	Honey Rock	Livingston Seed Company	75	82
Carrot	Imperator 58	New England Seed	55	87
Carrot	Jaune Obtuse du Doubs	Comstock, Ferre and Company	55	27 *
Carrot	Little Finger	Hart's Seed Company	55	75
Carrot	Long Imperator #58	Ferry Morse	55	86
Carrot	Purple Haze	Seedway LLC	55	82
Carrot	Scarlet Nantes	Botanical Interests, Inc.	55	75
Carrot	Short'n Sweet	Burpee Garden Products Company	55	81
Cauliflower	Early Snowball	New England Seed	75	100
Cauliflower	Early Snowball	Comstock, Ferre and Company	75	97
Cauliflower	Early Snowball A	Ferry Morse	75	96
Cauliflower	Purple of Sicily	Baker Creek Heirloom Seed Company	75	88
Cauliflower	Self Blanching	Hart's Seed Company	75	81
Celeriac	Giant Prague	Comstock, Ferre and Company	55	60
Celery	Giant Pascal	Comstock, Ferre and Company	55	80
Celery	Tall Utah	New England Seed	55	88
Celery	Tall Utah #527OR Improved	Ferry Morse	55	95
Celery	Tendercrisp	Baker Creek Heirloom Seed Company	55	82
Chicory	Catalogna	La Semiorto Sementi	65	89
Chicory	Dolci Talli		65	90
Chinese cabbage	Michili	Hart's Seed Company	75	98
Chinese cabbage	Michili	Ferry Morse	75	97
Chinese cabbage	Pak Choi	Seedway LLC	75	91
Collards	Georgia Green	Hart's Seed Company	80	86
Collards	Georgia Southern	Ferry Morse	80	91

Table 1 (continued). Germination of vegetable seeds. Standards are provided by the rules and regulations of the Federal Seed Act. \* = Does not meet label claim.

Plant	Cultivar	Seed Company	Standard	Found
Collards	Vates	Seedway LLC	80	90
Corn	Bi-Licious Hybrid	Burpee Garden Products Company	75	83
Corn	Bodacious	Seedway LLC	75	72
Corn	Butter and Sugar	Hart's Seed Company	75	65
Corn	Country Gentleman	Comstock, Ferre and Company	75	86
Corn	Early Sunglow	New England Seed	75	76
Corn	Early Sunglow	Livingston Seed Company	75	88
Corn	Golden Beauty	Hart's Seed Company	75	67
Corn	Jackpot Hybrid	Ferry Morse	75	87
Corn	Peaches and Cream	Botanical Interests, Inc.	75	56
Corn	Quickie	New England Seed	75	71
Corn	Silver Queen	Hart's Seed Company	75	56
Corn	Thompson Prolific	Baker Creek Heirloom Seed Company	75	87
Cornsalad	Big Seeded	Botanical Interests, Inc.	60	92
Cornsalad	Dutch	Baker Creek Heirloom Seed Company	70	92
Cowpea	California Black Eye	Hart's Seed Company	75	73
Cowpea	California Black Eye	Ferry Morse	75	66
Cowpea	Clay	Comstock, Ferre and Company	75	90
Cress, Garden		Baker Creek Heirloom Seed Company	75	99
Cucumber	Boston Pickling	Hart's Seed Company	80	99
Cucumber	Boston Pickling	Livingston Seed Company	80	97
Cucumber	Lemon	Burpee Garden Products Company	80	94
Cucumber	Long Green	Hart's Seed Company	80	99
Cucumber	Mezzo Lungo Bianco	La Semiorto Sementi	80	87
Cucumber	Pioneer Hybrid	New England Seed	80	63
Cucumber	Poinsett 76	Ferry Morse	80	98
Cucumber	Straight Eight	Hart's Seed Company	80	100
Cucumber	Straight Eight	New England Seed	80	99
Cucumber	Straight Eight	Botanical Interests, Inc.	80	99
Cucumber	Sumter	Ferry Morse/Martha Stewart Living	80	98
Cucumber	Sumter	Plantation Products Inc.	80	98
Cucumber	Wisconsin SMR-58	Seedway LLC	80	96
Dill	Bouquet	Hart's Seed Company	60	73
Dill	Bouquet	New England Seed	60	62
Dill	Bouquet	Botanical Interests, Inc.	60	75
Dill	Bouquet	Ferry Morse	60	71
Dill	Bouquet	Ferry Morse/Martha Stewart Living	60	55
Dill	Dukat	Seedway LLC	60	78
Dill	Vierling	Baker Creek Heirloom Seed Company	60	69
Dill		Burpee Garden Products Company	60	66
Eggplant	Black Beauty	Hart's Seed Company	60	79
Eggplant	Black Beauty	New England Seed	60	77
Eggplant	Black Beauty	Botanical Interests, Inc.	60	87
Eggplant	Black Beauty	Ferry Morse	60	65

Table 1 (continued). Germination of vegetable seeds. Standards are provided by the rules and regulations of the Federal Seed Act. \* = Does not meet label claim.

Plant	Cultivar	Seed Company	Standard	Found
Eggplant	Burpee Hybrid	Burpee Garden Products Company	60	98
Eggplant	Early Long Purple	Ferry Morse/Martha Stewart Living	60	91
Eggplant	High Bush Select	Seedway LLC	60	31 *
Eggplant	Rotondo Bianca Di Rosa	La Semiorto Sementi	60	42
Endive	Batavian Full Heart	New England Seed	70	95
Endive	Broadleaf Batavia	Comstock, Ferre and Company	70	92
Endive	Broadleaf Batavia	Burpee Garden Products Company	70	95
Endive	de Louviers	Baker Creek Heirloom Seed Company	70	68
Endive	Green Curled	Hart's Seed Company	70	96
Endive	Green Ruffle	Seedway LLC	70	94
Endive	Olesh Tres Fine	Botanical Interests, Inc.	70	91
Fennel	Capo Rizzuto	La Semiorto Sementi	No standard	76
Kale	Blue Scotch	Seedway LLC	75	99
Kale	Dwarf Siberian	Baker Creek Heirloom Seed Company	75	99
Kale	Green Curled Scotch	Comstock, Ferre and Company	75	99
Kale	Red Russian	Burpee Garden Products Company	75	99
Kale	Red Winter	Botanical Interests, Inc.	75	99
Kale	Vates	New England Seed	75	95
Kale	Vates Dwarf Blue Curled	Hart's Seed Company	75	94
Kale	Vates Dwarf Blue Curled	Ferry Morse	75	86
Kohlrabi	Early Purple Vienna	Seedway LLC	75	97
Kohlrabi	Early White Vienna	Comstock, Ferre and Company	75	98
Kohlrabi	Early White Vienna	Burpee Garden Products Company	75	97
Kohlrabi	Early White Vienna	Plantation Products Inc.	75	94
Kohlrabi	White	Hart's Seed Company	75	99
Kohlrabi	White Vienna	New England Seed	75	93
Leek	American Broad Flag	New England Seed	60	91
Leek	American Flag	Hart's Seed Company	60	94
Leek	American Flag	Livingston Seed Company	60	82
Leek	Arkansa	Seedway LLC	60	93
Leek	King Richard	Botanical Interests, Inc.	60	84
Leek	Larentian	Baker Creek Heirloom Seed Company	60	75
Lettuce	Bibb	Hart's Seed Company	80	82
Lettuce	Big Boston	Comstock, Ferre and Company	80	86
Lettuce	Black Seeded Simpson	Hart's Seed Company	80	95
Lettuce	Black Seeded Simpson	Burpee Garden Products Company/Organic	80	90
Lettuce	Black Seeded Simpson	Ferry Morse/Martha Stewart Living	80	95
Lettuce	Black Seeded Simpson	Plantation Products Inc.	80	73
Lettuce	Burpee Bibb	Burpee Garden Products Company	80	98
Lettuce	Butter Crunch	New England Seed	80	87
Lettuce	Buttercrunch	Botanical Interests, Inc.	80	95
Lettuce	Buttercrunch	The Page Seed Company	80	96
Lettuce	Cavolo Di Napoli	La Semiorto Sementi	80	12 *
Lettuce	Freckles	Botanical Interests, Inc.	70	80
Lettuce	Great Lakes #118	Ferry Morse	80	95

Table 1 (continued). Germination of vegetable seeds. Standards are provided by the rules and regulations of the Federal Seed Act. \* = Does not meet label claim.

Plant	Cultivar	Seed Company	Standard	Found
Lettuce	Iceberg	Hart's Seed Company	80	94
Lettuce	Lollo Rossa	Burpee Garden Products Company	80	94
Lettuce	Marvel of Four Seasons	Botanical Interests, Inc.	80	89
Lettuce	New York 12	Comstock, Ferre and Company	80	95
Lettuce	Oakleaf	Hart's Seed Company	80	95
Lettuce	Parris Island	Livingston Seed Company	80	97
Lettuce	Parris Island Cos Romaine	Seedway LLC	80	86
Lettuce	Parris Island Romaine	Ferry Morse	80	90
Lettuce	Prizehead	Seedway LLC	80	96
Lettuce	Quattro Stagioni	La Semiorto Sementi	80	91
Lettuce	Red Sails	New England Seed	80	96
Lettuce	Simpson Elite	New England Seed	80	90
Mustard	Green Wave	New England Seed	75	98
Mustard	Mizuna	Botanical Interests, Inc.	75	91
Mustard	Southern Curled	Hart's Seed Company	75	85
Mustard	Southern Giant	Comstock, Ferre and Company	75	98
Mustard	Southern Giant Curled	Ferry Morse	75	96
New Zealand Spinach		New England Seed	40	55
Okra	Clemson Spineless	New England Seed	50	71
Okra	Clemson Spineless	Burpee Garden Products Company	50	91
Okra	Clemson Spineless	Plantation Products Inc.	50	53
Okra	Clemson Spineless #80	Ferry Morse/Martha Stewart Living	50	83
Okra	Long Green	Hart's Seed Company	50	87
Onion	Evergreen Bunching	Ferry Morse	70	94
Onion	Evergreen Bunching	Ferry Morse/Martha Stewart Living	70	91
Onion	Evergreen Long White Bunching	Burpee Garden Products Company	70	91
Onion	Gold Princess	Baker Creek Heirloom Seed Company	70	85
Onion	Golden Globe	Hart's Seed Company	70	84
Onion	Golden Grande	Burpee Garden Products Company	70	81
Onion	Red Burgundy	Ferry Morse	70	88
Onion	Sweet Spanish	New England Seed	70	88
Onion	Sweet Spanish	Seedway LLC	70	93
Onion	Tropeana Lunga	La Semiorto Sementi	70	82
Onion	Utah Sweet Spanish	Plantation Products Inc.	70	81
Onion	Wethersfield Red	Comstock, Ferre and Company	70	91
Onion	White Lisbon	Comstock, Ferre and Company	70	88
Parsley	Extra Curled Dwarf	Burpee Garden Products Company	60	69
Parsley	Forest Green	Seedway LLC	60	97
Parsley	Italian Dark Green Flat	Botanical Interests, Inc.	60	93
Parsley	Italian Plain Leaf	Hart's Seed Company	60	94
Parsley	Italian Plain Leaf	New England Seed	60	61
Parsley	Italian Plain Leaf	The Page Seed Company	60	50
Parsley	Moss Curled	Ferry Morse/Martha Stewart Living	60	92
Parsley	Plain	Ferry Morse	60	65
Parsnip	All American	New England Seed	60	53

Table 1 (continued). Germination of vegetable seeds. Standards are provided by the rules and regulations of the Federal Seed Act. \* = Does not meet label claim.

Plant	Cultivar	Seed Company	Standard	Found
Parsnip	All American	Seedway LLC	60	78
Parsnip	Gurensey Half Long	Comstock, Ferre and Company	60	78
Parsnip	Hollow Crown	Hart's Seed Company	60	86
Parsnip	Hollow Crown	Burpee Garden Products Company	60	82
Parsnip	Turga	Baker Creek Heirloom Seed Company	60	66
Pea	Alaska	Ferry Morse	80	93
Pea	Dwarf Gray Sugar	Hart's Seed Company	80	89
Pea	Freezonian Thomas Laxton	Hart's Seed Company	80	84
Pea	Lincoln	Hart's Seed Company	80	83
Pea	Little Marvel	Comstock, Ferre and Company	80	90
Pea	Little Marvel	Plantation Products Inc.	80	74
Pea	Oregon Sugar Pod	Burpee Garden Products Company	80	90
Pea	Oregon Sugar Pod	Burpee Garden Products Company/Organic	80	87
Pea	Progress 9	Burpee Garden Products Company	80	88
Pea	Tall Telephone	New England Seed	80	65
Pea	Wando	Baker Creek Heirloom Seed Company	80	91
Pepper	California Wonder	Hart's Seed Company	55	56
Pepper	California Wonder	Burpee Garden Products Company	55	80
Pepper	California Wonder	Livingston Seed Company	55	67
Pepper	Callifornia Wonder 300 TMR	Ferry Morse/Martha Stewart Living	55	69
Pepper	Ciliegia Piccante	La Semiorto Sementi	55	72
Pepper	Cubanelle	Ferry Morse	55	77
Pepper	Early Jalapeno	Botanical Interests, Inc.	55	91
Pepper	Habanero	Burpee Garden Products Company	55	59
Pepper	Jalapeno Chili	Plantation Products Inc.	55	93
Pepper	Long Red Cayenne	New England Seed	55	54
Pepper	Marconi Rosso	La Semiorto Sementi	55	72
Pepper	Red Cherry Hot	Hart's Seed Company	55	89
Pepper	Serrano Chili	Burpee Garden Products Company	55	81
Pepper	Sweet Banana	New England Seed	55	85
Pepper	Sweet Banana	Ferry Morse	55	75
Pepper	Sweet Banana	Seedway LLC	55	48
Pepper	Thai Hot	New England Seed	55	53
Pumpkin	Appalachian	New England Seed	75	93
Pumpkin	Casperita	New England Seed	75	98
Pumpkin	Connecticut Field	Hart's Seed Company	75	98
Pumpkin	Howden	Hart's Seed Company	75	93
Pumpkin	Howden	New England Seed	75	73
Pumpkin	Howden XXX	New England Seed	75	90
Pumpkin	Jack O'Lantern	Hart's Seed Company	75	96
Radish	Champion	The Page Seed Company	75	95
Radish	Cherry Belle	Botanical Interests, Inc.	75	93
Radish	Cherry Belle	Burpee Garden Products Company/Organic	75	97
Radish	Cherry Belle	Plantation Products Inc.	75	80
Radish	China Rose	Baker Creek Heirloom Seed Company	75	99
Radish	Crimson Giant	Burpee Garden Products Company	75	98
Radish	Easter Egg	Seedway LLC	75	96

Table 1 (continued). Germination of vegetable seeds. Standards are provided by the rules and regulations of the Federal Seed Act. \* = Does not meet label claim.

Plant	Cultivar	Seed Company	Standard	Found	
Radish	Flamboyant 3	La Semiorto Sementi	75	90	
Radish	French Breakfast	Comstock, Ferre and Company	75	94	
Radish	Sparkler	Ferry Morse	75	97	
Radish	Watermelon	Livingston Seed Company	75	95	
Radish	White Icicle	New England Seed	75	96	
Radish	White Icicle	Ferry Morse/Martha Stewart Living	75	96	
Rutabaga	American Purple Top	Comstock, Ferre and Company	75	97	
Rutabaga	American Purple Top	Seedway LLC	75	99	
Rutabaga	Laurentian	New England Seed	75	74	
Sage	Broadleaf	Botanical Interests, Inc.	65	75	
Sage		Burpee Garden Products Company	60	80	
Salsify	Mammoth Sandwich Island	Comstock, Ferre and Company	65	80	
Soybean	Butter Bean	Botanical Interests, Inc.	75	81	
Spinach	Big Ruffles Hybrid	Burpee Garden Products Company	60	89	
Spinach	Bloomsdale Longstanding	Burpee Garden Products Company/Organic	60	87	
Spinach	Bloomsdale Longstanding	Ferry Morse	60	92	
Spinach	Bloomsdale Longstanding	Ferry Morse/Martha Stewart Living	70	91	
Spinach	Bloomsdale Longstanding	Plantation Products Inc.	60	48	
Spinach	Bloomsdale Savoy	New England Seed	60	89	
Spinach	Giant Noble	Baker Creek Heirloom Seed Company	60	94	
Spinach	Melody	Seedway LLC	60	95	
Spinach	Pricly	Comstock, Ferre and Company	60	89	
Spinach	Tyee	Botanical Interests, Inc.	60	95	
Squash	Black Beauty Zucchini	Ferry Morse/Martha Stewart Living	75	87	
Squash	Blue Hubbard	Hart's Seed Company	75	83	
Squash	Buttercup	Hart's Seed Company	75	90	
Squash	Buttercup	New England Seed	75	89	
Squash	Buttercup	Seedway LLC	75	63	
Squash	Cocozelle	New England Seed	75	69	
Squash	Early Crook Neck	Hart's Seed Company	75	94	
Squash	Early Prolific	New England Seed	75	91	
Squash	Early Prolific Straightneck	Seedway LLC	75	79	
Squash	Early White Bush Scallop	Ferry Morse	75	87	
Squash	Round Zucchini	Hart's Seed Company	75	77	
Squash	Table King	Hart's Seed Company	75	42	*
Squash	Table Queen	New England Seed	75	85	
Squash	Turks Turban	New England Seed	75	44	*
Squash	Vegetable Spaghetti	Burpee Garden Products Company	75	96	
Squash	Waltham Butternut	Burpee Garden Products Company	75	76	
Squash	Yellow Summer Crookneck	Ferry Morse	75	87	
Squash	Zucchini, Dark	Livingston Seed Company	75	79	
Squash	Zucchini, Di Faenza	La Semiorto Sementi	75	59	*
Swiss chard	Burpees Rhubarb Chard	Burpee Garden Products Company	65	74	
Swiss chard	Fordhook Giant	New England Seed	65	82	

Table 1 (continued). Germination of vegetable seeds. Standards are provided by the rules and regulations of the Federal Seed Act. \* = Does not meet label claim.

<b>Plant</b>	<b>Cultivar</b>	<b>Seed Company</b>	<b>Standard</b>	<b>Found</b>
Swiss chard	Fordhook Giant	Botanical Interests, Inc.	65	73
Swiss chard	Fordhook Giant	Livingston Seed Company	65	50
Swiss chard	Large Ribbed Dark Green	Ferry Morse	65	94
Swiss chard	Ruby	Ferry Morse/Martha Stewart Living	65	89
Tomatillo	Toma Verde	Plantation Products Inc.	50	92
Tomatillo	Verde	New England Seed	50	93
Tomato	Brandywine	Ferry Morse	75	97
Tomato	Early Girl	New England Seed	75	98
Tomato	Marglobe	Hart's Seed Company	75	86
Tomato	Marmande	La Semiorto Sementi	75	97
Tomato	Mountain Pride	New England Seed	75	80
Tomato	Oregon Spring	Hart's Seed Company	75	84
Tomato	Roma	Livingston Seed Company	75	95
Tomato	Roma VF	Seedway LLC	75	94
Tomato	Rutgers	The Page Seed Company	75	96
Tomato	San Marzano 2	La Semiorto Sementi	75	88
Turnip	Purple Top White Globe	New England Seed	80	99
Turnip	Purple Top White Globe	Botanical Interests, Inc.	80	87
Turnip	Purple Top White Globe	Burpee Garden Products Company	80	97
Turnip	Purple Top White Globe	Ferry Morse/Martha Stewart Living	80	97
Turnip	Purple Top White Globe	Plantation Products Inc.	80	99
Turnip	Seven Top	The Page Seed Company	80	96
Watermelon	Black Diamond	New England Seed	70	98
Watermelon	Black Diamond	Livingston Seed Company	70	89
Watermelon	Charleston Gray	Hart's Seed Company	70	75
Watermelon	Congo	Burpee Garden Products Company	70	87
Watermelon	Crimson Sweet	New England Seed	70	94
Watermelon	Crimson Sweet	Ferry Morse	70	94
Watermelon	Hyb WD 02-29	New England Seed	70	89
Watermelon	Sugar Baby	Hart's Seed Company	70	99

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 Seed Company	19	95	5
Botanical Interests Inc.	24	100	0
Burpee Garden Products Company	34	94	6
Burpee Garden Products Company/Organic	6	100	0
Comstock, Ferre and Company	26	96	4
Ferry Morse	34	100	0
Ferry Morse/Martha Stewart Living	16	100	0
Hart's Seed Company	52	96	4
La Semiorto Sementi	18	89	11
Livingston Seed Company	14	100	0
New England Seed	54	94	6
Plantation Products Inc.	13	100	0
Seedway LLC	26	96	4
The Page Seed Company	7	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.

<b>Plant</b>	<b>Samples Tested</b>	<b>Standard Germination</b>	<b>Average Germination</b>
Artichoke	1	60	57
Bean	15	70	77
Bean, lima	3	70	58
Beet	14	65	78
Broccoli	10	75	92
Brussels sprouts	7	70	85
Cabbage	10	75	90
Cantaloupe	4	75	85
Carrot	7	55	73
Cauliflower	5	75	92
Celeriac	1	55	60
Celery	4	55	86
Chicory	2	65	90
Chinese cabbage	3	75	95
Collards	3	80	89
Corn	12	75	75
Cornsalad	2	60	92
Cowpea	3	75	76
Cress, Garden	1	75	99
Cucumber	13	80	94
Dill	8	60	69
Eggplant	8	60	71
Endive	7	70	90
Fennel	1	No standard	76
Kale	8	75	96
Kohlrabi	6	75	96
Leek	6	60	87
Lettuce	25	80	88
Mustard	5	75	94
New Zealand Spinach	1	40	55
Okra	5	50	77
Onion	13	70	87
Parsley	8	60	78
Parsnip	6	60	74
Pea	11	80	85
Pepper	17	55	72
Pumpkin	7	75	92
Radish	13	75	94
Rutabaga	3	75	90
Sage	2	65	78
Salsify	1	65	80
Soybean	1	75	81
Spinach	10	60	87
Squash	19	75	78
Swiss chard	6	65	77
Tomatillo	2	50	93
Tomato	10	75	92
Turnip	6	80	96
Watermelon	8	70	91

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
Blue Seal Feeds	<i>Early Green Lawn Mixture</i>						
	Kentucky Bluegrass	14.19	20.30	6.11	2.07 *	80	69
	Perennial Ryegrass	47.26				90	92
	Annual Ryegrass	9.28				90	92
	total ryegrass	56.54	55.63	-0.91	4.19		
	Creeping red fescue	24.05	22.38	-1.67	2.97	85	85
	Weed	0.03	0.00	-0.03	0.52		
	Crop	0.86	0.04	-0.82	0.14		
	Inert	3.86	1.65	-2.21	1.21		
Total Pure Seed	94.78	98.31	3.53	1.28			
Blue Seal Feeds	<i>Horse Hay Mix</i>						
	Troy Kentucky Bluegrass	19.86	23.49	3.63	3.45 *	80	66 *
	Climax Timothy	73.81	71.49	-2.32	3.20	85	92
	White Clover	4.93	4.71	-0.22	1.91	85	86
	Crop	0.08	0.00	-0.08	0.14		
	Weed	0.25	0.00	-0.25	0.28		
	Inert	1.07	0.31	-0.76	0.61		
	Total Pure Seed	98.60	99.69	1.09	0.69		
Southern States Coop	<i>Agway Landscape Mixture</i>						
	Kentucky Bluegrass	14.70	17.04	2.34	1.86 *	85	84
	Perennial Ryegrass	68.00	67.24	-0.76	3.34	90	83
	Creeping Red Fescue	14.50	14.00	-0.50	2.52	85	90
	Crop	1.15	0.00	-1.15	0.56		
	Weed	0.05	0.00	-0.05	0.14		
	Inert	1.60	1.72	0.12	0.93		
	Total Pure Seed	97.20	98.28	1.08	1.10		
Lebanon Seaboard Corp.	<i>Greenview Fairway Formula</i>						
	Exacta Perennial Ryegrass	19.76				90	91
	Charismatic Perennial Ryegrass	19.72				90	91
	total ryegrass	39.48	38.49	-0.99	3.81		
	Ambassador Chewings Fescue	39.15				85	84
	Pathfinder Creeping Red Fescue	9.93				85	84
	Oxford Hard Fescue	9.92				85	84
	total fine fescue	59.00	60.36	1.36	3.79		
	Crop	0.00	0.00	0.00	0.14		
	Weed	1.50	0.00	-0.02	0.14		
Inert	0.02	1.15	-0.35	0.86			
Total Pure Seed	98.48	98.85	0.37	0.93			
X Seed Incorporated	<i>Kentucky 31 Grass Seed</i>						
	Kentucky 31 Tall Fescue	98.00	99.56	1.56	0.78	90	90
	Crop	0.10	0.00	-0.10	0.14		
	Weed	0.01	0.00	-0.01	0.14		
	Inert	1.98	0.43	-1.55	0.78		
	Total Pure Seed	98.00	99.56	1.56	0.78		

Table 4 (continued). 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.

<b>Seed Company</b>	<b>Seed Mixture</b>	<b>Pur C</b>	<b>Pur F</b>	<b>Var</b>	<b>Tol</b>	<b>Germ C</b>	<b>Germ F</b>
The Scotts Company	<i>Scotts Turf Builder Heat Tolerant Blue Mix</i>						
	Thermal Blue Kentucky Bluegrass	4.73	4.62	-0.11	0.76	85	86
	Greenkeeper Tall Fescue	14.38				85	89
	Innovator Tall Fescue	14.38				85	89
	Dynasty Tall Fescue	14.25				85	89
	total tall fescue	43.01	48.62	5.61	5.11	*	
	Water Smart Coating	50.00	46.61	-3.39	3.50		
	Crop	0.50	0.00	-0.50	0.41		
	Weed	0.01	0.00	-0.10	0.14		
	Inert	1.75	0.14	-1.61	0.72		
	Total Pure Seed	47.74	53.24	5.50	3.50		
Pennington Seed Inc.	<i>Pennington Smart Seed Sun-Shade Mix</i>						
	Midnight Kentucky Bluegrass	9.55	10.29	0.74	1.30	80	91
	Integra II Perennial Ryegrass	39.00				90	91
	Soprano Perennial Ryegrass	24.35				90	91
	total ryegrass	63.25	64.22	0.87	3.46		
	7-Seas Chewings Fescue	12.05				85	90
	Razor Red Fescue	12.05				85	90
	total fine fescue	24.10	24.27	0.17	3.05		
	Crop	0.50	0.00	-0.50	0.41		
	Weed	0.01	0.00	-0.01	0.41		
	Inert	2.49	0.82	-1.67	0.93		
Total Pure Seed	97.00	98.78	1.78	1.05			

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>		
Fieldworks Ag Services	Rye	99.37	98.53	*	91	85	
Fieldworks Ag Services	Wheat	96.09	98.83		76	86	
Southern States Coop	Rye	98.00	99.95		85	92	
Crop Production Services	Rye		97.80		46	66	
Blue Seal Feeds Inc.	Rye	98.00	99.87		85	86	
Semican International Inc.	Rye	99.89	99.97		90	95	
Michigan Agricultural Commodities Inc.	Rye	99.11	99.48		93	96	
Preferred Seed Company Inc.	Buckwheat	99.20	99.81		85	77	
Michigan Agricultural Commodities Inc.	Rye	97.00	99.38		89	91	
Logue Farms Inc.	Rye	99.70	99.49		96	86	*



---

The Connecticut Agricultural Experiment Station (CAES) prohibits discrimination in all of its programs and activities on the basis of race, color, ancestry, national origin, sex, religious creed, age, political beliefs, sexual orientation, criminal conviction record, gender identity, genetic information, learning disability, present or past history of mental disorder, mental retardation or physical disability including but not limited to blindness, or marital or family status. To file a complaint of discrimination, write Director, The Connecticut Agricultural Experiment Station, P.O. Box 1106, New Haven, CT 06504, or call (203) 974-8440. CAES is an affirmative action/equal opportunity provider and employer. Persons with disabilities who require alternate means of communication of program information should contact the Chief of Services at (203) 974-8442 (voice); (203) 974-8502 (FAX); or [Michael.Last@ct.gov](mailto:Michael.Last@ct.gov) (E-mail).

---