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BULLETIN NO. 54.

NOTES ON VEGETABLES.

LEXINGTON, KY.

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KENTUCKY
Agricultural Experiment Station.

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KENTUCKY AGRICULTURAL EXPERIMENT STATION,
LEXINGTON, KY.

BULLETIN No. 54.

NOTES ON VEGETABLES.

TOMATOES. PEAS. BEANS. POTATOES.

The vegetable tests for 1894 were conducted upon land at the experiment farm, instead of upon the college grounds as heretofore, and it has therefore been possible to secure greater accuracy in the report upon any experiments where the productiveness was concerned.

The climatic conditions of the season in Kentucky, as well as in adjoining States, were rather extraordinary. Spring opened earlier than usual, and the weather was mild and pleasant up to March 23, when there followed ten days of very cold weather for the time of year, which destroyed to a great extent the young growth upon trees and shrubs, and either destroyed or greatly injured in many cases young plants in plant beds. Growing crops of the more tender kinds were again considerably injured by an untimely snowfall of several inches upon May 20. The drought during the midst of the growing season further added to the unfavorable conditions. After a rainfall of about 2 inches on June 25 to 27, the total rainfall up to August 10, a period of six and a half weeks, was only 0.87 inches.

As a consequence of these conditions of the weather, the experiments with vegetables have in many cases not been as decisive as they would otherwise have been, and the results of some have been so uncertain as to be almost valueless.

The vegetable tests have, for the most part, been under the charge of Mr. A. T. Jordan, assistant in horticulture, and the taking of notes, as well as this report, have been largely his work.

The names and addresses of the seedsmen whose names

appear in the following tables are as follows: W. Atlee Burpee & Co., Philadelphia, Pa.; Henry A. Dreer, Philadelphia, Pa.; J. A. Everett, Indianapolis, Ind.; D. M. Ferry & Co., Detroit, Mich.; Frank Ford & Sons, Ravenna, Ohio; J. J. H. Gregory & Co., Marblehead, Mass.; Harris Seed Co., Moreton Farm, Monroe Co., N. Y.; Peter Henderson & Co., New York; Johnson & Stokes, Philadelphia, Pa.; D. Landreth & Sons, Philadelphia, Pa.; A. W. Livingston's Sons, Columbus, Ohio; W. H. Maule, Philadelphia, Pa; A. M. Nichols, Granville, Ohio; Northrup, Braslan & Goodwin Co., Minneapolis, Minn.; J. M. Thorburn & Co., New York; F. B. Van Ornam, Lewis, Iowa; J. C. Vaughan & Co., Chicago, Ill; James Vick's Sons, Rochester, N. Y.

Tomatoes.

VARIETIES. The seeds of fifty-six varieties of tomatoes for our test were sown in shallow seed boxes in the greenhouse on March 3. Most of the newer introductions obtainable are included in this collection, as well as a considerable number of the old standard varieties which are retained for comparison.

In accordance with our practice heretofore, in order to obtain uniform conditions for the varieties, the plants, after removal from the seed boxes, were grown in pots. On March 23 the seedlings were transferred to 2½ inch pots, and on April 12 were again shifted to 3 inch pots (the rose pots, so-called, which are 4 inches deep), in which they remained until set in the field, May 5. Upon this date the plants were vigorous and stocky, and since in pot culture the roots are not mutilated in setting, they continued to grow without much check.

The plot upon which they were grown received a fair coat of stable manure before plowing, and a few days after the plants were set a good supply of a complete fertilizer was sown broadcast, and hoed and cultivated

into the soil, and again on June 6 a light application of fertilizer was made and cultivated in.

Ten plants of each variety were used in the test, and were placed in rows 5 ft. apart and 4 ft. apart in the rows. The soil was frequently stirred with a horse cultivator and hand hoes until the vines had completely occupied the ground.

The tender growth of the tips of the vines was somewhat injured in the snow of May 20th, but in a short time the plants were again growing vigorously. Owing to the excessively hot and dry weather of July and August, the tomatoes ripened very slowly during that time, and were also rather small for the same reason.

As the fruits ripened they were picked, counted, and weighed. Owing to the fact that during previous seasons the tomato rot had been quite prevalent, and in order to determine if certain varieties had greater immunity from rot than others, accurate records were also made of the number and weight of rotten fruits, and the ratio between the weight of rotten fruits and the weight of perfect fruits will be found in the table which gives a detailed record of the variety test.

Variety.	Seedsman.	First ripe fruits.	Product up to Aug. 1.		Total product ripe fruits.		Number of ripe fruits.	Average weight per fruit.	Weight of fruit unmarketable because of tomato rot.		Proportion of rotted fruits to marketable fruit by weight.	Weight of green fruit marketable after killing frost.	
			lbs.	oz.	lbs.	oz.		oz.	lbs.	oz.		lbs.	oz.
Acme	Ferry	June 28.	19	6	76	10	576	2.1	22	2	1: 3.5	11	
		July 26.	4	12	66	4	390	2.7	14	1	1: 4.7	12	8
*Allen	M. J. Allen	July 2.	25	1	77	7	495	2.5	8	6	1: 9.2		
Atlantic Prize	J. & S.	" 2.	14	13	79	4	501	2.5	24	11	1: 3.3	5	4
Beauty	Livingston	" 2.	6	8	49	8	320	2.5	23	8	1: 2.1	3	
Brandywine	J. & S.						479	2.7	21		1: 3.8	11	4
Brinton's Best	J. & S.	June 29.	9	13	79	10	408	3.3	11		1: 7.6	25	
Buckeye State	Livingston	July 7.	11	11	84	2	593	2.6	10	6	1: 9.4	11	
Cardinal	Maule	June 28.	13	14	97	13	880	1.9	9	5	1: 11	2	12
Conqueror	Ferry	July 2.	17	14	102	5	302	5.4	14	3	1. 7.1	34	
Crimson Cushion	Henderson	" 7.	4	14	101	5							
Cumberland Red	J. & S.	June 28.	8	9	82	15	512	2.6	28	7	1: 2.9	15	4
Dwarf Aristocrat	Livingston	" 28.	14	11	62	14	494	2.	3	10	1: 17.3	4	
Dwarf Champion	Thorburn	July 2.	13	5	56	11	386	2.3	8	2	1: 7	7	
†Early Cluster	Landreth	" 2.	17	3	83	9	493	2.7	9	1	1: 9.2	3	
Early Market Champion	J. & S.	June 28.	9	12	71	12	581	2.	26	8	1: 2.7	5	8
Early Ruby	Harris	" 28.	26		107	11	595	2.9	7	5	1: 14.7	9	8
Essex Hybrid	Ferry	" 28.	16	5	69	10	547	2.	26	1	1: 2.7	14	8
Favorite	Henderson	" 28.	8	13	79	14	508	2.5	24	10	1: 3.2	5	

Fejee Improved	Landreth	July 7.	7	7	84	11	449	3.	10	5	1: 8.2	4	8
Fordhook First	Burpee	June 28.	17	4	71	6	554	2.1	26	12	1: 2.7	16	8
‡Gold Ball	Livingston	" 25.	13	1	82	14	1447	.9		13	1:102.		
‡Golden Queen	Ferry	July 19.	7	11	82	14	543	2.4	23	6	1: 3.5	6	12
Ignotum	Ferry	" 2.	6	14	55	3	328	2.7	31	4	1: 1.8	9	8
‡Lemon Blush	Thorburn	June 28.	11		76		573	2.1	23	15	1: 3.2	4	4
Liberty Bell	J. & S.	July 7.	11	13	84	13	557	2.4	27	10	1: 3.7	10	
Longkeeper	Thorburn	June 28.	14	14	76	14	607	2.	27	1	1: 2.8	10	8
Lorillard	Rawson	July 2.	12		66		510	2.1	27	14	1: 2.4	6	
Mansfield Tree	Maule	" 19.		14	50	11	188	4.3	11	5	1: 4 5	20	12
Matchless	Burpee	" 2.	10	5	86	6	505	2.7	29	3	1: 3.	3	4
McCullom's Hybrid	Vick	June 28.	15	8	80	2	527	2.4	25	8	1: 3.1	8	
Michigan	Ferry	" 25.	10	5	85	14	666	2.	25	3	1: 3 4	13	
Mikado	Dreer	July 2.	5	8	58	2	241	3.9	14	3	1: 4.1	8	
Mitchell's Improved	J. & S	" 2.	10	2	86	9	570	2.4	20	7	1: 4.2	8	12
Nichol's No. 5	A. M. Nichol	" 2,	6	5	74	4	406	2 9	19	12	1: 3.8	6	
Northern Light	Thorburn	" 2.	10	9	60	7	306	3.1	4	10	1: 13.1	3	12
Optimus	Ferry	June 28.	11	3	66		565	1.9	13	1	1: 5.1	10	
Paragon	Livingston	July 2.	9		61	6	446	2.2	26	12	1: 2.3	8	8
Perfection	Livingston	June 28.	13		67	8	469	2.3	26	15	1: 2.5	12	
Perfection (sport of)	Dr. R. J. Spurr	July 7.	7	11	82	6	455	2.9	20	14	1: 3.9	12	
Ponderosa	Henderson	June 28.	5	6	72	15	224	5.2	9	5	1: 7.8	31	8
Potato Leaf	Maule	" 28.	10	9	77	11	600	2.1	30	11	1: 2.5	8	8
Ringleader	Dreer	Aug. 1.			78	1	185	6.75	7	4	1: 10.8	19	8
Royal Red	Livingston	July 2.	8	11	76	5	423	2.9	23	3	1: 3.3	6	
Stone	Livingston	" 19.	3	8	68	4	390	2.8	26	4	1: 2.6	12	8
Table Queen	Henderson	" 2.	26	8	108	10	384	4.5	20	5	1: 5.3	12	8
Ten Ton	Landreth	June 28.	13	9	90	8	674	2.1	17	13	1: 5.1	3	4
Terra Cotta	Thorburn	July 7.	10	12	86	8	825	1.7	8	13	1: 9.8		

*Seed sown March 28; set in field May 17. †Nine plants only. ‡ Yellow varieties.

Variety.	Seedsman.	First ripe fruits.	Product up to Aug. 1.		Total product ripe fruits.		Number of ripe fruits.	Average weight per fruit.	Weight of fruit unmarketable because of tomato rot.		Proportion of rotted fruits to marketable fruits by eight.	Weight of green fruit marketable size after killing frost.	
			lbs.	oz.	lbs.	oz.		oz.	lbs.	oz		lbs.	oz.
Trophy	Henderson	June 28.	13	3	96	8	551	2.8	30	8	1: 3.2	9	8
Turner Hybrid	Maule	July 26.	16	5	74	14	283	4.2	16	5	1: 4.6	14	
Voluuteer	Vaughan	" 7.	10	3	85	1	569	2.4	29	12	1: 2.8	19	8
‡Yellow Peach	Vaughan	" 7.	7	14	78	9	1257	1.	6	5	1:12.4		

‡ Yellow varieties.

As has been noted before in discussing varieties of vegetables, the list of fifty-one named kinds in the above table does not by any means indicate that there were fifty-one distinct varieties in our experiment plot. Many of these kinds are so much alike that the closest inspection fails to reveal any distinguishing characters, so that in many cases the different names indicate at the most only different strains of the same variety.

It will be observed from the table that the varieties which were first to ripen fruit were the Essex Hybrid, Gold Ball, and Michigan, which showed ripe fruit on June 25, nearly two weeks earlier than the first ripe fruits upon any variety of the preceding year, although the seed was sown only four days earlier than in 1893. This greater earliness must have been due chiefly to differences in the two seasons, as all other conditions of growth were as nearly alike as they could be made.

The fact that one or two fruits ripened upon each of three varieties three days earlier than upon a considerable number of other varieties which commenced to ripen June 28, should not be considered proof that these three are as a whole earlier varieties, since these ripe fruits were found only upon one or two of the lot of ten plants. Of the three varieties mentioned, the Gold Ball is a small yellow kind which is only suited to special uses, and cannot be considered a general purpose variety.

In considering the quality of earliness in a tomato, it is evidently important to select varieties, whether for home use or for market, that will produce a considerable number of fruits early in the season while prices are high, rather than one which will produce merely the earliest ripe fruit. From this standpoint several other varieties are more valuable as producers of early fruit than the three varieties mentioned above.

Among those producing the most fruit before Aug. 1 are the ten plants of Table Queen, 26 lbs. 8 ozs. (although

not ripening its first fruits until July 2); Early Ruby, 26 lbs.; Atlantic Prize, 25 lbs. 1 oz.; Acme, 19 lbs. 6 ozs.; Conqueror, 17 lbs. 14 ozs.; Fordhook First, 17 lbs. 4 ozs., and Early Cluster, 17 lbs. 3 ozs.

The most productive varieties up to the time of killing frosts are,—Table Queen, 108 lbs. 10 ozs.; Early Ruby, 107 lbs. 11 ozs.; Conqueror, 102 lbs. 5 ozs.; Crimson Cushion, 101 lbs. 5 ozs.; Cardinal, 97 lbs. 13 ozs.; Trophy, 96 lbs. 8 ozs., and Ten Ton, 90 lbs. 8 ozs

The largest varieties in the list are,—Ringleader, average weight, 6.75 ozs.; Crimson Cushion, 5.4 ozs.; Ponderosa, 5.2 ozs.; Table Queen, 4.5 ozs.

The varieties showing the smallest proportion of rotten to perfect fruits are,—Gold Ball, 1 to 102; Dwarf Aristocrat, 1 to 17.3; Early Ruby, 1 to 14.7; Northern Light, 1 to 13.1; Ringleader, 1 to 10.8.

In examining the table it will be seen that in several instances the earlier varieties are among the list of largest producers, and this is in some cases doubtless *because* they are earlier, so that they can ripen all, or nearly all, their fruit before the first killing frost in the fall.

The following additional notes upon certain varieties, which from one cause or another have received special notice, may be of interest.

Atlantic Prize, J. & S. Plants are of medium size, rather slender and open in growth. Fruit red, of medium size and generally smooth, although a few were angular and ribbed, quite firm and one of the largest producers in the first six weeks.

Beauty, Livingston. One of the purple tinged standard varieties. Fruit round, smooth, firm, of medium size, ripens evenly and fairly productive.

Buckeye State, Livingston. Introduced 1893. A vigorous grower, producing a good quantity of large crimson fruit (av. weight 3.3 oz.) Ripens well at stem, smooth and firm. An excellent late variety.

CARDINAL, Maule. Plant vigorous. Fruit red, smooth, ripening well around the stem, of fair size and productive. A good standard variety.

CONQUEROR, Ferry. One of the earliest and most productive varieties. Fruit rather small, and somewhat irregular and ribbed.

CRIMSON CUSHION, Henderson. A vigorous grower, crimson color, ripening well at stem, firm, but considerably ribbed. A heavy producer. Much like Ponderosa in general characters, and with us more productive.

DWARF ARISTOCRAT, Livingston. Plant short and stocky, with a tendency to grow erect, although not self-supporting. Fruit has a purple tinge, is very smooth, firm and ripens evenly. Not very productive as compared with individual plants of other sorts, but its habit of growth allows closer planting. Freer from rot than any other variety of standard size. Superior for the home garden.

EARLY RUBY, Harris. Plants slender and of open growth. Fruit smooth and firm, ripening well at the stem. One of the three most productive, both in first six weeks and in the entire season, and also one of those producing the least rotten fruit.

ESSEX HYBRID, Ferry. One of the earliest in ripening. Fruit smooth and firm.

FORDHOOK FIRST, Burpee. Vigorous grower. Fruit red, smooth, ripening well up to stem, but not very solid. Ripens a good proportion of its fruit the first six weeks. With us seems to possess no special merit.

GOLDEN QUEEN, Ferry. A standard yellow variety, ripens evenly, smooth and firm.

IGNOTUM, Ferry. A variety which in many places has been pronounced one of the best general purpose varieties, but with us during the past season has not been productive, and was more subject to rot than any other variety grown.

LEMON BLUSH, Thorburn. As grown here, this yellow variety is almost identical with the Golden Queen and has shown no marked superiority over that variety except that it ripened three weeks earlier.

MANSFIELD TREE, Maule. A vigorous grower, but no more tree like than some other strong grower Fruits rather larger and firm, but considerably ribbed, and only moderately productive.

MICHIGAN, Ferry. Plant vigorous, producing a red, firm and smooth fruit, which ripens well to the stem, and is among the earliest.

NICHOL'S NO. 5, A. M. Nichol. Plant of the potato leaf type. Fruit purplish red in color, ripening evenly, round, smooth and solid. An excellent variety of its class.

NORTHERN LIGHT, Thorburn. A dwarf, strong-growing sort, of recent introduction. Fruit slightly purple tinged, smooth and firm. Very much like the Dwarf Aristocrat, and like that variety, is comparatively free from the rot.

RINGLEADER, Dreer. Plant large and vigorous. Fruit red, very large and solid, but showing some tendency to irregularity in shape.

TABLE QUEEN, Henderson. A vigorous grower, with large crimson fruit; solid, but somewhat ribbed and angled The most productive variety in our plot, both in first six weeks and through the entire season.

POT GROWN VERSUS "FLAT" GROWN PLANTS.

This experiment was undertaken to determine which of the two methods of growing plants would give the best results, growing them in seed flats,—shallow boxes of any convenient size (those used by us are 14x20 in. and about 3 in. deep), or in pots. When grown in pots the plants can be transferred to the open ground without disturbing the roots, thus avoiding any check to the growth of the plant. Will the results of this method of

handling pay for the extra labor, and expense for pots which is involved? To test this question, seeds of Livingston's Favorite and Perfection tomatoes were sown for both lots in a seed flat, March 3. When the seedlings had their "second leaves," 15 plants of each were set in seed flats 4 in. apart, and at the same time an equal number of plants were set in 2½ in. pots, and later on shifted to 3 in. rose pots (4 in. deep).

Both lots of plants were set in the field May 5, and the results are shown in the table below.

Name.	Date of first ripe fruits.		Average number of fruits per plant		Average weight per plant		Average weight of individual fruits.	
	FLAT.	POT.	FLAT.	POT.	FLAT. lbs. oz.	POT. lbs. oz.	FLAT. lbs. oz.	POT. lbs. oz.
Favorite	July 26	July 26	51	53	7 6	8 5	2 5	2 8
Perfection ...	July 30	July 26	38.5	52.3	7 3	8 10	3	2 10

It will be seen by the above table that the gain in yield per plant by pot growing is quite decided; in the case of the variety Favorite, being 15 ozs. per plant, and with Perfection 23 ozs., or almost 1½ lbs. per plant. The effect upon the earliness of ripening and the size of the fruit seems to be very slight, if any, as the results in the two varieties do not agree.

Experiments of this kind need several repetitions to establish trustworthy conclusions, but the evidence so far obtainable seems very favorable to pot grown plants. While the expense and extra labor of this method would probably preclude its adoption in tomato growing upon a large scale, it is probable that in the home garden it would be found a very desirable plan.

EARLY VERSUS LATE SEED-SOWING.

In order to determine the most favorable time for starting tomatoes to secure the best results, seeds of Livingston's Favorite tomato were sown in seed boxes at intervals of ten days, beginning Feb. 7, until eight consecutive sowings had been made.

The plants were grown in pots, and the first four lots required transplanting three times, and the remaining lots twice, before finally setting in the field. The first five lots were set in the field at the same time as the plants of the variety test, May 5, lot 6 on May 17, while lots 7 and 8 were not placed in the field until June 13. Fourteen plants were used in each lot, and the following table gives the detailed results of the experiment:

Lot.	Date of sowing.	Date of first ripe fruit	Average number of fruits per plant	Average weight of individual fruits	Average product per plant of ripe fruits, entire season.		Average product per plant of green fruit, marketable size, after killing frosts.	Product per plant up to middle of August.	
				oz.	lbs.	oz.	oz.	lbs.	oz.
1	Feb. 7.	June 28.	49.3	2.5	7	12	21	3	2
2	" 17.	July 26.	41.6	2.6	6	11	16	2	14
3	" 27.	" 26.	43.4	2.6	7	6	28	3	3
4	Mar. 9.	" 20.	47.4	2.5	7	6	21	3	
5	" 19.	" 30.	39.5	2.6	6	3	26	2	5
6	" 29	" 26	47.3	2.5	7	5	22		
7	Apr. 8.	Aug. 3.	23.4	3.3	4	13	12		14
8	" 18.	" 14.	20.7	3.2	4	2	14		10

The first ripe fruits were from lot 1, almost a month ahead of any other lot, but these ripe fruits were only two in number, and no other picking was made from this

or any other lot until near the last of July. It seems that the drought interfered with this experiment somewhat, especially in regard to earliness, as when rain came, all except the last two lots began to ripen their fruit very near together. By the middle of August, approximately four weeks from the earliest picking in July, lot 3, sown Feb. 27, was a little in advance of any other lot in productiveness, but the results taken as a whole are not very decisive, and the experiment will be repeated. It appears, however, that considering the extra labor and care involved in starting plants very early, there is no advantage to be gained, under ordinary conditions, in sowing tomato seed before the first of March in this climate.

TRANSPLANTED VERSUS THICKLY GROWN OR "DRAWN" PLANTS.

An idea seems to be prevalent among gardeners in this as in other States, that plants grown unthinned and close together in hot beds or cold frames, and consequently very slendy or "leggy," give just as good results as though they were transplanted early and given room sufficient to develop into strong and stocky plants. Even among those who acknowledge the superiority of stocky plants, it is thought by many that the increased productiveness of such plants will not pay for the extra labor and the cost of extra sash required to produce them.

In order to throw light upon this question, if possible, seeds of the Stone and Longkeeper varieties of tomato were sown in a cold frame in rows four to five inches apart on April 9. A few days after germination the seedlings were thinned to ½–¾ inches apart, and the plants remained at this distance until set in the field. A portion of the same plants when in the "second leaf" stage were set in another portion of the bed, four inches apart each way, and being given sufficient room, developed into strong, stocky plants.

Twenty plants of each of the four lots were set side by side at the usual distance of 4 x 5 feet apart.

	Variety.	Average weight of individual fruits.	Average weight perfect ripe fruit per plant	Average weight rotted fruit per plant.	Per cent. of rotted fruit.
		oz.	lbs. oz.	oz.	
Transplanted	Stone	3.4	6 2	16	14
	Longkeeper	4.5	6 11	13	11
Average of two varieties		3 95	6 6.5	.....	12½
Thickly Grown or "Drawn" Plants	Stone	3.	3 8	11	16
	Longkeeper	3.4	4 11	6.5	8
Average of two varieties		3.2	4 1.5	.....	12

As will be noted in the table above, there was in this experiment a decided gain in the size of fruit and in productiveness, as a result of securing strong, stocky plants. This gain is especially noteworthy in the product, which is 1 lb. 5 oz. greater per plant in the stocky plants than in the slender plants of the second lot, a gain, which at the usual distance apart of setting (4 feet by 5 feet) would amount to the very considerable total of 47 bushels per acre, or nearly a ton and a half. As there is very little difference in the proportion of rotted fruit in the two lots, it would appear from this single experiment, combined with the results of the variety test, that the rotting of the fruit does not depend so much upon the lack of vigor in the individual plant as it does upon the want of power of resistance in certain varieties.

CUTTING BACK PLANTS AT TIME OF SETTING.

The experiment was tried of cutting back a number of plants of three varieties when set in the field, in comparison with a similar lot of plants untrimmed.

Ten plants each of Favorite, Acme and Buckeye State were set in the field, June 2. Five plants of each variety were trimmed severely, leaving only three leaves above the surface of the ground, while a corresponding set of plants which were uncut were set beside them. The varieties Acme and Buckeye State were pot grown plants, while the Favorite was grown in the ordinary soil of a cold frame.

	Variety.	First ripe fruit.	Average product per plant.		Average weight individual fruit.	Average number of fruits per plant.
			lbs.	oz	oz.	
Untrimmed ..	Acme	July 30	7		2.4	47.2
	Favorite	" 30	7	11	3.4	36.4
	Buckeye State..	Aug. 14.	7	11	4.	30.8
Trimmed. ...	Acme	Aug. 2.	6	13	2.7	39.2
	Favorite	" 14.	7	13	3.1	40.8
	Buckeye State..	" 14.	7	10	3.8	31.8

The figures given show practically no difference in the productiveness of the two lots of plants, the average product of all the untrimmed plants being a small fraction over 7 lbs. 7 ozs. per plant and that of the trimmed plants being slightly under 7 lbs. 7 ozs. There is, however, a slight difference in the earliness of first ripening of the fruit, the Acme (untrimmed) being 3 days and the Favorite 15 days earlier than the corresponding lots of trimmed plants.

TOMATO ROT.

An experiment was made to determine the practical value of the Bordeaux mixture in preventing rot, but from some unknown cause the results were very conflicting in duplicate experiments, so that they are not considered worthy of publication, but the experiments will be carefully repeated in the hope that some definite conclusions may be reached. The use of this fungicide and the ammoniacal carbonate of copper has been reported elsewhere as very effective.*

Peas.

Our test of peas the past year has included 37 varieties. All were planted on good loamy soil April 6 and throughout the season given uniform care,—ordinary field culture without support for the vines.

Twelve ounces of peas were sown in 56 ft. of row, giving for the tall and large growing varieties 20, and for the smaller growing varieties 30 peas to the foot. Full rows were obtained of each variety with the following exceptions: Telegraph, Telephone, Duke of Albany, Pride of the Market, Everbearing, and Champion of England.

In order to obtain accurate data for estimating productiveness, etc., 5 ft. of the most uniform part of the row of each variety was carefully thinned, leaving 12 plants to each foot of row, except in three or four cases,—as noted in the table,—where it was impossible on account of irregularity in germination.

The peas from these vines were carefully picked, shelled, and weighed, and the following table gives in detail the results of the test thus made.

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* U. S. Dept. of Agriculture Report 1889, 418; Cornell University Experiment Station Bulletin 28, 1891, 59.

The column headed "Days to edible maturity" refers to the number of days from date of planting to the day when the very first pods were found sufficiently filled to pick, although such pods might be very few in number. The next column refers to the date,—usually several days later,—when a sufficient number of peas were matured to make it profitable to pick for market. The scale of productiveness is based upon the actual weight of peas in the pod, from corresponding lengths of row, the most productive being rated as 10, and less productive varieties proportionally lower. The column headed "Ratio, etc." is intended to give an approximate indication of how well the pods are filled with peas, as this is an important point, especially to canning factories, and growers for them, where the product is sold by weight. In the case of "American Wonder," for instance, the ratio 1 to 3·3 indicates that from a lot of peas (in the pod) weighing 3 and 3-10 pounds only 1 pound of shelled peas could be taken. This rule would probably not apply very exactly when peas are taken by measure.

Variety	Seedsman.	Wrinkled or smooth.	Days to edible maturity.	Date of marketable maturity. June	Product. Scale 10.	Average length of pod. inch's	Average number peas to pod.	Ratio weight of peas to the combined weight of peas and pods.	Habit. Under 24 in....Dwarf. 24 to 36 in.....Medium. Over 36 in ....Tall.
American Wonder.....	Vaughan.....	W	60	9	7	2¾	4½	1 to 3.3	Dwarf.
Burpee.....		S	57	5	7	2½	4½	1 to 3.5	"
Best Extra Early.	Dreer.....	W	71	19	9	2½	6	1 to 2.9	Medium.
Bliss Abundance	Thorburn.....	S	60	11	9	3	4	1 to 3.4	"
Blue Beauty.....	"	S	59	8	6	3	3	1 to 3.4	Dwarf.
Blue Peter.....		W	74	23	6	3	5	1 to 2.9	Tall.
Champion of England....	Vaughan.....	W	..	22	8	3½	6	1 to 3.3	"
Duke of Albany	Burpee.....	W	74	23	8	3	5	1 to 3.	Medium.
Everbearing.....	Dreer	W	74	23	9	3½	6	1 to 3.	"
Fillbasket.....	Thorburn	W	74	23	7	4	7	1 to 3.1	"
Heroine.....	Henderson....	W	74	23	8	2¾	4	1 to 3.2	Medium.
Horsford's Market Garden	Vaughan	W	71	5	6	2¾	4	1 to 3.2	"
Improved Dan'l O'Rourke	Burpee.....	S	57	23	5	3	7	1 to 3.	Tall.
John Bull.....	Thorburn	W	74	11	7	2¾	5	1 to 3.7	Dwarf.
King of Dwarfs.....	Vick.....	W	60	19	7	2¾	4	1 to 2.6	Tall.
Laxton's Alpha	Dreer.....	W	69	9	10	2½	4	1 to 3.1	Dwarf.
Little Gem	Thorburn	W	59	12	10	3	4	1 to 3.5	Medium.
McLean's Advancer	Vaughan.....	W	64	21	6	2	4	1 to 2.6	Tall [edible pods.]
Melting Sugar.....	"	S	71	5	7	2½	4	1 to 3.5	Medium.
New Exonian	Thorburn	W	57						

New Station	Thorburn	W	52	2	6	2½	4	1 to 3.4	Medium.
Nott's Excelsior [1]	Ferry	W	48	16	7	3	6	1 to 3.4	"
Little Gem [2]	N. B. G. Co.	W	50	19	9	2½	3½	1 to 3.	Dwarf.
Paragon	Vaughan	W	71	19	8	3	4	1 to 3.	Tall.
Pride of the Market	"	W	73	23	8	4	7	1 to 3.3	Medium.
Prince of Wales	Thorburn	W	71	19	9	2¾	3½	1 to 3.1	Medium.
Quality	Burpee	W	69	19	8	2½	4	1 to 2.7	"
Quantity	"	W	69	19	9	2¾	4	1 to 2.7	"
Queen [3]	Henderson	W	78	26	7	4	5	1 to 3.5	Tall.
Rural New Yorker	Thorburn	S	53	2	5	2½	4	1 to 3.4	Dwarf.
Sapphire	N. B. G. Co.	W	60	9	7	2¾	5	1 to 3.2	Medium.
Shropshire Hero	Burpee	W	74	23	8	3½	7	1 to 3.2	"
Stratagem	Dreer	W	74	22	8	3½	6	1 to 3.	"
Sunol	Vaughan	S	57	5	6	2½	5	1 to 3.	"
Telegraph (Culverwell's) [4]	Dreer	W	74	23	7	3½	5	1 to 3.5	Tall.
Telephone [5]	Burpee	W	74	23	5	3¾	5	1 to 3.7	Tall.
Vick's Charmer	Vick	W	74	21	7	3	6	1 to 2.8	"
Yorkshire Hero	Burpee	W	71	21	8	3	3	1 to 3.1	Medium.

[1] Sown April 27.
[2] Sown April 27 with Nott's Excelsior, to test comparative earliness of the latter.
[3] 21 plants only to 5 ft. of row.
[4] 46 plants only to 5 ft. of row.
[5] 10 plants only to 5 ft. of row.

Among the varieties worthy of some special mention the following may be noted:

NEW STATION, Thorburn. The earliest variety grown here; slightly wrinkled. Vine 20 inches high, pod round and full, of medium size, but not very productive.

RURAL NEW YORKER, Thor. A smooth variety one day later than New Station. Pod nearly round; small to medium in size; only moderately productive.

BLUE BEAUTY, Thor. A somewhat later smooth sort. Pods round and full. Peas large.

MCLEAN'S ADVANCER, Vaughan. Maturing for market a week or ten days later than the earliest varieties. With the Little Gem, the most productive varieties in our list. Pods of medium size, well filled with peas of superior quality. A standard variety which is still one of the best.

NEW EXONIAN, Thorburn. An early wrinkled variety. Vine 2 ft. in height. Pod of fair size, round and full. One important point in favor of this variety is that it matures nearly all its pods at one time. At the first picking of the full row about 15 lbs. were picked; three days later a little over 1 lb., and nearly a week after about 1½ lbs. were picked. None of these pods were too old for use when picked.

LITTLE GEM, Thorburn. A well-known early dwarf, wrinkled variety. One of our largest producers the past year, and of superior quality.

LAXTON'S ALPHA, Dreer. This variety had the smallest ratio between weight of peas and weight of pod of any variety grown. Pod of medium size, attractive in appearance, and well filled with large peas of excellent quality.

HORSFORD'S MARKET GARDEN, Vaughan. An intermediate variety in date of maturity and size of vine. Pod round and filled with good sized peas Quite productive and of good quality.

QUALITY AND QUANTITY, Burpee. Very little difference between them. Medium sorts in earliness and size of vine. Pod round and well filled with good sized peas. Quite productive.

NOTT'S EXCELSIOR, Ferry. Vine from 15–18 in. tall and well filled with pods. Pod of good size. Peas large and crowded together, averaging six in a pod; of fair productiveness here.

SAPPHIRE, N. B. G. Co. An early wrinkled variety. Vine 2 ft. tall. Pods are well filled with good sized peas. Quite productive.

BLISS' ABUNDANCE, Dreer. A late variety here, about 30 in. tall Pod of moderate size, round and full of large peas crowded together. Very productive.

PRINCE OF WALES, Thorburn. A rather late variety. Vine 3 ft. tall. Pod of medium size, but peas are quite large. Productive.

FILLBASKET, Thor. A late variety, growing about 30 in. tall. Pod of medium length and filled with peas of good size. A good producer.

SHROPSHIRE HERO, Burpee. A productive variety with long attractive pods, well filled with large peas, and of superior quality.

YORKSHIRE HERO, Burpee. A productive variety with medium sized pods which are very closely packed with peas of good size, and one of the best in quality.

THICKNESS OF PLANTING.

What thickness of planting—one seed every three inches or three seeds every inch—will give us the best results? Are we generally buying and planting more seed than we need to, or are we not? With a view to answering this question, the following experiment was planned, using as varieties a tall growing, a medium, and dwarf growing sort, viz., Champion of England, Horsford's Market Garden, and American Wonder. The ex-

periment was made in duplicate, with the exception that Little Gem was substituted for American Wonder in the duplicate lot.

The rows were divided into 16 ft. lengths, and nine of these lengths were planted with each variety in the duplicate tests on April 16. The first 16 ft. received 1 oz. of seed, the second 16 ft. 2 oz., the third 3 oz., continuing in like manner up to 9 oz. to the 16 ft., all the seed being distributed as uniformly as possible.

One ounce of seed gave for American Wonder 8 or 9 peas to the foot, for Horsford's Market Garden 9, and for Champion of England 6 to the foot.

Very litttle if any difference could be observed in the germination, growth, time of blossoming, or in the number of blossoms in the different 16 ft. lengths. There was, however, as would be expected, some difference in the character of the plants, the thin sown lots having strong, stocky vines, while the thicker planted lots were somewhat "drawn" or spindling, and spread over more space than the thin planted.

Amount of seed 16 ft. row.	American Wonder. Total yield.	Little Gem. Total yield.	Horsford's Market Garden. Total yield.		Champion of England. Total yield.		Total yield of four varieties.
			Original.	Duplicate	Original.	Duplicate.	
oz.	lbs.	lbs	lbs	lbs	lbs.	lbs	lbs.
1	82	70	90	91½	42	64	439½
2	79	94	77	123½	52	69	494½
3	95	105½	84	84	79½	64½	512½
4	77½	106½	99½	111	60	75½	530
5	99	121	76	136½	68½	78	579
6	111½	113	110½	128½	61½	76	601
7	94	77½	92	84	67	61½	476
8	91	77½	106	101½	70½	77½	524
9	109	89	114½	106½	88½	60	567½

While the results are somewhat variable, as is usual in such experiments, yet the general average of the results

as shown in the column of total yields, indicates quite clearly that the best average results can be obtained with 5 to 6 ounces of seed for this length of row, or at the rate of one quart to 80 or 90 ft. of drill.

Bush Beans.

The varieties of Bush Beans were planted in drills May 5, twenty feet of drill being allowed for each variety. Plenty of seed was used to insure a stand and after the young plants were well started they were thinned to about 4 inches. Like many other vegetables, the beans suffered a severe check from the snow of May 20, losing many of their leaves, but recovered their normal condition in two or three weeks. The table shows results.

Variety.	Seedsman.	First blossom.	First edible.	First marketable.	Product	Average length of pod	Average weight of pod.
					oz.	inches.	oz.
Bismarck Black Wax	Dreer	June 18	June 28	July 5	18	4½	.14
Boston Favorite	Vaughan	" 25	.....	" 12	6	4½	
Challenge Black Wax	"	" 18	June 28	" 3	12	3	.09
China	Thorburn	" 20	" 28	" 1	38½	4½	.145
Cylinder Black Wax	Henderson	" 18	" 28	" 3	48½	4	.11
Dwarf Horticultural	Henderson	" 18	" 28	" 3	26	3½	.16
Extra Early Refugee	Vaughan	" 19	.....	" 3	65	4	.12
Flageolet Victoria	Henderson	" 22	July 3	" 12	60½	6½	.15
Giant Yosemite Wax	Vaughan	" 19	" 3	" 12	3[illegible]½	5½	.14
Golden Eye Wax	"	" 21	" 1	" 7	39	4½	.13
Improved Golden Wax	Henderson	" 18	June 28	" 3	40½	3½	.11
Improved Valentine	Vaughan	" 22	.....	" 3	98½	3½	.17
Marvel of Paris	Thorburn	" 22	June 28	" 3	57½	4½	.10
Mohawk	Henderson	" 16	" 28	" 3	61	5	.12
Pride of Newtown	Thorburn	" 20	" 29	" 3	53½	5½	.15
Prolific German Wax	Vaughan	" 22	.....	" 5	43	4½	.11
Refugee Wax	Henderson	" 18	June 28	" 5	46½	4½	.13
Saddleback Wax	Burpee	" 19	" 28	" 5	19	4	.11
Speckled Wax	J. & S	" 22	July 3	" 12	80	4½	.13
Stringless Green Pod	Burpee	" 22	June 28	" 5	32	5	
Wardwell's Kidney Wax	Thorburn	" 20	" 28	" 3	38½	4	.11
Warren	Vaughan	" 18	" 28	" 3	39½	4	.18
Warwick	Henderson	" 16	" 25	June 28	35	4	.16
White Wax	Dreer	" 22	July 3	July 12	12½	3	.11

The earliest variety was the Warwick. The three most productive varieties were—

Improved Valentine	98½ oz.
Speckled Wax	80 "
Extra Early Refugee	65 "

The following brief notes on a few of the best varieties may be of interest.

EXTRA EARLY REFUGEE, Vaughan. Pod round, light green, resembling Valentine, free from rust, attractive in appearance, but slightly stringy.

FLAGEOLET VICTORIA, Henderson. A long, slender, flattish green pod, slightly rusted and a very little stringy. Uniform in size.

GIANT YOSEMITE WAX, Vaughan. Pods are a bright yellow color, nearly round and quite strongly curved. It is nearly free from rust, very fleshy, and has no stringiness.

GOLDEN EYE WAX, Vaughan. Pods are a bright yellow color, rather flat and wide, and practically free from rust. Somewhat stringy.

IMPROVED VALENTINE, Vaughan. Handsome, round green pods, uniform in size. Free from rust or spots, and comparatively free from strings. The most productive variety on the list.

MARVEL OF PARIS, Thorburn. A green, slender, roundish pod. Quite uniform in size, slightly rusted.

MOHAWK, Henderson. A flattish, green pod of medium size. Uniform in size and shape. Somewhat stringy. A good producer.

PRIDE OF NEWTOWN, Thorburn. Handsome, long, green, flattish pods. Slightly rusted and quite stringy.

PROLIFIC GERMAN WAX, Vaughan. Bright yellow, and similar in size and shape to a Valentine. Slightly rusted, stringless.

REFUGEE WAX, Henderson. Handsome, light yellow pods, considerably curved and quite free from imperfections. Uniform in size.

STRINGLESS GREEN POD, Burpee. Roundish, green pod, similar to Valentine, but somewhat larger in diameter. Slightly rusted, but free from strings.

SPECKLED WAX, Johnson & Stokes. A roundish, yellow, fleshy pod. Somewhat irregular, yet attractive. Rusting a little, slightly stringy, and second in productiveness this year.

WARWICK, Henderson. Similar to Mohawk, but rather more fleshy. Considerably rusted, somewhat stringy. The earliest variety of the list.

Bush Lima Beans.

Considerable attention has recently been paid to this class of beans, and to carefully test the principal kinds advertised by seedsmen, we obtained the five varieties given in table, planting them in the garden May 26. A row 56 ft. in length was used in each case, 10 ft. of which was set apart, and from the plants of this lot the pods, when beans were of edible size, were carefully picked, counted and weighed. The number and weight of shelled beans was also recorded. The table gives details.

Variety.	Seedsmen.	Amount of first picking, August 20, in oz.	Product.		Average weight of pod as picked.	Average weight of beans.	Average number of beans per pod.	Length of pod.
			Weights of pods as picked and beans after shelling, in oz.					
			Pods.	Beans.	oz	oz.		inches
Henderson's Bush Lima	Henderson	14½	118	47½	.15	.03	2.3	3
Jackson Wonder	Dreer	32	91½	34	.15	.035	2.3	3
Thorburn's Dwarf Lima	Thor	14½	53½	12	.22	.038	1.8	2½–3
Dreer's Bush Lima	Dreer	6	55	17½	.22	.051	2.	3
Burpee's Bush Lima.....	Burpee	4	50	14½	.26	.046	1.8	3½–4

The general characters of Henderson's Bush and Jackson Wonder are practically the same. Plant a vigorous grower, with dark green foliage, rather small leaflets, fruit-bearing stalks numerous. Pods are somewhat curved, regular, thin and narrow. Bean is small, but all seem to fill out well. Slightly earlier than the other varieties.

The general characters of Thorburn's Dwarf and Dreer's Bush Lima are also much alike. In both the plant is vigorous, but more dwarf than the other varieties, bearing leaflets of medium size. Fruit-bearing stalks are fairly abundant, but not so many as in Henderson's Bush Lima and Jackson Wonder. Pods are straight, thick and wide, many being irregular in shape. Bean is of good size, even large and thick, with some irregularity in filling out.

Burpee's Bush is a large and vigorous grower, with light green foliage, leaflets large, and a good number of fruit bearing stalks. Pod is somewhat curved, wide and thick, but a good many were small and irregular. Bean is very large, fleshy, and also rather irregular in filling out.

Pole Beans.

The pole varieties of beans were planted May 29 in drills, 20 feet being allowed for each variety. A trellis was made as follows. Strong posts were set at either end of the row, and good stakes were driven every 20 feet in the row. Two wires—ordinary fence wire--were tightly strung between the posts, one about 4 feet and the other 6 inches from the ground. Cheap hempen twine was wound over and under these wires six to eight inches apart, up which the vines grew. The results appear in the following table.

Variety.	Seedsman.	Date of first blossom.	Date and amount of first picking in oz., full sized beans in pod.	Total product.		Average weight of a pod.	Average length of pod.	Remarks on the Pods.
				lbs. oz		oz.	inch's	
Lazy Wife's	Burpee	.....	Sept. 13. 45	4	1½		5	Green, flattened, thick and fleshy.
Horticultural Cranberry	Vaughan	July 17	Aug. 9. 2½	3	4	.17	4	Green, speckled, flattish.
Creaseback	"	" 17	" 9. 30	5	14½	.10	4	Green, roundish, uniform.
Golden Wax	Henderson	" 20	" 9. 28	3	3½	.17	4	Small, flat, irregular.
Mammoth Carmine Podded	Gregory	" 20	" 9 2	2	14	.18	4	Green, speckled, rounded, fleshy.
Yardlong	Burpee	" 17	" 9. 3½	16	17½	.25	12–27	Light green, thin walls.
French Yardlong	Thorburn	" 17	" 9. 2	5		.24	12–27	
White Zulu	Burpee	" 17	" 9. 1½	1	10¼	.18	6	Yellowish green, thick and fleshy.
Golden Champion	Henderson	" 17	" 9. 17	11	2½	.11		Yellow; germinated poorly.
Kentucky Wonder	Ferry	" 17	" 9 36	15	3	.25	8	Green, thick and fleshy; irregular.
Golden Cluster Wax	Burpee	" 20	Sept. 6. 5¼	1	8½		4	Yellow, flattened, fleshy.
Dutch Caseknife	Thorburn	" 17	Aug. 21. 3¾	7	5	.22	4	Dark green, flattish.

The two most productive varieties are Kentucky Wonder and Yardlong.

YARDLONG and FRENCH YARDLONG, received from different seedsmen, are identical. The foliage is dark green in color and vigorous. Pods are round and very long, with thin walls. They contain very few beans. A curiosity.

KENTUCKY WONDER, Ferry. The favorite late market bean of this locality Pods are green, long, considerably twisted and irregular, thick and fleshy. Very productive.

GOLDEN CLUSTER WAX, Burpee. The most productive yellow-podded variety. Pod somewhat flattened and quite fleshy.

POLE LIMA BEANS.

The pole Limas were planted the same day, in the same manner, and received the same care and culture given the common pole beans. The table gives only the comparative earliness and productiveness.

VARIETY.	SEEDSMAN.	Date of first blossom.	Date and amount of first picking in ounces.	Total Product.	
				lbs.	oz.
Ford's Mammoth..	Dreer	July 20	Sept. 5, 2½	14	3
Large White	Henderson ...	" 17	" 5, 8	14	15
Sieva	"	" 20	" 5, 9	11	7
Large Select	Vaughan	" 20	" 5, 14	14	3
Willow Leaf	Burpee.....	Aug. 4	Aug. 22, 9	10	11
Early Black	"	July 20	" 22, 78	11	—
Jersey Extra Early	Henderson ...	" 17	Sept. 5, 7	7	12
Horticultural	Ferry	" 20	Aug. 21, 1½	5	3
King of the Garden	Vaughan	" 20	Sept 5, 2½	11	2

The most productive varieties are Large White, Ford's Mammoth and Large Select. Of these, Large White is the most productive and one of the very best large Lima beans.

THICK AND THIN PLANTING OF BUSH BEANS.

The beans for this experiment were planted May 8 as follows: 12 ft. of row was used for each lot; ½ oz. of seed, carefully weighed, was evenly drilled into the first 12 ft. Succeeding 12 ft. received in order 1, 1½, 2, 2½, 3, 3½, 4, 4½, 5, 5½ and 6 ounces of seed evenly distributed and uniformly covered. This would give for the different sections of row approximately 4, 8, 12, 16, 20, 24, 28, 32, 36, 40, 44 and 48 beans respectively to each foot of drill. Two varieties were used in this test, Improved Valentine and Golden Eye Wax. The ½ oz. lot in each case was rather irregular in germination, having some vacancies. The results are found in the table.

Thickness of planting. oz. per 12 ft.	Improved Valtine. Product in oz.	Golden Eye Wax. Product in oz.	Totals for the two varieties.
½	30½	10½	41
1	58½	32	90½
1½	86½	53½	140
2	64½	52½	117
2½	70	57	127
3	53	59½	112½
3½	62	39½	101½
4	68½	46	114½
4½	59	40¾	99¾
5	55	56	111
5½	64½	62½	127
6	61½	54½	116

Careful examination revealed practically no difference in earliness of blossoming or in maturity, while in size of pods those of the thickest lots seemed to be a little shorter.

The results, while not perfectly uniform throughout, seem to indicate that there is no gain in using the larger quantities of seed, as the best return of all was obtained from the 1½ ounce lot of seed planted in 12 ft. of drill.

This would be equivalent to 1 quart of such beans as the Valentine to 240 ft. of drill.

Since, however, one of the varieties in the experiment gave a better yield with 3 and even with 5½ oz per 12 ft., it would seem to be safer—since in many cases the germinating power of seed is not known,—to plant a somewhat larger proportion of seed than indicated. Completely trustworthy results in an experiment of this kind can only be secured after several repetitions of the experiment and averaging the results of all.

Potatoes.

Sixty-four varieties were grown this year. They were planted in drills, using six pounds of seed to 87 ft. of row in nearly every case, and in those cases where a smaller amount of seed was used, it was planted in a row of proportional length. Three pounds of a complete fertilizer was applied to each 87 ft. and worked into the soil. The planting was commenced Apr. 18, but the work was delayed by a sudden storm and could not be resumed until two days later. A few varieties, including Van Ornam's Superb and the six varieties from Messrs. Everett & Co., could not be planted until Apr. 27.

The season of planting, which was rather late for this section, combined with the severe drought of the early summer, resulted in a very small total yield, and also in a small per cent. of potatoes of marketable size, as the drought commenced just at the time the tubers were forming.

VARIETY.	SEEDSMEN.	Total yield per acre.	Marketable tubers per acre.	Per cent. of marketable potatoes.
		BU.	BU	
Molly Stark	Ford	163	57	35
King of Roses	"	153	77	50
Extra Early Vermont	Landreth	152	74	48
Woodbury White	Ford	145	79	54
Puritan	"	142	57	40
Summit	Vaughan	138	72	52
Lee's Favorite	Ford	138	58	42
Dakota Red	Landreth	135	60	44
Tonhocks	Ford	132	57	43
Reed's "'86"	Vaughan	128	29	23
Burbank Seedling	Ford	127	45	35
Iron Clad	"	122	45	37
New Queen	"	122	52	42
Polaris	Vaughan	119	40	34
Garfield	Landreth	116		
Snowflake	"	113	25	22
Crown Jewel	Dreer	110	39	35
Columbus	Ford	109	45	41
Green Mountain	"	109	39	36
Vaughan	"	109	39	36
Dandy	"	106	43	41
Acme Seedling	Vaughan	100	42	42
Halo of Dakota	Ford	99	40	40
Burpee's Extra Early	Burpee	96	33	34
Mount Carbon	Ford	96	36	38
Red Ohio	Vaughan	95	29	31
Early Rose	Ford	92	42	46
Golden Harvest	Landreth	92	28	30
Arizona	Vaughan	90	43	48
American Wonder	Ford	90	58	64
Standard	Dreer	85	26	31
Early Norther	Henderson	84	18	21
Chautauqua	Ford	84	24	29
Munroe Seedling	"	84	42	50
Burpee's Superior	"	82	32	39
Freeman	Gregory	82	27	33
Alexander's Prolific	Ford	81	31	38
Penn Manor	J. & S.	79	25	32
World's Fair	Vaughan	76	23	30
Brownell's Winner	Ford	76	23	30
Thorburn	Thor.	75	25	33
Rural New Yorker	Ford	74	29	40
Early Pearl	"	74	33	45
Early Rochester	"	73	36	49
Harbinger	"	72	15	21

Variety.	Seedsman.	Total yield per acre.	Marketable tubers per acre.	Per cent. of marketable potatoes.
		BU.	BU.	
Early Norther	Gregory	69	33	48
Hamden Beauty	Ford	68	22	32
Maggie Murphy	Vick	65	45	69
Empire State	Burpee	63	22	35
Farmers' Alliance	Landreth	60	31	52
Early Ohio	"	59	17	29
Chas. Downing	"	58	10	17
Star Seedling	Ford	55	22	40
Great West	"	54	22	40
State of Maine	Landreth	53	24	45

With the following small lots of potatoes, the actual product is given in each case, as the amount of seed was so small that an estimate of the yield per acre based upon such a small area, would be liable to great error.

Variety	Amt of seed, lbs.	Seedsman.	Date of planting.	Total yield, lbs.	Marketable potatoes, lbs.	Per cent. marketable potatoes.
Carman	1	Thorburn	Apr. 20	$4\frac{1}{2}$	$2\frac{3}{4}$	60
Superb	2	Van Ornam.	" 27	$9\frac{1}{4}$	4	43
Green Mountain	1	Everett	" 27	$3\frac{5}{8}$	2	55
Everett's Colossal	1	"	" 27	$6\frac{1}{4}$	$2\frac{3}{4}$	44
Rural New Yorker	1	"	" 27	$10\frac{1}{4}$	$6\frac{1}{4}$	61
Everett's Six Weeks Market	1	"	" 27	$5\frac{3}{4}$	$3\frac{1}{2}$	61
Everett's Heavy Weight	1	"	" 27	1 9-16	$\frac{3}{4}$	48
Early Everett	1	"	" 27	$4\frac{5}{8}$	$2\frac{3}{4}$	60
The Great Divide	1	Burpee	" 20	$6\frac{1}{2}$	$2\frac{1}{2}$	39

C. W. MATHEWS.
A. T. JORDAN.

Notice.—This Station has no seeds for sale or distribution.

M. A. SCOVELL, Director.