

South Dakota State University
**Open PRAIRIE: Open Public Research Access Institutional
Repository and Information Exchange**

Bulletins

South Dakota State University Agricultural
Experiment Station

2-1905

Co-Operative Vegetable Tests in 1904

N.E. Hansen

South Dakota Agricultural College

V.P. Fulkerson

South Dakota Agricultural College

E.G. Sanderson

South Dakota Agricultural College

Follow this and additional works at: http://openprairie.sdstate.edu/agexperimentsta_bulletins

Recommended Citation

Hansen, N.E.; Fulkerson, V.P.; and Sanderson, E.G., "Co-Operative Vegetable Tests in 1904" (1905). *Bulletins*. Paper 91.
http://openprairie.sdstate.edu/agexperimentsta_bulletins/91

This Bulletin is brought to you for free and open access by the South Dakota State University Agricultural Experiment Station at Open PRAIRIE: Open Public Research Access Institutional Repository and Information Exchange. It has been accepted for inclusion in Bulletins by an authorized administrator of Open PRAIRIE: Open Public Research Access Institutional Repository and Information Exchange. For more information, please contact michael.biondo@sdstate.edu.

SOUTH DAKOTA
AGRICULTURAL COLLEGE

EXPERIMENT STATION

BROOKINGS, SOUTH DAKOTA

CO-OPERATIVE VEGETABLE TESTS IN 1904

Peas, Beans, Sweet Corn, Cabbage.

DEPARTMENT OF HORTICULTURE.

GOVERNING BOARD

BOARD OF REGENTS

Hon. I. W. Goodner, President	Pierre, S. D.
Hon. F. A. Spafford	Flandreau, S. D.
Hon. R. M. Slocum	Herreid, S. D.
Hon. A. W. Burtt	Huron, S. D.
Hon. M. F. Greeley	Gary, S. D.
Hon. I. D. Aldrich (Secretary of Regents)	Big Stone, S. D.

STATION COUNCIL

R. M. Slocum	Regent Member
F. A. Spafford	Regent Member
James Chalmers, President of the College.	
James W. Wilson, Director and Professor of Animal Husbandry.	
E. C. Chilcott, Vice-Director	Agronomist
James H. Shepard	Chemist
N. E. Hansen	Horticulturist
W. A. Wheeler	Botanist and Entomologist
E. L. Moore	Veterinarian and Zoologist
R. A. Larson	Secretary and Accountant

ASSISTANTS

A. B. Holm	Soil Physics
H. G. Skinner	Animal Husbandry
Frank Norton	Chemistry
William West	Agronomy
Adolph Morlock	Horticulture
T. B. Kelly	Stenographer

Any farmer of the state can have the Bulletins of this Station free upon application to the Director.

CO-OPERATIVE TESTS IN 1904

OF

Peas, Beans, Sweet Corn and Cabbage.

N. E. HANSEN VINCENT FULKERSON EVERETT G. SANDERSON

In the spring of 1903 a variety test of over 800 varieties of vegetables was undertaken for and in co-operation with the United States Department of Agriculture. W. W. Tracy, Sr., of the Division of Seed and Plant Introduction of the Bureau of Plant Industry, was sent by the Department to several states where this co-operative work is carried on, and visited this Station in the spring of 1903 to complete the preliminary arrangements. The United States Department of Agriculture furnished the seeds and paid for the labor. The land and superintendence were furnished by this Station. In 1903 a hail-storm on July 15 destroyed the plants so that no satisfactory results were obtained except with the earliest garden peas, which were reported in Bulletin 84.

In 1904 the tests were confined to peas, beans, sweet corn and cabbage and the list of varieties changed to some extent. The notes were taken upon special blanks furnished by the Department of Agriculture, but the following tables include only a small part of the notes taken. Only those points deemed of special interest to the general public at this stage of the investigation are included. The results of this co-operative work in several states, representing the various parts of the country, will be published in due season by the Department of Agriculture. One of the objects of this very thorough system of note-

taking, embracing many points of botanical interest, is the compilation of definite technical descriptions of all the leading varieties of garden vegetables. The following notes are understood to be a brief survey of the facts deemed most essential for the planter at this time. It is, of course, understood that results of one season only are not to be considered as final proof of the real value of the variety. Varieties vary widely in their adaptation to varied localities and soils.

The season was favorable. The soil was a rich, black, somewhat sandy loam, underlaid at about two feet with boulder clay. The planting and field cultivation were conducted under the direction of the Horticulturist by Charles Haralson. All the field notes and cooking tests are by Vincent Fulkerson and Everett G. Sanderson; Mr. Fulkerson also compiled the tables and selected the varieties named in the general notes.

PEAS.

Trial Number	VARIETY AND SEEDSMAN	p-Pure stock ; m-mixed stock s m-slightly mixed stock	Height of Vine in Inches	Days to First Picking	AVERAGE OF TEN PLANTS			Shape of Pod—s-Stout v s-very stout ; m-medium ; sl-slender	Size of Pea—l-Large ; m-Medium s-small ; v l-Very large ; v s-very small	Shape of Pea— o-Oval ; r-round ; f-Flattened	COOKING TESTS					
					Number of Pods on Vine	Number of Peas per Pod	Average length of Pods—inches				Time required for cooking	Color	Sweetness	Flavor	Juiciness	Hardness
316	Admiral, Ferry.....	p	40	65	8.8	7	2.8	sl	s	o	m	m	m	m	m	s
149	Alaska, Ferry.....	p	22	53	6.8	6.5	2.7	m	s	r	m	m	t	p	d	h
246	Alderman, Burpee.....	p	48	65	10	8	4.1	s	l	o	m	g	m	g	m	m
102	Allan's Dwarf Telephone, Allan....	m	34	67	10.5	7.1	4	s	l	o	q	m	m	g	j	s
37	Allan's No. 7, Allan.....	p	17	62	13	5.2	3.7	m	l	r	m	m	m	p	m	m
12	American Wonder, Ferry.....	s m	17	56	8.6	6	3	m	m	o	m	g	s	g	j	s
117	Anticipation, Carter.....	p	24	72	12.5	6	3.6	s	l	o	q	m	s	m	m	v s
275	Aristocrat, Sharpe.....	p	28	70	18.5	7	4	s	l	o	m	m	s	m	m	m
135	Bliss Everbearing, Keeney.....	p	31	67	17.6	3.6	2.7	m	l	o	q	p	m	m	m	s
77	Blue Beauty, Thorburn.....	p	22	56	11.2	5.5	3	m	m	o	m	g	t	m	d	s
145	Boston Unrivalled, Dennison.....	p	50	63	10	6.5	4.1	m	m	r	q	m	m	g	v j	v s
194	Breck's Excelsior, Breck.....	m	25	53	10.2	6	2.7	m	m	o	m	m	v t	v p	v d	h
90	Breck's New Life, Breck.....	m	35	72	20.5	6.3	3.7	m	l	o	m	p	m	m	m	m
48	British Wonder, Squier.....	p	20	63	21	5	3.2	m	m	o	q	v g	m	m	j	s
317	Canning, Keeney.....	p	32	65	18.5	5.1	3.1	sl	s	o	q	m	m	m	m	m
127	Capt. Cuttle, Hurst.....	p	34	72	21.2	6	3.8	m	l	o	m	g	m	m	m	m
235	Carter's Battleship, Carter.....	p	50	66	13	5	3.6	s	l	o	q	p	m	m	m	m
101	Carter's Daisy, Carter.....	p	22	66	16.4	7.5	4	s	m	o	q	m	s	g	j	s
191	Carter's Early Morn, Carter.....	p	33	65	10.9	8.1	4.1	m	l	o	q	m	s	m	m	s

PEAS—Continued.

Trial Number	VARIETY AND SEEDSMAN	p—Pure stock; m—Mixed stock s—Slightly mixed stock	Height of Vine in Inches	Days to First Picking	AVERAGE OF TEN PLANTS			Shape of Pod—s—Stout v—s—Very stout; m—Medium; sl—slender	Size of Pea—l—Large; v—l—Very large m—Medium; s—small; v—s—Very small	Shape of Pea—o—oval; r—round fl—flattened	COOKING TESTS					
					Number of Pods on Vine	Number of Peas per Pod	Average length of Pods— inches				Time required for cooking	Color	Sweetness	Flavor	Juiciness	Hardness
237	Carter's Telephone, Carter	p	45	63	5	6.3	4.3	m	l	o	q	m	m	m	m	s
303	Champion of England, Ferry	p	60	68	12.8	7	3.2	m	o	m	m	m	m	m	j	s
70	Chelsea Gem, Johnson	p	18	56	8.2	6	3.3	m	m	r	m	m	t	m	m	m
72	Chelsea Gem, Hurst	p	19	57	9.6	6	3.2	sl	m	o	m	p	t	m	m	m
125	Dr. McLean Improved, Sutton	p	32	70	19.5	6.5	4	m	l	r	m	p	m	m	m	m
261	Duke of Albany Selected, Sutton	p	48	65	8.2	6	4	s	l	o	q	g	m	m	m	s
341	Dwarf Grey Sugar, Rogers Bros.	p	36	65	10.7	6.7	2.8	sl	v—s	r	s	v—p	v—t	v—p	v—d	h
213	Early Bountiful, Sutton	p	26	65	6.5	8	3.7	m	s	r	s	p	t	p	v	m
76	Early Prize, Gregory	p	24	57	12.3	6	3	m	m	o	m	m	v—t	v—p	d	h
119	Edward the Seventh, Johnson	p	22	65	13.2	5.5	3.6	m	l	o	q	g	m	g	m	s
44	English Wonder, Burpee	p	18	62	25.5	6.5	3.1	sl	m	o	m	g	m	g	m	m
221	Extra Early Alpha Improved, Ferry	p	28	53	6	5	2.7	m	s	r	m	m	m	g	m	m
156	Extra Early, Ferry	p	24	53	9	7	2.7	m	m	o	s	t	p	d	m	m
217	Fillbasket, Moore & Simon	s—m	50	65	9	7	4.1	s	l	o	m	g	t	m	d	m
172	First and Best, Squier	p	24	53	8.4	6.5	2.7	m	m	o	m	m	v—t	v—p	v—d	h
169	First of All, Thorburn	p	24	53	8.2	6	2.7	m	m	o	m	m	t	p	v—d	h
307	Forty Fold Selected, Sutton	p	54	77	20.5	7	3.5	m	m	o	m	p	s	m	j	m
319	Glory, Keeney	p	40	65	20	7	3	sl	s	o	m	m	m	p	m	m
9 ₈	Harbinger, Hurst	p	13	55	8.2	6	3	s	m	o	m	m	s	m	m	m

94	Heroine, Henderson	p	30	70	18	6.7	4.2	m	l	o	q	p	m	m	m	s
143	Horsford's Market Garden, Keeney	p	33	66	16.9	4.5	3	s	s	o	m	p	m	p	m	s
328	Improved Sugar Marrow, Ferry	p	60	67	8	7.7	3.5	m	l	r	q	m	t	m	m	s
95	Johnson's Magnificent, Johnson	p	28	67	12.5	7.3	3.5	m	m	o	q	m	s	g	j	s
98	Juno, Henderson	p	30	72	2.1	5.6	3.6	s	l	o	m	g	s	m	m	s
165	Kalvedonian, Hurst	p	45	66	4.8	6.2	3.7	s	m	o	m	m	m	m	m	m
166	Kalvedonian, Burpee	p	45	66	7.6	6.2	3.5	s	m	o	m	m	m	m	m	m
211	Large Podded Alaska, Johnson & Stokes	p	35	57	6.5	6	3.5	m	m	o	m	m	m	m	m	s
330	Large White Marrowfat, Thorburn	p	66	72	15.2	5.6	3	m	s	o	m	p	t	p	d	m
342	Mammoth Podded Sugar, Keeney	p	60	65	8	6	4.7	v s	s	r	q	v p	t	v p	v d	m
111	Market Master, Johnson & Stokes	p	23	72	14.4	8	3.8	s	m	o	q	m	t	m	d	m
91	Masterpiece, Sutton	p	33	72	14.5	5.2	4.2	s	l	o	q	g	m	g	m	s
92	Masterpiece, Holmes	p	25	55	5.2	7	4	m	l	o	m	v g	m	g	m	s
229	McLean's Advancer	p	25	62	8	5	3	m	m	o	m	p	m	m	m	m
55	McLean's Little Gem, Thorburn	m	29	65	2.5	6.5	2.8	sl	s	o	m	p	m	p	m	m
311	Ne Plus Ultra, Reselected, Carter	p	48	72	14.6	6.5	3.2	s	l	o	q	g	s	m	j	v s
13	Nott's Excelsior, Ferry	p	14	55	6.5	6.7	3	m	l	o	m	m	f	m	m	m
130	Perpetual, Maule	p	30	74	...	4.2	3.1	m	m	o	v q	p	s	g	j	v s
116	Phonograph, Landreth	p	54	63	10	7.5	3.5	m	s	r	m	p	t	p	d	m
23	Piermont Gem, C. T. & Co.	p	13	63	9.4	4.1	3.2	s	m	r	m	g	s	m	m	m
51	Premium Gem, Ferry	p	19	58	11.3	6.5	3	m	m	o	m	m	t	m	m	m
87	Pride of the Market, Ferry	p	24	66	9.2	7.6	3.7	s	m	o	q	g	t	p	d	s
247	Prodigious, Maule	p	66	65	12.6	7	4	s	l	r	m	m	m	m	m	s
118	Productive Marrowfat, Hurst	p	22	66	15.6	5	3.7	m	l	o	m	p	m	m	d	m
134	Quality, Burpee	p	26	61	21	4	2.5	m	m	o	m	m	m	g	m	m
283	St. Duffer's, Hurst	m	32	70	7.8	7.5	4	m	m	o	m	m	m	m	m	m
65	Scotch Champion, Moore & Simon	p	40	65	11	6	4	s	m	r	q	g	m	g	m	s
197	Senator Improved, Burpee	p	38	63	18.2	7	4	m	l	o	m	m	s	g	m	s
113	Sensation, Mitchell	p	23	66	9.2	8	4.2	s	l	r	m	m	m	g	m	s
205	Sharpe's Improved Monarch, Sharpe	p	40	68	4.2	7	4	s	l	o	m	g	s	m	m	m
21	The Sherwood, C. T. & Co.	p	21	65	19	6.2	3.5	m	l	o	m	g	s	m	m	m
271	Shropshire Hero, Ferry	no stand														
84	Stratagem, Thorburn	p	28	66	12.5	7	4	s	m	o	q	m	s	m	j	s
85	Stratagem Selected, Dobbie	p	28	66	12.6	7.5	4	s	l	o	q	m	s	g	j	s
69	Sutton's Dwarf Defiance, Sutton	p	27	65	25	8.3	4.1	m	m	r	q	g	m	m	j	s
28	Sutton's Excelsior, Dennison	p	18	62	14	6	3.5	m	l	r	m	m	s	g	m	m

PEAS—Continued.

Trial Number	VARIETY AND SEEDSMAN	p—Pure stock ; m—Mixed stock s—Slightly mixed stock	Height of Vine in Inches	Days to First Picking	AVERAGE OF TEN PLANTS			Shape of Pod—s—Stout v s—Very stout ; m—Medium ; sl—slender	Size of Pea—l—Large ; v l—Very large m—Medium ; s—Small ; v s—Very small	Shape of Pea— o—oval ; r—Round ; fl—Flattened	COOKING TESTS					
					Number of Pods on Vine	Number of Peas per Pod	Average length of Pods—inches				Time required for cooking	Color	Sweetness	Flavor	Juiciness	Hardness
190	Sutton's Early Giant, Hurst.	p	30	61	9	6.7	4	m	l	o	q	g	m	g	j	s
29	Sutton's Favorite Marrowfat, Hurst	p	22	65	20	6	3.2	s	m	o	m	g	m	p	d	m
3	Sutton's Forcing, Hurst	p	12	56	4.2	5	3.5	m	l	fl	m	m	m	m	m	s
2	Sutton's Forcing, Keeney.	p	12	56	4.2	5	3.5	m	l	fl	m	m	m	m	m	s
185	Sutton's Ideal, Sutton.	p	22	54	7.2	5	3.2	s	l	o	m	g	m	m	j	m
79	Sutton's Lord Roberts, Sutton.	p	25	66	11.6	6	3.8	s	l	o	q	g	s	g	m	s
195	Sutton's May Queen, Sutton.	p	26	54	5	5	3.2	s	l	r	q	m	s	g	j	s
196	May Queen, Ferry	p	26	54	9.2	5.5	3.2	s	l	o	q	m	m	g	j	s
267	Sutton's Prince of Peas, Sutton.	p	56	65	10.5	5.5	3.5	s	l	o	m	m	s	m	m	s
107	Sutton's Satisfaction, Johnson & Stokes.	p	30	72	25.8	3.6	3.1	m	l	o	q	m	s	g	m	s
6	Sutton's Seedling Marrowfat, Hurst	p	18	62	10.3	4.5	3.5	s	v l	o	m	p	m	m	m	m
8	Sutton's Seedling Marrowfat, Sutton	p	15	62	19.4	4	3.5	s	l	o	m	p	m	g	j	m
84	Stratagem, Thorburn	p	28	66	12.5	7	4	s	m	o	q	m	s	m	j	s
85	Stratagem Selected, Dobbie.	p	28	66	12.6	7.5	4	s	l	o	g	m	s	g	j	s
233	Telephone, Morrison.	p	30	61	8.6	5	3.7	s	l	o	m	g	s	g	d	m
249	Telegraph Selected, Sutton.	p	60	65	8	6.2	4.2	s	l	r	m	g	t	p	d	m
205	Thomas Laxton, Sutton.	p	35	57	5.8	7	3.5	m	l	r	m	g	s	m	m	s

200	Thorburn's Extra Early Market, Thorburn.....	p	26	60	7.5	7	3	m	m	o	s	g	t	p	d	m
132	Vaughan's Sweet Market, Vaughan	p	30	74	13.9	4	3.2	sl	m	r	q	p	m	m	j	s
219	William the First Improved, Sutton	m	26	55	13	6	3	m	m	r	s	g	t	p	d	h
68	Wm. Hurst, Hurst.....	p	13	57	7	5	3.2	m	l	o	q	m	t	p	d	s
26	Witham Wonder, C. T. & Co.....	p	18	61	15.5	7.6	3.5	sl	m	o	m	v g	m	m	j	s

GENERAL NOTES ON PEAS.

FIRST EARLY.

Alaska, Extra Early, First of All, First and Best, Breck's Excelsior, were the earliest peas, and appeared to be nearly or quite identical; the pods were small, quality not good, but vines healthy and productive; height 18 to 24 inches. Extra Early Alpha Improved was much the same, but the vines were slightly taller, and the peas of good quality.

Of better quality and not more than two days later were, Masterpiece, from Holmes, Sutton's Ideal and Sutton's May Queen. The latter was of especially good quality. Sutton's Forcing and Harbinger were dwarf varieties of about the same season; quality good; the whole crop maturing at one time.

The American Wonder is a fine early pea, especially desirable for home use owing to its long season.

Blue Beauty is of standard height but lacks in quality.

SECOND EARLY.

First in this class as to earliness were William Hurst, a distinct, rather dwarf, slender stemmed and small leaved variety of only fair quality, and Premium Gem, a semi-dwarf. Chelsea Gem and Early Prize were not of the best quality. Thomas Laxton and Large Podded Alaska are rather tall, pods of good size, well filled, and quality good, especially Thomas Laxton; not especially prolific.

Witham Wonder and Sutton's Excelsior are semi-dwarf with medium sized, well filled pods; quality good. Piermont Gem is a dwarf variety, pods not so well filled; quality good. Telephone has rather large pods, height standard to rather tall, not very prolific, quality good. Boston Unrivalled is a very large podded pea, tall in vine; quality very good.

MID-SEASON.

Good varieties less than two feet in height are the Sherwood, British Wonder, and Sutton's Favorite Marrowfat; the first two of good quality. McLean's Little Gem from Thorburn is tall in vine; lacks in quality. Sutton's Dwarf Defiance is productive, pods large and well filled; height 27 inches; quality good.

Stratagem, Stratagem Selected and Sutton's Lord Roberts

are of good quality; pods large. Pride of the Market is nearly the same but poorer in quality. Carter's Daisy and Sensation are of good quality, pods very large and well filled. Allen's Dwarf Telephone is of the same class but slightly taller in vine.

Among the tallest varieties of good quality of this season are Bliss Everbearing, Admiral, Kalvedonian, Carter's Early Morn and Canning. The tallest of this season need trellis or other support for best results, being too tall and rank for windy places. Among these are the following: Scotch Champion, Carter's Battleship, Alderman, Prodigious, Telegraph Selected, Duke of Albany Selected, Sutton's Prince of Peas, Improved Sugar Marrow.

LATE.

Breck's New Life, Masterpiece, Anticipation (Carter's), Dr. McLean's Improved, Captain Cuttle, Aristocrat, St. Duther's and Johnson's Magnificent are medium tall. Very tall kinds are Sharpe's Improved Monarch, Champion of England, Ne Plus Ultra. The latest kinds are Perpetual and Forty Fold Selected.

A SHORT LIST FOR GENERAL USE.

EARLY.

Most of the earliest peas are practically the same. Extra Early Alpha appeared to be the best in quality. Following these are May Queen and American Wonder. American Wonder is longer in season. Harbinger and Sutton's Forcing are good for early market.

SECOND EARLY.

Thomas Laxton; the Piermont Gem a good dwarf; Witham Wonder a semi-dwarf. English Wonder is good and prolific.

MID-SEASON.

Sherwood or British Wonder. Sutton's Dwarf Defiance good as a taller variety.

LATE.

Perhaps, Johnson's Magnificent or Perpetual for very late. For a trellis pea, Forty Fold or Ne Plus Ultra, Reselected.

BUSH BEANS.

Trial Number	VARIETY AND SEEDSMAN	Days to Bloom		Quality as Green Snaps	Days to Ripeness		Average Number Beans per plant
		Days to Bloom	Days to Edible Maturity		Days to Ripeness	Number to Ounce	
11	Best of All, Keeney	46	61	fair	110	88	82
202	Bismarck Black Wax, Thorburn	45	49	poor	99	89	82
149	Black Bear (from Brazil)	58	72	poor	118	168	198
210	Black Wax, Pencil Pod, Keeney	45	59	fair	109	69	48
55	Bur Stringless Green Pod, Keeney	42	58	fair	109	70	25
57	Dwarf, Childs	53	68	fair	114	83	95
74	Canadian Wonder, Fish	47	62	fair	118	47	53
77	Carter's Canadian R's Glory, Carter	42	58	fair	116	...	76
193	Davis White Wax, Keeney	43	58	fair	104	84	60
2	Dwarf Horticultural, Burpee	44	58	fair	109	59	35
15	Early Mohawk, Keeney	42	58	fair	109	60	55
58	Everbearing, Dennison	50	69	fair	114	103	95
99	Evergreen Stringless Green Pod, Jones	42	52	good	110	81	92
41	Extra Early Red Valentine, Keeney	46	58	fair	107	97	37
62	Extra Early Refugee, Ferry	42	58	fair	99	105	64
105	Extra Early Yellow, V-A	50	65	poor	117	90	81
21	Dwarf Emperor of Russia, V-A	44	58	fair	107	94	74
95	Flageolet (Long White Canterbury), V-A	44	60	fair	109	110	65
83	French Forcing, Hurst	46	62	poor	116	75	67
97	Garden Pride (stringless green pod), Jones	42	56	good	99	89	57
176	Golden Wax, McClure	43	58	fair	109	72	73
91	Green Seeded Bagnolet, V-A	50	63	poor	109	138	68
59	Grenell's Stringless Green Pod, Grenell	45	58	fair	99	83	25
229	Golden Crown Wax, Jones	42	57	good	104	90	71
84	Hurst's Everbearing Dwarf French, Hurst	42	60	poor	111	120	76
237	Hodson Wax, Young & Halstead	58	72	fair	114	76	79
69	Improved Goddard, Ferry	46	60	fair	110	46	45
233	Jones String Wax, Jones	44	58	fair	104	102	92
217	Keeney's Rustless Golden Wax, Keeney	44	61	good	108	...	80
18	Long Yellow (six weeks), Thorburn	44	58	fair	109	69	60
235	Market Wax, Henderson	44	58	good	106	81	56
251	Perfection Wax, Fisk	44	58	fair	108	...	29
254	Phaseolus Viridissimus, from Arabia	73	118	.....	.....	.....	.....
198	Prolific German Wax, (black seeded), Keeney	46	60	fair	106	111	94
250	Purple Flageolet Wax, Keeney	44	58	fair	108	70	23
42	Red Valentine, Dibble	46	60	fair	108	93	86
8	Red Eyed China, Keeney	42	58	fair	109	68	32
64	Refugee 1,000 to 1, Ferry	53	69	fair	112	96	72
65	Round Pod Refugee, Keeney	53	69	good	116	95	99
68	Refugee Galega, Thorburn	58	70	fair	116	81	115
239	Rogers' Lima Wax (Ripened after September 16), Rogers	52	63	good	107	124	81
227	Round Pod Kidney, Keeney	44	58	good	109	91	68
22	Round Yellow (six weeks), Keeney	44	58	fair	108	82	98
118	Salzer's New Yankee Winter, Salzer	60	70	fair	117	150	80
81	Selected Ne Plus Ultra, Sutton	42	56	poor	116	72	51
27	Sutton's Plentiful, Sutton	42	58	good	107	70	48
230	String Round Pod Yellow Pod, Jones	46	57	good	109	113	81

GENERAL NOTES ON BUSH BEANS.

The earliest varieties of bush beans came to edible maturity as string beans in fifty-eight days. Among the earliest varieties it was difficult to choose, as so many were desirable. The Long Yellow Six Weeks and the Round Yellow Six Weeks were among the most prolific. Sutton's Plentiful was less productive but of better quality.

In the cooking tests the green pod beans were compared with others of their same class only; the wax beans were cooked by themselves; hence, the quality given in the table is relative rather than absolute, although the committee thought the wax beans as a class were better than the green podded varieties.

Among the best and earliest wax beans were the Yosemite Wax, Round Pod Kidney Wax and Market Wax; in productiveness they differed little from those of the same season of green podded varieties.

Of the later green podded varieties, the Canadian Wonder was very prolific; Round Pod Refugee was a week later and of better quality. Rogers' Lima Wax was a good late wax bean; later and more prolific was the Hodson Wax.

Twelve varieties of Mexican beans were tested. These proved to be rank-growing rather small leaved sorts that began to bloom just before frost came. Their season would need to be shortened by selection before they will be of value in this latitude.

As to size of bean, the largest among the varieties that ripened was the Tall Sioux, running 48 to the ounce. Of bush beans the largest was Dwarf Horticultural, 59 to the ounce, and the smallest Black Bear, 168 to the ounce.

POLE BEANS

Trial Number	VARIETY AND SEEDSMAN	Days to Bloom	Days to Edible Maturity	Quality as Green Snaps	Days to Ripeness	Number to Ounce	Average Number Beans per Plant
389	Andalusian Wax Pole, Johnson & Stokes	60	78	good	†	....	31
409	Best of All Runner, Sutton	46	86	....	†	....	43
363	Cambria Tall Butter Skinless, Vilmorin	55	75	good	*	63	103
327	Carter's Ten Weeks, Carter	47	65	poor	*	90	60
337	Cut Short, McClure	58	76	fair	†	....	68
338	Cut Short, Fish	60	76	fair	†	....	64
330	Dutch Case Knife Pole, McClure	62	88	fair	†	....	50
357	German Black Wax Pole, Dennison	53	75	v'y g'd	†	....	95
390	Golden Champion Wax, McClure	57	69	good	110	....	73
396	Golden Cluster Wax, McClure	61	87	good	†	....	30
311	Heinemann's Fillbasket, Heinemann	55	70	poor	*	71	50
369	Kentucky Wonder Wax, Gregory	56	75	good	119	77	96
366	Kentucky Wonder, McClure	57	71	fair	120	76	85
368	Kentucky Wonder Pole, Grenell	58	71	poor	119	72	125
333	Lazy White Pole, Ferry	60	90	poor	†	....	36
347	Mammoth Podded Horticultural, Fish	59	74	fair	†	65	35
401	Matchess, Dobbie	46	64	poor	†	....	18
373	Noxall New Prolific G. P. Pole, Maule	50	60	fair	108	74	92
315	Royal Corn, Livingston	70	93	good	†	....	32
376	Southern Prolific, Fish	46	75	....	†	....	....
377	Southern Prolific, McClure	46	75	....	†	....	....
325	Sutton's Earliest of All, Sutton	55	63	fair	107	132	97
405	Sutton's Mammoth White Runner, Sutton	42	64	poor	†	....	16
317	Tall Sioux, Field	58	72	fair	*	48	62
375	Tennessee Wonder, Ferry	46	68	good	72	78	63
380	White Wonder, Fish	61	100	poor	†	....	....
349	Worcester Pole, Rawson	60	78	fair	†	....	33

*Ripened but required over 120 days.

†Frozen on September 21 before being all ripe.

N. B.—311 probably not pole. 325, 327, 375, 401, 405 not distinctly pole varieties.

GENERAL NOTES ON POLE BEANS.

Of the pole beans many were too late to ripen. German Black Wax Pole was very good as a string bean but did not ripen. Cambria Tall Butter Skinless, Kentucky Wonder Wax and Tennessee Wonder were the best in quality of those that ripened. The Best of All Runner was ornamental as well as useful with its scarlet flowers and extra large beans.

LIMA BEANS.

Trial Number	VARIETY AND SEEDSMAN	Days to Bloom	Days to Edible Maturity	Average Number Beans per Plant	Size of Bean	Quality
255	Burpee's Bush Lima, Burpee.....	58	117	53	very large	very good
257	Bush Butter Lima, Moore & Simon.	58	112	71	medium	fair
302	Challenger Lima, Fish.....	60	116	97	large	good
283	Extra Early Jersey Lima, Johnson & Stokes.....	60	119	63	large	very good
295	Ford's Mammoth Lima, Johnson & Stokes.....	58	118	74	very large	good
264	Henderson's Bush, Fish.....	53	116	61	medium	fair
306	Horticultural Lima, Currie Bros....	47	85	49	large	poor
289	Improved Pole Lima, Wood & Sons	67	118	92	medium	good
296	King of the Garden, Fish.....	60	116	84	large	good
260	St. Louis Seed Co's. Imp. Bush Lima, St. Louis Seed Co.....	60	116	55	medium	good
262	Salzer's Bush Lima, Salzer Seed Co.	64	119	77	medium	good
284	Seiberts' Early Lima, Livingston....	60	115	61	large	good
286	Seiberts' Lima, Fish.....	59	114	67	medium	fair
291	Shotwell's Imp. Thick Lima, Johnson & Stokes.....	60	116	47	large	very good
271	Small White Lima, Fish.....	60	116	115	medium	fair
275	Tucker's Delight, Holmes.....	58	118	60	large	good
261	Tucker's Prolific, Texas Seed Co....	60	118	65	medium	good
281	Wilkie's Prize Lima, Moore & Simon	59	114	89	large	good
259	Willow Leaf Lima, May.....	64	114	...	medium	fair
273	Willow Leaf Lima, Stickler.....	65	119	84	medium	fair

GENERAL NOTES ON LIMA BEANS.

The tests this season confirmed the results of former trials, that most Lima Beans are too late for this region. Bush Butter Lima, by Moore & Simon, came to edible maturity about two days earlier than the others, but was not of the best quality. Shotwell's Improved Thick Lima was of very good quality. The other kinds equally as good were from one to five days later. The most prolific were Small White Lima, Wilkie's Prize Lima, Improved Pole Lima, and Challenger Lima. No great range of variation was apparent among the Limas, except the Horticultural Lima, which was nearly a month earlier, but scarcely a Lima at all in quality.

SWEET CORN.

Trial Number	VARIETY AND SEEDSMAN	Height in Feet			Days to Edible Maturity	Days to Ripeness	COOKING TEST
		Average Number of Ears per Stalk	Average Length of Ears in Inches	Quality as Green Corn			
86	Best of All, H. W. Buckbee.....	5.5	2.2	7.25	99	*	.....
156	Black Mexican, A. N. Clark.....	5.5	1.8	7	109	*	good
157	Black Mexican, Rice & Co.....	5.5	1.9	8.3	105	*	good
240	Buck Mountain, Moore & Simon.....	5.3	1	8.2	101	*	fair
54	Champion, A. N. Clark.....	5.7	1.2	7	105	*	.....
200	Clark's Early Evergreen, C. B. Clark.....	6.5	1.2	8.5	107	*	.....
48	Cosmopolitan, C. B. Clark.....	5	1.3	6.75	101	*	fair
230	Country Gentleman, Comstock, Ferre & Co.....	5.6	1.2	6.5	117	*	good
55	Early Champion, Rice & Co.....	5.3	1.8	5.5	102	*	good
27	Early Cory (White Cob), Fred Meier.....	4.5	1.8	7.5	90	121	good
79	Early Crosby, J. B. Rice.....	4.7	1.5	7.66	103	*	fair
81	Early Crosby, C. P. Coy & Co.....	5.5	1.3	6	101	*	fair
70	Early Crosby, A. N. Clark.....	5.3	1.6	7.33	103	*	fair
42	Early Essex, Gregory & Son.....	5	1	7.25	100	*	fair
96	Early Minnesota, Sioux City Seed Co.....	5.3	1.5	7.6	100	*	fair
98	Early Minnesota, C. B. Clark.....	5.5	1.5	8.75	99	*	good
16	Early Red Cory, A. N. Clark.....	4.5	1.3	8.25	95	*	good
35	Early Sunrise, H. W. Buckbee.....	5	1.4	7.4	100	*	good
32	Early Windsor, May & Co.....	5.5	1	8	90	125	poor
248	Early Yellow New England (8 rowed) J. P. Jerrard & Co.....	3.8	1	9.7	89	116	poor
17	Eastman's Early, Eastman Seed Co.....	2.5	1.9	5.75	89	*	poor
242	Extry Early Adams, Clark.....	3.5	1.9	6.5	84	117	fair
67	Crosby Extra Early, Kendall & Whitney.....	3.8	1.4	6.12	99	*	fair
30	First of All, H. W. Buckbee.....	5.5	1.6	6	90	*	fair
44	Fottler's Early, Schlegel & Fottler.....	4	1.8	6.33	101	*	good
140	Golden Dawn, Rawson & Co.....	4.7	2	6.6	99	*	good
13	Heeber & Don's First Early, Heeber & Don.....	5	1.1	8.4	116	*	fair
188	The Henderson (Connecticut grown) Henderson & Co.....	6.5	1.1	8	110	*	good
176	Hickox Improved (Connecticut grown), Comstock, Ferre & Co.....	6.5	1	9.4	114	*	fair
181	Hickox Improved, C. P. Coy & Co.....	6.2	1.1	8.5	112	*	good
88	Holmes' Premo (Pennsylvania grown), Holmes Seed Co.....	5	1.2	7	94	*	fair
90	Holmes Premo (Ohio grown), Holmes Seed Co.....	4.5	1.5	7	93	*	fair
92	Holmes' Premo, A. N. Clark.....	4.5	1.4	7	98	*	very good
8	Honey Dew, J. Lewis Childs.....	5.5	1.7	8.50	107	*	good
7	Honey Dew, A. N. Clark.....	5	1.4	7.50	102	*	poor
154	Kendel's Early Giant, A. N. Clark.....	4.5	1.9	7.3	105	*	good
31	Kendel's Early White Wonder, A. C. Kendel.....	5.5	1.3	8	103	*	good
153	Kendel's Giant, Rice & Co.....	4.5	1.2	8	100	*	fair
107	Kelley's Hybrid, Rice & Co.....	6	1.8	6.4	109	*	good
234	Late Mammoth Sugar, E. B. Clark.....	6.5	2	9.5	113	*	fair
4	Malakhov White, Galligher.....	4	1.5	5.4	92	119	good

*Frozen on September 21, 1904.

SWEET CORN—Continued.

Trial Number	VARIETY AND SEEDSMAN	Height in Feet			Days to Edible Maturity	Days to Ripeness	Quality as Green Corn
		Average Number of Ears per Stalk	Average Length of Ears in Inches				
2	Malakhov White, Boynton.....	3.5	1.3	5.5	89	117	good
23	Mammoth White Cory, Ferry & Co.....	3.2	.95	5.5	88	116	fair
66	Maule's XX. W. H. Maule.....	5.3	1.7	5.5	101	*	good
60	Metropolitan, A. N. Clark.....	5.3	1.7	8	100	*	good
62	Metropolitan, Henderson & Co.....	5.3	1.17	25	99	*	good
144	Monarchie. Woodruff & Sons.....	6	1	8	111	*	fair
165	Moore's Early Concord, Rice & Co.....	5	1.26	4	107	*	fair
162	Moore's Early Concord, E. B. Clark.....	5.3	1.2	6.9	119	*	good
112	M. & S's. New Early Giant, Moore & Simon	5.2	1.5	8	117	*	good
220	Ne Plus Ultra, A. N. Clark.....	5.5	1.26	5	117	*	good
246	Northwest Old Squaw, McKenzie.....	3.6	1.2	10	91	119	fair
23	N. K. & Co's. XXXX, N. K. & Co.....	4.5	1.16	4	100	127	good
25	Oakview Early Market, Ferry & Co.....	3.3	.95	75	92	120	fair
192	Old Colony, A. N. Clark.....	6	1.87	5	111	*	good
59	Peep O' Day, N. K. & Co.....	3.5	.96		89	117	poor
145	Perry's Hybrid, Rice & Co.....	4.6	1.7	2	95	*	poor
146	Perry's Hybrid, A. N. Clark.....	5	1.17	2	103	*	fair
181	Pharaoh's Dream, Iowa Seed Co.....	6.7	1.17	7	114	*	very good
39	Phillip's New Wonder, Phillip's S. & P. Co.	5.8	1.8		103	*	good
121	Portland, O. C. Thompson.....	5.3	1.86	66	102	*	good
130	Potter's Excelsior (Ohio grown), Comstock, Ferre & Co.....	5.7	1.7		110	*	fair
58	Quincy Market, A. N. Clark.....	4.5	1.4	6.5	97	127	fair
100	St. Louis Seed Co's. Noxall, St. Louis Seed Co.....	5.5	1.28	2	109	*	good
116	Shaker's Early, E. B. Clark.....	5.8	1.8	8	109	*	very good
142	Sheffield, Burpee & Co.....	6	1.47	8	108	*	good
110	Stabler's Early, E. B. Clark.....	5.5	1.5	8	110	*	good
204	Stowell's Evergreen, C. P. Coy & Co.....	6.5	1.7	5	113	*	good
206	Stowell's Evergreen, E. B. Clark.....	6.6	1.8		116	*	fair
212	Stowell's Evergreen, Sioux City Seed Co...	5.5	1.97	2	113	*	good
211	Stowell's Evergreen, Fred Meier.....	5	1.47		110	*	good
213	Stowell's Evergreen, Rice & Co.....	5.5	.87	5	113	*	good
208	Stowell's Evergreen, A. N. Clark.....	6.3	1.17		113	*	good
136	Squantum (Connecticut grown), Comstock, Ferre & Co.....	6	1.48	5	105	*	good
11	Sugar Loaf, H. F. Michell & Co.....	4.5	1.47		101	127	good
72	Triumph, A. N. Clark.....	6.5	1.37	8	112	*	very good
20	White Cory, E. B. Clark.....	4	1.37		92	121	poor
98	White Evergreen, Burpee & Co.....	5.8	1.27		111	*f	fair
26	White Mexican, Sioux City Seed Co.....	4	1.86	7	90	121	.....

*Frozen on September 21, 1904.

GENERAL NOTES ON SWEET CORN.

The sweet corn field was in open exposure on level, fairly well drained, rather low land. The seed was planted in drills four feet apart and the stalks thinned to one foot apart. September 11th a very light frost nipped the leaves; another September 16th killed part of the leaves; September 21st, a killing frost. Forty-five feet of row was allowed to each variety.

The earliest to reach edible maturity was Extra Early Adams, in 84 days, quality fair. The varieties reaching edible maturity in 88 or 89 days but of poor quality were Early Yellow New England, 8 rowed; Peep O'Day; Eastman's Early. Of the same season but of fair quality was Mammoth White Cory. The only variety of this season of good quality was Malakhov White from Boynton. Of the varieties in this season Eastman's Early appeared to be the most productive but Malakhov White the best in quality. Malakhov White from Galligher was somewhat taller and three days later than the same variety from Boynton.

White Mexican and Early Cory (white cob) are good samples of rather early sorts maturing in 90 days. Succeeding this came Early Red Cory and Holmes' Premo, maturing in 93 to 95 days. Sugar Loaf, N. K. & Co's. XXXX, Fottler's Early, Metropolitan, Best of All and Early Minnesota are good examples of varieties about five feet in height and maturing in 100 days, quality good.

Such varieties as Early Crosby and Kendel's Early White Wonder are large varieties a day or two later, and of good quality. Such varieties as Kelly's Hybrid, Stabler's Early, Shaker's Early, Squantum (Connecticut grown), Clark's Early Evergreen, Black Mexican and Sheffield are all good varieties; but were rather too late for this year on the kind of soil where these were planted, requiring from 105 to 110 days to reach edible maturity. All the Evergreens and Moore's Early Concord and some others were too late to be long in use before frost. Those considered to be best in quality were Pharaoh's Dream, Triumph, Shaker's Early and Holme's Premo.

Only fifteen varieties ripened good seed before frost.

MALAKOFF. A NEW SWEET CORN.

In the fall of 1897 while in Russia as agricultural explorer for the United States Department of Agriculture, the attention of the horticulturist of this station was called to the Malakoff, a very early sweet corn. Although corn is an American plant, it appears that in Russia this variety had been selected a long time for extreme earliness. The seed was imported and distributed by the Department at Washington in the spring of 1898. It was given a limited trial at a number of places and proved to be dwarf in habit and extremely early; although small in size of ear the quality was good. The original plants at this station were too near other corn so a second supply was imported by this station and bred pure since that time. It appears that in Russia this variety has been selected for earliness rather than uniformity of color, the color of the mature kernel varying from white to pale yellow or amber. It was the intention to breed this variety true to color first but as seedsmen began to introduce it it was deemed best to put the variety on the market to establish priority. The seed will be handled mainly by seedsmen as each planter will need a small quantity only. No more seed will be available until the fall of 1905. As for the best spelling of the word the writer suggests "Malakoff" rather than any other as it is the simplest way. At best the rendering of Russian names into English is difficult. The name suggests a place in the Crimean peninsula.

At the Universal Exposition at St. Louis in 1904, in the exhibit of the United States Department of Agriculture in the Government Building, a wax model of the Malakoff sweet corn was shown as "the earliest sweet corn," with an account of its introduction, as one of the results of agricultural explorations.

All things considered, the Malakoff appears promising as a first early variety of good quality. In the hands of sweet corn breeders in this country we may expect to see it still further improved as to size of ear and uniformity of color.

In Bulletin No. 179, December 20th, 1904, of the New Jersey Experiment Station, Prof. B. D. Halsted reports as follows concerning trials of the Malakoff in each congressional district of the state, from seed furnished by the United States Department of Agriculture and sent out by the New Jersey Station:

"All reports sent in agree that the plants are small, one

stating the average height to be four and one-half feet. The number of ears on a stalk is ranged from one to four. As to quality, the reports are usually 'excellent' or 'good.' The number of rows to the ear is almost invariably eight. Several of those who grew the corn sent sample ears to the Experiment Station, and below is given some of the remarks as submitted to us:

" 'We tried one small mess of it and it was pronounced very sweet; it grows very quickly.' 'Planted it on the 22d of May, not expecting to see any results, but to my surprise it was up in a few days and grew rapidly, soon tasseling out and ears setting, while it was only about three feet high; we had one meal from it, the first by two weeks of any other sort, near the 4th of July; shall give it another trial.' 'Planted May 31st and used for table August 5th; it can be planted closely and get a fair yield of early corn.' 'It is a very early kind of corn, as I planted some of my own at the same time and the Malakhov came two weeks earlier; the stalks I do not think were over two and one-half feet tall.' 'I put it on my table sixty days from planting and it was plenty old enough; it had excellent ears of good quality.' 'The corn is too small to be profitable for market, but is valuable for the home garden on account of its earliness.'

"Upon our own grounds it gave ears in fair number that averaged four inches in length. They had the rows always to the number of eight. Two crops might be grown during a single season.

"Alongside of the above we grew a few hills of another 'Malakhov' corn (96), also received from the United States Department of Agriculture, and under the list number of '9357' a (amber grain), grown by Upton Galligher. The two strains were nearly the same with us and the color of the dried grain is practically alike in both. The last named has the ear somewhat longer and more even in diameter throughout."

CABBAGE.

One hundred and twenty-seven varieties of cabbage were tested. To ensure exact results the seed was sown in flats in the greenhouse and transplanted once before setting in the field. Twenty plants of each variety were set in the field. The dry spell in July retarded growth and the season was marked by extreme abundance of cabbage lice or aphids, so that it is deemed best to omit detailed tables.

Eureka First Early, from J. M. Lupton, was especially desirable as the earliest variety, maturing fully a week before Early Jersey Wakefield.

The following list includes the surest and best heading early varieties ripening with, or a little earlier than, Early Jersey Wakefield.

It will be noticed that of five varieties every plant, or 100 per cent., formed good heads.

VARIETY	SEEDSMAN	Per Cent. Headed
Eureka First Early	J. M. Lupton	100
Erfurt Early	Sluis & Groot.	100
Nicholson's Southern Prize Head.	Texas Seed Co.	100
All Head Early	Sluis & Groot.	95
Early Jersey Wakefield	J. M. Lupton	84
Burpee's Surehead	C. L. Allen	100
Nicholson's Early Wonder	Texas Seed Co.	90
Succession	C. L. Allen	100
Magdeburg Large Sauerkraut	Hurst	95
Early Drumhead	C. L. Allen	85