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*The
Connecticut
Agricultural
Experiment
Station,
New Haven*

Seed Germination and Purity Analysis 1994

BY SHARON M. DOUGLAS

*Bulletin 924
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Official samples of 367 vegetable and 15 lawn seed were collected by inspectors from the Bureau of Regulation and Inspection of the Connecticut Department of Agriculture for testing in 1994. 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 claim, germination found, and compliance with the standards for germination. These 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. All tests were replicated twice. If a seed lot failed, it was retested. In addition, seedlings from the seeds must also appear "normal", i.e., they have to be free from decay, have well-developed primary root systems, have well-developed and intact hypocotyls and/or epicotyls, and have healthy cotyledons. Of the 367 vegetable seeds tested, five did not meet their claims for germination even after being retested. 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 in each category for compliance are summarized for each vegetable seed company in Table 2. Table 3 summarizes the average percent germination claimed, that found, and the standard 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 labelled 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. Only one of the 15 lawn seed samples tested met label claims for both purity and germination. Ten samples did not meet claims for purity and four samples failed label claims for both germination and purity.

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

Analyses were performed by Mary K. Inman and Dr. Sharon M. Douglas. Samples were collected by Alton Van Dyke, Seed Control Official. The Seed Law is administered by the Seed Control Official for the Commissioner of the Department of Agriculture.

Sharon M. Douglas

Table 1. Germination of vegetable seeds.

Plant	Variety	Seed Company	Germination	
			Claim	Found
Bean	Blue Lake 274	Lake Valley	75	95
Bean	Blue Lake Bush 274	Burpee	75	76
Bean	Brittle Wax	Burpee	75	96
Bean	Burpee Stringless Green Pod	Greene Valley	75	98
Bean	Bush Blue Lake	New England Seed	75	89
Bean	Contender	Lake Valley	75	94
Bean	Contender	Plantation Products	75	97
Bean	Derby Bush	Comstock Ferre	85	95
Bean	French Horticultural	Hart	75	86
Bean	Gator Green 15	Ferry Morse	75	65
Bean	Gold Crop Wax	Hart	91	94
Bean	Golden Butterwax	Agway	75	97
Bean	Harvester	Michael Leonard	75	88
Bean	Improved Golden Wax	New England Seed	75	95
Bean	Kentucky Wonder	New England Seed	75	98
Bean	Kentucky Wonder 125	Lake Valley	75	96
Bean	Kentucky Wonder Pole	American Seed	75	93
Bean	Kentucky Wonder Pole	Burpee	75	93
Bean	Kentucky Wonder Pole	Ferry Morse	75	95
Bean	Kentucky Wonder Pole	Greene Valley	75	99
Bean	Kentucky Wonder Pole	Plantation Products	75	91
Bean	Lancer Stringless	New England Seed	75	76
Bean	Long Tendergreen	Agway	75	98
Bean	Pencil Pod Black Wax	Michael Leonard	75	97
Bean	Pencil Pod Wax	Comstock Ferre	91	93
Bean	Romano	Burpee	75	98
Bean	Romano Pole	New England Seed	75	97
Bean	Stringless Blue Lake	Plantation Products	75	92
Bean	Stringless Green	Hart	88	95
Bean	Tendergreen	Michael Leonard	75	96
Bean	Tendergreen	New England Seed	75	98
Bean	Tendergreen Bush	Greene Valley	75	97
Bean	Tendergreen Improved	Ferry Morse	75	97
Bean	Tendergreen Improved	Lake Valley	75	96
Bean	Yellow Eye	Comstock Ferre	80	76
Bean, Lima	Burpee's Best Pole	Burpee	70	89
Bean, Lima	Henderson Bush	Agway	70	85
Beet	Burpee's Red Ball	Burpee	65	95
Beet	Cylindra	Agway	65	82
Beet	Detroit Dark Red	American Seed	65	88
Beet	Detroit Dark Red	Comstock Ferre	93	94
Beet	Detroit Dark Red	Plantation Products	65	87
Beet	Early Wonder	Agway	65	91
Beet	Early Wonder	Greene Valley	65	82
Beet	Early Wonder	Lake Valley	65	93
Beet	Early Wonder Green Top	Comstock Ferre	90	93
Beet	Early Wonder Green Top	New England Seed	65	95
Beet	Red Ace	Hart	88	80

Table 1. Germination of vegetable seeds (continued).

Plant	Variety	Seed Company	Germination	
			Claim	Found 1
Beet	Ruby Queen	Michael Leonard	65	77
Beet	Tall Top Early Wonder	Ferry Morse	65	93
Broccoli	Green Comet	Ferry Morse	75	80
Broccoli	Premium Crop	Comstock Ferre	85	85
Broccoli	Premium Crop	Hart	87	90
Broccoli	Premium Crop	New England Seed	75	100
Broccoli	Primo	Comstock Ferre	93	98
Broccoli	Waltham 29	Agway	75	90
Brussels sprouts	Catskill	Agway	70	93
Brussels sprouts	Jade Cross	Comstock Ferre	88	86
Brussels sprouts	Jade Cross	New England Seed	70	82
Cabbage	Cabbage	American Seed	75	100
Cabbage	Copenhagen Market	Comstock Ferre	92	97
Cabbage	Danish Ball Head	Hart	75	81
Cabbage	Danish Ball Head	New England Seed	75	83
Cabbage	Earliana	Burpee	75	88
Cabbage	Early Golden Acre	Plantation Products	75	99
Cabbage	Golden Acre	Greene Valley	75	96
Cabbage	Gourmet	Agway	75	94
Cabbage	Jersey Wakefield	Hart	88	97
Cabbage	Premium Late Flat Dutch	Michael Leonard	75	82
Carrot	Chantenay	Michael Leonard	55	80
Carrot	Danvers Half Long	Burpee	55	79
Carrot	Danvers Half Long	Michael Leonard	55	72
Carrot	Danvers Half Long	New England Seed	55	93
Carrot	Fly Away	Thompson & Morgan	55	93
Carrot	Gold Pack	Comstock Ferre	92	92
Carrot	Ingot	Hart	95	94
Carrot	Juwarot	Thompson & Morgan	55	61
Carrot	Little Fingers	New England Seed	55	92
Carrot	Long Imperator	Ferry Morse	55	94
Carrot	Nantes Coreless	Greene Valley	55	91
Carrot	Nantes Coreless	Plantation Products	55	83
Carrot	Nantes Coreless Half Long	Comstock Ferre	87	67*
Carrot	Nantes Long	Agway	55	79
Carrot	Red Core Chantenay	Ferry Morse	55	84
Carrot	Royal Chantenay	Agway	55	90
Carrot	Scarlet Nantes	Hart	81	88
Carrot	Scarlet Nantes	Lake Valley	55	86
Carrot	Thumbelina	Plantation Products	55	71
Cauliflower	Early Snowball	Greene Valley	75	93
Cauliflower	Self Blanching	Hart	92	93
Cauliflower	Snow King	New England Seed	75	98
Cauliflower	Snowball 34	Agway	75	42*
Cauliflower	Snowball Early Select	Comstock Ferre	92	91

Table 1. Germination of vegetable seeds (continued).

Plant	Variety	Seed Company	Germination	
			Claim	Found 1
Celery	Giant Pascal	Hart	93	85
Celery	Giant Pascal	New England Seed	55	81
Celery	Golden Selfblanching	Comstock Ferre	75	72
Chinese cabbage	Early Jade Pagoda	Comstock Ferre	92	97
Chinese cabbage	Jade Pagoda	Agway	75	100
Chinese cabbage	Orient Express	Burpee	75	96
Collards	Georgia	Michael Leonard	75	83
Collards	Georgia Southern	Ferry Morse	75	96
Collards	Vates	Hart	95	98
Corn	Bodacious	Hart	79	98
Corn	Breeder's Choice	Burpee	75	100
Corn	Butter and Sugar	Agway	75	99
Corn	Butter and Sugar	Comstock Ferre	93	98
Corn	Butter and Sugar	New England Seed	75	100
Corn	Early Golden Bantam	Plantation Products	75	99
Corn	Early Sunglow	Burpee	75	98
Corn	Early Sunglow	Lake Valley	75	100
Corn	Early Xtra Sweet	Thompson & Morgan	75	97
Corn	Golden Beauty	Greene Valley	75	98
Corn	Golden Beauty	Michael Leonard	75	95
Corn	Golden Cross Bantam	American Seed	75	98
Corn	Golden Cross Bantam	Greene Valley	75	97
Corn	Golden Cross Bantam	Plantation Products	75	90
Corn	Golden Cross Bantam T-51	Ferry Morse	75	97
Corn	Honey and Cream	Hart	79	97
Corn	lochief	Michael Leonard	75	96
Corn	lochief	Plantation Products	75	97
Corn	Pride and Joy	New England Seed	75	97
Corn	Silver Bullet	Ferry Morse	75	98
Corn	Silver Queen	Agway	75	99
Corn	Silver Queen	Hart	96	97
Corn	Silver Queen	New England Seed	75	99
Corn	Spirit	Ferry Morse	75	99
Corn	Sugar Buns	Comstock Ferre	90	80*
Cowpea	Purple Hull	Burpee	75	93
Cucumber	Armenian	Burpee	80	91
Cucumber	Boston Pickling	New England Seed	80	100
Cucumber	Boston/National Pickling	Comstock Ferre	90	99
Cucumber	Burpee Hybrid II	Burpee	80	100
Cucumber	Burpless	Agway	80	97
Cucumber	Bush Pickle	Hart	90	100
Cucumber	Early Surecrop	New England Seed	80	99
Cucumber	Fanfare	Agway	80	99
Cucumber	Marketer	Hart	91	99
Cucumber	Marketmore 76	Ferry Morse	80	99
Cucumber	Marketmore 76	New England Seed	80	98

Table 1. Germination of vegetable seeds (continued).

Plant	Variety	Seed Company	Germination	
			Claim	Found 1
Cucumber	Muncher	Plantation Products	80	95
Cucumber	National Pickling	American Seed	80	100
Cucumber	National Pickling	Lake Valley	80	98
Cucumber	National Pickling	Plantation Products	80	99
Cucumber	Olympian	Hart	90	100
Cucumber	Picarow	Agway	80	98
Cucumber	Poinsett	Michael Leonard	80	95
Cucumber	Poinsett 76	Ferry Morse	80	100
Cucumber	Slice Master Select	Comstock Ferre	92	98
Cucumber	SMR-58	Michael Leonard	80	99
Cucumber	Straight Eight	American Seed	80	99
Cucumber	Straight Eight	Burpee	80	99
Cucumber	Straight Eight	Greene Valley	80	98
Cucumber	Straight Eight	New England Seed	80	100
Cucumber	Straight Eight	Plantation Products	80	99
Cucumber	Sumter	Ferry Morse	80	97
Cucumber	Tasty Green	Comstock Ferre	99	99
Cucumber	Wisconsin SMR-18	Agway	80	96
Eggplant	Black Beauty	Comstock Ferre	90	85
Eggplant	Black Beauty	Ferry Morse	60	95
Eggplant	Black Beauty	Hart	86	85
Eggplant	Black Beauty	Plantation Products	60	95
Eggplant	Burpee Hybrid	Burpee	60	95
Eggplant	Dusky	New England Seed	60	90
Eggplant	High Bush Select	Agway	60	96
Eggplant	Ichiban	Comstock Ferre	93	94
Eggplant	Millionaire	Burpee	60	99
Endive	Full Heart NR-65	Ferry Morse	60	80
Kale	Blue Scotch	Agway	75	99
Kale	Dwarf Blue Curled	Ferry Morse	75	91
Kale	Dwarf Siberian	Hart	93	89
Kale	Vates Dwarf Blue Curled	Burpee	75	95
Kohlrabi	Early Purple	Hart	95	76*
Kohlrabi	Grand Duke	Comstock Ferre	89	82
Kohlrabi	White Vienna	Agway	75	99
Leek	American Broad Flag	New England Seed	60	85
Leek	Broad London	Burpee	60	79
Lettuce	All the Year Round	Thompson & Morgan	80	97
Lettuce	Bibb	Ferry Morse	80	98
Lettuce	Bibb	Michael Leonard	80	97
Lettuce	Black Seeded Simpson	Agway	80	95
Lettuce	Black Seeded Simpson	Greene Valley	80	93
Lettuce	Buttercrunch	Agway	80	91
Lettuce	Grand Rapids	Michael Leonard	80	61*
Lettuce	Great Lakes	New England Seed	80	98
Lettuce	Green Ice	Comstock Ferre	99	99
Lettuce	Iceberg	Plantation Products	80	98

Table 1. Germination of vegetable seeds (continued).

Plant	Variety	Seed Company	Germination	
			Claim	Found 1
Lettuce	Buttercrunch	New England Seed	80	100
Lettuce	Dapple Butterhead	Burpee	80	98
Lettuce	Grand Rapids	Hart	96	99
Lettuce	Merveille Des Quatre Saisons	Ferry Morse	80	99
Lettuce	Oak Leaf	Comstock Ferre	91	88
Lettuce	Paris White	Burpee	80	94
Lettuce	Parris Island Cos	Ferry Morse	80	99
Lettuce	Ruby	Burpee	80	100
Lettuce	Salad Bowl	Agway	80	98
Lettuce	Salad Bowl	Hart	87	98
Lettuce	Salad Bowl	Plantation Products	80	96
Muskmelon	Delicious 51	Agway	75	95
Muskmelon	Delicious 51	Comstock Ferre	93	84
Muskmelon	Delicious 51	New England Seed	75	91
Muskmelon	Hale's Best	Michael Leonard	75	95
Muskmelon	Hale's Best Jumbo	Ferry Morse	75	98
Muskmelon	Iriquois	Hart	87	94
Mustard	Tendergreen	Comstock Ferre	92	98
Onion	Evergreen Bunching	Hart	85	90
Onion	Granex	Burpee	70	87
Onion	Green Bunching	Michael Leonard	70	88
Onion	Green Scallions	Greene Valley	70	93
Onion	Hardy White Bunching	New England Seed	70	87
Onion	Long White Bunching	Agway	70	87
Onion	Spartan Banner	Agway	70	85
Onion	Sweet Sandwich	Comstock Ferre	93	95
Onion	Sweet Spanish	Agway	70	92
Onion	White Lisbon Bunching	American Seed	70	69
Onion	White Lisbon Bunching	Plantation Products	70	87
Pak choi	Lei Choi	Burpee	75	98
Parsley	Moss Curled	Greene Valley	60	82
Parsnip	All American	New England Seed	60	90
Pea	Alaska	American Seed	80	99
Pea	Dwarf Gray Sugar	Comstock Ferre	90	99
Pea	Dwarf White Sugar	Agway	80	97
Pea	Frosty	Hart	82	99
Pea	Green Arrow	Hart	83	94
Pea	Little Marvel	Ferry Morse	80	98
Pea	Little Marvel	Plantation Products	80	97
Pea	Melting Sugar	Ferry Morse	80	84
Pea	Oregon Sugar Pod II	Lake Valley	80	95
Pea	Progress No. 9	Agway	80	91
Pea	Sparkle	Comstock Ferre	92	97
Pea	Sparkle	New England Seed	80	96
Pea	Sugar Snap	Greene Valley	80	92
Pea	Sugar Snap	New England Seed	80	94

Table 1. Germination of vegetable seeds (continued).

Plant	Variety	Seed Company	Germination	
			Claim	Found 1
Pea	Sweet Snap	Michael Leonard	80	97
Pea	Thomas Laxton	Plantation Products	80	94
Pea	Sugar Bon	Burpee	80	100
Pea	Wando	Agway	80	91
Pea	Wando	Burpee	80	97
Pepper	Bell Boy	Hart	87	95
Pepper	Belle Star	Ferry Morse	55	97
Pepper	California Wonder	American Seed	55	92
Pepper	California Wonder	Burpee	55	92
Pepper	California Wonder	Comstock Ferre	90	86
Pepper	California Wonder	Plantation Products	55	92
Pepper	California Wonder	Thompson & Morgan	55	87
Pepper	California Wonder 300 TMR	Ferry Morse	55	95
Pepper	Cubanelle	Burpee	55	82
Pepper	Cubanelle	New England Seed	55	91
Pepper	Early Calwonder	Agway	55	90
Pepper	Early Calwonder	Greene Valley	55	92
Pepper	Early Calwonder	New England Seed	55	90
Pepper	Early Jalapeno	New England Seed	55	89
Pepper	Habanero	Comstock Ferre	92	92
Pepper	Hungarian Hot Wax	Burpee	55	83
Pepper	Hungarian Yellow Wax Hot	American Seed	55	65
Pepper	Jalapeno	Burpee	55	84
Pepper	Jalapeno	Hart	84	79
Pepper	Jalapeno	Plantation Products	55	83
Pepper	Jalapeno M	Ferry Morse	55	94
Pepper	Large Red Cayenne	New England Seed	55	95
Pepper	Large Red Cherry	New England Seed	55	92
Pepper	Long Slim Red Cayenne	Burpee	55	84
Pepper	Purple Beauty	Ferry Morse	55	91
Pepper	Red Cherry Hot	Hart	81	83
Pepper	Serrano Chili	Ferry Morse	55	89
Pepper	Super Cayenne	Comstock Ferre	71	75
Pepper	Super Chili	Comstock Ferre	91	90
Pepper	Surefire	Agway	55	79
Pepper	Sweet Banana	Agway	55	88
Pepper	Sweet Banana	Hart	92	93
Pumpkin	Autumn Gold	Comstock Ferre	95	98
Pumpkin	Baby Bear	Hart	87	98
Pumpkin	Baby Pam	Agway	75	100
Pumpkin	Big Max	New England Seed	75	94
Pumpkin	Connecticut Field	Hart	97	93
Pumpkin	Triple Treat	Burpee	75	96
Radish	Champion	Agway	75	98
Radish	Champion	Hart	91	97
Radish	Champion	New England Seed	75	92
Radish	Cherry Belle	Hart	94	100
Radish	Crimson Giant	Plantation Products	75	99
Radish	Crunchy Red Hybrid	Thompson & Morgan	75	96

Table 1. Germination of vegetable seeds (continued).

Plant	Variety	Seed Company	Germination	
			Claim	Found 1
Radish	Early Scarlet Globe	Comstock Ferre	92	94
Radish	Early Scarlet Globe	Greene Valley	75	98
Radish	French Breakfast	Michael Leonard	75	100
Radish	French Breakfast	New England Seed	75	93
Radish	Red Devil B	Ferry Morse	75	99
Radish	Scarlet Turnip White Globe	Michael Leonard	75	98
Radish	Sparkler White Tip	American Seed	75	100
Radish	White Icicle	Burpee	75	99
Radish	White Icicle	Greene Valley	75	97
Rutabaga	Purple Top Yellow	Burpee	75	99
Spinach	Bloomsdale Long Standing	Greene Valley	60	97
Spinach	Melody	Agway	60	85
Spinach	Melody	Comstock Ferre	91	92
Spinach	New Zealand	Hart	82	85
Spinach	Shamrock	Ferry Morse	60	96
Squash	Ambassador Zucchini	New England Seed	75	99
Squash	Aristocrat Zucchini	Comstock Ferre	95	92
Squash	Black Beauty	Lake Valley	75	83
Squash	Black Beauty Zucchini	Ferry Morse	75	94
Squash	Blue Hubbard	Hart	88	97
Squash	Buttercup	Agway	75	96
Squash	Buttercup	New England Seed	75	96
Squash	Dixie	Ferry Morse	75	98
Squash	Early Prolific Straightneck	Comstock Ferre	95	95
Squash	Early Prolific Straightneck	Ferry Morse	75	98
Squash	Early Prolific Straightneck	New England Seed	75	99
Squash	Early Summer Crookneck	Hart	87	96
Squash	Fordhook Zucchini	Burpee	75	94
Squash	Gold Slice	Agway	75	89
Squash	Goldbar	New England Seed	75	99
Squash	Milano Zucchini	Agway	75	98
Squash	Puritan Butternut	Agway	75	95
Squash	Roly Poly Zucchini	Burpee	75	93
Squash	Seneca Zucchini	Hart	95	100
Squash	Spaghetti	New England Seed	75	97
Squash	Straightneck	Hart	93	89
Squash	Table Queen	Agway	75	92
Squash	Waltham Butternut	Comstock Ferre	94	95
Squash	Zucchini, Burpee's Hybrid	Burpee	75	96
Swiss chard	Fordhook Giant	Agway	65	86
Swiss chard	Fordhook Giant	Comstock Ferre	91	90
Swiss chard	Fordhook Giant	Hart	94	95
Swiss chard	Rhubarb	New England Seed	65	98
Tomato	Beefmaster	Ferry Morse	75	96
Tomato	Beefmaster	Hart	87	84
Tomato	Beefsteak	Plantation Products	75	84
Tomato	Better Boy	Comstock Ferre	88	81
Tomato	Burpee Big Boy	Agway	75	94

Table 1. Germination of vegetable seeds (continued).

Plant	Variety	Seed Company	Germination	
			Claim	Found 1
Tomato	Burpee's Big Boy	Burpee	75	98
Tomato	Burpee's Supersteak	Burpee	75	96
Tomato	Celebrity	Ferry Morse	75	94
Tomato	Cherry	Michael Leonard	75	96
Tomato	Delicious	Burpee	75	96
Tomato	Dusky Gold	New England Seed	75	97
Tomato	Early Girl	Plantation Products	75	81
Tomato	Fantastic	Hart	94	90
Tomato	Heinz 1370	Agway	75	96
Tomato	Husky Gold	Comstock Ferre	85	97
Tomato	Jetstar	Hart	90	96
Tomato	Jumbo Jim	Agway	75	94
Tomato	Large Red Cherry	Comstock Ferre	91	88
Tomato	Large Red Cherry	Hart	97	97
Tomato	Large Red Cherry	Plantation Products	75	97
Tomato	Patio	Ferry Morse	75	96
Tomato	Patio	New England Seed	75	93
Tomato	Red Cherry	Agway	75	91
Tomato	Roma	Comstock Ferre	93	93
Tomato	Roma VF	Agway	75	96
Tomato	Roma VF	Burpee	75	91
Tomato	Rutgers	Greene Valley	75	86
Tomato	Rutgers	Michael Leonard	75	95
Tomato	Rutgers-Select	Plantation Products	75	98
Tomato	San Marzano	Ferry Morse	75	84
Tomato	Super Marmande	Thompson & Morgan	75	93
Tomato	Super Sweet 100	Burpee	75	98
Tomato	Supersweet 100 VF	Ferry Morse	75	92
Tomato	Sweet 100	New England Seed	75	95
Turnip	Purple Top White Globe	Agway	80	97
Turnip	Purple Top White Globe	American Seed	80	99
Turnip	Purple Top White Globe	Michael Leonard	80	99
Turnip	Purple Top White Globe	Plantation Products	80	97
Turnip	Seven Top	Michael Leonard	80	100
Turnip	Tokyo Cross	Thompson & Morgan	80	96
Turnip	Yellow Globe	Hart	91	91
Watermelon	Charleston Gray	Hart	90	96
Watermelon	Sugar Baby	Comstock Ferre	99	98

1 * = does not meet label claims within allowable tolerance

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

Seed Company	Claims	% Samples in Each Compliance Category*	
		1	2
Agway	49	98	2
American Seed	12	100	0
Burpee	42	98	2
Ferry Morse	45	100	0
Comstock Ferre	38	95	5
Greene Valley	19	100	0
Hart	47	98	2
Lake Valley	10	100	0
Michael Leonard	23	96	4
New England Seed	47	100	0
Plantation Products	27	100	0
Thompson & Morgan	8	100	0

* Compliance Categories:

1= meets label claims

2= does not meet label claims within allowable tolerance

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

Vegetable	No. of Samples	Average % Germination		
		Claimed	Found	Standard #
Bean	35	77	92	75
Bean, Lima	2	70	87	70
Beet	13	71	88	65
Broccoli	6	82	91	75
Brussels sprouts	3	76	87	70
Cabbage	10	78	92	75
Carrot	19	62	84	55
Cauliflower	5	82	83	75
Celery	3	74	79	62
Chinese cabbage	3	81	98	75
Collards	3	82	92	77
Corn	25	77	97	75
Cowpea	1	75	93	75
Cucumber	29	82	98	80
Eggplant	9	70	93	60
Endive	1	60	80	60
Kale	4	80	94	75
Kohlrabi	3	86	86	75
Leek	2	60	82	60
Lettuce	21	83	95	80
Muskmelon	6	80	93	75
Mustard	1	92	98	75
Onion	11	73	87	70
Pak choi	1	75	98	75
Parsley	1	60	82	60
Parsnip	1	60	90	60
Pea	19	81	95	80
Pepper	32	63	88	55
Pumpkin	6	84	97	75
Radish	15	78	97	75
Rutabaga	1	75	99	75
Spinach	5	71	91	56
Squash	24	80	95	75
Swiss chard	4	79	92	65
Tomato	34	79	93	75
Turnip	7	82	97	80
Watermelon	2	95	97	70

Standards are provided for by the rules and regulations of the Federal Seed Act.

Table 4. Germination and purity of lawn seed.

Seed Company	Seed Mixture	Claim	Purity			Germination	
			Found	Tolerance ¹	Variance ^{1,2&3}	Claim	Found ^{2&3}
STANFORD SEED	<i>Holdridge Contractor Mix</i>						
	Kentucky Bluegrass	9.27	10.87	1.47	1.60*	80	64*
	Perennial Ryegrass	19.90				90	
	Annual Ryegrass	69.31				90	
	total ryegrass	89.21	86.75	1.66	-2.46*		96
STANFORD SEED	<i>Holdridge Custom Multi-purpose</i>						
	Kentucky Bluegrass	14.78	17.58	2.07	2.80*	85	86
	Allaire II Perennial Ryegrass	9.81				90	
	Evening Shade Perennial Ryegrass	9.80				90	
	Patriot II Perennial Ryegrass	9.80				90	
	total ryegrass	29.41	30.90	4.31	1.49		92
	Koket Chewings Fescue	14.93				90	
	Creeping Red Fescue	39.02				85	
	total fescue	53.95	50.28	3.48	-3.67*		82
BLUE SEAL FEEDS	<i>Fleming Conservation Mix</i>						
	Kentucky Bluegrass	19.74	25.73	2.57	5.99*	85	83
	Annual Ryegrass	14.73	8.11			90	
	Perennial Ryegrass	14.31	18.04			90	
	total ryegrass	29.04	26.15	4.84	-2.89		94
	Creeping Red Fescue	44.59	39.75	3.79	-4.84*	85	85
	White Clover	5.00	7.17	1.73	2.17*	85	93
BLUE SEAL FEEDS	<i>Shady Lawn Mixture</i>						
	Kentucky Bluegrass	9.85				85	
	Eclipse Kentucky Bluegrass	4.95				83	
	total Kentucky bluegrass	14.80	15.11	2.15	.31		79
	Perennial Ryegrass	14.75	14.15	4.25	-.60	90	81
	Creeping Red Fescue	38.92				90	
	Chewings Fescue	9.84				85	
	total fescue	48.76	42.44	4.66	-6.32*		77*
	Rough Bluegrass	19.40	25.49	2.57	6.09*	85	
	total bluegrass	34.20	40.60		6.40		83
AGWAY	<i>Royal Green Grass Seed Mix</i>						
	Kentucky Bluegrass	29.50				85	
	Monopoly Kentucky Bluegrass	9.87				85	
	total bluegrass	37.37	51.24	4.53	13.87*		82
	Citation II Perennial Ryegrass	26.95	22.77	5.37	-4.18	90	98
	Creeping Red Fescue	24.22				88	
	Pennlawn Red Fescue	9.73				88	
	total fescue	33.95	24.54	4.28	-9.41*		89

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

Seed Company	Seed Mixture	Claim	Found	Purity			Germination	
				Tolerance ¹	Variance ^{1,2&3}	Claim	Found ^{2&3}	
AGWAY	<i>Wear Green Grass Seed Mix</i>							
	Kentucky Bluegrass	9.74	12.94	1.47	3.20*	85	83	
	Derby Perennial Ryegrass	19.66	20.34	3.45	.68	90	97	
	Creeping Red Fescue	9.75	11.01	2.19	1.26	88	95	
	Cochise Tall Fescue	19.65				88		
	Arid Tall Fescue	19.64				88		
	Chieftain Tall Fescue	19.34				88		
	total tall fescue	58.63	54.10	3.83	-4.53*		81	
AGWAY	<i>Landscaper's Mixture</i>							
	Kentucky Bluegrass	30.29	35.65	3.51	5.63*	80	76	
	Perennial Ryegrass	33.09	29.07	4.88	-4.02	90	92	
	Creeping Red Fescue	32.05	29.69	4.31	-2.36	88	91	
HALSEY SEED	<i>Halsey Conservation Mix</i>							
	Kentucky Bluegrass	8.99	12.52	1.50	3.53*	80	56*	
	Linn Perennial Ryegrass	11.87	19.34			90		
	Annual Ryegrass	14.87	7.35			90		
	total ryegrass	26.74	26.69	4.25	-.05		93	
	Fine Fescue	34.31	33.06	3.29	-1.25	85	80	
	Fawn Tall Fescue	24.64	20.98	4.12	-3.66	85	93	
	NZ White Clover	2.99	4.84	1.06	1.85*	84	95	
HALSEY SEED	<i>Halsey Conservation II Mix</i>							
	Linn Perennial Ryegrass	11.83	21.19			90		
	Annual Ryegrass	19.82	11.78			90		
	total ryegrass	31.65	32.97	3.78	1.32		91	
	Creeping Red Fescue	29.10	29.87	2.99	.77	85	80	
	Fawn Tall Fescue	34.48	29.39	3.78	-4.61*	85	94	
	Dutch White Clover	2.98	4.37	0.90	1.39*	84	90	
HALSEY SEED	<i>Halsey Landscape 85 Mix</i>							
	Kentucky Bluegrass	17.89	23.48	2.62	5.59*	80	52*	
	Dimension Perennial Ryegrass	24.27	29.69			90		
	Annual Ryegrass	14.60	8.28			90		
	total ryegrass	38.87	37.97	4.86	-.90		95	
	Creeping Red Fescue	24.26				85		
	Chewings Fescue	14.69				85		
	total fescue	38.95	36.58	3.81	-2.37		91	
NEW ENGLAND SEED	<i>N E Athletic Mix</i>							
	Perennial Ryegrass	14.93	12.49	2.36	-2.44*	85	94	
	Creeping Red Fescue	38.88	38.47	3.79	-.41	85	86	
	Tall Fescue	44.73	47.66	3.81	2.93	85	95	

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

Seed Company	Seed Mixture	Claim	Found	Purity	Variance ^{1,2&3}	Germination	
				Tolerance ¹		Claim	Found ^{2&3}
NEW ENGLAND SEED	<i>Connecticut Turf Mix</i>						
	Kentucky Bluegrass	9.97	10.60	1.47	.63	80	90
	Perennial Ryegrass	34.83	35.77			90	
	Annual Ryegrass	34.35	32.53			90	
	total ryegrass	69.18	68.30	3.34	-.88		93
	Creeping Red Fescue	19.44	19.54	3.04	.10	85	91
NEW ENGLAND SEED	<i>CT Premium Lawn Mix</i>						
	Kentucky Bluegrass	26.36	34.38	3.34	8.02*	80	79
	Manhattan II E Perennial Ryegrass	19.80	19.35	2.41	-.45	90	98
	Pennlawn Red Fescue	49.39	42.47	4.17	-6.90*	90	81
NEW ENGLAND SEED	<i>University R.I., no. 2</i>						
	Nassau Kentucky Bluegrass	19.91				85	
	98 Kentucky Bluegrass	19.85				85	
	total bluegrass	39.76	48.04	4.19	8.28*		86
	Manhattan II Perennial Ryegrass	19.57	18.02	2.76	-1.55	90	97
	Creeping Red Fescue	39.36	32.54	3.46	-6.82*	85	84
SEEDWAY, INC.	<i>Eastland Treeline Shade Mix</i>						
	Kentucky Bluegrass	8.83	11.58	1.50	2.75*	80	70
	Fiesta II Perennial Ryegrass	44.18	40.78	4.17	-3.40	90	94
	Creeping Red Fescue	44.12	45.53	3.48	1.41	85	84

1 Calculated according to rules for seed testing published by the Association of Official Seed Analysts (AOSA).

2 Results for seeds which were separated by genus and not by species or by variety are reported as the sum for that genus.

3 * = does not meet label claims within allowable tolerance



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