VIRGINIA

HORTICULTURE ANNUAL REPORT 1935

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ANNUAL REPORT
1933

Project No. Va - - - - - - Extension Division

By L. B. Dietrick

Horticultural Department, V. P. I.

INDEX

COOPERATIVE EXTENSION WORK
IN
AGRICULTURE AND HOME ECONOMICS
STATE OF VIRGINIA

[illegible] AGRICULTURAL AND MECHANICAL COLLEGE AND POLYTECHNIC INSTITUTE AND UNITED STATES DEPARTMENT OF AGRICULTURE, COOPERATING

EXTENSION SERVICE

Blacksburg, Virginia
December 1, 1935

Mr. John R. Hutcheson, Director
Extension Division
Blacksburg, Virginia

Dear Sir:

I am submitting herewith the fourteenth annual report of the work in Vegetable Extension, Department of Horticulture, for the period beginning December 1, 1934 and ending November 30, 1935.

PERSONNEL

The personnel for this period consisted of L.B. Dietrick, Vegetable Specialist, employed two-thirds time; and L.C. Benner, Assistant Vegetable Specialist, employed full time.

GENERAL DISCUSSION

As in the past four main projects were emphasized. Three of these, the Potato, Sweet Potato, and Tomato projects, deal with crops of considerable monetary value to the agriculture of the State. The fourth, or Home Garden project, deals with a phase of agriculture which is of even greater importance to the health and often to the income of the farm family.

Although efforts were confined chiefly to the projects mentioned, considerable aid was also given to growers of various other truck and market garden crops. Several institutions were aided in their production problems. The usual amount of judging at fairs also had to be handled. Correspondence in addition dealt with practically every vegetable crop grown in the State. The minor projects as well as the four major projects will be discussed separately in the body of this report.

Means and Agencies

The extension set-up within the counties continued to be the main agency through which Vegetable Extension information was carried to the farmers of the State. The success or failure of any project depends primarily upon the intelligent understanding of that project by the agent and secondly upon the energy expended by him in pushing the project in his county. For that reason, projects were stressed primarily in those counties in which the agents were completely sold on the project under consideration.

Through the agents, the aid of various other organizations was enlisted in Vegetable Extension work. Among these might be mentioned marketing organizations, growers' organizations, civic leagues, farmers' clubs, garden clubs, etc.

Demonstrations were used to a great extent in putting over the program in Vegetable Extension. By this means, a far greater total number of people were reached than would otherwise have been possible. Communities have been served rather than individuals. The demonstrations given have covered the range of vegetable production.

Wherever possible, meetings or tours were held at result demonstrations to fix definitely such results in the growers' minds. Likewise, it has been our aim, in so far as possible, to make all other meetings demonstrations as it is felt that such demonstrations add considerably to the effectiveness of the meeting as an extension agency. Publicity articles, radio talks, and circular letters have also been used to a great extent both in putting over subject matter and results.

For subject matter, the specialists have from time to time called upon the United States Department of Agriculture and various State experiment stations. The cooperation of the Virginia Truck Experiment Station has been of particular value in this respect.

Service Rendered

Before discussing the several projects in detail, a brief statement might well be made relative to the service rendered by this department in 1926. The situation can be most concisely pictured by the statistical method. Although it is conceded that the number of miles traveled, the days in the field or office, the number of letters written, or even the meetings held and demonstrations given, are not necessarily a true criterion of the work accomplished, yet taken all together they serve as an index to achievement. Viewed in this light, the following statistics are indicative of the service rendered by this department.

Type of Service	Data
Days in field	408
Days in office	148
Mileage	22,495
Counties visited	27
Visits to agents	206
Visits unassisted by agents	61
Meetings	309
Attendance	25,282
4-H clubs met	21
Attendance	1,265
Method demonstrations	242
Attendance	4,442
Letters written	4,487
Information circulars written	13
Information circulars sent out	150,900
Press articles and radio talks prepared	44
Bulletins sent out	8,215

As an indication of the demand for service from this department it is significant to note that over 75% of the specialists' time was devoted to field work. As a matter of fact considerable time was spent in the field when such time was sorely needed in the office. Visits to counties on project work increased 30% over 1934. Method demonstrations increased 45% and attendance at such demonstrations 15%. The number of meetings showed a gain of 26% while attendance increased 27%. In addition many calls had to remain unanswered due to a lack of time on the part of the limited personnel.

POTATO PROJECT

Virginia ranks eighth in the production of Irish potatoes in the United States. Two counties alone - Accomac and Northampton - produce sufficient potatoes to supply the annual needs of a city of over two million inhabitants. For the five-year period 1931-1935, the state acreage in Irish potatoes has averaged 101,200 acres with an average production of 11,478,800 bushels valued at $7,620,800.

The yield per acre, of Virginia's leading truck crop, however, is far from satisfactory. The average yield per acre in 1935 was only 129 bushels. The five-year average 1931-1935 was still lower, only 116 bushels per acre. Such yields are far too low and must be increased for economical production.

The low average yield for the State is due primarily to the use of poor and diseased seed, low fertilization, lack of cultivation, little or no pest control measures, etc. The potato project is designed to increase the production per acre at a low unit cost of production. Work was carried on in this project in 17 counties.

Early Irish Potato Production

Early Irish potato growers cut their acreage rather heavily in 1935 following the disastrous prices of 1934. Total acreage of commercial early potatoes was 272,100 acres compared with 307,800 acres in 1934, a decrease of over 14%. Due to slightly better yields, production decreased from 42,799,000 bushels in 1934 to 35,094,000 bushels in 1935, a decrease of only 11%. In spite of the reduced acreage and production, however, prices still further declined from 54¢ per bushel in 1934 to 51¢ in 1935, a decline of 6¢ per bushel or 9%. The 1935 price averaged only 50% of the price received in 1933.

Production of the early Irish potato crop in Virginia is concentrated in a relatively few counties in the eastern section of the State. Accomac, Northampton, Norfolk, Princess Anne, Nansemond and James City counties produce by far the bulk of the crop.

Virginia growers reduced their 1935 acreage from 65,000 acres in 1934 to 50,000 acres in 1935, a reduction of nearly 23% compared to 14% for the early states as a whole. Virginia production fell 30% from 10,012,000 bushels in 1934 to 7,000,000 bushels in 1935, compared to a reduction of 11% for the early producing states as a group.

Prices declined to 42¢ per bushel, a decrease of 4½¢ from 1934 and only approximately one third of the price received in 1933 when potatoes sold for $1.21 per bushel.

Various efforts were made throughout the season to improve the potato prospects for the Shore. Two of these accomplished little or nothing while two were conducive to good.

Marketing Agreement. Early in the season a potato marketing agreement was offered by the A.A.A. to the shippers in Virginia and other early producing states. Discouraged by the lack of success of the 1934 marketing agreement, however, shippers refused to give the 1935 agreement a trial. It is doubtful if much could have been accomplished in stabilizing prices through such an agreement.

Potato War. Another price raising effort was made, more or less, by the growers themselves, during the marketing of the crop. This movement became known as the Potato War. Discouraged by the low prices for which their crop was being sold, the growers took matters into their own hands. The price of potatoes was pegged at definite figures and no potatoes were allowed to move below that figure. Patrol committees were appointed to enforce the move. Several cars, boats and trucks were unloaded in carrying out the recommendations of the growers' committee. At least two definite factors worked against the success of the movement. First, the men heading the movement knew little about the marketing of potatoes. The price was finally pegged at $2.00 per barrel which was undoubtedly higher than supplies justified. The result was that the Eastern Shore held the umbrella for other sections which sold out a little below that figure. Losses on the Shore from decay and rehandling were tremendous. It is doubtful if the total returns for the crop as a whole were as great as they would have been without such a movement. A second factor which militated against success in the growers' efforts was that no provision was made for apportioning the crop sold at the pegged figure. Each grower attempted to move his crop when digging was permitted. After his crop was marketed, naturally he lost interest and left his neighbor holding the bag. The movement was partially successful, however, in uniting the growers in a common cause and in the long run it may tend to greatly reduce the number of selling agencies handling potatoes on the Shore. Some of the selling agencies were seriously crippled financially during the movement. It is undoubtedly true that one agency handling at least 50% of the crop would return the growers far more per barrel than they get under the present marketing system.

Credit Agreement. One of the encouraging signs on the Shore during the current season was a credit agreement signed and lived up to apparently on the part of the various agencies furnishing credit to the potato growers. In the past such agreements have always been on the basis of "gentlemans' agreements" and as one representative of a large agency aptly stated "the trouble is there aren't any gentlemen."

This particular agreement, however, sponsored primarily by G.S. Ralston of the Eastern Shore of Virginia Produce Exchange, sought to restrict credit to a definite percentage of the previous year's credit by drawing up such an agreement with teeth in it. Penalties for breaking the agreement were definite fines and full publicity. That the agreement worked is indicated in part at least by the fact that Eastern Shore growers reduced their acreage 21% compared to less than 12% for the Norfolk section and 14% for the early producing states as a whole.

Live-at-Home Movement. Another encouraging sign is the growing realization on the part of growers that their own farms should be more nearly self-sufficient. There is a gradual tendency toward at least some slight diversification and a live-at-home program. Considerable work will be done along this line in 1936.

The ultimate aim of the Irish potato grower in Virginia along with some diversification and a live-at-home program should be not increased total production but increased production per acre at minimum costs. Cost account records secured from 93 growers in 1935 show that the average cost per barrel was $1.46, the average value per barrel $1.43 and the net loss per barrel three cents. If these 93 growers were representative of the industry as a whole, Virginia early potato growers lost at least $52,900 in the 1935 season. Profit or loss is directly dependent on yields. The same records vividly portray this as evidenced by the following table.

Yields per Acre	Profit or Loss	
	Per Acre	Per Barrel
30.0-39.9	- $28.18	-$ .82
40.0-49.9	- 15.47	- .38
50.0-59.9	- 10.48	- .19
60.0-69.9	- 2.47	- .04
70.0-79.9	6.19	.08
80.0 and over	25.66	.39

High yields per acre are therefore essential if the Virginia potato grower is to remain in the game. Considerable effort has been expended in influencing growers to adopt improved cultural practices and thus increase their individual production per acre. The use of land suitable for potato production, green manure crops, good seed, proper fertilization, and the judicious use of lime have been particularly stressed. Various phases of the early potato project work are discussed in detail in the following pages.

Outlook Information. This department cooperated with the Interstate Early Potato Committee in holding 15 outlook meetings with Irish potato growers in Virginia. Total attendance at the meetings was 669. Mr. A.E. Morshey, Chairman of the Committee presided and deserves considerable credit for his presentation of the facts to the growers. Dr. H.H. Zimmerley, Director of the Virginia Truck Experiment Station, was drafted for the outlook meetings and made some very valuable suggestions on cultural practices. The Vegetable Specialists presented a summary of the cost of production studies. Additional outlook and market information was furnished the growers from time to

time by this office through the county agents.

Source-of-seed demonstrations. Four source-of-seed demonstration plots were conducted on the Eastern Shore comparing 30 known sources of Cobblers. Due to flooding, resulting in poor germination, complete records could be kept on but two plots.

The performance of the various sources was observed carefully throughout the season. Germination, disease and yield records were kept on each. Individually and collectively, the plots served as excellent "Good Seed vs. Poor Seed" demonstrations. Accumulated records over a 12-year period also serve as valuable aids in recommendations to growers. One year's results are questionable; thirteen years' consistent performance insures dependability to a high degree.

The first field record taken was a germination count. Missing hills were dug up to determine, if possible, the cause for non-germination. Among the contributing causes were rot, dead eye, no eye and loss. Loss was attributed to cultivation, rodents and more particularly complete rot. Germination ranged from 91.35% to 100%. (The germination counts for the [illegible] plots are included in this report as a part of Exhibit A.)

The second field record taken was a Disease Count. Each hill was carefully checked and disease symptoms noted. Acknowledgment is made to Dr. H.T. Cook, of the Virginia Truck Experiment Station, for his assistance in taking the disease record. The per cent disease ranged from 0% to 21.66% with leaf roll accounting for most of the disease present, and mosaic second in importance. (The disease counts of the [illegible] plots are also included in this report as a part of Exhibit A.)

The third field record taken was the yield record. The averaged yields of the two plots on Eastern Shore have been computed in bushels per acre and are given below. The number in parentheses directly after the name of each strain denotes the number of plots in which that particular strain occurred.

Average of All Plots

Source of Seed		Yield - Bushels per Acre		
		Primes	Seconds	Total
Mich. Robinson	(2)	244.5	72.0	316.5
Va. T.V. Wood & Sons	(2)	238.5	72.0	307.5
S.D. Fletcher	(2)	238.0	61.5	299.5
Wis. Zaleski	(2)	233.0	98.0	331.0
N.D. Fur North	(1)	225.0	87.0	312.0
N.Y.N.J.#1 Buff	(2)	223.5	51.0	274.5
N.Y. Home-Grown	(2)	222.5	96.0	318.5
P.E.I. Palmer	(2)	217.5	82.5	300.0
N.Y. Porter and Rooney	(2)	214.5	102.0	316.5
N.D. Miller	(2)	214.5	67.5	282.0
Nova Scotia Fleming	(2)	214.5	64.5	279.0
N.D. Douglass	(2)	213.0	100.0	313.0
N.D. Story	(2)	213.0	106.5	319.5
Me. Corliss	(1)	207.0	69.0	276.0
N.D. Late-Valah	(1)	207.0	48.0	255.0
N.Y. Home-Grown #1	(2)	207.0	48.0	255.0
Me. Rooney	(2)	204.0	82.5	286.5
N.Y. Home-Grown #2	(2)	201.0	61.5	262.5
N.Y.N.J.#2 Buff	(2)	199.5	61.5	261.0
S.D. Blackman	(2)	198.0	64.5	262.5
N.D. Home-Grown	(2)	198.5	82.5	281.0
Me. Home-Grown	(2)	192.0	65.0	257.0
S.D. Porter	(2)	189.5	69.0	258.5
Me. Ashby	(2)	184.5	88.5	273.0
Me. Prescott	(2)	183.0	88.5	268.5
N.C.	(2)	181.5	121.5	303.0
N.Y. Home-Grown Sub Tr.	(1)	174.0	39.0	213.0
Md. Dukes	(2)	171.0	70.5	241.5
P.E.I. Home-Grown	(2)	168.0	48.0	216.0
N.Y.N.J.#3 Buff	(2)	141.0	69.0	180.0
Average		202.8	72.1	274.9

Yields ranged from 141.0 to 244.5 bushels of primes per acre, a difference of 103.5 bushels between the best and poorest strains. The average yield for all strains included in the plots was 202.8 bushels of primes per acre. The variation in yield can be charged largely to seed source.

The leading strain in the plots yielded 244.5 bushels of primes per acre, 92.5 bushels over the Eastern Shore average of 152 bushels or an increase of over 60%. The five leading strains showed an increase of 52% while the average yield for all strains was still 33% above the average yield for the Shore. Only one strain included in the plots yielded lower than the Shore average. This is particularly significant since several known inferior strains were included in the plots.

The plots as in past years again emphasized the superiority of certified seed over home grown seed, as illustrated by the following table.

Source of Seed	Yield - Bushels Per Acre		
	Firsts	Seconds	Total
N.Y.	216.8	102.0	318.8
N.Y. Home Grown (Av. of 3 strains)	210.2	67.5	277.7
N.D. (Av. of 5 strains)	215.3	98.0	311.3
N.D. Home Grown	195.2	86.8	282.0
P.E.I.	217.6	82.8	300.0
P.E.I. Home Grown	162.0	48.0	210.0
Maine (Av. of 5 strains)	190.3	85.5	276.0
Maine Home Grown	198.0	65.0	263.0
Average - Certified	206.0	92.0	301.0
Average - Home Grown	189.4	59.3	248.7

The data recorded from the plots are distributed to growers, seedsmen, fertilizer dealers and others. Copies are sent to the seed growers in the several states whose seed is represented in the plots. Both the grower and the user of the seed can thus study the performance in comparison with other strains. A copy of the complete plot records, distributed this year, is contained in the back of this report as Exhibit A.

New Varieties. Chippewa, Katahdin, Golden Nittany and other new varieties were included in some of the source-of-seed plots. None of the new varieties except one strain of Chippewa yielded as well as the better strains of Cobblers. This one strain yielded 219 bushels of firsts per acre. A second strain, however, yielded only 176.6 bushels. Katahdin yielded 177 bushels of firsts per acre while Nittany and Golden each yielded 150 bushels. The other five numbered but as yet unnamed varieties ranged from 155 to 195 bushels of firsts per acre.

Stem Ends. A planting of stem ends was included in one of the source-of-seed plots. The yield for the stem ends was only 119 bushels of firsts and 66 bushels of seconds per acre.

Potato Tour. The thirteenth annual Eastern Shore Potato Tour was held on June 29, 1938, in conjunction with the Worcester County, Maryland, Tour held the following day.

Growers, fertilizer and package salesmen, seed dealers, marketing representatives and others toured the various demonstration plots, comparing seed-sources, pest control measures, stem-end plantings, twin row planting, liming, etc. After inspecting the plots,

the crowd gathered at the Eastern Shore Experiment Station at Onley, to inspect the several experiments conducted at that Station, to observe various demonstrations, and to listen to a prepared program.

Three hundred and fifty people attended the tour. A partial check-up showed representatives from Virginia, Florida, Maryland, New Jersey, North Dakota, North Carolina, Delaware, Ohio, Pennsylvania, New York, Maine, Connecticut, Illinois, Indiana and the District of Columbia.

Several Virginia representatives also attended the Maryland tour on the day following the Virginia tour. Such tours afford an excellent opportunity for intercontact between growers, officials, and others vitally interested in the potato industry from several states. Such associations must of necessity react to the benefit of the Virginia potato industry. A program of the tour is included in the back of this report as a part of Exhibit A.

The Production of Potatoes in Other Parts of the State

The lot of Virginia late potato grower improved in 1935. Acreage remained the same at 80,000 acres. Due to better yields, however, production in 1935 increased 9% to 5,728,000 bushels from 5,421,000 bushels in 1934. Prices improved and the average will probably approximate 90¢ to $1.00 per bushel.

Late potato growers face practically the same problems as the producer of early potatoes. Similar aid was given, therefore, to growers in various sections as was given in the early producing area. Thirty method demonstrations were given with a total attendance of 607.

Meetings. Thirty-six meetings, including the Outlook Meetings were held or attended in the Potato Project as a whole with a total attendance of 5,888. Average attendance was 106.

Exhibits. Irish and sweet potato exhibits of both certified seed and table stock were featured by this department at the Corn and Grain Show. This feature of the Show has increased and is increasing rapidly. The total number of exhibits in 1935 was 97, an increase of 12 exhibits over 1934.

Certified Seed Production. Certification work was done with eight growers of Irish potatoes. A total of 56½ acres were grown, distributed according to varieties as follows:

Bovel New Yorker	26½	Acres
Irish Cobblers	11	"
Katahdin	9	"
Green Mountain	7	"
Red Bliss	3	"

Of this acreage 97½ acres passed the field inspection while 19½ acres were turned down. The potatoes will not be bin inspected until 1926. The 1924 crop, however, bin inspected in January 1925, totaled 4,870 bushels of which 4830 bushels were certified.

4-H Club Work. Some work was done with Irish potato club members. Three hundred and fifty-two members were enrolled in potato clubs.

Summary of Important Phases of Potato Project

Cooperated with Interstate Early Potato Committee in holding 16 outlook meetings with a total attendance of 669. Additional outlook and market information furnished to growers from time to time.

Seventy-one and one-half days in field devoted in Potato Project work in 17 counties. Thirty-five visits to counties on such work.

Thirty-six meetings held with a total attendance of 5,802; average attendance 161.

Numerous demonstrations conducted on source-of-seed, certified seed, new variation, liming, roguing, pest control, grading, storing, etc; attendance at 20 method demonstrations, 607.

Source-of-seed plots ranged from 141.8 to 344.5 bushels of prime per acre with an average for the thirty strains of 228.8 bushels.

Leading strain in source-of-seed plots yielded 80% over Eastern Shore average. Five leading strains showed average increase of 82%; average for all strains 35% above Shore average.

Certified seed yielded 19.6 bushels of prime per acre more than home grown seed.

Three hundred fifty growers, gardens, fertilizer dealers and certification officials from 14 states and the District of Columbia attended Potato Tour.

Irish potato exhibit featured at Corn and Grain Show; 21 state and five interstate exhibits in certified class; 11 exhibits in table stock class; total exhibits, 37.

Fifty-four and one-half acres of Irish potatoes grown for certification. Certification issued for 2,530 bushels of the 1924 crop.

Cooperated in 4-H Potato Club work.

500 Interested Growers at 12th Annual Potato Tour

One of 1939 Cobbler Seed Source Demonstration Plots

Growers Inspecting Potato Fertilization Plots

Field of Eastern Shore Irish Cobblers

Rye and Vetch Soil Improvement Crop for Potatoes

Spraying to Control Flea Beetle - Eastern Shore

Spraying for Insect and Disease Control - Washington County

Power Equipment for Potato Growers

Certified Rural New Yorker - 360 Bushels per Acre - Huff Bros.Farm - Washington County

Irish Potato Exhibits - Eastern Shore Farm Products Show

SWEET POTATO PROJECT

The 1935 acreage of sweet potatoes in the United States increased 6% from 768,000 acres in 1934 to 812,000 acres in 1935. Total production is estimated at 69,000,000 bushels, an increase of 8.6% over 1934. The price per bushel declined from 80 cents in 1934 to 69 cents in 1935.

Virginia growers increased their acreage 3% from 34,000 acres in 1934 to 35,000 acres in 1935. Production increased approximately 4% from 3,910,000 bushels in 1934 to 4,060,000 bushels in 1935. Prices declined from an average of 76 cents per bushel in 1934 to 65 cents per bushel in 1935.

Although the total value of the sweet potato crop in Virginia was $2,639,000 the yield per acre of her second most important truck crop is extremely low. Yield per acre in 1935 was only 116 bushels, in 1934 118 bushels and the 5-year average 1931-1935, only 118 bushels. Proper cultural practices can increase this yield tremendously. Factors contributing to the low average yield are the use of poor land, poor seed, improper fertilization, disease, careless harvesting and poor storage.

Certified seed production, crop production, and storage house construction, were emphasized in the sweet potato project. Sixty-nine and one-half days in the field were devoted to sweet potato project work in 21 counties.

Certified Seed Production

The certified seed project has been of untold value in making available a supply of good seed. During the past 15 years a total of 140,944 bushels of sweet potatoes have been certified, an average of 10,496 bushels annually. In addition to the income from the sale of this seed growers have received additional profits from increased yields and the sale of plants.

Inspections. Three separate inspections were given; namely, Seed Bed, Field and Bin. The seed beds were inspected primarily for black rot, soft rots and general condition of the plants. The fields were inspected for varietal mixture, black rot, blue stem, freedom from weeds, general condition, etc. The potatoes were inspected in the bin for black rot and storage rots.

Scope of Work. In 1935 certification work was carried on with 71 growers in 7 counties - Accomac, Northampton, Caroline, Isle of Wight, Southampton, Charles City and Lancaster.

Two hundred and sixty acres, an increase of 80% over 1934, were given for inspection, consisting of 189 acres from draws and 71 acres from vine cuttings. The distribution of acreage according to varieties was as follows:

Variety	Acreage
Nancy Hall	140½
Big Stem Jersey	49
Maryland Golden	11½
Porto Rico	10 1/8
Hayman	8
Little Stem Jersey	4
Spanish	1½
Priestley	1/8

The crop grown in 1935 will not be certified until 1936. Nine thousand and eighty-two bushels of the 1934 crop were eligible for bin inspection and of this number 8,080 bushels were certified in 1935. These potatoes were distributed according to varieties as follows:

Variety	Acreage
Big Stem Jersey	4440
Nancy Hall	3198
Little Stem Jersey	200
Hayman	80
Maryland Golden	80
Spanish	80
Priestley	80

Value of Certification Project. The certification of sweet potatoes pays the growers exceedingly well. Reports from 60 of the 71 growers in 1935 show a return of $6,999.80 from the sale of seed and $12,586.50 from the sale of plants or a total return of $19,586.40. Of considerable importance, too, is the fact that growers of certified seed bedded 8080 bushels of certified seed and used over 8 million plants for their own plantings.

Crop Production

The same type of cultural information was given to the commercial growers as to the producers of certified seed. Outlook information, seed selection, spacing, fertilization, pest control, grading and storing were particularly stressed.

Outlook Information. The state outlook report on sweet potatoes was prepared by this office and was used effectively at sweet potato meetings.

Demonstrations. One hundred and forty-eight demonstrations were given in the Sweet Potato Project with a total attendance of 872. The demonstrations dealt with seed selection and treatment, disease identification, rogueing, fertilization, harvesting, grading, storing, and storage house construction.

Meetings. Thirty meetings were held in the Sweet Potato Project with a total attendance of 868, or an average attendance of 15.

Corn and Grain Show. Sweet potatoes were again featured at the Corn and Grain Show. The exhibit consisted of 19 exhibits in the certified class and 41 exhibits in the table stock class, or a total of 60 exhibits. Total exhibits increased 114% over 1934.

Information Circulars. One information circular on sweet potato production was prepared and a total of 2000 copies were distributed (see Exhibit E.)

Storage House Construction

This project is a cooperative one between this department and the Agricultural Engineering Department. Sixteen sweet potato storage houses were constructed in 1935, 13 of wood and 3 of cinder block construction. Of the 13 wood houses, 9 were new and 4 were old buildings remodeled into storage houses. The location and capacity of the houses are shown below.

County	No. of Houses	Total Capacity
Caroline	3	15,000
Isle of Wight	2	3,000
Lancaster	3	4,000
Nottoway	1	800
Dinwiddie	1	10,000
Southampton	1	4,000
King George	1	4,000
Princess Anne	1	1,000
Charles City	1	8,000
Hanover	1	10,000

The total capacity of the 16 houses is 56,800 bushels, or an average capacity of 3,550 bushels. Houses cured sweet potatoes usually sell at a premium of at least 50 cents per bushel above the average price paid in the field. Provided only 80% of this storage capacity is being utilized, the premium value over field marketed stock would total $14,200.

The 16 houses constructed this year bring the total to 181 houses constructed during the past 11 years. The total capacity of all 181 houses is 284,480 bushels or an average capacity of 2,250 bushels.

Summary of Accomplishments - Sweet Potato Project

Sixty-nine and one-half days in field devoted to sweet potato project work in 21 counties; 89 visits to agents.

Thirty meetings held with a total attendance of 868.

One hundred forty-eight method demonstrations given with a total attendance of 878.

Certification work carried on with 71 growers in 7 counties.

Two hundred and sixty acres of sweet potatoes, an increase of 82% over 1934, grown for certification. Eight varieties entered.

Eight thousand thirty bushels of sweet potatoes certified.

One hundred forty thousand eight hundred forty-four bushels certified in 13 years, an average of 10,834 bushels annually.

Return to growers from sale of certified seed and plants, $19,826.40.

Growers of certified seed bet 2,500 bushels and use over 3 million plants for their own plantings.

Nineteen sweet potato exhibits in certified class and 41 exhibits in table stock class at Corn and Grain Show. Total exhibits 60, or increase of 114% over 1934.

Sixteen storage houses constructed or remodeled; total capacity, 56,000 bushels; average capacity, 3,500 bushels.

Premium value of potatoes stored, $14,500 [illegible] only 30% of storage capacity is utilized.

One hundred twenty-one houses constructed in 35 counties since project started; total capacity 326,450 bushels; average capacity, 2,690 bushels.

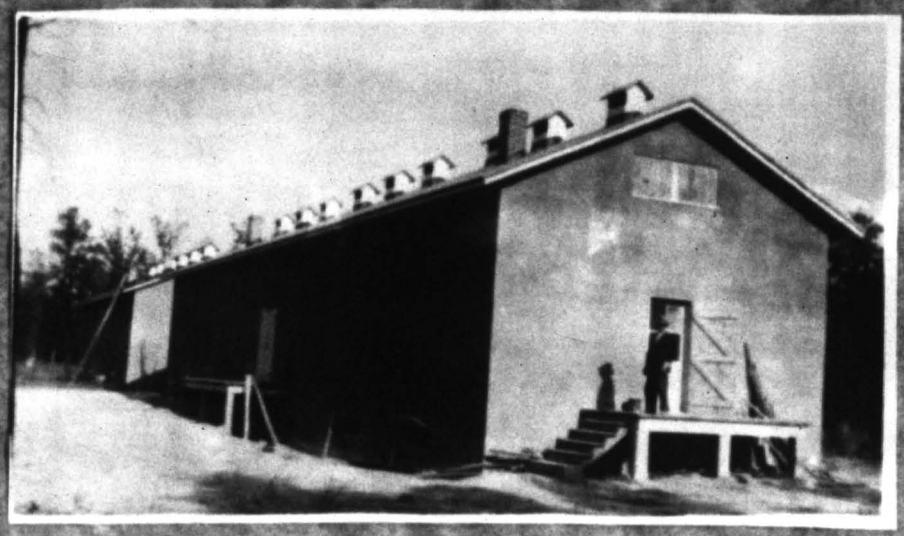
HIGHLIGHTS OF THE SWEET POTATO PROJECT

Certified Sweet Plant Bed - Southampton County

Instructing Grower on Field Grading of Sweet Potatoes

Graded Sweet Potatoes Ready for Storage

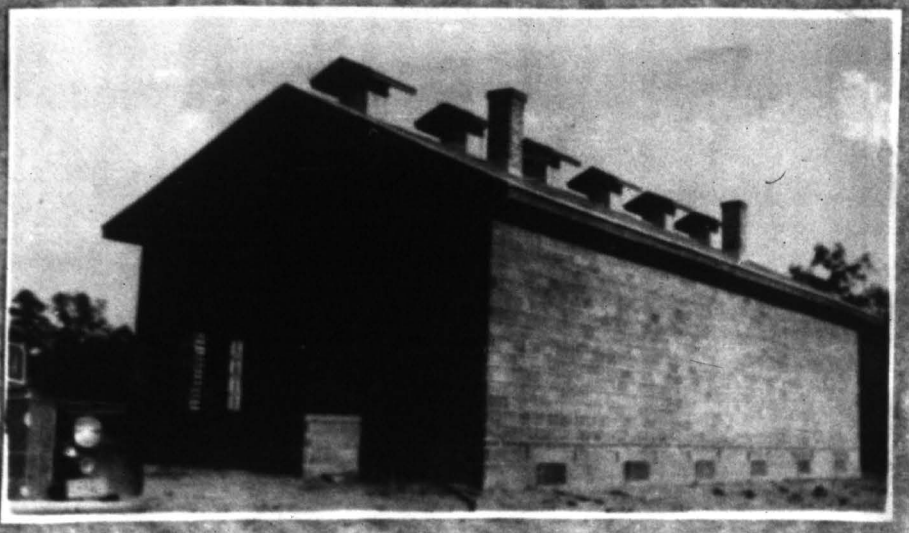
Improper Method of Stacking Crates in Storage House



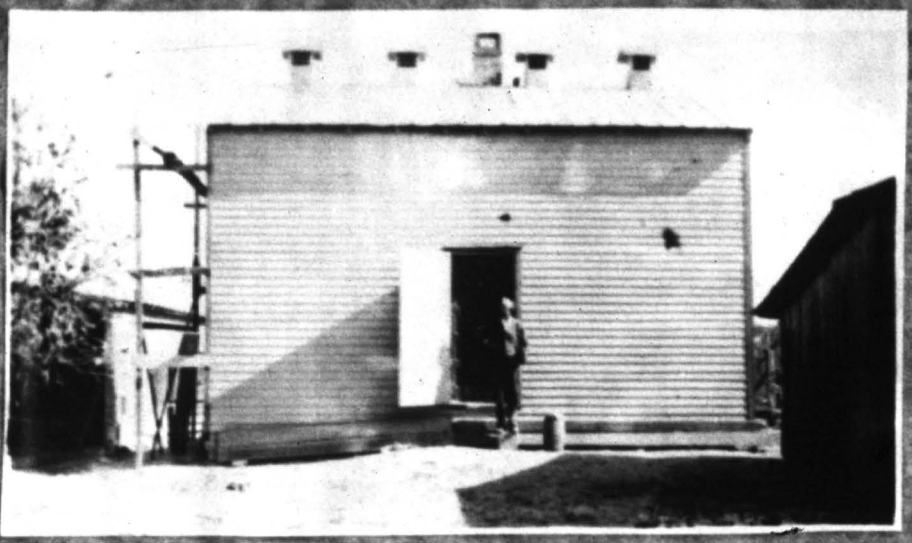
10,000 Bushel Storage House - Caroline County

Same House as Above - Note 7,500 Bushel Bin Added in 1938
Total Capacity 17,500 Bushels

5,000 Bushel Storage House under Construction - Caroline County



Same House as Above Completed



Individual Farm Storage Houses Constructed in 1938
Princess Anne County

Tobacco Barn Converted into Storage House - Nottoway County

Combined Sweet Potato Storage House and Tomato
Cannery - King George County

TOMATO PROJECT

The combined value of market and canning tomatoes in Virginia for the five-year period 1931-1935 averaged $760,200 annually. Improved yields per acre could greatly increase this figure. Virginia's yield of market tomatoes in 1935 was only 100 bushels per acre and of canning tomatoes only 110 bushels.

Ninety days in the field were devoted to tomato project work in 19 counties, entailing 55 visits to agents.

The Production of Canning Tomatoes

United States acreage in canning tomatoes increased over 25% from 365,260 acres in 1934 to [illegible] acres in 1935. Due to poorer yields per acre, total production, however, increased but 19% from 1,407,800 tons in 1934 to 1,673,400 tons in 1935. The yield per acre of 3.68 tons was the lowest in the last 17 years with the exception of the 3.30 ton yield in 1931. The total pack is estimated at around 17 million cases of No. 2's compared to around 15 million cases in 1934.

Prices to growers dropped from $12.12 per ton in 1934 to $11.68 per ton in 1935. For two seasons weather, by decreasing yields, has prevented disastrous years. The stage is all set, however, for a tremendous overproduction in 1936 which with the large carry-over would mean ruinous prices for both canners and growers.

Virginia growers increased their acreage 32% from 18,900 acres in 1934 to 25,000 acres in 1935. Yield per acre in Virginia was the highest in years, increasing from 2.4 tons (80 bushels) per acre in 1934 to 3.3 tons (110 bushels) in 1935. As a result total production increased 81% from 45,400 tons in 1934 to 82,500 tons in 1935. The average price received by the grower, according to government reports, which price this office feels is higher than the actual price received, dropped from $12.10 per ton ([illegible].3 cents per bushel) in 1934 to $11.70 per ton ([illegible] cents per bushel) in 1935. In many areas of Virginia tomatoes were contracted for at 31 cents per bushel. In some of the non-contract areas tomatoes sold as low as 10 and 15 cents per bushel to the grower in the patch. At this price many growers harvested only a portion of their crop. It is believed, therefore, that later revisions will greatly lower the reported price.

Regardless of price, however, Virginia growers must increase their yield per acre for economical production. As factors influencing yield, the Tomato Project has stressed good seed, good plants, good land, early planting, proper fertilization, cultivation and pest control.

Outlook Information. This department prepared the outlook report on canning tomatoes for Virginia. This information was passed on to growers through the agents, meetings and publicity articles. In addition to the outlook report, additional outlook information on acreage, production, etc., was sent regularly to the county agents. Both growers and canners, particularly the latter, are more and more requesting this type of information.

Demonstrations. Numerous demonstrations were conducted on plant bed selection, land preparation, good seed, seeding, thinning, mulching, dusting, disease identification, fertilization, cultivation, grading, packing, account keeping, etc. Four hundred and sixty-two method demonstrations were given with a total attendance of 9880.

Tomato Plant Bed Demonstrations. Demonstration plant beds continue to be an excellent medium through which to instruct growers in the production of good plants. Twenty such beds, producing over 1,500,000 plants were supervised in 1935. Sufficient plants were grown in the supervised beds to set over 800 acres. Sale of plant bed dust has increased tremendously due to the beds.

Introduction of Good Seed. Specific information has been given both growers and canners as to sources of reliable tomato seed. The seed source plots have effectively stimulated this work. Hundreds of pounds of seed have been purchased from sources recommended by this office.

Three hundred and twenty-five ounce packages of high grade seed were distributed to individual tomato growers in several counties. The growers were asked to keep a record on the performance of this seed in comparison with their own crop. Many of the fields were visited by a Vegetable Specialist and the superiority of the seed noted.

Source of Seed Demonstrations. Closely allied to the introduction of good seed has been the source-of-seed plots. The majority of the seed account demonstrators in 1935 used seed from firms whose seed showed a high record of performance in the source-of-seed tests. Two thousand copies of the source-of-seed plot records were distributed to growers, seedsmen, and canners, a copy of which is included in this report as a part of Exhibit B.

Two half-acre source-of-seed plots were conducted in Lancaster and Westmoreland Counties in cooperation with the Virginia Truck Experiment Station, comparing Marglobe seed from 14 sources. In addition some promising new varieties were included in the plots. Growers were paid to insure the plots being well taken care of and records kept. The seed was all planted on the same date in the same plant bed and treated in the same manner. Plants were set in the plots on the same date and received the same field treatment. Records were made on trueness-to-type, resistance to wilt, and yield. The summarized record on two plots follows:

SEEDSMEN TOMATO SEED SOURCE PLOTS - 1938
Numerical Average for Two Plots

Source	Percent Wilt					Aug. 9 Type	Yield in Bushels Per Acre
	July 10	Aug. 8	August 25 Living	August 25 Dead	August 25 Total		
Burpee	0.0	10.6	46.3	0.0	46.1	-	169.9
Pritchard	2.0	31.5	68.5	11.9	73.4	-	227.2
Greater Baltimore	17.0	65.6	23.7	72.9	96.6	-	85.6
Blumberg Brothers	0.6	28.9	54.8	4.8	59.5	1.0	218.6
R.O. Dunn	0.6	18.0	49.9	2.6	52.5	0.0	226.2
Ferry Morse Standard	2.0	32.4	58.7	5.2	57.9	0.6	216.2
Ferry Morse Supreme	0.0	24.5	65.6	1.2	60.8	1.2	227.5
Griffith and Turner	0.6	28.0	58.4	10.5	68.9	10.5	209.5
Invincible	1.9	21.6	56.2	11.2	64.8	-	210.4
Maryland Seed Company	1.2	15.0	48.2	2.6	47.9	1.9	226.8
R.M. Richardson and Company	1.2	24.6	66.1	8.1	68.2	10.6	211.1
Stokes Standard	0.6	28.2	48.8	11.0	56.8	10.6	219.0
Stokes Master	1.2	15.7	47.2	1.2	48.4	0.6	226.6
George Thit and Sons	0.0	17.2	48.7	6.6	56.2	4.6	226.1
Tri-State Packers Ass'n.	0.0	28.6	41.8	0.6	48.4	4.6	203.9
Southern States Cooperative	2.0	18.7	54.2	0.6	58.1	1.9	220.1
R.V. Warren and Company	0.6	16.7	51.1	2.0	55.1	3.7	212.7
T.V. Wood and Sons	2.0	29.1	47.6	14.9	62.2	9.6	226.2
Average for 14 Marglobe Strains	0.9	21.2	49.9	5.1	55.0	4.0	224.6

The plots gave an excellent indication as to potential sources of good seed. In the Marglobe strains percent off-type ranged from as low as 0% to as high as 13.6% with an average for the 14 strains of 4.8%.

For the Marglobe strains wilt ranged from 0% to 3% with an average of 0.9% on July 10 compared to 17.8% for the Greater Baltimore check; from 13.7% to 30.3% with an average of 21.2% on August 9 as compared to 55.0% for the Greater Baltimore check; and from 42.4% to 68.9% with an average of 55.0% on August 26 compared to 98.6% for the Greater Baltimore check. On August 26 at the last wilt count the number of plants dead from wilt ranged from 0.6% to 14.8% with an average of 5.1% for the Marglobe strains compared to 72.9% for the Greater Baltimore check.

Yields ranged from 203.9 to 247.3 with an average of 224.6 bushels per acre for the Marglobe strains compared with 83.5 bushels per acre for Greater Baltimore. The best Marglobe strain yielded [illegible] as well as the check while the average yield for all 14 Marglobe strains was still 269% that of the check. Thus is indicated the necessity for good seed.

Of the new varieties, Rutgers yielded 149.9 bushels per acre; Pritchard 227.5 bushels and Invincible 210.4 bushels.

Tomato Tour. A tour of the source-of-seed plots was attended by representatives of ten large seed concerns which supply the bulk of the tomato seed used in Virginia. Only two concerns having strains in the plots were unrepresented. The concerns represented, located as far north as New Haven, Connecticut; as far south as Norfolk, Virginia, and as far west as Detroit, Michigan are given below. A program of the tour is included in the report as Exhibit C.

Seedsmen	Location
Blumberg Brothers	Baltimore, Maryland
Ferry-Morse	Detroit, Michigan
Griffith and Turner	Baltimore, Maryland
E.M. Richardson & Company	Baltimore, Maryland
Francis C. Stokes & Company, Inc.	Philadelphia, Pennsylvania
Geo. Tait and Sons	Norfolk, Virginia
Southern States Cooperative	Richmond, Virginia
D.W. Warren and Company	Norfolk, Virginia
T.W. Wood and Sons	Richmond, Virginia
Associated Seed Growers	New Haven, Connecticut

This tour has focused the attention of the seedsmen selling tomato seed in this area and has done a great deal to stimulate interest in better seed both on the part of the seedsmen themselves and also with growers and canners.

Pest Control Demonstrations. Each of the 20 plant beds served as a demonstration on pest control. All beds were dusted to control pests.

Wilt is one of the most destructive diseases of the tomato area. Emphasis has been placed upon the use of the wilt-resistant variety, Marglobe. All the seed introduced in the good seed work has been of this variety.

Tomato Survey Records. Survey records were made of the 318 tomato farms whose owners cooperated in keeping cost accounts. Each survey secured information on factors pertinent to tomato production on the particular farm in question. These records will be summarized and the results presented to growers' meetings in 1936. They should be of particular value in conjunction with the cost account records kept on the same farms in interpreting causes of variations in returns from the tomato crop.

Cost Account Records. One of the most important phases of the tomato project is the cost account work. Definite information on the cost of tomato production in Virginia is sorely needed and such records will supply this information. Three hundred and eighteen cost account record books were started with tomato growers in Lancaster, Westmoreland, Essex, Richmond, Middlesex, King William, King and Queen, Bedford, Botetourt, Shenandoah and Page Counties, in cooperation with the Economics Department. The account books completed have not been summarized as yet, but will be in time to present to meetings of tomato growers in March.

The data from 211 records kept in 1934 were presented in meetings early this year very effectively. A brief summarization follows:

Costs and Returns Per Acre on Tomatoes

	(211 farms)	
	Amount	Value
Use of land		3.50
Manure		2.55
Fertilizer	815 lbs.	6.21
Lime		.08
Seed		.04
Plants		.51
Spray and Dust		.16
Man Labor	60.8 hrs.	8.17
Horse Work	49.5 hrs.	4.16
Truck Use		.04
Tractor Use		.25
Equipment Use		.50
Contract Picking		5.27
Contract Hauling		2.75
Interest		.24
Total Cost		38.53
Tomatoes Sold	232.5 baskets	48.30
Profit Per Acre		9.77
Acres Per Farm	3.68	
Yield Per Acre (Bskts)	232.5	
Cost Per Basket		15.2¢
Value Per Basket		19.2¢
Profit Per Basket		4.2¢

For a complete summary of the cost account records see Exhibit E.

Meetings. Thirty-three meetings were held in the Tomato Project, as a whole, with a total attendance of 1,878; average attendance was 56.

Three special phases of tomato production were taken up at these meetings. The first was the outlook information. All the available data were presented to the growers and canners for their consideration. The second phase discussed was the source-of-seed work stressing the necessity for good seed. The third matter presented was cost of production studies described previously. The reason why some growers secured a high profit per acre while others made a low profit or suffered a net loss was pointed out. In Lancaster County, for example, 84 growers averaged $19.86 net profit per acre. The five best growers, however, made a net profit of $48.17 per acre; the five medium growers made a profit of $18.36 per acre; while the five poorest growers suffered a net loss of $12.05 per acre. The same comparative figures hold true for all other counties. There was considerable interest manifested in the studies, particularly since many of the cost account demonstrators attended the meetings.

Cooperative Canneries. This office assisted in starting a cooperative cannery in King George County. It is interesting to note that this cannery put up a pack of 10,000 cases valued at approximately $18,000.00. The factory payroll was $1800.00 of which $1600.00 went to families of growers. Assistance was also given cooperative factories in Cumberland and Floyd Counties.

The Production of Market Tomatoes

Virginia acreage in market tomatoes increased 49% from 5,180 acres in 1934 to 4,800 acres in 1935. Yields averaged 100 bushels per acre as compared to 120 bushels in 1934. Total production is estimated at 480,000 bushels, an increase of 9.6% over 1934 production. The price per bushel received by the grower was 50 cents or a decrease of 22 cents below the 1934 price. The total value of the crop was $171,000 in 1935.

Extent of Work. Work with growers of market tomatoes was limited to Caroline and Northumberland Counties and to areas adjacent to cities.

Summary of Accomplishments - Tomato Project

Outlook information prepared and disseminated to growers and canners throughout the year.

Ninety days in field devoted to Tomato Project Work in 19 counties; 89 visits to agents on project work.

Thirty-three meetings held with a total attendance of 1,878; average attendance 56.

Numerous demonstrations given in all phases of tomato production; attendance at 462 methods demonstrations, 988.

Twenty plant bed demonstrations, producing over 1,000,000 plants, sufficient to set 200 acres, emphasize value of good plants.

Use of good seed greatly increased through good seed project; 325 ounce lots distributed to growers for demonstrational purposes.

Two seed-source plots conducted comparing 14 sources of Marglobe seed. Trueness to type for Marglobe strains ranged from 86.4% to 100% with an average of 95.8%.

Percent wilt for Marglobe strains ranged from 0% to 8% with an average of 0.9% on July 10, from 13.7% to 22.3% with an average of 21.5% on August 5, from 42.4% to 53.9% with an average of 50.0% on August 26 compared to 17.8%, 35.6% and 96.6% for the Greater Baltimore check on the same dates. Plants dead from wilt on August 26 ranged from 0.6% to 14.6% with an average of 8.1% for the Marglobe strains compared to 78.9% for the Greater Baltimore check.

Yields ranged from 233.9 to 347.3 with an average of 294.6 bushels per acre for the Marglobe strains compared to 88.3 bushels for Greater Baltimore.

Best Marglobe strain yielded 393% as well as check; average yield of all Marglobe strains 333% that of check.

Seed growers as far north as New Haven, Connecticut, as far south as Norfolk, Virginia and as far west as Detroit, Michigan represented at Tomato Tour.

Three hundred and eighteen cost account record books started in 11 counties.

Cost account records kept on 211 farms in 1934 (summarized and presented to grower meetings in 1935) show average gross return per acre of $48.30; cost per acre $38.33; profit per acre $9.97; yield per acre 332.3 bushels. High correlation between yield per acre and profit and loss.

Assisted with establishing cooperative cannery in King George County; pack of 10,000 cases valued at $12,000; $1400 of $1500 factory payroll went to families of growers.

Demonstration Tomato Plant Beds - Early Stage

Demonstration Plant Bed Mulched with Well-Rotted Manure
to Prevent Crust Forming

Demonstration Plant Bed - Note Excellent Windbreak

Demonstration Plant Beds - Note Twin Row Planting

Plants Nearing Transplanting Stage

Growing Plants for Seed-Source Plots

Field Inspection - Middlesex County

Making Type and Disease Counts on Seed Source Plot
Lancaster County

Noonday Feast of Watermelons and Cantaloupes 1938 Tomato Tour

Lancaster County

Westmoreland County
Growers and Sandsmen Inspecting Tomato Seed Source Plots

Field Inspection for Diseased and Bull Plants Middlesex County

Norfolk Prison Farm - 5 Rishes to Hoh Tomato Plant - Labor Do Item

HOME GARDEN PROJECT

The 1935 census reports 197,652 farms in Virginia. The potential value, therefore, of food crops produced in the gardens on these farms is tremendous. At an estimated value of $100 per garden the total value of the farm gardens would reach the impressive figure of $19,765,200. This twenty-nine million dollar industry, is vital to the agriculture of the state and is worthy of serious consideration. No other farm crop approaches it in economic value. And in addition the health of the farm family is directly affected by it.

Interest in the home garden continues to run high. There were probably more good gardens in Virginia in 1936 than ever before. Gardening in the one-crop sections is receiving more and more attention. There still remains, however, plenty of room for improvement. Many farms have no gardens at all; others have vegetables available only through the spring and summer months; it is still the exceptional gardener who has an all year around garden.

Seventy-five and one-half days in the field were devoted to garden project work in 24 counties. Sixty-three visits were made to counties on definite garden work.

Meetings. One hundred and twenty-four meetings were held with a total attendance of 4396, or an average attendance of 35. Garden information was presented at 29 4-H garden clubs and 35 adult garden clubs with a combined total attendance of 2,117.

Demonstrations. One hundred eighty-three method demonstrations were given in the garden project with a total attendance of 1978 or an average attendance of 11.

Contests. Several garden contests were conducted in various counties with both adults and with 4-H club members. Some of these contests were arranged by the extension agents and some by commercial concerns with their employees. Information was furnished to the contestants and some assistance was given in scoring the gardens.

Bulletins. Practically every county in the state benefited from garden information in the form of bulletins and letters.

Approximately 9,000 copies of Circular B-265, Vegetable Garden Suggestions for Virginia Farmers, were distributed through the county extension agents, bringing the total distribution to date to 99,000 copies.

Information Circulars. Nine information circulars were prepared for the garden project and 140,500 copies were distributed. The subjects treated in the circulars were seasonal and timely. Many of the monthly garden suggestions were used by agents for press articles. All circulars were sent out under the signature of the agent to give the information a more personal touch. Specimens of these garden information circulars are included in the back of this report as exhibits F to N inclusive.

Press Articles. Twenty-six press articles on the home garden were prepared and published in the Extension Division News, Virginia Fruit, Virginia Farmer, county papers, etc. Nine radio talks on the home garden were also prepared and broadcast over station WRNV.

Garden Relief Work. Although there was no direct tie-up in 1935 between V.P.I. and the V.E.R.A. garden relief work, considerable assistance was rendered the program by the office. Several advisory conferences were held with the V.E.R.A. Garden Director and Garden Specialist. Some few meetings of relief gardeners were also addressed by the Extension Garden Specialists at the request of county extension agents.

Summary of Accomplishments - Home Garden Project

Seventy-five and one-half days in field devoted to Garden Project work in 34 counties.

Sixty-three visits to counties on definite garden work.

One hundred twenty-four meetings held with a total attendance of 4,394; average attendance 35.

Twenty-nine 4-H garden clubs met with a total attendance of 1200; average attendance 41.

Thirty-three adult garden clubs met with a total attendance of 917; average attendance 28.

One hundred eighty-three method demonstrations given with a total attendance of 1,976.

Assistance given in several garden contests.

Nine thousand five hundred copies of Circular B-268, Vegetable Garden Suggestions for Virginia Farmers distributed; 79,800 copies distributed to date.

Nine garden information circulars written with a total distribution of 140,500 copies, average distribution 15,611.

Twenty-six press articles prepared and published on various phases of the garden project.

Nine garden radio talks broadcast over station WRNV.

[redacted]

Ornamental and Vegetable Garden on Home Place - Each
a Thing of Beauty

First Prize Garden - Westmoreland County

Second Prize Garden - Westmoreland County

A Well-Kept Garden

Vegetable and Canning Exhibit - Eastern Shore Farm Products Show

MINOR PROJECTS

As stated in the beginning of this report an attempt was made to limit the work in Vegetable Extension in so far as possible to the four major projects. Naturally, however, considerable aid had to be given along other lines. Ninety-eight and one half days were spent in the field on miscellaneous projects in 1939 in 38 counties. Approximately 34% of the specialists' time was spent on work other than the major projects. This demand for assistance, while gratifying, serves to emphasize the need for additional personnel.

At the Farmers' Institute this department presented a vegetable crop program. In addition to the regular staff, we were fortunate in securing W.H. Porter, R.L. Carolus, Mrs. H.P. Cook and Harry G. Walker of the Virginia Truck Experiment Station as speakers. A program of this meeting is included in this report as Exhibit C. Attendance at this meeting was 97.

Cabbage Production

Two meetings were held with cabbage growers in Patrick and Carroll counties with a total attendance of 77. Outlook information was prepared and furnished to agents.

Cucumber Production

Considerable assistance was given to growers of cucumbers for pickles in nine counties, - Richmond, Caroline, King and Queen, King William, Cumberland, New Kent, James City, Buckingham and Amherst. Eleven meetings were held with a total attendance of 490, or an average attendance of 45. One information circular was prepared and 2,000 copies were distributed (See Exhibit M). There is a chance for the good cucumber grower to make a reasonable profit from this crop. The average grower, however, will lose money.

Market Gardening and Truck Crop Production

Considerable aid has been given to market gardeners around Charlottesville, Lynchburg, Danville, Roanoke, Richmond and Washington. Growers of miscellaneous truck crops in various sections of the state have also been assisted. Nine meetings were held with a total attendance of 247 or an average attendance of 61.

Seed Distribution

In addition to the 325 samples of tomato seed, several trial lots of wilt resistant cabbage seed, corn and potatoes were secured for trial and given to growers.

Flowers

Since no floriculturist is at present on the staff, numerous calls came to this department for assistance along that line. Such assistance is given only when it can be tied in with other work. Three meetings were addressed in 1939 with a total attendance of 106. In addition several flower shows judged at various fairs.

Fairs

The following fairs or shows were attended during the past year and products were judged at all of them.

Chesterfield County Fair	Chesterfield
Glade Spring Community Fair	Glade Spring
Smyth County Fair	Marion
King George County Fair	King George Courthouse
Grate Mines Community Fair	St. Paul
Riner Community Fair	Riner
Princess Anne 4-H Club Achievement Day	Oceana
Virginia Corn & Grain Show	Hopewell
Virginia State Fair	Richmond
Roanoke County Fair	Roanoke

In addition Mr. R.E. Porter of the Virginia Truck Experiment Station judged the Keller Fair at the request of this office.

Institutional Work

The following institutions were given definite aid in their production problems:

Central State Hospital	Petersburg
State Epileptic Colony	Colony
West Virginia Pulp and Paper Co.	Covington
Smallhiser Silk Mills	Covington
Alleghany Tanning Company	Covington
Russell County Almshouse	Lebanon
Kittamy Transient Camp	Blackstone
Montgomery Transient Camp	Yellow Sulphur
Grace House on the Mountain School	St. Paul

Radio and Publicity

Nine radio talks were broadcast over station WRNV. Thirty-five press articles were prepared throughout the year and published in the Extension Division News, agricultural papers, newspapers, etc.

Correspondence

A considerable amount of office time was required to answer routine correspondence. A total of 4,487 letters were written or an average of 21 letters for each day spent in the office.

Study

The demand for field work seriously limits the time which can be devoted to study. The specialists, however, strive to keep well up on the study of subject matter.

Summary of Accomplishments - Minor Projects

Ninety-eight and one-half days in field devoted to minor projects in 39 counties; 87 visits to counties made.

Eleven method demonstrations given with a total attendance of 182.

Twenty-three subject matter meetings held with a total attendance of 1,082.

Ten fairs or shows judged.

Nine institutions aided in production problems.

Nine radio talks broadcast over WDBJ.

Thirty-five press articles prepared and published.

Four thousand, four hundred and fifty-seven letters written.

Eastern Shore Union Crops

Early Cabbage - Eastern Shore

Late Cabbage - Southwest Virginia

OUTLOOK FOR 1936

The vegetable work in 1936 will be continued along the same general lines as in 1935. No drastic changes should be necessary. Minor changes will be made to fit the requirements of the work as conditions arise making such changes necessary. Increased emphasis will be placed upon outlook information for all vegetable crops and upon high acre production at a low unit cost of production. Additional personnel is urgently needed to handle adequately the increased service requested from this department.

In the Potato Project, close cooperation with the Interstate Early Potato Committee will be maintained. The value of outlook information will be impressed upon the growers. In an effort to increase production per acre, the use of good land, cover crops, good seed, proper fertilization, and the judicious use of lime will be stressed.

In the Sweet Potato Project, outlook information, seed certification, efficient crop production, and storage house construction will be emphasized.

In the Tomato Project, outlook information, demonstration plant beds, source-of-seed demonstrations, high grade seed of the proper varieties, fertilization and grading will be stressed as factors in an economic production program. At least 300 tomato surveys and cost account records will be taken.

In the Home Garden Project, an effort will be made to increase the number of all-year-round gardens and to aid gardeners in solving their problems. The demand for garden work is such as to utilize efficiently a full-time man.

The Minor Projects will be given as much consideration as time will permit.

The work will be carried on as in the past mainly through the county extension agents. Aid will be required from the United States Department of Agriculture in the form of

1. Intentions-to-Plant Reports, Acreage and Production Forecasts, Crop Reports, Market Reports, etc.

2. Publications and other literature.

3. Information as to successful extension methods.

STATISTICAL DATA

The following statistics are summarized from the monthly reports. The data are given for the personnel of the Vegetable Extension collectively. No duplications occur, however, in meetings or demonstrations and attendance under separate projects.

Days in field	408
Days in office	145
Days annual leave	10
Counties visited	57
Visits to county agents	180
Visits to county home demonstration agents	26
Visits to counties unassisted by agents	61
Meetings attended	508
Total attendance	26,822
Average attendance	78
4-H Clubs visited	31
Total attendance	1,268
Average attendance	41
Adult clubs visited	26
Total attendance	919
Average attendance	36
Letters written	4,487
Information circulars prepared	15
Information circulars distributed	150,900
Average distribution	11,600
Bulletins sent out	8,215
Method demonstrations	243
Total attendance	4,442
Miles traveled by auto	48,042
Miles traveled by rail	3,988
Miles traveled by other means	798
Total mileage	52,828

Potato Project

Days in field	71½
Counties visited	17
Visits to agents	27
Visits unassisted by agents	8
Meetings	26
Total attendance	2,908
Average attendance	106

Method demonstrations	30
Total attendance	607
Average attendance	20
Acres grown for certification	94½
Bushels certified (1954 crop)	2,388
Tours attended	2
Attendance at Virginia Potato Tour	350
Exhibits at Corn and Grain Show	57

Sweet Potato Project

Days in field	95½
Counties visited	21
Visits to agents	89
Visits unassisted by agents	9
Meetings	30
Attendance	565
Average attendance	19
Method demonstrations	148
Total attendance	573
Number of certified seed growers	71
Bushels bedded by certified growers	4,860
Number draws used by certified growers	5,000,000
Acres grown for certification	260
Bushels submitted for inspection	9,082
Bushels certified	8,000
Total bushels certified since project began	160,864
Average number of bushels certified per year	10,864
Storage houses constructed	16
Average capacity	8,000
Storage houses constructed since project began	121
Average capacity	8,250
Exhibits at Corn and Grain Show	60

Tomato Project

Days in field	90
Counties visited	19
Visits to agents	82
Visits unassisted by agents	15
Meetings	28
Total attendance	1,275
Average attendance	46

Method demonstrations	462
Total attendance	988
Plant bed demonstrations	20
Plants sold or used from bed	1,800,000
Number source-of-seed demonstrations	2
Cn.Samples of seed furnished to growers	585
Surveys made and cost account records started	818

Home Garden Project

Days in field	75½
Counties visited	28
Visits to agents	27
Visits to home demonstration agents	25
Visits unassisted by agents	10
Meetings	134
Total attendance	4,896
Average attendance	36
4-H Clubs met	29
Attendance	1,800
Average attendance	41
Adult clubs met	28
Attendance	917
Average attendance	28
Leader-trainer groups met	2
Attendance	36
Method demonstrations	185
Attendance	1,978
Average attendance	11
Information circulars written	9
Distribution of information circulars	140,800
Average distribution	15,611
Press articles and radio talks	38

Minor Projects

Days in field	90½
Counties visited	35
Visits to agents	38
Visits unassisted by agents	29
Subject matter meetings held	28
Attendance	1,088
Average attendance	47
Method demonstrations	11
Attendance	152

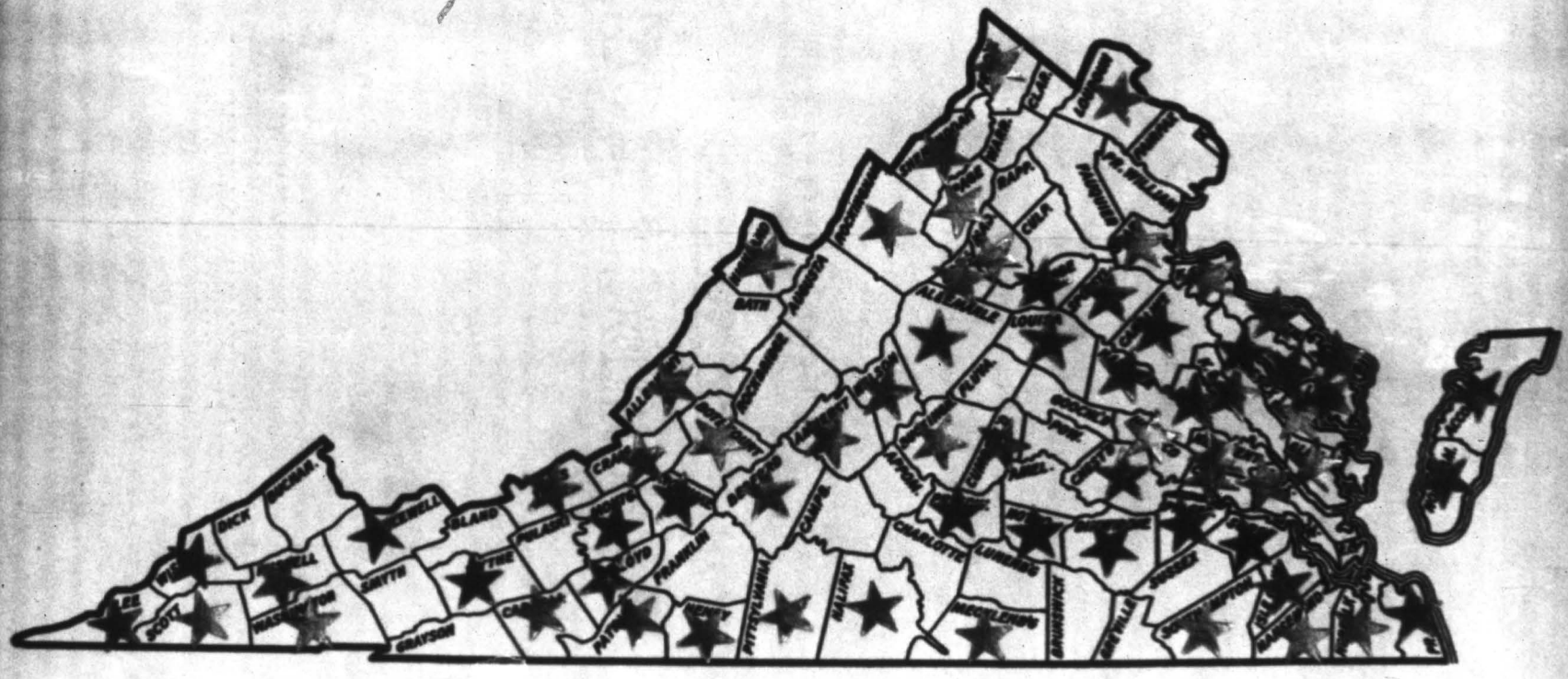
Institutions aided	9
Radio talks	6
Fairs judged	10
Publicity articles	55

Respectfully submitted,

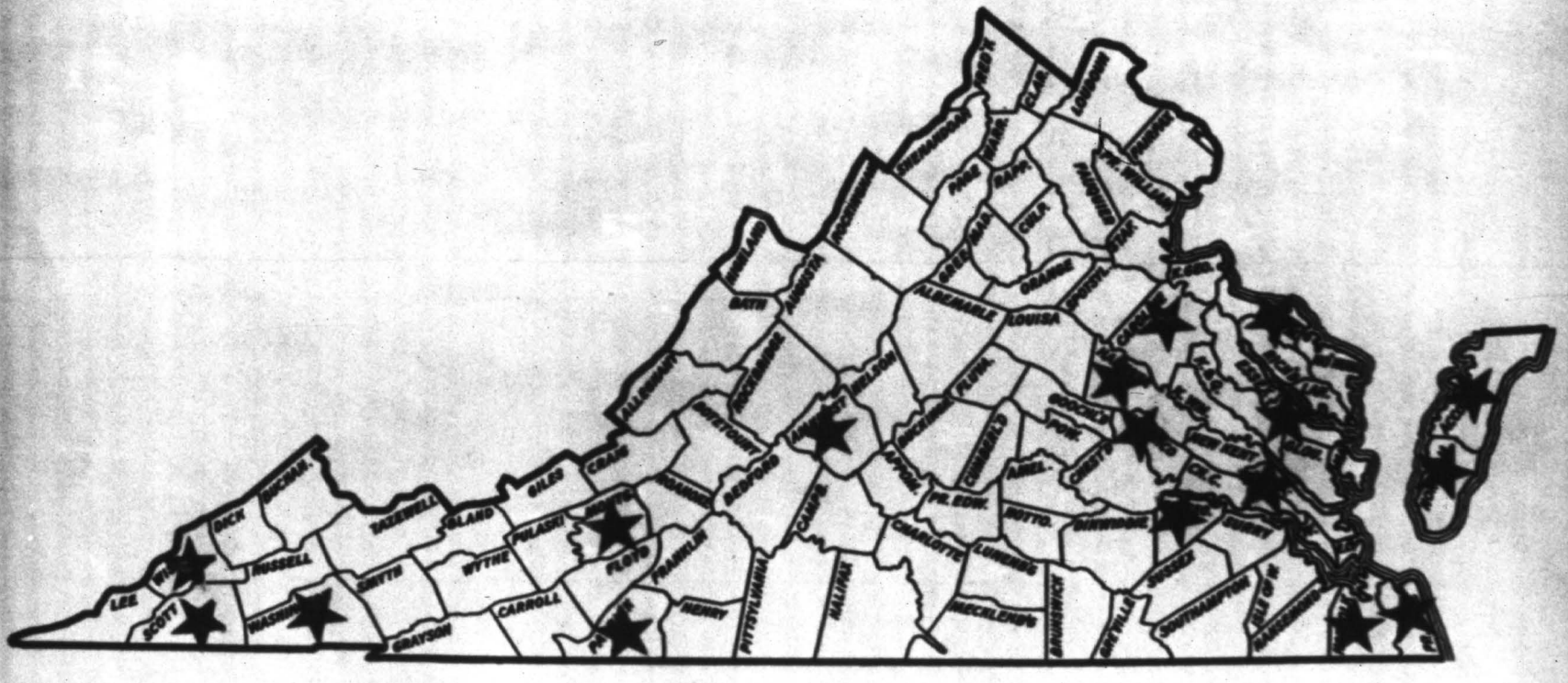
L. B. Dietrick

L.B. Dietrick, In Charge
Vegetable Extension

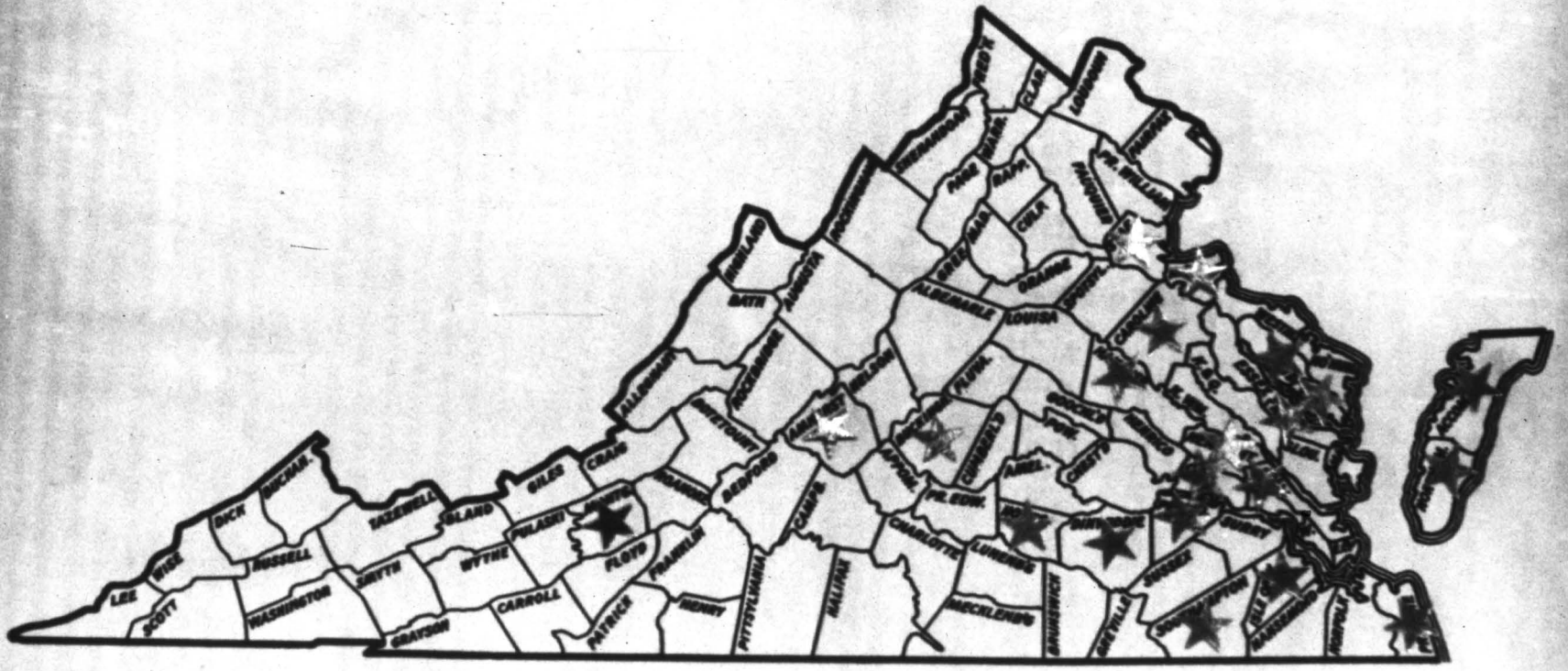
LBD:dp



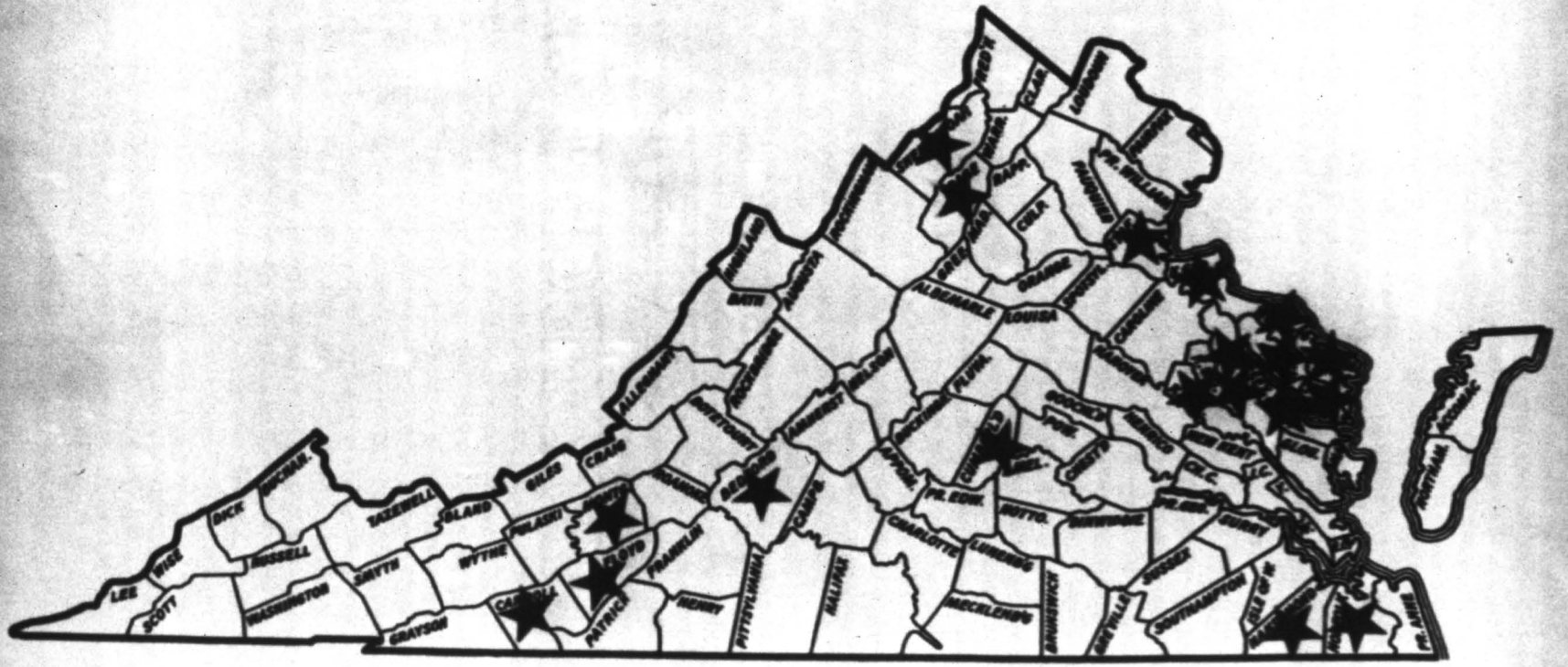
Counties Visited in 1935



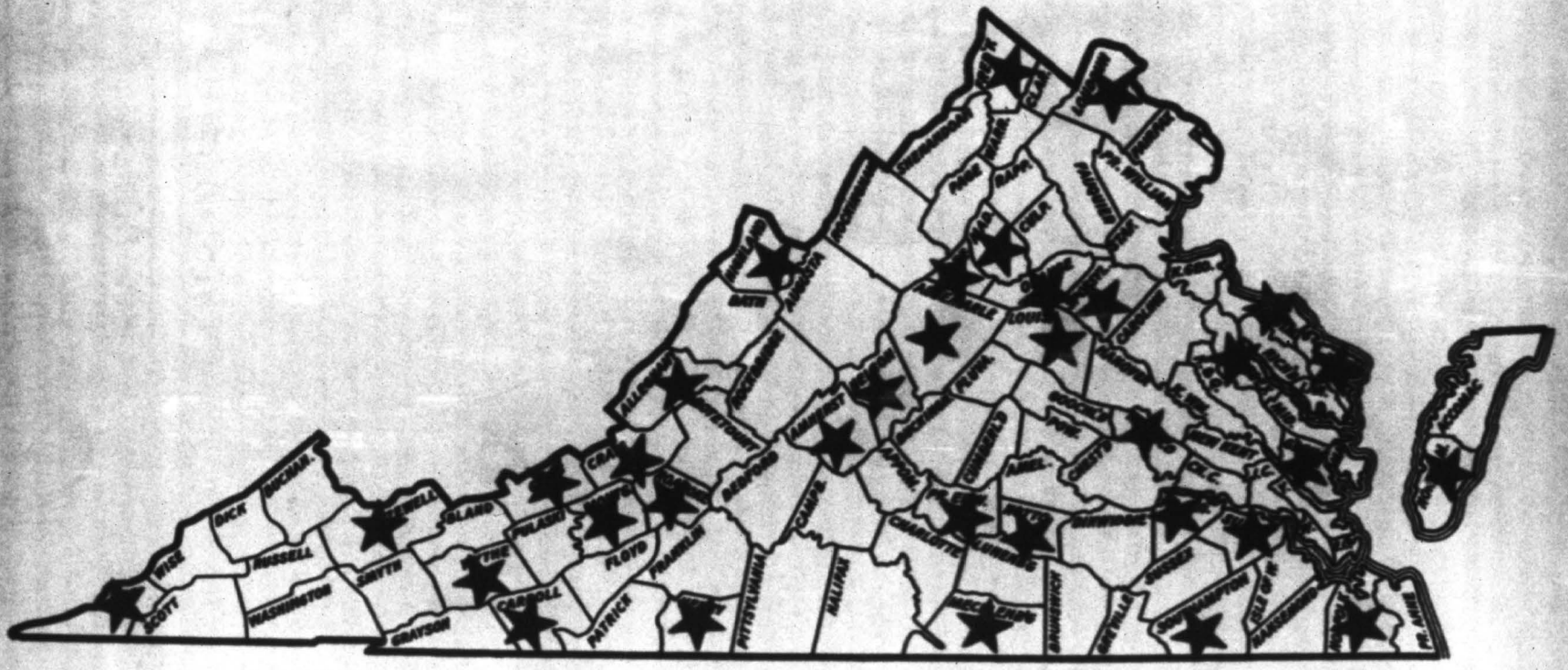
Counties Visited in Potato Project



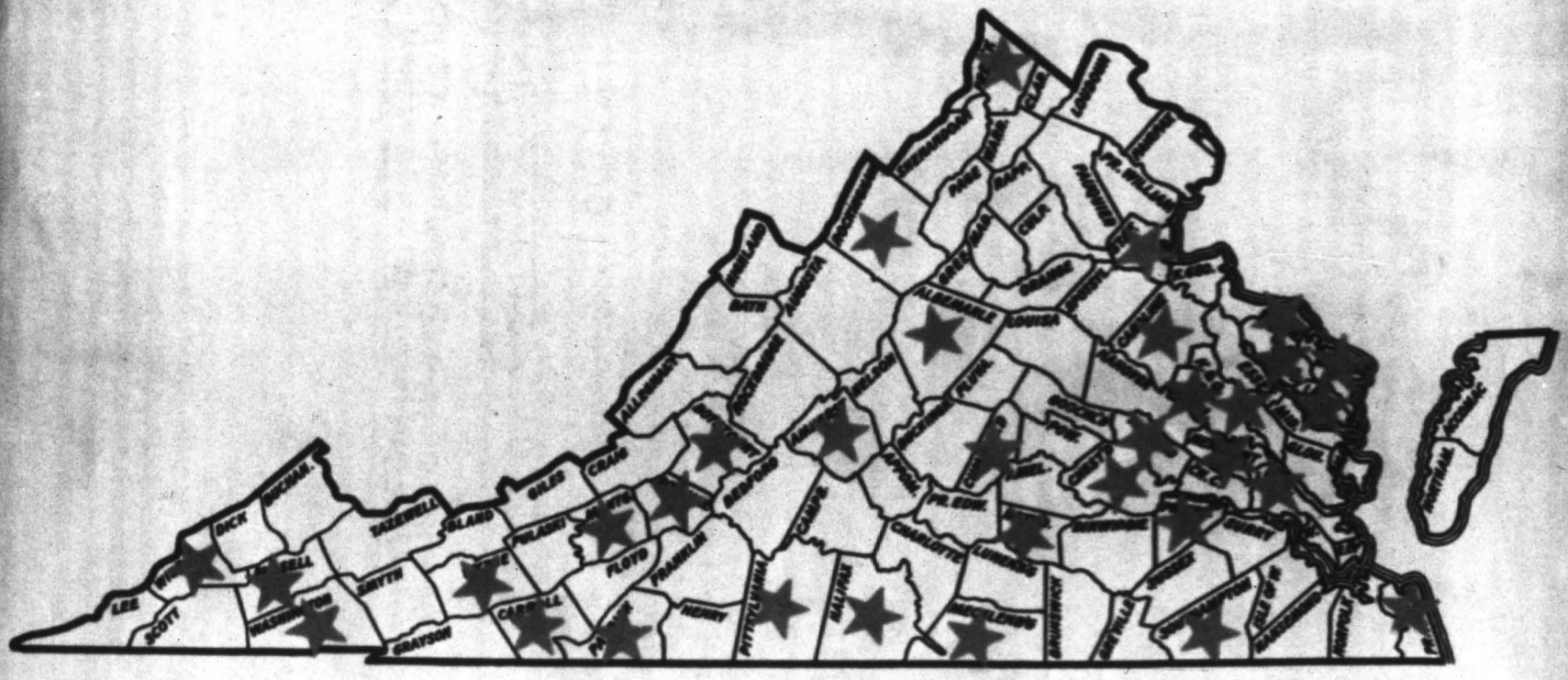
Counties Visited in Sweet Potato Project



Counties Visited in Tomato Project



Counties Visited in Home Garden Project



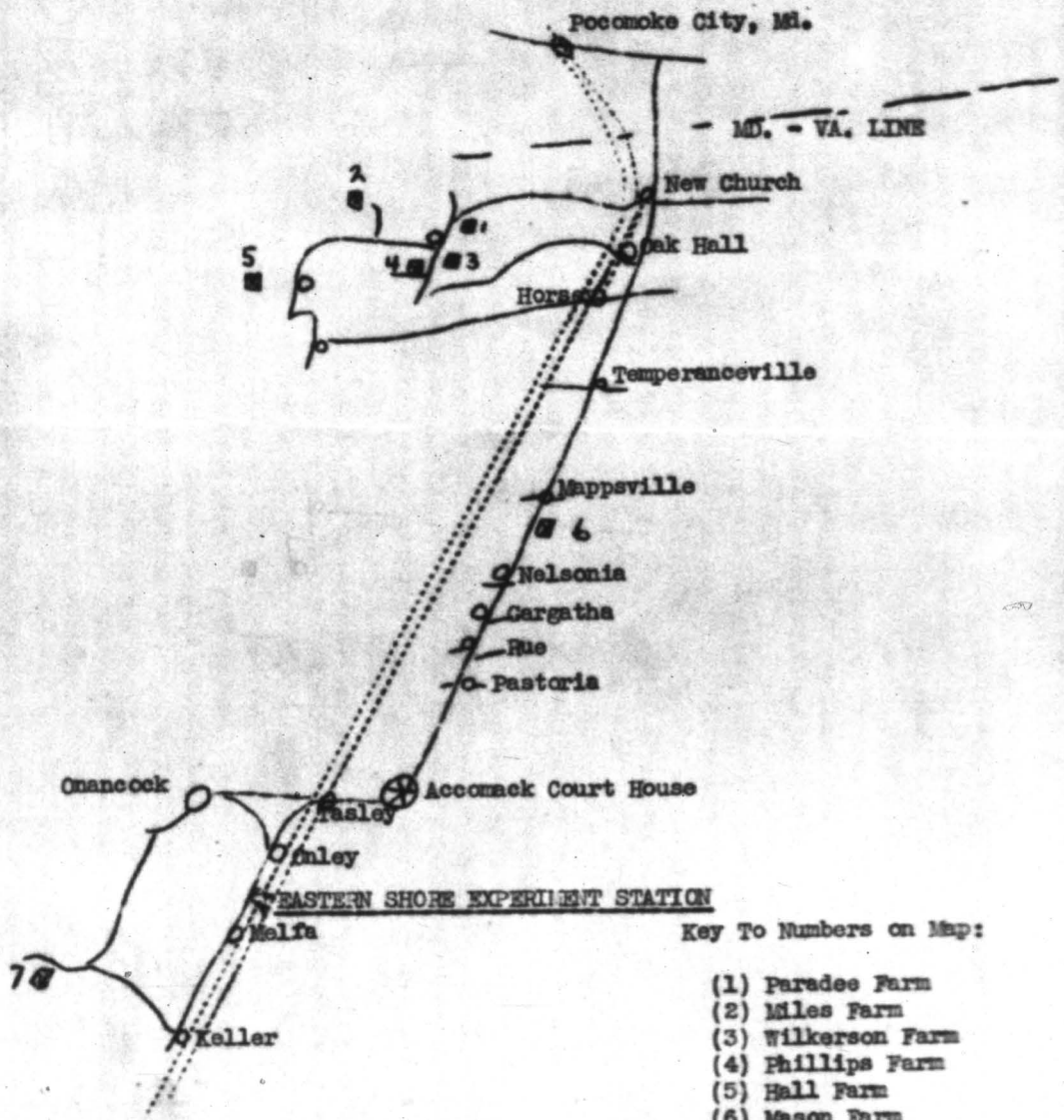
Counties Visited in Minor Projects

Exhibit "A"

THIRTEENTH ANNUAL POTATO TOUR AND FIELD DAY

ACCOMACK COUNTY, VIRGINIA

JUNE 20, 1935



Key To Numbers on Map:

(1) Paradee Farm
(2) Miles Farm
(3) Wilkerson Farm
(4) Phillips Farm
(5) Hall Farm
(6) Mason Farm
(7) Bonniwell Farm

THIRTEENTH ANNUAL POTATO TOUR AND FIELD DAY

ACCOMACK COUNTY, VIRGINIA

JUNE 20, 1935

Source-of-Seed Test Plots On The Following Farms:

B. P. Paradee, New Church, Va.
R. Finney Mason, Mappsville, Va.
G. C. Bonniwell, Harborton, Va.
E. S. Experiment Station, Onley, Va.

Flea Beetle Control Work Conducted On

The Paradee, Wilkerson, Miles and Phillips Farms, near Miona, Va., three miles west of New Church, Va.

Lime, Fertilizer, Insect & Disease Control, And Other Experiments At

E. S. Experiment Station, Onley, Va.

. . . . . .

COOPERATING AGENCIES:

U. S. Department of Agriculture
Bureau of Plant Industry
Bureau of Agricultural Engineering
Bureau of Entomology & Plant Quarantine
Virginia Polytechnic Institute
Virginia Truck Experiment Station
Fertilizer, Lime, Insecticide, and Implement Manufacturers and Distributors

H. M. NICHOLS W. O. STRONG

COUNTY AGENTS

INTRODUCTION

Cobbler Seed Source Demonstration

There are four seed source demonstration plats located in Accomack County as shown by reports on the following pages. In these plats are included Cobbler seed from the principal commercial seed-growing districts.

None of the seed were treated before planting as this is not customary with local growers. It was thought desirable to handle this work as nearly like the average farm practice as possible. However, in an effort to improve the stand, the stem end eye of the potato was discarded when cut.

ALL PLATS WERE PLANTED WITH AN IRON AGE ASSISTED FEED PLANTER EQUIPPED WITH SPACER AND BAND FERTILIZER ATTACHMENTS.

The disease counts were made on June 13 and 14, by Dr. Harold T. Cook, Plant Pathologist of the Virginia Truck Experiment Station. No spindle tuber counts are recorded; however, strains showing a large number of spindle tuber type plants are indicated in the individual plots. No records were taken on the Paradee plat on account of severe damage by early rains.

A study of the enclosed data shows conclusively how good certified seed, intelligent use of fertilizer, and careful cultural practices influence stand and yield, thus lowering the cost per unit of production - the first step in successful potato growing.

Potato Insect Control

Since potato insects, particularly flea beetles, have been doing so much damage in the upper part of Accomack County and appear to be migrating southward, a very intensive experiment on commercial sized plats is being conducted in an effort to thoroughly test the most efficient dusting and spraying materials. Time of application and number of applications of these materials are being studied. The plats are replicated three times on two farms on a small scale. The most promising materials are being tested this year on a commercial scale with traction dusters and sprayers.

Bean Beetle Control

A large experiment is being conducted at the Eastern Shore Branch of the Virginia Truck Experiment Station in cooperation with the U. S. Department of Agriculture, Bureau of Entomology and Plant Quarantine, to determine the most effective means of control. Recent investigations have shown the insecticides listed below give good control when properly applied to the undersides of the leaves:

Sprays

1. Powdered Derris Root - 2½ lbs to 50 gals. water; or 2½ oz. to 3 gals. water
2. Cryolite - 3 lbs to 50 gals. water; or 3 oz. to 3 gals. water
3. Magnesium Arsenate - 2 lbs to 50 gals. water; or 2 oz. to 3 gals. water

Dusts

Derris (4% rotenone content), 12½ lbs., Talc, 87½ lbs; or 19 lbs Derris, 81 lbs Talc

Fertilizer Application

During the past two or three years it has been noted that certain methods of applying fertilizer decidedly improve the yield. Therefore, the Bureau of Plant Industry and Agricultural Engineering, of the U. S. Department of Agriculture, are cooperating with the Virginia Truck Experiment Station in an intensive study along this line at the Eastern Shore Branch. Observe the Irish potato, sweet potato, and onion experiments.

STRAINS AND SOURCES OF SEED USED IN TEST PLATS - 1935

Strain	Grower or Source
1. 45656	C. F. Clark, U. S. D. A.
2. 45075	C. F. Clark, U. S. D. A.
3. 44639	C. F. Clark, U. S. D. A.
4. 44520	C. F. Clark, U. S. D. A.
5. 41914	C. F. Clark, U. S. D. A.
6. Golden	C. F. Clark, U. S. D. A.
7. Katahdin	C. F. Clark, U. S. D. A.
8. Chippewa	C. F. Clark, U. S. D. A.
9. Nittany Cobbler	F. H. Bateman, Grenloch, N. J.
10. P. E. I.	H. L. Palmer, Elmsdale
11. P. E. I., Ho. Gr.	R. C. Hall, Parksley, Va.
12. Maine	C. E. Hussey and Son, Presque Isle, Me.
13. Maine	John Prescott, Island Falls, Me.
14. Maine	Fred B. Ashby, Caribou, Me.
15. Maine	Fred D. Carliss, Sherman Mills, Me.
16. Maine, Ho.Gr.	George Johnson, Chancock, Va.
17. South Dakota	C. S. Blackman, Clark, S. Dak.
18. South Dakota	Leonard J. Parker, Hazel, S. Dak.
19. South Dakota	E. A. Fletcher, Garden City, S. Dak.
20. North Dakota	Albert Miller Co., Chicago, Ill. (Seed from northern part of Red River Valley)
21. North Dakota, Ho. Gr.	G. W. McMath, Onley, Va.
22. North Dakota, Early	Far North Potato Association, Park River, N. Dak.
23. North Dakota, Late - Walsh	Far North Potato Association, Park River, N. Dak.
24. North Dakota, Lot 1	R. C. Hastings, Fargo, N. Dak.
25. North Dakota, Lot 3	R. L. Douglass, Park River, N. Dak.
26. Maryland	F. J. Dukes, Girdletree, Md.
27. Michigan	J. D. Robinson, Pollston, Mich.
28. Nova Scotia	W. A. Fleming, Truro, Nova Scotia
29. North Carolina	Carolina Mountain Mutual Assns., Banner Elk, N. C.
30. New York	Porter and Bonney, Elba, New York
31. New York, Ho.Gr.#1	G. W. McMath, Onley, Va.
32. New York, Ho.Gr.#2	G. W. McMath, Onley, Va.
33. New York, N.J.#1	C. S. Huff, Great Meadows, N. J.
34. New York, N.J.#2	C. S. Huff, Great Meadows, N. J.
35. New York, N.J.#3	C. S. Huff, Great Meadows, N. J.
36. New York, Ho.Gr 2d yr.	R. C. Hall, Parksley, Va.
37. Virginia, 2d Crop	T. W. Wood and Sons, Richmond, Va.
38. Wisconsin	Felix Zeloski, Antigo, Wis.

Notes:

10. P. E. I. Seed supplied through P. E. I. Potato Growers' Assoc. by Southgate Produce Co., Norfolk, Va.

17, 18, 19 S.Dak. Seed furnished through S. Dak. Potato Growers' Assn, Watertown, S. Dak.

25. N.Dak., Lot 3 Seed supplied by R. C. Hastings, Dep. Seed Comm., Fargo, N.D.

27. Mich. Seed furnished through Russell G. East, Agrl. Agt., P. R. R., Richmond, Ind.

29. N. C. Seed furnished through M. E. Gardner, Head, Dept. of Hort., State College, Raleigh, N. C., at request of T. Gilbert Wood, Agrl. Agt., Norfolk and Western Railroad, Roanoke, Va.

33, 34, 35 N.Y., N. J. grown. Seed furnished by Seaboard Produce Distributors, Onley, Va.

DESCRIPTION OF SEED JUST BEFORE PLANTING

March 22, 1935

	Size	Sp. Lengths (8ths)	Mature	Immature	Firm	Extra	Medium	Air Crack	Date Recd	Place Stored
1. Stem Eyes										
2. P. E. I., H. L. Palmer	M-L	2	x	-	x	-	-	-	2-28	Elmsdale, Canada
3. P.E.I.,Ho.Gr.,R. C. Hall	S-M	-	-	x	x	-	-	-	3-19	Bullbegger, Va.
4. Me., C.E.Hussey & Son	S-L	2	x	-	x	-	-	tr	2-25	Presque Isle, Me.
5. Me., John Prescott	M-L	2	x	-	x	-	-	tr	3-8	Island Falls, Me.
6. Me., Fred Ashby	M-L	2	x	-	x	-	-	tr	2-15	Caribou, Me.
7. Me., Fred Corliss	M-L	2	x	-	x	-	-	tr	3-20	Sherman Mills, Me.
8. Me., Ho.Gr., Geo.Johnson	S-M	1	-	x	x	-	-	-	3-18	Onancock, Va.
*9. S.Dak., C. S. Blackman	M-L	3	x	-	x	-	-	tr	2-18	Clark, S. Dak.
**10. S.Dak., L. J. Parker	S-M	1	x	-	x	-	-	tr	2-18	Hazel, S. Dak.
11. S.Dak., E. A. Fletcher	M-L	3	x	-	x	-	-	tr	2-18	Garden City, S.Dak.
12. N.Dak., Albert Miller Co.	S-M	1	x	-	x	-	-	tr	3-15	Crystal, N.Dak.
13. N.Dak., Ho.Gr.,G.W.McMath	S	tr	-	x	x	-	-	-	3-20	Melfa, Va.
14. N.Dak., Early Strain										Park River, N.Dak.
15. N.Dak., Late Strain (Walsh)										Park River, N.Dak.
16. Va., 2d crop, T. W. Wood	S	1	x	-	x	-	-	tr	2-14	Richmond, Va.
17. Wis., Felix Zeloski	S-M	3	x	-	-	-	x	tr	1-31	Antigo, Wis.
18. Mich., J. D. Robinson	S-L	1	x	-	x	-	-	-	3-20	Pellston, Mich.
19. Md., F. J. Dukes	S-M	1	x	-	x	-	-	-	3-20	Girdletree, Md.
20. N.Dak., R. C. HastingsLot1	S-M	2	x	-	-	x	-	tr	3-9	Fargo, N. Dak.
21. N.Dak., R. L. Douglass " 3	M-L	2	x	-	x	-	-	tr	3-9	Park River, N. Dak.
22. Nova Scotia, W. A. Flemming	M-L	4	x	-	-	-	x	tr	1-25	Truro, Nova Scotia
23. N. C., Car. Mt. Mut. Assns.	S-M	2	x	-	x	-	-	-	3-1	Banner Elk, N. C.
24. N. Y., Porter & Bonney	S-L	1	x	-	-	x	-	tr	3-14	Elba, N. Y.
25. N. Y., Ho.Gr.#1, G.W.McMath	S-M	tr	-	x	-	x	-	x	3-20	Melfa, Va.
26. N. Y., Ho.Gr.#2, G.W.McMath	S		-	x	-	x	-	-	3-20	Melfa, Va.
27. N. Y., N.J.#1, C. S. Huff	S-L	1	x	-	x	-	-	-	3-20	Melfa, Va.
28. N. Y., N.J.#2, C. S. Huff	S	1	-	-	x	-	-	-	3-20	Melfa, Va.
29. N. Y., N.J.#3, C. S. Huff	V-S	1	-	-	x	-	-	-	3-20	Melfa, Va.
30. N. Y., Ho.Gr. 2d yr, R.C.Hall	S	tr	-	x	-	x	-	-	3-20	Bullbegger, Va.

* From Porter and Bonney, New York, 1933
** From Olo Flaat, North Dakota, 1933
*** From Johnson, North Dakota, 1933

B. P. Paradee, New Church, Va.
Planted 3/22/35

No missing hill or disease records were taken on account of damage by spring rains

Source of Seed	
6 Rows planted with Picker Planter; fertilizer mixed in mark	
6 Rows planted with fertilizer in bands (Better stand and larger tops)	
1. Stem Eyes	
2. Check, N. Y. Ho. Gr.	
3. N. Dak., (Early) Far North Potato Growers Assn.	50 yds. from Road
4. N. Dak., (Late) " " " " "	50 yds. from Road
5. 45656, C. F. Clark, U. S. D. A.	24 yds. from Road
6. 45075, C. F. Clark, U. S. D. A.	60 yds. from Road
7. 44639, C. F. Clark, U. S. D. A.	30 yds. from Road
8. 44520, C. F. Clark, U. S. D. A.	30 yds. from Road
9. 41914, C. F. Clark, U. S. D. A.	17 yds. from Road
10. Golden, C. F. Clark, U. S. D. A.	22 yds. from Road
11. Katahdin, C. F. Clark, U. S. D. A.	20 yds. from Road
12. Chippewa, C. F. Clark, U. S. D. A.	20 yds. from Road
13. Chippewa, C. F. Clark, U. S. D. A.	65 yds. from Road
14. Nittany Cobbler, F. H. Bateman, Cronloch, N. J.	
15. Check, N. Y. Ho. Gr.	
16. P. E. I., H. L. Palmer	
17. P. E. I., Ho. Gr., R. C. Hall	
18. Maine, C. E. Hussey and Son	
19. Maine, Fred Ashby	
20. Maine, John Prescott	
21. Maine, Ho. Gr., G. T. Johnson	
22. S. Dak., C. S. Blackman	
23. S. Dak., L. J. Parker	
24. S. Dak., E. A. Fletcher	
25. N. Dak., Albert Miller & Co.	
26. N. Dak., Ho. Gr. #2, G. W. McMath	
27. Nova Scotia, W. A. Flemming	
28. Va., 2d crop, T. W. Wood & Son	
29. Wis., Felix Zeloski	
30. N. Dak., Lot 1, R. C. Hastings	
31. N. Dak., Lot 3, R. L. Douglass	
32. Mich., J. D. Robinson	
33. Check, Ho. Gr., N. Y.	
34. Mi., F. J. Dukes	
35. N. C., Car. Mt. Mut. Assns., Inc.	
36. N. Y., Porter and Bonney	
37. N. Y., Ho. Gr. #1, G. W. McMath	
38. N. Y., Ho. Gr. #2, G. W. McMath	
39. N. Y., Ho. Gr., 2d yr., R. C. Hall	
40. N. Y., N. J. #1, C. S. Huff	
41. N. Y., N. J. #2, C. S. Huff	
42. N. Y., N. J. #3, C. S. Huff	
43. Check, N. Y. Ho. Gr.	

Check = N. Y., Ho. Gr., from J. N. Belote, Onancock, Va.

R. Finney, Mason, Mappsville, Va.
Planted 3/27/35 - Rows 106' long, plants 15" apart
Huston-Culver Fertilizer Used

(Poor stand due to decayed seed pieces, drowned out by heavy spring rains. These records are not included in summary.)

Source of Seed	Missing Hills						Diseased Hills						
	Total	Rot	Decayed	Nonemerged	Weak	Lost. Stem	Total	Mosaic	Leaf Roll	Sp. T.	B. L.	Rhiz.	Weak	Injury
1. Stem Eyes														
2. Check	13						1	1	-	-	-	-	-	-
3. Chippewa	16						2	2	-	-	-	-	-	-
4. Nittany Cobbler	24						1	1	-	-	-	-	-	-
5. P. E. I., H. L. Palmer	33						3	3	-	-	-	-	1	-
6. P. E. I., Ho. Gr., R. C. Hall	27						6	3	3	-	-	-	-	-
7. Me., C. E. Hussey and Son	4						0	-	-	-	-	-	-	-
8. Me., Fred Ashby	8						0	-	-	-	-	-	-	-
9. Me., John Prescott	2						0	-	-	-	-	-	-	-
10. Me., Ho. Gr., G. T. Johnson	3						1	-	1	-	-	-	-	-
11. Check	3						5	-	5	*	-	-	-	-
12. S. Dak., C. S. Blackman	5						0	-	-	-	-	-	-	-
13. S. Dak., L. J. Parker	3						0	-	-	-	-	-	-	-
14. S. Dak., E. A. Fletcher	0						0	-	-	-	-	-	-	-
15. N. Dak., Albert Miller Co.	11						2	-	-	-	-	2	5	-
16. N. Dak., Ho. Gr. #2, G. W. McMath	13						2	1	-	-	-	1	-	-
17. Nova Scotia, W. A. Flemming	2						3	-	3	-	-	-	2	-
18. Va., 2d Crop, T. W. Wood & Sons	1						0	-	-	-	-	-	-	-
19. Wis., Felix Zolenski	12						0	-	-	-	-	-	-	-
20. N. Dak., Lot 1, R. C. Hastings	7						0	-	-	-	-	-	-	-
21. N. Dak., Lot 3, R. L. Douglass	17						0	-	-	-	-	-	-	-
22. Mich., J. D. Robinson	5						0	-	-	-	-	-	-	-
23. Check	6						18	3	15	-	-	-	-	-
24. Mi., F. J. Dukes	3						1		1	-	-	-	1	-
25. N. C., Car. Mt. Mut. Assns., Inc.	16						1	-	-	-	-	-	-	-

Note: Check = N. Y. Ho. Gr. from J. N. Boloto, Onancock, Va.

* Many spindle tuber type

Eastern Shore Experiment Station, Onley, Va.
Planted 3/22/35 - Rows 106' Long, Plants 15" apart

Source of Seed	Missing Hills							Diseased Hills							
	Total	Rot	Dead Eye	Nose Eye	Weak	Lost	Br. St.	Total	Mosaic	Leaf Roll	Sp. T.	B. L.	Rhiz.	Weak	Injury
3 Rows Stem Eyes															
2 Rows P. E. I.															
2 Rows Nova Scotia															
1. N.Dak., Early, Far North	2	-	-	-	-	2	-	0	-	-	-	-	-	-	-
2. N.Dak., Late, Walsh	4	-	-	-	-	4	-	0	-	-	-	-	-	-	-
3. Dr. Fernow's Seed (120 Hills)	No record taken-							.	-	.	-	-			
4. 45656 C. F. Clark, U. S. D. A.	2	-	1	-	-	1	-	0	-	-	-	-	-	-	-
5. 45075 " " " "	2	1	1	-	-	-	-	0	-	-	-	-	-	-	-
6. 44639	3	-	1	-	-	2	-	0	-	-	-	-	-	-	-
7. 44520	2	-	-	-	-	2	-	0	-	-	-	-	-	1	-
8. 41914	3	-	-	-	-	3	-	0	-	-	-	-	-	-	-
9. Golden	1	-	-	-	-	1	-	0	-	-	-	-	-	-	-
10. Katahdin	6	-	-	-	-	6	-	0	-	-	-	-	-	-	-
*11. Chippewa	1	-	-	-	-	1	-	0	-	-	-	-	-	-	-
12. Chippewa	1	-	-	-	-	1	-	0	-	-	-	-	-	-	-
13. Nittany Cobbler, F. H. Bateman	1	-	-	-	-	1	-	0	-	-	-	-	-	-	-
14. P. E. I., H. L. Palmer	1	-	-	-	-	1	-	0	-	-	-	-	-	-	-
15. P. E. I., R. C. Hall, Ho. Gr.	9	8	-	-	-	1	-	13	5	8	-	-	-	-	-
16. Maine, C. E. Hussey and Son	1	-	-	-	-	1	-	0	-	-	-	-	-	-	-
17. Maine, Fred D. Ashby	0	-	-	-	-	-	-	0	-	-	-	-	-	-	-
18. Maine, John Prescott	1	-	-	-	-	1	-	0	-	-	-	-	-	-	-
19. Maine, Ho.Gr., G. T. Johnson	1	-	-	-	-	1	-	8	4	4	-	-	-	-	-
20. S. Dak., C. S. Blackman	1	-	-	-	-	1	-	0	-	-	-	-	-	-	-
21. S. Dak., L. J. Parker	1	-	-	-	-	1	-	0	-	-	-	-	-	-	-
22. S. Dak., E. A. Fletcher	2	-	-	-	-	2	-	1	1	-	-	-	-	-	-
23. N. Dak., Albert Miller Co.	0	-	-	-	-	-	-	0	-	-	-	-	-	-	-
24. N. Dak., Ho. Gr. #2, G. W. McMath	2	-	-	-	-	2	-	8	1	7	-	-	-	-	-
25. Nova Scotia, W. A. Flemming	1	-	-	-	-	1	-	0	-	-	-	-	-	-	-
26. Va., 2d Crop, T. W. Wood & Sons	2	-	-	-	-	2	-	2	2	-	-	-	-	-	-
27. Wis., Felix Zelcaki	2	-	-	-	-	2	-	0	-	-	-	-	-	-	-
28. N. Dak., R. C. Hastings, Lot 1	0	-	-	-	-	-	-	0	-	-	-	-	-	-	-
29. N. Dak., R. L. Douglass, Lot 3	2	-	-	-	½	1	½	1	1	-	-	-	-	-	-
30. Mich., J. D. Robinson	0	-	-	-	-	-	-	0	-	-	-	-	-	-	-
31. Md., F. J. Dukes	0	-	-	-	-	-	-	2	1	1	-	-	-	-	-
32. N. C., Car. Mt. Mat. Assns., Inc.	1	-	-	-	-	1	-	0	-	-	-	-	-	-	-
33. N. Y., Porter and Bonney	0	-	-	-	-	-	-	3	-	3	-	-	-	-	-
34. N. Y., Ho. Gr., #1, G.W.McMath	1	-	-	-	-	1	-	0	-	-	-	-	-	-	-
35. N. Y., Ho. Gr., #2, G.W.McMath	3	-	-	-	-	3	-	0	-	-	-	-	-	-	-
36. N. Y., Ho. Gr., 2d yr., R.C.Hall	1	-	-	-	-	1	-	6	2	4	-	-	-	-	-
37. N. Y., N.J. #1 - C. S. Huff	2	-	-	-	-	2	-	10	-	10	-	-	-	-	-
38. N. Y., N.J. #2 - C. S. Huff	2	-	-	-	-	2	-	18	-	18	-	-	-	-	-
39. N. Y., N.J. #3 - C. S. Huff	2	-	-	-	-	2	-	20	-	20	-	-	-	-	-
40. Maine, Prod R. Corliss	0	-	-	-	-	-	-	2	-	2	-	-	-	-	-

Note: *8 off-type plants

G. C. Bonniwell, Harborton, Va.
Planted 3/28/35
Smith-Douglass Fertilizer Used

	Missing Hills							Diseased Hills							
	Total	Rot	Dead Eye	No Eye	Weak	Lost	Br. Stem	Total	Mosaic	Leaf Roll	Sp. T. T.	B. L.	Rhiz.	Weak	Injury
8 Rows plant with Pickor Planter, Mb. Ho. Gr. Seed															
8 Rows planted with Iron Age Planter, band method, Mb. Ho. Gr. Seed (More uniform and larger tops)															
1. Stem Eyes															
2. Check	2	-	-	-	-	2	-	0	-	-	-	-	-	-	-
* 3. Chippewa	2	1	-	1	-	-	-	0	-	-	-	-	-	-	-
4. Nittany Cobbler	1	-	-	-	-	1	-	0	-	-	-	-	-	-	-
5. P. E. I., P.E.I.Pot.Growers'Assoc.	1	-	-	-	-	1	-	0	-	-	-	-	-	-	-
6. P. E. I., Ho.Gr., R. C. Hall	5	1	1	-	-	3	-	1	-	1	-	-	-	1	1
7. Mb., C. E. Hussey & Son	1	-	-	-	-	1	-	0	-	-	-	-	-	-	-
8. Mb., Frod Ashby	2	-	-	1	-	1	-	0	-	-	-	-	-	-	-
9. Mb., John Prescott	0	-	-	-	-	-	-	0	-	-	-	-	-	-	-
10. Mb., Ho.Gr., G. T. Johnson	0	-	-	-	-	-	-	0	-	-	-	-	-	-	-
11. Check	0	-	-	-	-	-	-	3	-	3	-	-	-	-	-
12. S.Dak., C. S. Blackman	1	-	1	-	-	-	-	3	-	3	-	-	-	-	-
13. S.Dak., L. J. Parker	0	-	-	-	-	-	-	0	-	-	-	-	-	-	-
14. S.Dak., E. A. Fletcher	0	-	-	-	-	-	-	0	-	-	-	-	-	1	-
15. N.Dak., Albert Miller & Co.	1	-	1	-	-	-	-	0	-	-	-	-	-	1	-
16. N.Dak., Ho.Gr.#2, G.W.McMath	1	-	-	-	-	1	-	13	4	9	-	-	-	-	-
17. Nova Scotia, W. A. Flemming	0	-	-	-	-	-	-	0	-	-	-	-	-	-	-
18. Va., 2d Crop, T. W. Wood	0	-	-	-	-	-	-	0	-	-	-	-	-	-	-
19. Wis., Felix Zaloski	0	-	-	-	-	-	-	0	-	-	-	-	-	-	-
20. N.Dak., Lot 1, R. C. Hastings	1	-	-	-	-	1	-	1	-	1	-	-	-	-	-
21. N.Dak., Lot 3, R. L. Douglass	2	1	-	-	-	1	-	0	-	-	-	-	-	-	-
22. Mich., J. D. Robinson	0	-	-	-	-	-	-	1	-	1	-	-	-	-	-
23. Check	0	-	-	-	-	-	-	2	-	2	-	-	-	3	-
24. Mb., F. J. Dukes	0	-	-	-	-	-	-	0	-	-	-	-	-	-	-
25. N.C., Car.Mt.Mut.Assocs., Inc.	0	-	-	-	-	-	-	0	-	-	-	-	-	-	-
26. N.Y., Porter & Bonney	0	-	-	-	-	-	-	0	-	-	-	-	-	-	-
27. N.Y., Ho.Gr.#1, G. W. McMath	0	-	-	-	-	-	-	2	-	2	-	-	-	-	-
28. N.Y., Ho.Gr.#2, G. W. McMath	10	4	-	-	-	6	-	3	-	3	-	-	-	-	-
29. N.Y., Ho.Gr., 2d yr., R.C.Hall	0	-	-	-	-	-	-	1	1	-	-	-	-	-	-
30. N.Y., N.J., #1, C. S. Huff	5	2	1	-	-	2	-	10	-	10	-	-	-	-	-
31. N.Y., N.J., #2, C. S. Huff	1	-	-	-	-	1	-	12	-	12	-	-	-	-	-
32. N.Y., N.J., #3, C. S. Huff	3	1	-	-	-	2	-	14	-	14	-	-	-	-	-
33. Check	1	-	-	-	-	1	-	1	-	1	-	-	-	-	-

"Check" = N. Y. Homegrown, From J. N. Beloto
Onancock, Va.

* Three off-type plants

GERMINATION COUNTS

1935

Source of Seed	Total No. Hills	% Miss. Hills	Cause of Missing Hills			
			% Rot	% Dead Eye	% No Eye	% Lost
1. Stem Eyes (No counts made	81					
2. P. E. I., H. L. Palmer	162	1.24				1.24
3. P. E. I., Ho. Gr., R. C. Hall	162	8.65	5.56	0.62		2.47
4. Me., C. E. Hussey & Son	162	1.24				1.24
5. Me., John Prescott	162	0.62				0.62
6. Me., Fred Ashby	162	1.24			0.62	0.62
7. Me., Fred Carliss	81					
8. Ho. Gr., Geo. Johnson	162	0.62				0.62
9. S.Dak., C. S. Blackman	162	1.24			0.62	0.62
10. S.Dak., L. J. Parker	162	0.62				0.62
11. S.Dak., E. A. Fletcher	162	1.24				1.24
12. N.Dak., Albert Miller Co.	162	0.62		0.62		
13. N.Dak., Ho.Gr., G.W.McMath	162	1.85				1.85
14. N.Dak., Early; Far North	81	2.48				2.48
15. N.Dak., Late, Walsh, FarNorth	81	4.94				4.94
16. Va., 2d crop, T. W. Wood	162	1.24				1.24
17. Wis., Felix Zaloski	162	1.24				1.24
18. Mich., J. D. Robinson	162					
19. Mi., F. J. Dukes	162					
20. N.Dak., R.C.Hastings, Lot 1	162	0.62				0.62
21. N.Dak., R.L.Douglass, Lot 3	162	1.86	0.62			1.24
22. Nova Scotia, W. A. Flemming	162	0.62				0.62
23. N. C., Car. Mt. Mt. Assns.	162	0.62				0.62
24. N. Y., Porter and Bonney	162					
25. N. Y., Ho.Gr.#1, G.W.McMath	162	0.62				0.62
26. N. Y., Ho.Gr.#2, G.W.McMath	162	8.03	2.47			5.56
27. N. Y., Ho.Gr.2d yr, R.C.Hall	162	0.62				0.62
28. N. Y., Ho.Gr., J. N. Bolotoo	324	3.70				3.70
29. N. Y., N.J.#1, C. S. Huff	162	4.33	1.24	0.62		2.47
30. N. Y., N.J.#2, C. S. Huff	162	1.85				1.85
31. N. Y., N.J.#3, C. S. Huff	162	3.09	0.62			2.47
32. Nittany Cobbler, P.H.Antomm	162	1.24				1.24
33. Golden	81	1.23				1.24
34. Katahdin	81	7.41				7.41
35. Chippewa	243	1.65	0.41		0.41	0.83
36. 45656, C. F. Clark, USDA	81	2.48		1.24		1.24
37. 45075, C. F. Clark, USDA	81	2.48	1.24	1.24		
38. 44639, C. F. Clark, USDA	81	3.70		1.24		2.46
39. 44520, C. F. Clark, USDA	81	2.48				2.48
40. 41914, C. F. Clark, USDA	81	3.70				3.70

DISEASE COUNTS

1935

Source of Seed	Total Plants	Diseased Plants	% Various Diseases: Mosaic	% Various Diseases: Leaf Roll	PerCent Spindle Tuber Type *	PerCent Weak Plants
1. Ston Eyes (No Counts Made)			c			
2. P.E.I., H. L. Palmer	160	0.00	0.00	0.00	0.63	0.00
3. P.E.I., Ho.Gr.,R.C.Hall	148	9.46	3.38	6.08	0.00	0.68
4. Me.,C. E. Hussey and Son	160	0.00	0.00	0.00	0.00	0.00
5. Me.,John Prescott	161	0.00	0.00	0.00	0.00	0.00
6. Me., Fred Ashby	160	0.00	0.00	0.00	0.00	0.00
7. Me., Fred Corliss	81	1.24	0.00	1.24	1.85	0.00
8. Me., Ho.Gr., Geo.Johnson	161	4.96	2.48	2.48	1.24	0.00
9. S.Dak., C. S. Blackman	160	1.87	0.00	1.87	1.25	0.00
10. S.Dak., L. J. Parker	161	0.00	0.00	0.00	0.62	0.00
11. S.Dak., E. A. Fletcher	160	0.63	0.63	0.00	0.00	0.63
12. N.Dak., Albert Miller & Co.	161	0.00	0.00	0.00	1.86	0.62
13. N.Dak.,Ho.Gr.,G.W.McMath	159	13.21	3.14	10.07	0.00	0.00
14. N.Dak., Early, Far North	79	0.00	0.00	0.00	0.00	0.00
15. N.Dak., Late, Walsh, Far North	77	0.00	0.00	0.00	0.00	0.00
16. Va., 2d Crop, T. W. Wood & Sons	160	1.25	1.25	0.00	0.00	0.00
17. Wis., Felix Zaloski	160	0.00	0.00	0.00	0.00	0.00
18. Mich., J. D. Robinson	162	0.62	0.00	0.62	1.24	0.00
19. Me., F. J. Dukes	162	1.24	0.62	0.62	0.00	0.00
20. N.Dak., R.C.Hastings, Lot 1	161	0.62	0.00	0.62	0.00	0.00
21. N.Dak.,R.L.Douglass,Lot 3	158	0.63	0.63	0.00	0.63	0.00
22. Nova Scotia, W.A.Fleming	161	0.00	0.00	0.00	0.00	0.00
23. N.C.,Car.Mt.Mut.Assns.	161	0.00	0.00	0.00	0.62	0.00
24. N.Y., Porter & Bonnoy	162	1.85	0.00	1.85	1.24	0.00
25. N.Y., Ho.Gr., #1,G.W.McMath	161	1.25	0.00	1.25	1.25	0.00
26. N.Y., Ho.Gr. #2, G.W.McMath	149	2.01	0.00	2.01	0.00	0.00
27. N.Y., Ho.Gr. 2d yr,R.C.Hall	161	4.34	1.86	2.48	0.00	0.00
28. N.Y., Ho.Gr., J. N. Bolotc	321	1.87	0.00	1.87	0.00	0.94
29. N.Y., N.J., #1 C. S. Huff	155	12.90	0.00	12.90	0.65	0.00
30. N.Y., N.J., #2 C. S. Huff	159	18.87	0.00	18.87	1.26	0.00
31. N.Y., N.J., #3 C. S. Huff	157	21.66	0.00	21.66	0.64	0.00
32. Nittany Cobbler, F.H.Bateman	160	0.00	0.00	0.00	0.00	0.00
33. Golden, C. F. Clark, U.S.D.A.	80	0.00	0.00	0.00	0.00	0.00
34. Katahdin, " " "	75	0.00	0.00	0.00	0.00	0.00
35. Chippewa " " "	239	0.00	0.00	0.00	0.00	0.00
36. 45656, " " "	79	0.00	0.00	0.00	3.80	0.00
37. 45075, " " "	79	0.00	0.00	0.00	0.00	0.00
38. 44639, " " "	78	0.00	0.00	0.00	0.00	0.00
39. 44520, " " "	79	0.00	0.00	0.00	0.00	1.20
40. 41914, " " "	78	0.00	0.00	0.00	0.00	0.00

*Percentage of Spindle Tuber Type shown but not included in column headed "Percentage Diseased Plants".

1934 YIELDS - COBBLER SEED SOURCE DEMONSTRATION

The average yield of the four source-of-seed plots in 1934 is given below. The number in parentheses directly after the name of each strain denotes the number of plots in which that particular strain occurred.

Average of All Plots

Source of Seed		Yield - Bushels Per Acre		
		Primes	Seconds*	Total
Mn., Prescott #1	(4)	263.6	51.1	314.7
Mn., Prescott #2	(4)	247.3	46.1	293.4
Vt., Joslyn	(4)	239.3	56.7	296.0
S.Dak., Fletcher	(4)	228.4	41.7	270.1
N.Y., Porter and Bonney	(4)	226.7	43.8	270.5
Minn., Leody	(4)	225.3	58.2	283.5
N.Dak., Hoaley	(4)	221.1	42.3	263.4
Nova Scotia	(4)	219.4	57.1	276.5
P. E. I.	(4)	216.7	40.8	257.5
Mn., Hussey	(4)	203.4	56.8	260.2
N. Y., Cottrell	(4)	203.0	50.7	253.7
S.Dak., Radtke	(4)	192.6	38.4	231.0
N.Dak., Home Grown	(4)	191.9	38.3	230.2
N.Dak., Letnes	(3)	190.4	32.8**	223.2
Mn., Home Grown	(4)	189.8	28.1	217.9
P.E.I., Home Grown	(4)	185.3	37.2	222.5
Nova Scotia #47	(4)	167.6	36.7	204.3
N.Dak., Douglass	(2)	161.9	32.6**	194.5
N.Dak., Thompson	(3)	157.1	32.1**	189.2
N.Dak., Whitnack	(3)	151.6	46.4**	198.0
N.Dak., Aafodt	(4)	148.6	32.0	180.6
Average		201.5	42.8	244.3

* Records on 3 plots only ** Records on 2 plots only

Yields ranged from 148.6 to 263.6 bushels of primes per acre, a difference of 115.0 bushels between the best and poorest strains. The average yield for all strains included in the plots was 201.5 bushels of primes per acre. Yields varied from 52.9 bushels below the average to 62.1 bushels above the average.

1934 YIELD - COMPARISON OF CERTIFIED AND HOME-GROWN SEED

The plots again emphasized the superiority of certified seed over home-grown seed, as illustrated by the following table:

Source of Seed	Yield - Bushels Per Acre		
	Primes	Seconds	Total
Maine-(Av. of 3 strains)	238.1	51.3	289.4
Maine-Home Grown	189.8	28.1	217.9
P. E. I.	216.7	40.8	257.5
P. E. I.-Home Grown	185.3	37.2	222.5
N.Dak.-Hoesley	221.1	42.3	263.4
N.Dak.-Home Grown	191.9	38.3	230.2
Average - Certified	225.3	44.8	270.1
Average - Home Grown	189.0	34.5	223.5

The difference in yield in favor of certified seed averaged 36.3 bushels of primes per acre, due largely to the later maturity of home-grown seed and to the greater prevalence of disease in home-grown seed. That this superiority of certified seed is not due just to factors operating this year is clearly demonstrated by the fact that over a period of nine years Maine certified has averaged 214.9 bushels of primes per acre as compared to 177.6 bushels for Maine home-grown, or an increase of 47.3 bushels of primes per acre.

FLEA BEETLE CONTROL EXPERIMENT

Conducted on The Paradee, Miles, Wilkerson, and Phillips Farms
By L. D. Anderson, Assistant Entomologist
Virginia Truck Experiment Station

Treatments With Traction & Power Equipment

In order to test the efficiency of sprays and dusts on a commercial scale in controlling flea beetles, promising spray and dusting materials are being used. The equipment is a Niagara one-horse, 6-nozzle Traction Duster, and an Iron Age 4-row, 3-nozzle Power Sprayer. The experiments are as follows:

Sprays

Plat No.		
1	Calcium Arsenate and Pyrox - - - - - - - - -	2-8-50
2	Calcium Arsenate and Bordeaux - - - - - - - -	2-4-6-50
3	Calcium Arsenate Alone - - - - - - - - - -	2-50
4	Calcium Arsenate & Basic Copper Sulphate - - -	2-2-50

Dusts

5	Calcium Arsenate, Copper Lime	25-20-55
6	Lead Arsenate, Lime	1-1
7	Lead Arsenate, Lime	1-3
8	Check - Sprayed once for Colorado Potato Beetles	

Time and Number of Applications

A Bordeaux-Calcium Arsenate spray is being tried in a series of combinations of time and application and number of applications to determine, if possible, the best time and number of times to treat.

Plat No.		Plat No.	
1	All six applications	5	First, third, fifth and sixth
2	First four	6	Second, fourth, and sixth
3	First two and last two	7	Second, fifth, and sixth
4	Last four	8	Second and fifth

9 Sprayed once for Colorado Potato Beetle

Strength of Application

Different strengths of Bordeaux are being tried in an effort to determine which mixtures are most efficient. Calcium arsenate is being used at the rate of 2 lbs. to 50 gals. of spray on all plats.

Plat No.	
1	2 lbs. copper sulphate, 3 lbs. lime, 50 gals. water
2	4 lbs. copper sulphate, 4 lbs. lime, 50 gals. water
3	4 lbs. copper sulphate, 6 lbs. lime, 50 gals. water
4	6 lbs. copper sulphate, 6 lbs. lime, 50 gals. water
5	6 lbs. copper sulphate, 9 lbs. lime, 50 gals. water
6	Check - Sprayed once for Colorado Potato Beetle

Seed Treatment

A seed treatment test is being made on ten farms to determine whether this has any effect on the amount of flea beetle larval injury to the tubers. Corrosive Sublimate (4 oz. to 30 gals.). Previous seasons' work indicates that seed treatment decreases larval injury.

Past experience indicates that mixtures containing copper, lime, and a stomach poison materially decrease flea beetle injury and greatly improve the crop in quality and yield.

THIRTEENTH ANNUAL EASTERN SHORE OF VIRGINIA POTATO FIELD DAY, JUNE 20, 1935

Purpose

To bring about a better understanding among seed producers, dealers, farmers who grow table stock and seed, and others interested in the potato industry; and to observe and study potato and other demonstrations and experiments.

SCHEDULE

9.30 a.m. Assemble at the B. P. Paradee Farm, 3 miles west of New Church, Va.
10.45 a.m. Observe potatoes planted in Twin Rows, R. C. Hall Farm, Bullbeggar.
11.15 a.m. Stop at Seed Source Plat, R. Finney Mason Farm, Mappsville, Va.
(Those south of Painter attending the Field Day should observe G. C. Bonniwell's Plat, Pungoteague, Va.)
11.45 a.m. Arrive at Eastern Shore Experiment Station, Onley, Va.

12.00 Noon Lunch, served by ladies of the Onley Community Organization.

1.30 p.m. Program of Speeches:

Address of Welcome	Dr. H. H. Zimmerley, Director Virginia Truck Experiment Station
"Four Hundred Bushels Per Acre"	Dr. E. L. Nixon, Plant Pathologist Pennsylvania State College
"Recent Agricultural Developments"	John R. Hutcheson, Director Va. Agricultural Extension Svc.

3.30 p.m. Demonstrations, exhibits, and observation of Experiment Station Plats

DEMONSTRATIONS

(1) Spraying and Dusting (2) Soil Testing (3) Grading

EXHIBITS

(1) Specimens of Irish Cobbler Seed Used In Source-of-Seed Demonstration Plats
(2) Economic Insect Exhibit With Special Reference To The Mexican Bean Beetle and Japanese Beetle
(3) Potato Machinery Exhibit, Including Planters, Fertilizer Distributors, Sprayers, Dusters, Graders, Etc.
(4) Flax Harvesting Machinery

EXPERIMENTS

I. Little Stem Sweet Potato Fertilizer Placement Experiment
(a) Fertilizer applied in bands at time of setting plants.
(b) Fertilizer applied seven days after setting plants.

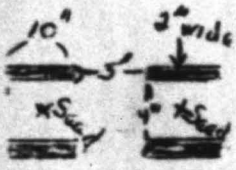
II. Strawberry Variety, Culture, and Fertilizer Experiment

EXPERIMENTS, Cont'd

III. Lime Experiment - Potatoes
- A. Forms of Lime Used
  - (a) Hydrated Calcium Lime
  - (b) Hydrated Dolomitic Lime
  - (c) Lime Marl
  - (d) Oyster Shell Flour Lime
  - (e) Dolomitic Limestone - 100 mesh
  - (f) Calcium Limestone - 100 mesh

IV. Fertilizer Placement Experiment - Potatoes (U. S. D. A. Cooperating)

No.		Method of Fertilizer Placement
1	2000 lbs.	In furrow, well mixed with soil
2	2000 lbs.	In furrow, lightly mixed with soil
3.	2000 lbs.	Continuous band, each side, 2 in. away
4	1500 lbs.	" " " " " " "
5		Check - No fertilizer
6	2000 lbs.	Local Method - Applied in furrow, 15" band - cultivated and planted in 2 operations
7	2000 lbs.	Underneath - 4" band, covered with one inch soil
8	1000 lbs.	Broken Band - 10" fertilizer, 5" space, each side, 2" away
9	1500 lbs.	10" fert., 5" space, each side, 2" away; Broken Band
10	1750 lbs.	10" fert., 5" space, each side, 2" away; " "
11	2000 lbs.	10" fert., 5" space, each side, 2" away; " "
12	1000 lbs.	5" fert., 10" space, each side, 2" away; " "
13	1500 lbs.	5" fert., 10" space, each side, 2" away; " "
14	1750 lbs.	5" fert., 10" space, each side, 2" away; " "
15	2000 lbs.	5" fert., 10" space, each side, 2" away; " "



V. Sweet Potato Spacing Experiment - Plants set 12, 14, 16, 20, and 24" in row

VI. Sweet Potato Sprout Treatment Experiment

1	Bordeaux Mixture	5	Copper Lime Dust
2	New Semesan Bel	6	Sulphur Dust
3	Old Semesan Bel A	7	Check
4	Old Semesan Bel B		

VII. Triangulation Fertilizer Experiment - Porto Rico Sweet Potatoes

VIII. Manure Experiment With Irish Potatoes
- a. Pound manure, untreated
- b. Pound manure, treated with Cyanamid and Superphosphate
- c. Compost, untreated
- d. Compost, treated with Cyanamid and Superphosphate
- e. Check

IX. Size of Limestone Experiment (U. S. D. A. Cooperating)
All plots treated with one ton per acre of 6-6-5 fertilizer (90-10 mixture
1. Acid (No Lime)
2. Neutralized with dolomitic limestone; 100% through 40-60 mesh
3. " " " " ; 88% through 100 mesh
   71% through 200 mesh
4. Neutralized with Calnitro and Nitrate of Soda

All treatments repeated 6 times

EXPERIMENTS, (Cont'd)

X. Onion Experiment
   a. Seed onions for set production
   b. Source of sets
   c. Fertilizer placement and lime experiment
   d. Size of sets

XI. European Corn Borer Control Experiment
   a. Resistant varieties
   b. Time of planting

XII. Strawberry Bed Renewal

XIII. Mexican Bean Beetle Control Experiment (U.S.D.A. Bu. Ent. & Plant Quar. Cooperating)

XIV. Cobbler Source-of-Seed and New Varieties Tests

XV. Nutritional Experiment (Fertilizer reinforced with magnesium, copper, zinc, manganese, etc.)

XVI. 6-6-6 Potato Fertilizers Test
Plats arranged at random and repeated four times.

XVII. Source of Nitrogen, Source of Magnesium, and Reaction Experiment (BoggsFarm) (U. S. D. A. Cooperating)

OTHER IMPORTANT MEETINGS

June 21
Worcester County, Maryland, Potato Tour and Field Day, Pilchard Farm, Pocomoke, Md.

June 25
Potato Field Meeting, Scott Farm, in the vicinity of Cranbury, New Jersey.

MAKE YOURSELF AT HOME ASK QUESTIONS

COME AGAIN

Exhibit B

#16628 COOPERATIVE EXTENSION WORK IN AGRICULTURE AND HOME ECONOMICS
State of Virginia, Va. A & M College, Poly. Inst. & U.S.D.A. Coop.
EXTENSION SERVICE

Dear Sweet Potato Grower:

Virginia growers suffer heavy losses annually as a result of sweet potato diseases which affect the potato in the seed bed, field, or storage house. These diseases can be controlled to a great extent and the loss practically eliminated if proper bedding practices are followed.

1. Grow the varieties best adapted to your section.

2. Select sound, medium sized roots for bedding, clean in appearance and typical of the variety to be used. DO NOT use any sweet potatoes with shriveled ends or black spots on them as these characteristics indicate the presence of disease. Seed treatment will not cure any disease already established in the sweet potato, but will only destroy the spores on the surface of the roots.

3. Disinfect the seed potatoes before bedding by dipping them for ten minutes in a solution of corrosive sublimate made by dissolving 1 ounce of corrosive sublimate in eight gallons of water.

Use a wooden container, as the chemical eats into metal. Place the sweet potatoes in a split basket or cotton bag, and immerse them in the solution. Treat on warm, sunny days so the potatoes will not become chilled. Eight gallons of solution will treat two and one-half bushels of sweet potatoes at one time. After using the solution four times, discard and make up a new solution.

4. Place the sweet potatoes in the seed bed immediately upon removal from the solution. Bed in clean sand or soil in which no sweet potatoes have been bedded or grown before. If the plantbed frame has been used for this purpose previously, disinfect it thoroughly with a solution of corrosive sublimate of dipping strength before putting in new bedding soil.

5. If manure is to be used to supply heat for the beds, be sure that it does not come from stock which has been fed on sweet potatoes or sweet potato vines.

6. Exercise care in covering the roots in the seedbed. If too little sand or soil is placed over them, the bed dries out quickly and the roots fail to sprout. On the other hand, if they are covered too deeply, many of the sprouts fail to reach the surface. It is recommended that they be covered with sand to a depth of two to three inches above the upper surface.

7. Provide thorough drainage for the bed by digging surface ditches on all sides.

8. Keep the bed moist at all times for best results.

9. All growing plants need air. Ventilate the bed every day if the weather will permit.

10. Practice a three or four year crop rotation to further aid in the control of sweet potato diseases.

County Agent

COOPERATIVE EXTENSION WORK IN AGRICULTURE AND HOME ECONOMICS
Virginia, A & M College, Poly. Inst. and U.S.D.A. Cooperating

Seed	Seedsman
Master Marglobe (N.J. Certified)	Francis C. Stokes & Co., Philadelphia, Pa.
Marglobe (Standard)	Francis C. Stokes & Co., Philadelphia, Pa.
Ferry's Supreme Marglobe	Ferry-Morse Seed Co., Detroit, Mich.
Marglobe	Ferry-Morse Seed Co., Detroit, Mich.
Marglobe (Certified)	Geo. Tait & Sons, Norfolk, Va.
Marglobe (Pa. Certified)	R. O. Dean Federalsburg, Md.
Marglobe	T. W. Wood and Sons, Richmond, Va.
Marglobe	Griffith and Turner, 205-215 N. Paca St. Baltimore, Md.
Marglobe	D. W. Warren Co., Norfolk, Va.
Marglobe	Blamberg Brothers, Baltimore, Md.
Marglobe	Maryland Seed Co., Federalsburg, Md.
Marglobe	E. Miller Richardson & Co., Baltimore, Md.
Pritchard (N.J. Certified)	Francis C. Stokes & Co., Philadepphia, Pa.
Greater Baltimore	Francis C. Stokes & Co., Philadelphia, Pa.
Marglobe (Md. Certified)	Tri-State Packers Assn., Easton, Md.
Marglobe (Certified)	Southern States Cooperative Richmond, Va.
Invincible	Virginia Truck Experiment Station Norfolk, Va.
Rutgers	New Jersey Agricultural Experiment Station New Brunswick, N. J.

COOPERATIVE EXTENSION WORK IN AGRICULTURE AND HOME ECONOMICS
Virginia, A & M College, Poly. Inst. and U.S.D.A. Cooperating

TOMATO SEED SOURCE PLOTS 1935
Lancaster County

Plot located on farm of W. H. Walker, Senora Virginia
25 plants to row, replicated 3 times, planted May 31

Source of Seed	% Wilt	% Off Type
Rutgers	19.4	-
Prichard	37.0	-
Greater Baltimore	84.9	-
Blamberg Bros.	26.0	1.4
R. O. Dean	18.6	0.0
Ferry Morse Standard	21.3	0.0
Ferry Morse Supreme	24.0	1.3
Griffith & Turner	22.6	12.0
Invincible	12.0	-
Maryland Seed Co.	6.6	1.3
E. Miller Richardson & Co.	16.0	12.0
Stokes Standard	28.0	16.0
Stokes Master	5.3	1.3
Geo. Tait & Sons	16.0	4.0
Tri-State Packers Assn.	25.3	4.0
Southern States Coop.	16.0	0.0
D. W. Warren & Co.	14.8	1.3
T. W. Wood & Sons	22.6	4.1

Wilt counts made August 5
Off typo counts made on August 9

COOPERATIVE EXTENSION WORK IN AGRICULTURE AND HOME ECONOMICS
Virginia, A & M College, Poly. Inst. and U.S.D.A. cooperating

TOMATO SEED SOURCE PLOTS 1935
Westmoreland County

Plot located on farm of L. W. English, Acorn, Virginia
27 plants to row, replicated 3 times, planted June 1

Source of Seed	% Wilt	% Off Type
Rutgers	13.4	-
Pritchard	25.6	-
Greater Baltimore	82.4	-
Blamberg Bros.	25.9	2.5
R. O. Dean	17.5	0.0
Ferry Morse Standard	23.5	1.3
Ferry Morse Supreme	25.0	1.3
Griffith & Turner	21.5	9.0
Invincible	31.2	-
Maryland Seed Co.	23.4	2.5
E. Miller Richardson & Co.	33.2	14.8
Stokes Standard	28.7	11.3
Stokes Master	22.2	0.0
Geo. Tait & Sons	18.5	4.9
Tri-State Packers Assn.	25.9	4.9
Southern States Coop.	21.5	3.8
D. W. Warren & Co.	18.7	6.2
T. W. Wood & Sons	35.6	14.8

Wilt counts made on August 6
Type counts made on August 9

COOPERATIVE EXTENSION WORK IN AGRICULTURE AND HOME ECONOMICS
Virginia, A & M College, Poly. Inst. and U.S.D.A. Cooperating

TOMATO SEED SOURCE PLOTS 1935
Princess Anne County

Plot located at Virginia Truck Experiment Station, Norfolk, Va.
30 plants to row, replicated 2 times, planted June 3.

Source of Seed	% Wilt	% Off Type
Rutgers	3.3	-
Pritchard	5.0	-
Greater Baltimore	77.9	-
Blamberg Bros.	13.5	0.0
R. O. Dean	3.3	0.0
Ferry Morse Standard	5.0	0.0
Ferry Morse Supreme	0.0	0.0
Griffith & Turner	11.6	1.7
Invincible	5.0	-
Maryland Seed Co.	11.8	0.0
E. Miller Richardson & Co.	10.0	5.0
Stokes Standard	20.0	3.3
Stokes Master	3.3	0.0
Geo. Tait & Sons	13.3	5.0
Tri-State Packers Assn.	8.3	0.0
Southern States Coop.	13.3	0.0
D. W. Warren & Co.	5.1	1.6
T. W. Wood & Sons	15.0	5.0

Wilt counts made August 12,
Off type counts made August 12

COOPERATIVE EXTENSION WORK IN AGRICULTURE AND HOME ECONOMICS
Virginia, A & M College, Poly.Inst. and U.S.D.A. Cooperating

TOMATO SEED SOURCE PLOTS 1935
Record of Prelimary Wilt Counts Made July 10

	PER CENT WILT		
Source of Seed	West. Co.	Lanc. Co.	West. & Lanc. Co. Combined
Rutgers	0.0	0.0	0.0
Pritchard	0.0	4.0	2.0
Greater Baltimore	7.7	28.0	18.2
Blamberg Bros.	0.0	1.3	0.6
R. O. Doan	0.0	1.3	0.6
Ferry Morse Standard	0.0	4.0	2.0
Ferry Morse Supreme	0.0	0.0	0.0
Griffith & Turner	1.2	0.0	0.6
Invincible	1.2	2.6	1.9
Maryland Seed Co.	0.0	2.6	1.2
E. Miller Richardson & Co.	2.4	0.0	1.2
Stokes Standard	0.0	1.3	0.6
Stokes Master	0.0	2.6	1.3
Geo. Tait & Sons	0.0	0.0	0.0
Tri-State Packers Assn.	0.0	0.0	0.0
Southern States Coop.	0.0	4.0	1.9
D. M. Marran & Co.	0.0	1.3	0.6
T. W. Wood & Sons	0.0	4.0	1.8

COOPERATIVE EXTENSION WORK IN AGRICULTURE AND HOME ECONOMICS
Virginia, A & M College, Poly. Inst. and U.S.D.A. Cooperating

Summary: Westmoreland, Lancaster and Princess Anne Counties

Source of Seed	% Wilt	% Off Type
Rutgers	12.5	-
Pritchard	28.1	-
Greater Baltimore	82.1	-
Blamborg Bros.	22.5	1.4
R. O. Dean	[illegible]	0.0
Ferry Morse Standard	[illegible]	0.4
Ferry Morse Supreme	17.6	0.9
Griffith & Turner	19.1	8.0
Invincible	17.2	-
Maryland Seed Co.	14.4	1.3
E. Miller Richardson & Co.	20.8	11.1
Stokes Standard	26.0	10.6
Stokes Master	11.1	0.4
Geo. Tait & Sons	16.2	4.6
Tri-State Packers Assn.	20.8	3.2
Southern States Coop.	17.2	1.4
D. W. Warren & Co.	13.6	3.2
T. W. Wood & Sons	25.4	8.3

Exhibit B

16,209 COOPERATIVE EXTENSION WORK IN AGRICULTURE AND HOME ECONOMICS
State of Virginia, Va. A & M College & Poly. Inst. & U. S. D. A. Cooperating
EXTENSION SERVICE

1934 Tomato Seed Source Demonstrations

Five source-of-seed plots were conducted this year in cooperation with the Virginia Truck Experiment Station as a part of the better seed program. Since the plots were all located in the wilt area, only the Marglobe variety was used in this work. Marglobe seed from 14 different sources was all planted on the same date in the same plant bed and treated in the same manner. Plants were set in the plots on the same date and received the same field treatment. Records were made on trueness-to-type, resistance to wilt, and yield. The summarized type and wilt record on four plots follows:

Summary Tomato Seed Source Plots - 1934

Seedsmen	Type and Wilt Studies			
	No. Plants Studied	% Plants Off-Type	% Wilt	% Bull Plants
Brown-Hynson Strain	160	0.0	0.0	0.0
Francis C. Stokes	162	9.9	0.0	3.7
Stokes-Master Marglobe	167	0.0	0.0	0.0
Brown-Chase Strain	145	0.0	0.0	1.4
Ferry-Morse	170	0.0	0.0	0.6
Geo. Tait & Sons	159	6.3	0.0	3.8
R. O. Dean	170	0.6	0.0	1.8
Southern States Cooperative	169	2.4	0.6	4.1
Tri-State Packers	168	0.0	0.0	4.2
Thos. M. Brown	168	0.0	0.0	1.2
J. B. Cookerell	136	0.7	0.0	3.7
Woodruff & Sons	170	18.8	2.9	0.0
T. W. Wood & Sons	168	3.0	0.0	0.6
Griffith & Turner	99	4.5	0.0	6.7
Greater Baltimore*	94	0.0	1.1	4.3
Average		3.3	0.2½	2.3

* Not included in average

Per cent off-type ranged from as low as 0% to as high as 18.8% with an average of 3.3%. The type of seed sold in the Northern Neck has improved considerably in the last few years. Bull plants developed in the plots to some extent this year due probably to weather conditions. Such plants were no more numerous in the plots, however, than in the field.

Unfortunately, none of the plots were located on land badly infested with wilt. Only three strains developed any wilt at all and the average for these three strains was only 1.5%. The average for all strains was 1/4 of 1%. Heavily infested land has been secured for next year's plots.

Yield records were kept on two plots. Yields ranged from 3.29 to 6.92 tons per acre for the Marglobe strains with an average yield of 5.48 tons per acre. The yields for all strains for 1934, occurring in both plots are given in the following table.

Seedsmen	Yield-Tons Per Acre		
Woodruff & Sons	6.92		
Stokes-Master Marglobe	6.85		
R. O. Dean	6.58		
Tri-State Packers	5.93		
Ferry-Morse	5.87		
Brown-Hynson Strain	5.86	Brown-Chase Strain	5.35
Southern States Cooperative	5.33		
Geo. Tait and Sons	5.31		
Thos. M. Brown	4.80		
T. W. Wood & Sons	4.59		
Francis C. Stokes	4.62		
J. B. Cookerell	3.29		
	5.48		

Exhibit E 1

#16,260

Detailed Costs and Returns on Canning Tomatoes, 211 Virginia Farms, 806.73 Acres, Crop Season of 1934.

	Average Costs and Returns per Acre in Dollars					
	A	B	C	D	E	F
Use of Land	$ 3.58	$ 3.77	$ 4.27	$ 3.77	$ 3.40	$ 3.23
Manure	2.55	.60	2.67	4.37	3.08	1.95
Fertilizer	6.21	4.10	4.21	6.87	9.05	5.52
Lime	.02	-	.01	.02	-	.03
Seed	.94	.75	.30	1.02	1.26	1.03
Plants	.51	.39	1.60	.13	.60	.21
Spray and Dust	.16	-	.09	.16	.25	.19
Man Labor	8.17	11.98	9.11	7.57	7.07	7.08
Horse Work	4.16	4.99	4.72	3.84	3.77	3.99
Truck Use	.04	.02	.01	.12	.04	.03
Tractor Use	.23	-	.22	.27	.46	.17
Equipment Use	.50	.50	.50	.50	.50	.50
Contract picking	5.27	5.32	8.16	5.52	4.99	3.96
Contract hauling	2.75	2.31	3.30	3.12	1.91	3.15
Interest	.24	.28	.28	.24	.24	.22
Total Cost	35.33	35.01	39.45	37.52	36.62	31.26
Tomatoes sold	45.30	40.38	45.27	49.88	53.98	38.15
Profit	9.97	5.37	5.82	12.36	17.36	6.89
Yield (Baskets) Per Acre (1)	232.8	227.8	289.4	276.0	245.8	173.2
Cost per basket	.152	.154	.136	.136	.149	.180
Value per basket	.195	.177	.156	.180	.219	.220
Profit per basket	.043	.023	.020	.044	.070	.040
Returns per hour of man labor(2)	.300	.300	.243	.328	.433	.274

County	Number of farms keeping records	Total acres in tomatoes	Average acres in tomatoes per farm	Average Per Acre: Pounds fertilizer used	Hours Man Labor	Hours Horse Work
A - State	211	806.73	3.82	515	60.8	49.5
B - Bedford & Botetourt	35	118.18	3.38	334	86.8	56.8
C - Shenandoah & Page	33	112.6	3.41	362	61.5	48.0
D - Essex & Richmond	41	141.75	3.46	568	60.8	50.0
E - Lancaster	54	191.9	3.55	688	56.4	43.2
F - Westmoreland	48	242.4	5.05	507	51.0	51.2

(1) Yield per acre is given in terms of 5/8 Baskets - except where tomatoes were sold by weight 30 pounds was considered a basket.

(2) Returns per hour of man labor exclusive of labor of picking and hauling tomatoes.

#16,242

DETAILED COSTS AND RETURNS PER ACRE ON CANNING TOMATOES
CROP SEASON 1934

Items	State (1) 211 Farms		Lancaster 54 Farms		Lancaster 5 High Farms		Lancaster 5 Middle Farms		Lancaster 5 Low Farms	
	Amount	Value	Amount	Value	Amount	Value	Amount	Value	Amount	Value
Use of Land		$ 3.58		$ 3.40		$ 3.38		$ 4.12		$ 3.55
Manure Value		2.55		3.08		4.66		7.85		-
Fertilizer	515#	6.21	688#	9.05	1079#	15.80	461#	9.61	586#	7.70
Lime		.02		-		-		-		-
Seed		.94		1.26		1.21		1.03		.56
Plants		.51		.60		2.15		2.28		.12
Spray and Dust		.16		.25		.34		.33		.10
Man Labor	60.8 Hrs.	8.17	56.4 Hrs.	7.07	64.5 Hrs.	7.96	58.5 Hrs.	7.53	61 Hrs.	7.27
Horse Work	49.5 Hrs.	4.16	43.2 Hrs.	3.77	52.6 Hrs.	4.17	37.7 Hrs.	2.85	43.1 Hrs.	3.63
Truck Use		.04		.04		-		-		-
Tractor Use		.23		.46		-		1.13		-
Equipment Use		.50		.50		.50		.50		.50
Contract Picking		5.27		4.99		11.74		4.64		1.21
Contract Hauling		2.75		1.91		5.54		1.10		-
Interest		.24		.24		.25		.23		.16
Total Cost		35.33		36.62		57.70		43.32		24.80
Tomatoes Sold (2)	232.5 Bskts.	45.30	245.8 Bskts.	53.98	532.9 Bskts.	120.87	245.1 Bskts.	56.68	61.8 Bskts.	12.74
Profit		9.97		17.36		63.17		13.36		-12.06
Acres per farm	3.82		3.55		2.5		3.3		3.44	
Cost Per Basket		.152		.149		.108		.177		.401
Value Per Basket		.195		.219		.227		.231		.206
Profit Per Basket		.043		.070		.119		.054		-.195
R. P. H. M. L. (3)		.300		.433		1.103		.357		-.079

Note: (1) The figures in the State column of the above table were secured from records kept by 35 Bedford and Botetourt, 33 Shenandoah and Page, 41 Essex and Richmond, 54 Lancaster and 48 Westmoreland county farmers on 806.73 acres of tomatoes in 1934.
(2) Yield per acre is given in terms of 5/8 baskets - except where tomatoes were sold by weight 30# was considered a basket.
(3) R. P. H. M. L. - Returns Per Hour of Man Labor exclusive of labor of picking and hauling tomatoes.

#16,258

Detailed Costs and Returns Per Acre on Canning Tomatoes
Crop Season 1934

Item	State (1) 211 Farms		Westmoreland 48 Farms		Westmoreland 5 High Farms		Westmoreland 5 Middle Farms		Westmoreland 5 Low Farms	
	Amount	Value	Amount	Value	Amount	Value	Amount	Value	Amount	Value
Use of Land		$ 3.58		$ 3.23		$ 2.72		$ 2.72		$ 2.95
Manure		2.55		1.95		5.17		2.57		.46
Fertilizer	515#	6.21	507#	5.52	535#	6.92	607#	6.21	479#	5.48
Lime		.02		.03		-		-		-
Seed		.94		1.03		1.97		1.61		.85
Plants		.51		.21		.37		.19		.42
Spray and Dust		.16		.19		.24		.10		.06
Man Labor	60.8 Hrs.	8.17	51.0 Hrs.	7.08	68.2 Hrs.	11.38	45.3 Hrs.	6.06	51.6 Hrs.	7.00
Horse Work	49.5 "	4.16	51.2 "	3.99	76.6 "	6.64	51.5 "	3.86	53.6 "	3.79
Truck Use		.04		.03		-		.20		-
Tractor Use		.23		.17		-		.58		-
Equipment Use		.50		.50		.50		.44		.50
Contract Picking		5.27		3.96		8.35		3.38		2.03
Contract Hauling		2.75		3.15		6.08		2.56		1.45
Interest		.24		.22		.32		.24		.22
Total Cost		35.33		31.26		50.66		30.72		25.21
Tomatoes Sold 2/	232.5 B.	45.30	173.2 B.	38.15	412.5 B.	93.11	151.8 B.	33.84	75.5 Bskts.	16.53
Profit		9.97		6.89		42.45		3.12		-8.68
Acres per Farm	3.82		5.05		3.78		4.7		4.3	
Cost Per Basket		.152		.180		.123		.202		.334
Value Per Basket		.195		.220		.226		.223		.219
Profit Per Basket		.043		.040		.103		.021		- .115
R. P. H. M. L. 3/		.300		.274		.790		.203		- .032

Table # 8

Note: 1. The figures in the State Column of the above table were secured from records kept by 35 Bedford and Botetourt, 33 Shenandoah and Page, 41 Essex and Richmond, 54 Lancaster, and 48 Westmoreland County farmers on 806.73 acres of tomatoes in 1934.

2. Yield per acre is given in terms of 5/8 Baskets - except where tomatoes were sold by weight 30# was considered a basket.

3. R. P. H. M. L. = Returns per hour of man labor exclusive of labor of picking and hauling tomatoes.

#16,257

Detailed Costs and Returns Per Acre on Canning Tomatoes
Crop Season 1934

Items	State (1) 211 Farms		Essex and Richmond 41 Farms		Essex and Richmond 5 High Farms		Essex and Richmond 5 Middle Farms		Essex and Richmond 5 Low Farms	
	Amount	Value	Amount	Value	Amount	Value	Amount	Value	Amount	Value
Use of Land		$ 3.58		$ 3.77		$ 3.88		$ 3.83		$ 3.11
Manure		2.55		4.37		6.28		3.97		3.71
Fertilizer	515#	6.21	568#	6.87	645#	6.61	669#	9.57	643#	6.95
Lime		.02		.02		-		-		-
Seed		.94		1.02		1.20		1.00		1.41
Plants		.51		.13		-		-		-
Spray and Dust		.16		.16		.14		.06		.13
Man Labor	60.8 Hrs.	8.17	60.8 Hrs.	7.57	76.8 Hours.	6.85	45.5 Hrs.	5.40	59.8 Hrs.	6.95
Horse Work	49.5 "	4.16	50.0 "	3.84	58.0 "	4.35	42.0 "	3.15	57.5 "	4.31
Truck Use		.04		.12		-		.49		-
Tractor Use		.23		.27		.90		-		-
Equipment Use		.50		.50		.50		.50		.50
Contract Picking		5.87		5.52		9.46		4.98		2.11
Contract Hauling		2.75		3.12		4.14		3.43		1.48
Interest		.24		.24		.26		.15		.24
Total Cost		35.33		37.52		46.57		36.53		30.90
Tomatoes Sold 2/	232.5 B.	45.30	276 Bskts.	49.88	516.9 B.	89.22	249 Bskts.	43.67	101.1 Bskts.	18.63
Profit		9.97		12.36		42.65		7.14		-12.27
Acres Per Farm	3.82		3.46		5.3		2.9		2.8	
Cost Per Basket		.152		.136		.090		.147		.306
Value Per Basket		.195		.180		.172		.175		.184
Profit Per Basket		.043		.044		.082		.028		-.122
R. P. H. M. L. 3/		.300		.328		.670		.276		-.321

Note: 1. The figures in the State Column of the above table were secured from records kept by 35 Bedford and Botetourt, 33 Shenandoah and Page, 41 Essex and Richmond, 54 Lancaster and 48 Westmoreland County farmers on 806.73 acres of tomatoes in 1934.

2. Yield per acre is given in terms of 5/8 Baskets - except where tomatoes were sold by weight 30# was considered a basket.

3. R. P. H. M. L. = Returns per hour of man labor exclusive of labor of picking and hauling tomatoes.

#16,256

Detailed Costs and Returns Per Acre on Canning Tomatoes
Crop Season 1934

Items	State (1) 211 Farms		Bedford and Botetourt 35 Farms		Bedford and Botetourt 5 High Farms		Bedford and Botetourt 5 Middle Farms		Bedford and Botetourt 5 Low Farms	
	Amount	Value	Amount	Value	Amount	Value	Amount	Value	Amount	Value
Use of Land		$ 3.58		$ 3.77		$ 4.47		$ 4.03		$ 2.99
Manure		2.55		.60		1.79		.78		.62
Fertilizer	515#	6.21	334#	4.10	258#	2.54	369#	3.69	378#	4.02
Lime		.02		-		-		-		-
Seed		.94		.75		.71		1.19		.52
Plants		.51		.39		.23		.33		-
Spray and Dust		.16		-		-		-		-
Man Labor	60.8 Hrs.	8.17	86.8 Hrs.	11.98	113.5 Hrs.	18.22	97.4 Hrs.	11.41	71.9 Hrs.	7.95
Horse Work	49.5 "	4.16	56.8 "	4.99	81.2 "	7.81	58.9 "	4.09	56.2 "	4.54
Truck Use		.04		.02		-		-		-
Tractor Use		.23		-		-		-		-
Equipment Use		.50		.50		.50		.50		.55
Contract Picking		5.27		5.32		9.38		4.49		2.29
Contract Hauling		2.75		2.31		5.56		1.73		.47
Interest		.24		.28		.40		.31		.23
Total Cost		35.33		35.01		51.61		32.55		24.18
Tomatoes Sold 2/	232.5 B.	45.30	227.8 Bskts.	40.38	407.3 Bskts.	73.09	198.8 Bskts.	35.97	66.1 Bskts.	11.34
Profit		9.97		5.37		21.48		3.42		-12.84
Acres Per Farm	3.82		3.39		3.64		3.3		2.05	
Cost Per Basket		.152		.154		.127		.164		.366
Value Per Basket		.195		.177		.180		.181		.172
Profit Per Basket		.043		.023		.053		.017		-.194
R. P. H. M. L. 3/		.300		.200		.350		.152		-.068

Note: 1. The figures in the State Column of the above table were secured from records kept by 35 Bedford and Botetourt, 33 Shenandoah and Page, 41 Essex and Richmond, 54 Lancaster and 48 Westmoreland county farmers on 806.73 acres of tomatoes in 1934.

2. Yield per acre is given in terms of 5/8 Baskets - except where tomatoes were sold by weight 30# was considered a basket.

3. R. P. H. M. L. = Returns per hour of man labor exclusive of labor of picking and hauling tomatoes.

Detailed Costs and Returns Per Acre on Canning Tomatoes
Crop Season 1934

Item	State (1) 211 Farms Amount	Value	Shenandoah & Page 33 Farms Amount	Value	Shenandoah & Page 5 High Farms Amount	Value	Shenandoah & Page 5 Middle Farms Amount	Value	Shenandoah & Page 5 Low Farms Amount	Value
Use of Land		$ 3.58		$ 4.27		$ 4.64		$ 3.47		$ 3.70
Manure		2.55		2.67		3.07		2.57		1.71
Fertilizer	515#	6.21	362#	4.21	714#	8.76	262#	2.60	200#	2.20
Lime		.02		.01		-		-		.04
Seed		.94		.30		.22		.28		.35
Plants		.51		1.60		3.96		.40		.36
Spray and Dust		.16		.09		.03		.11		.02
Man Labor	60.8 Hrs.	8.17	61.5 Hrs.	9.11	65.1 Hrs.	11.25	64.1 Hrs.	9.16	53.3 Hrs.	7.18
Horse Work	49.5 "	4.16	48 "	4.72	44.2 "	4.42	50.2 "	4.60	45.3 "	4.53
Truck Use		.04		.01		-		-		-
Tractor Use		.23		.22		.31		-		.17
Equipment Use		.50		.50		.50		.50		.54
Contract Picking		5.27		8.16		18.78		5.69		1.96
Contract Hauling		2.75		3.30		4.36		3.93		1.14
Interest		.24		.28		.48		.25		.16
Total Cost		35.33		39.45		60.78		33.76		24.06
Tomatoes Sold 2/	232.5 B.	45.30	289.4 B.	45.27	508.2 B.	79.20	230 Bskts.	35.75	95.7 Bskts.	14.62
Profit		9.97		5.82		18.42		1.99		-9.44
Acres Per Farm	3.82		3.41		4.9		3.35		2.8	
Cost per Basket		.152		.136		.120		.147		.251
Value Per Basket		.195		.156		.156		.155		.153
Profit Per Basket		.043		.020		.036		.008		-.098
R. P. H. M. L. 3/		.300		.243		.456		.174		-.042

Note: 1. The figures in the State Column of the above table were secured from records kept by 35 Bedford and Botetourt, 33 Shenandoah and Page, 41 Essex and Richmond, 54 Lancaster and 48 Westmoreland County farmers on 806.73 acres of tomatoes in 1934.

2. Yield per acre is given in terms of 5/8 Baskets - except where tomatoes were sold by weight 30# was considered a basket.

3. R. P. H. M. L. = Returns per hour of man labor exclusive of labor of picking and hauling tomatoes.

16,267 COOPERATIVE EXTENSION WORK IN AGRICULTURE AND HOME ECONOMICS
State of Virginia, Va. A & M College & Poly Inst & U.S.D.A. Cooperating
EXTENSION SERVICE

February Suggestions for Garden Club Leaders and Gardeners

Plowing. Plow your garden as soon as possible. Fall or winter plowing is advisable but February plowing will still give some of the benefits of fall plowing such as pulverizing the soil, conservation of moisture, partial control of insects, etc. Why delay when you pay?

Manuring. Manure is the best soil conditioner available. Not only does it add plant food to the soil, but of even more importance, it increases the moisture-holding capacity of the soil by adding organic matter. Before plowing, make a liberal application of well-rotted stable manure. Twenty tons per acre is not too much. If fresh, strawy manure is used, disc the material in before plowing to prevent the forming of air pockets.

Soil Preparation. Allow the soil to remain rough until just before planting. Just previous to planting, the soil should be thoroughly harrowed or worked. A firm well prepared seedbed will increase germination and aid in the production of better vegetables. Harrow if necessary, several times. Don't let your desire to plant cause you to neglect thorough soil preparation.

Fertilization. All vegetables require food to grow properly. Some of this food is supplied in the form of manure. The chief value of manure, however, is to increase the moisture-holding capacity of the soil. In addition to manure, an application of 5-8-5 or 4-12-4 fertilizer at the rate of 1000 pounds per acre (approximately 25 pounds per 1000 square feet) will prove profitable. One-half of the fertilizer should be used in the row and thoroughly mixed with the soil. The balance should be broadcast and cultivated in.

Seed. Order your seed at once from some reliable seed concern. Cheap seed is costly seed in the long run. Do not delay. Have your seed on hand when needed.

Selection of Vegetables. Is your garden a corn-potato-beans-cabbage garden? It should contain a good selection of vegetables available throughout every month of the year. It should contain at least five or six of the green or leafy vegetables, five or six root vegetables, and a like number of fruit vegetables. Below is a list of some of these vegetables. Those followed by an asterisk should be in every garden.

Green or Leafy	Root	Fruit
Cabbage*	Beets*	Beans*
Kale*	Carrots*	Lima Beans
Lettuce*	Onions*	Corn*
Spinach	Parsnips*	Peas*
Swiss Chard	Potatoes*	Peppers
Turnip Salad*	Salsify	Tomatoes*
Spinach-mustard	Sweet Potatoes	Okra
Mustard	Turnips*	Pumpkin
Celery	Radish	Squash
	Rutabaga	Cantaloupes
		Cucumber
		Eggplant

Selection of Varieties. As a rule, order the old, standard varieties which have been tried and found of value. It is all right to try some new varieties each year, but do not risk your entire planting.

Planning. Plan your garden carefully before planting. Place all perennials such as rhubarb and asparagus on one side of the garden where they will not interfere with the culture of annual crops. Group those vegetables together which mature at approximately the same time. Such a practice will permit the planting of succession crops and will go a long way toward insuring a good fall garden. A suggestive garden plan for a family of five is attached.

Hotbeds. In eastern Virginia cabbage, cauliflower, tomato, pepper and eggplant seed may be sown in rows in the hotbed. Cabbage and cauliflower may also be sown in hotbeds in western Virginia. Watch ventilation and watering carefully. Harden off the cabbage plants carefully by gradually increasing ventilation and reducing watering until the plants are accustomed to out-door conditions.

Planting. In eastern Virginia, potatoes, peas, onions, spinach, etc., may be planted in February.

Exhibit F 2

13,714 COOPERATIVE EXTENSION WORK IN AGRICULTURE AND HOME ECONOMICS
State of Virginia, Va. A & M College & Poly.Inst. & U.S.D.A. Cooperating
EXTENSION SERVICE

SUGGESTED GARDEN PLAN FOR FAMILY OF FIVE

Ft. of	Vegetable	Variety	Seed Required	Planting Date
125	Parsnip	Guernsey	1 oz.	Mar. & Apr.
75	Salsify	Sandwich Island	1 oz.	Apr. & May
250	Carrot	Chantenay	2½ oz.	Mar., Apr., & May
125	Beet	Crosby's Egyptian	2½ oz.	" " "
125	Spinach	Long St.Bloomsdale Savoy or Va.Savoy (blight resistant)	2½ oz.	Mar. & Apr.
300	Peas	World's Record	1 lb.	
		Thomas Laxton	2 lbs.	Feb. to May
200	Onion sets	Ebenezer or Yellow Globe	2 lbs.	Mar. & Apr.
50	Lettuce	Grand Rapids (leaf) or	½ pkt.	Mar., Apr., & May
		Big Boston (head)	½ pkt.	Mar. & Apr.
75	Cabbage, early	Jersey, or		Set plants
		Charleston Wakefield	1 pkt.	March & April
300	Snap Beans	Stringless Green Pod	3 lbs.	April & May
175	Kale	Dwarf Blue Curled Scotch	3/4 oz.	March & April
250	Potatoes, early	Irish Cobbler	1½ pk.	March & April
500	Potatoes, late	Green Mountain*	2½ pk.	March & April
175	Tomato	Bonny Best	1 pkt.	Set plants
		Brimmer or Marglobe	1 pkt.	after frost
500	Sweet potatoes	Nancy Hall & Porto Rico	500 plants	Set plants May and June
500	Corn	Golden Bantam	3/4 lb.	Apr., May & June
		Country Gentleman	1-3/4 lb.	Apr., May & June
In corn	Pumpkin	Virginia Mammoth	1 pkt.	May
		Cushaw	1 pkt.	May
10-15 Hills	Squash	White Bush	1 pkt.	Apr. & May
		Yellow Crookneck	1 pkt.	Apr. & May
10-15 Hills	Cucumber	Early Fortune	1 pkt.	May
		SUCCESSION CROPS		
200	Snap Beans	Stringless Green Pod	2 lbs.	Jul.15-Aug.15 after onions
250	Cabbage	Late Flat Dutch or		Set plants in
		Danish Ballhead	1 pkt.	July after peas
50	Lettuce	Grand Rapids (leaf)	½ pkt.	Jul.15-Sept.1 after spinach
125	Spinach	Long St.Bloomsdale Savoy or Va.Savoy (blight resistant)	2½ oz.	Aug.15-Sept.15 after beans
200	Turnip	Purple Top White Globe	2 oz.	Aug. after beans
125	Turnip Salad	Pomeranian White Globe	3/4 oz.	" after potatoes (early)

*I.Cobbler or McCormick should be planted for the late crop in E. & Middle Virginia.

The above plan should be of value to you in planning your garden. These suggestions are also offered (1) Locate your garden on fertile, well-drained soil, convenient to the house. (2) Plow as early as possible. (3) Plant only good seed. (4) Apply manure at the rate of from 10 to 20 tons per acre, if available. (5) If possible, fertilize with from 600 to 1000 pounds of 5-8-5 per acre. (6) Practice frequent shallow cultivation. (7) Follow a thorough pest control program. For further information on gardening, consult your county agent or write to the Vegetable Extension Service, Blacksburg, Virginia.

Exhibit 6

16,374 COOPERATIVE EXTENSION WORK IN AGRICULTURE AND HOME ECONOMICS
State of Virginia, Va. A. & M. College & Poly. Inst. & U.S.D.A. Cooperating
EXTENSION SERVICE

March Suggestions for Garden Club Leaders and Gardeners

In most sections of Virginia, gardening really begins in March. Warm spring days arouse the gardening fever. Tools stored away during the winter months are brought out and the spring garden work gets under way.

Plowing. Plow your garden immediately, the sooner the better. In general plowing in March is too late for best results, but March plowing is much better than plowing in April and May. Plow now and you still help to conserve moisture, control insects, and allow the material turned under to rot.

Manuring. Manure is the best soil conditioner available. Not only does it add plant food to the soil, but of even more importance, it increases the moisture-holding capacity of the soil by adding organic matter. Before plowing, make a liberal application of well-rotted stable manure. Twenty tons per acre is none too much. If fresh, strawy manure is used, disc the material in before plowing to prevent the forming of air pockets.

Soil Preparation. Allow the soil to remain rough until just before planting. Just previous to planting, the soil should be worked or harrowed thoroughly. A firm well prepared seedbed will increase germination and aid in the production of better vegetables. If necessary, harrow several times. Don't let your desire to plant cause you to neglect thorough soil preparation.

Fertilization. All vegetables require food to grow properly. Some of this food is supplied in the form of manure. The chief value of manure, however, is to increase the moisture holding capacity of the soil. In addition to manure, an application of 5-8-5 or 4-12-4 fertilizer at the rate of 1000 pounds per acre (approximately 25 pounds per 1000 square feet) will prove profitable. In eastern Virginia, a 6-6-5 makes a good garden fertilizer. If your garden has been well manured yearly, the fertilizer may be broadcast and worked into the soil. If little manure has been used, half of the fertilizer should be placed in the row and thoroughly mixed with the soil; the balance broadcast and cultivated in.

Seed. Order your seed at once from some reliable concern. Cheap seed is costly seed in the long run. Have your seed on hand when needed. Many a garden lacks a proper assortment of vegetables simply because the seed was not ordered in time.

Selection of Vegetables. The average home garden contains from eight to ten vegetables and supplies no food for the table after the middle of August. The good home garden should contain at least 15 to 20 vegetables so selected as to supply an abundance of food, either fresh, canned or stored, for every month in the year. Personal likes and dislikes will govern this selection to a great extent. However, your garden should contain (1) at least five or six of the green or leafy vegetables such as cabbage*, kale*, lettuce*, spinach, Swiss chard, turnip salad*, spinach-mustard, mustard and celery; (2) five or six root vegetables such as beets*, carrots*, onions*, parsnips*, potatoes*, salsify, sweet potatoes, turnips*, radish and rutabaga; (3) and a like number of the fruit vegetables, such as beans*, lima beans, corn,* peas*, peppers, tomatoes*, okra, pumpkin, squash, cantaloupes, cucumber and eggplant. Those vegetables followed by an asterisk should be in every garden. The others might well be.

Selection of Varieties. As a rule, order the old, standard varieties which have been tried and found of value. It is all right to try some new varieties each year, but do not risk your entire planting. If you are bothered with cabbage yellows, a yellows resistant variety such as Wisconsin Hollander or Wisconsin All Seasons, should be secured. Marglobe or Pritchard are good wilt resistant tomatoes.

Planning. Plan your garden carefully before planting. Place all perennials such as rhubarb and asparagus, on one side of the garden where they will not interfere with the culture of annual crops. Group those vegetables together which mature at approximately the same time. Such a practice will permit the planting of succession crops and will go a long way toward insuring a good fall garden. Tall growing vegetables should be grouped together. Rows should be straight and in general, should be the long way of the garden. Planting distances for both hand and horse cultivation are given in Circular L-263, Vegetable Garden Suggestions for Virginia Farmers, which is available at my office.

Planting. Asparagus and rhubarb should be planted in March. These vegetables deserve a place in many more gardens throughout the state. Once established, they will be available for years. Ask for information on their culture. For planting dates on other vegetables, consult Circular E-263 mentioned above, or ask for information at this office.

Agent.

Exhibit H

#16,510 COOPERATIVE EXTENSION WORK IN AGRICULTURE AND HOME ECONOMICS
Virginia, A & M College, Poly.Inst. and U.S.D.A. Cooperating
EXTENSION SERVICE

APRIL SUGGESTIONS FOR GARDEN CLUB LEADERS AND GARDENERS

Plowing. Unfavorable weather conditions have delayed plowing in many instances. Plow immediately.

Manuring. Before plowing, make a liberal application of well rotted stable manure. Twenty tons per acre is not too much. If fresh, strawy manure is used, disc the material in before plowing to prevent the forming of air pockets. An application of nitrate of soda or sulphate of ammonia at the rate of 100 pounds per acre will hasten decomposition.

Soil Preparation. The soil should be thoroughly harrowed or worked before planting. A firm, well-prepared seedbed will increase germination and aid in the production of better vegetables. Harrow if necessary several times. Don't let your desire to plant cause you to neglect thorough soil preparation.

Fertilization. All vegetables require food to grow properly. Some of this food is supplied in the form of manure. The chief value of manure, however, is to increase the moisture-holding capacity of the soil. In addition to manure, an application of 5-8-5 or 4-12-4 fertilizer at the rate of 1000 pounds per acre (approximately 25 pounds per 1000 square feet) will prove profitable. One-half of the fertilizer should be used in the row and thoroughly mixed with the soil a week to ten days before planting. The balance should be broadcast and cultivated in.

Selection of Vegetables. Plant a well balanced garden which will supply an abundance of food throughout every month in the year. The garden should contain around 20 to 25 vegetables, about equally divided between green or leafy vegetables, root vegetables and fruit vegetables.

Planting. Seed should be planted at varying depths depending upon the size of the seed. The soil should be firmed over the row after the seed is planted to insure quick and better germination. For some vegetables, such as parsnips, salsify, carrots, etc., a light mulch of well rotted manure or woods mold will aid in getting a stand. Planting distances are given in Circular E-263 Vegetable Garden Suggestions for Virginia Farmers.

Arrangement. All perennials such as rhubarb, asparagus, horse radish, small fruits, etc., should be planted on one side of the garden where they will not interfere with the cultivation of the vegetables planted each year. Group those vegetables together which will be ready to harvest at approximately the same time. All those vegetables which require the entire season to grow should be placed on one side of the garden where they will not interfere with the planting of succession crops. A well planned garden should certainly provide for succession crops, the growing of two or more crops on the same land, one following the other. When early maturing crops are grouped together, that portion of the garden may later be worked up and replanted to fall or winter vegetables. All those vegetables which require the entire season to mature should be placed on one side of the garden where they will not interfere with the planting of succession crops.

Transplanting. Care should be taken in removing young plants from the plant-bed. Leave as much soil as possible on the roots. Water when setting in the garden. After the water has soaked into the ground, pull some dry dirt over the moist soil and firm.

Cutworms. Tomatoes, cabbage and pepper plants may be protected from cutworms by using paper bands around the stems. About an inch of the paper should be below the surface of the ground and from 1 to 2 inches above ground. Cutworms may also be controlled by poison bran mash, made from 5 pounds of dry bran, ¼ pound Paris green, 1 pint of syrup or molasses and sufficient water to make a crumbly mash.

Aphids. Aphids or plant lice will seriously injure young plants unless precautions are taken. They may be controlled by spraying with Black Leaf 40 (nicotine sulphate) at the rate of 1½ teaspoons to 1 gallon of water. A homemade spray may also be prepared by soaking 1 pound of tobacco stems or refuse in 1 gallon of water for 24 hours and spraying with this solution. Fairly satisfactory results may also be secured by spraying with a soap solution made by dissolving an inch cube of hard laundry soap in a quart of water. Regardless of the spray material used, the aphid must be hit with the spray to be killed.

Flea Beetles. Flea beetles often destroy young seedlings. They may be controlled by dusting or spraying with some stomach or food poison such as magnesium or calcium arsenate. As a dust use 1 part of the arsenate to 5 parts of hydrated lime. As a spray use 5 level tablespoonfuls to 3 gallons of water. A commercial copper-lime-arsenate dust will also give good control and in addition will help to control certain diseases.

Exhibit I

$16,848 COOPERATIVE EXTENSION WORK IN AGRICULTURE AND HOME ECONOMICS
Virginia, A & M College, Poly. Inst. and U.S.D.A. Cooperating
EXTENSION SERVICE

MAY SUGGESTIONS FOR GARDEN CLUB LEADERS AND GARDENERS

May is the testing period for many gardeners. Success or failure of the summer garden depends to a great extent upon what you do this month. Planting and transplanting are at their height. Fertilization is extremely important. Failure to provide food for your vegetables in May will result in poor production later. Insects will appear to try your patience and test your ingenuity. The decision whether to raise vegetables for the insects or for the family must be made now.

Soil Preparation. Some few gardens are still unplowed due to excessive rains in April. Such gardens should be plowed as soon as possible. Before plowing make a liberal application of well rotted stable manure. Twenty tons per acre is none too much. Fresh, strawy manure should not be used too late in the season. If used at this season, it should be disced in before plowing to prevent the forming of air pockets, and an application of nitrate of soda or sulphate of ammonia at the rate of 100 pounds per acre should be made to hasten decomposition and to prevent decomposition robbing the plants of nitrogen. After plowing, harrow thoroughly, several times if necessary. A firm well prepared seed bed will increase germination and aid in the production of better vegetables. Take time to prepare the soil thoroughly.

Planting. Seed should be planted at varying depths, depending upon the size of the seed. The soil should be firmed over the seed to insure quick and better germination. For some vegetables, such as parsnips, salsify, carrots, etc., a light mulch of well rotted manure or woods mold will aid in securing a stand. In transplanting care should be taken in removing young plants from the plant bed. Leave as much soil as possible on the roots. After planting, firm the soil around the roots and then water. After the water has soaked into the ground, pull some dry dirt over the moist soil. Make the rows straight. Group early maturing vegetables together in order that succession crops may be planted when the early crops are used up.

Fertilization. Use a 5-8-5 or 4-12-4 fertilizer on your garden at the rate of 1000 pounds per acre (approximately 25 pounds per 1000 square feet). See that this fertilizer is thoroughly mixed with the soil.

Cutworms. Tomatoes, cabbage, and pepper plants may be protected from cutworms by using paper bands around the stems. About an inch of paper should be below the surface of the ground and from 1 to 2 inches above. Cutworms may also be controlled by poison bran mash made from 5 pounds of dry bran, ¼ pound Paris green, 1 pint of syrup or molasses, and sufficient water to make a crumbly mash. Keep poultry out of the garden as the mash is poisonous.

Slugs and Snails. Slugs and snails eat large ragged holes through the leaves of the plants and destroy young seedlings. Remove all rotten boards and trash from the garden. Place bands of air slaked lime, soot or sifted wood ashes around the garden. Slugs and snails coming in contact with this material throw off so much slime that death follows.

Flea Beetles. Flea beetles are small dark colored insects which jump about when disturbed. Cleaning up grass plots near the garden will aid in control. Dusting with 1 part calcium arsenate to 15 parts hydrated lime is recommended. Hydrated lime alone used as a dust will help to repel the beetles.

Grasshoppers and Ants. Grasshoppers often damage garden crops. For control add a finely chopped orange or lemon to the poison bran mash described under cutworms. Ants may also be controlled in the garden by poison bran mash.

Chewing Insects. Chewing insects, as the name implies, eat portions of the plant. Among the more common chewing insects are the Mexican bean beetle, potato beetle, cabbage worm and others. They may be controlled by spraying or dusting with magnesium arsenate in these proportions: Spray - magnesium arsenate 5 level tablespoonfuls; water, 3 gallons. Dust - magnesium arsenate, 1 part; hydrated lime, 3 parts. Place the poison where the insect feeds, which is usually on the undersides of the leaves. Thoroughness is essential for control. Start spraying or dusting when the insect first appears and keep at it.

Sucking Insects. Sucking insects, such as aphids or plant lice, injure the plant by sucking the juice from the leaves and causing them to yellow and curl. They may be controlled by spraying with Black Leaf 40 (nicotine sulphate) in these proportions: nicotine sulphate, 1½ teaspoonfuls; soap, 1 inch cube; water, 1 gallon. Remember it is necessary that the spray hit a sucking insect to kill it. Thoroughness as well as timeliness, is essential. A satisfactory homemade tobacco spray may be prepared by soaking a pound of tobacco stems, stalks, etc., in a gallon of water for 24 hours and spraying with the resultant mixture. Fairly good results may also be secured by spraying with a soap solution made by dissolving a 1 inch cube of hard laundry soap in a quart of water.

Exhibit J

#17077 COOPERATIVE EXTENSION WORK IN AGRICULTURE AND HOME ECONOMICS
Virginia, A & M College, Poly. Inst. and U.S.D.A. Cooperating.
EXTENSION SERVICE

JUNE SUGGESTIONS FOR GARDEN CLUB LEADERS AND GARDENERS

Cultivation. Would you permit a thief to take all your possessions before doing anything to stop him? Weeds rob your vegetables of food and moisture, causing poor growth and quality. Destroy the weeds before the injury is done. At least half the labor in gardening can be eliminated by proper cultivation at the right time. Practice frequent, thorough, shallow cultivation. Do not cultivate when the foliage is wet.

Thinning. Two beets, carrots, or any other vegetable cannot grow where only one is supposed to grow. Give each plant room to grow and develop properly. All gardeners sow seed rather thickly in order to secure a good stand, but many fail to realize the importance of thinning. Both size and quality are injured by crowding. Beets, carrots, parsnips, salsify and turnips should be thinned to approximately 4-5 inches in the row; leaf lettuce 6-8 inches, head lettuce 8-10 inches; Swiss chard and kale 12-18 inches. In thinning, such vegetables as lettuce, beets, Swiss chard, kale, etc. may be transplanted to another place in the garden.

Watering. Do not water the garden unless you give it a thorough soaking. Sprinkling the surface does more harm than good.

Fertilization. If your vegetables are not growing properly, side-dress them with nitrate of soda or sulphate of ammonia at the rate of 150 to 200 pounds per acre (approximately 3 to 5 pounds per 1000 square feet). The material should be distributed along the row, not nearer than 3 or 4 inches to the base of the plant, and cultivated in. Care should be taken that the material does not come in contact with the plant foliage or burning will result. A complete fertilizer, such as a 5-8-5 or a 4-12-4 may be used as a side-dressing if you have no nitrate or sulphate on hand. Poultry manure in limited amounts may also be used to advantage.

Moles. Every year hundreds of gardeners seek information on the control of moles. This industrious little pest is particularly hard to control. Steel traps set in the burrows offer one means of protection. Napthalene flakes or moth balls placed in the burrows will often cause the moles to seek your neighbor's garden in preference to yours. A commercial material known as Cyanogas is also used in the burrows with some success. Cyanogas is a greyish colored powder which, on coming in contact with the moisture in the soil, gives off a poisonous gas which penetrates the burrows and kills the moles. A teaspoonful of the material is placed every few feet in the burrow, care being taken not to destroy the runway. A small hole made into the runway with a pointed stick or pencil and a paper funnel will aid in inserting the material. Cyanogas is poisonous to humans, should be handled with care, and should be stored in an air tight container where no moisture can get to it.

Chewing Insects. Chewing insects, as the name implies, eat portions of the plant. Among the more common chewing insects are the Mexican bean beetle, potato beetle, cabbage worm and others. They may be controlled by spraying or dusting with magnesium in these proportions: magnesium arsenate 5 level tablespoonfuls and water 3 gallons for spraying or magnesium arsenate 1 part, hydrated lime 3 parts for dusting. Place the poison where the insect feeds, which is usually on the undersides of the leaves. Thoroughness is essential for control. Start spraying or dusting when the insect first appears.

Sucking Insects. Sucking insects, such as aphids or plant lice, injure the plant by sucking the juice from the leaves and causing them to yellow and curl. They may be controlled by spraying with Black Leaf 40 (nicotine sulphate) in these proportions: nicotine sulphate 1½ teaspoonfuls, soap 1-inch cube, water 1 gallon. Remember it is necessary that the spray hit a sucking insect to kill it. Thoroughness as well as timeliness is essential. A satisfactory homemade tobacco spray may

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be prepared by soaking a pound of tobacco stems, stalks, etc. in a gallon of water for 24 hours and spraying with the resultant mixture. Fairly good results may also be secured by spraying with a soap solution made by dissolving a 1-inch cube of hard laundry soap in a quart of water.

Arsenical Substitutes. The use of pyrethrum and derris compounds in insect control has increased considerably throughout Virginia. These materials, poisonous to insects but non-poisonous to man, can be used with safety on vegetable crops at any stage of their growth. Pyrethrum kills quicker than derris but it acts only as a contact insecticide, loses its strength quickly, and usually costs more. Pyrethrum dusts and sprays vary in strength and should be used in the proportions recommended by the manufacturer.

Derris compounds act both as contact and stomach poisons, do not lose their strength as quickly and, for some insects at least, are more effective. For that reason they have gained in popularity. Dr. Harry C. Walker, Entomologist of the Virginia Truck Experiment Station, states that a derris dust containing from ½ to ¾ of 1% rotenone properly applied will give very good control of the Mexican bean beetle. A spray containing from 2 to 2½ ounces of finely ground derris root (4 to 5% rotenone) to 3 gallons of water will also give satisfactory results.

Derris dusts and sprays have also shown promising results with cabbage worms, the troublesome Harlequin cabbage bug, cucumber beetle and other insects. Derris compounds cost more than the arsenicals but they deserve a place in the pest control program.

Diseases. Many of our worst garden diseases of tomatoes, potatoes, cucumbers, cantaloupes, etc. may be controlled by spraying with Bordeaux mixture made up in these proportions: bluestone (copper sulphate) 4 ounces, rock lime 4 ounces, water 3 gallons. Dissolve the bluestone in a small amount of hot water and add water to make 1½ gallons. Slake the lime in a small amount of water and then add water to make 1½ gallons. Pour the two solutions together just before spraying. Magnesium arsenate and Black Leaf 40 may be combined with Bordeaux mixture if either chewing or sucking insects are present.

Fall Garden. Begin planning your fall garden now. Beans, beets, cabbage, carrots, kale, lettuce, Swiss chard, turnips, and turnip salad should all appear in the fall garden. If these vegetables are to be available this fall and winter, they must be planted from June to August, depending on the vegetable and the section of the state. Gardeners in western and southwestern Virginia in particular should make some plantings for the fall garden in June. In these sections much better stands of beets and carrots may usually be secured from plantings made between June 15-30 than from later plantings. Cabbage plants set in late June are also surer of heading than plantings made later. The earlier settings become established before the dry seasons set in. Secure your seed now. Vegetables for fall and winter are the real test of a good gardener.

Exhibit K

#17,113 COOPERATIVE EXTENSION WORK IN AGRICULTURE AND HOME ECONOMICS
Virginia, A & M College, Poly.Inst. and U.S.D.A. Cooperating
EXTENSION SERVICE

JULY SUGGESTIONS FOR GARDEN CLUB LEADERS AND GARDENERS

If one were to visit a hundred farms at random in this county during the month of June, he would find a good garden on a large majority of them. The flourishing condition of these gardens would testify to the owners' recognition of the value of a good home garden in the farm program. A later visit to many of the same gardens after the middle of August, however, would afford just as striking evidence to the contrary. Weeds will be thriving where vegetables flourished before. Succession plantings will not have been made to extend the season of harvest and hundreds of gardens will fail to supply the farm family with fresh vegetables during the fall and winter months. Any gardener can have a good spring and summer garden but it takes a real gardener to boast an all-year around garden. Now is the time to plan your fall and winter garden.

Good seed is the first requisite for a successful fall garden. Order your seed at once from some reliable seedsman. The following list will give you information on varieties and planting dates for the fall garden.

		Planting Dates*	
Vegetables	Varieties	Tidewater and Middle Virginia	Piedmont and Western Virginia
Beans	Stringless Green Pod	Aug. 1-20	July 15-Aug.10
Beets	Grosby's Egyptian	Aug. 1-20	June 20-Aug.10
Cabbage	Danish Ball Head	Set plants July 15 to Aug.15	Set plants June 20 to July 20
	Late Flat Dutch		
Carrots	Chantenay	Aug. 1-10	June 20-July 20
Collards	Carolina Short Stem	Aug. 1-10	July 1-20
Celery	Winter Queen	Set plants July and Aug.	Set plants June 2[illegible] to July 20
	Easy Blanching		
Corn	Golden Giant	Aug. 1-15	July 1-20
	Country Gentleman		
Kale	Dwarf Blue Curled Scotch	September	July 1-Aug.10
Lettuce	Big Boston (head)	August-September	Aug. 1-20
	Grand Rapids (leaf)	August-September	August-September
Mustard	Japanese Spinach Mustard	August	July 15-Aug.20
Onion	Potato	October-November	October
Radish	Scarlet Globe	September	August
	White Icicle		
Spinach	Longstanding Bloomsdale Savoy	August 15-Nov.15	August-September
	Virginia Savoy		
Swiss Chard	Lucullus	August 1-10	July 1-Aug.1
Tomato	Marglobe	Set plants July 15 to Aug.10	Set plants June 15 to July 20
Turnip	Purple Top Globe	August	Aug.1-10
	Yellow Aberdeen		
Turnip Salad	Pomeranian White Globe	August-September	August
	Seven Top		

*Middle Virginia gardeners should plant earlier for the fall garden than Tidewater gardeners. Likewise Western Virginia gardeners should plant earlier than Piedmont gardeners. Both Middle Virginia and Western Virginia gardeners, therefore, should approach the earlier date mentioned in the respective column for fall planting.

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Further essentials for a successful garden for fall are:

1. Thorough soil preparation. Careful attention to thorough soil preparation before planting will make later care of the garden much easier and will provide more and better quality of vegetables.

2. Firming soil after planting. It is often difficult to secure good stands in midsummer. Firming the soil after planting will bring the seed in contact with the soil moisture and aid in securing better stands. A light mulch of well-rotted stable manure or leaf mould applied on top the row will prevent a crust forming over the seed, and will increase the stand, particularly of small seed.

3. Liberal fertilization. Broadcast and cultivate in a 5-8-5 or a 4-12-4 fertilizer at the rate of from 400 to 1000 pounds per acre (10 to 25 pounds per 1000 square feet), preferably a week or ten days before planting.

4. Thorough shallow cultivation. Your vegetables require a large root system to supply the plant with moisture during hot weather. Don't destroy these roots by deep cultivation. Shallow cultivation is always best. Destroy the weeds when they are small and it will not be necessary to cultivate deeply.

5. Thorough pest control measures. Magnesium arsenate at the rate of one ounce (5 level tablespoonsful) to 3 gallons of water, will control the Mexican bean beetle and other chewing insects. Nicotine sulphate (Black Leaf 40) at the rate of 1½ teaspoonsful to a gallon of water will control aphids or plant lice and other sucking insects. Bordeaux Mixture (4-4-50) will control many of the worst garden diseases.

6. Consult this office concerning any of your garden problems.

Agent_____

Exhibit L

17,424 COOPERATIVE EXTENSION WORK IN AGRICULTURE AND HOME ECONOMICS
Virginia, A & M College, Poly. Inst. and U.S.D.A. Cooperating
EXTENSION SERVICE

AUGUST SUGGESTIONS FOR GARDEN CLUB LEADERS AND GARDENERS

August should be an exceptionally busy month in the garden. The summer garden will soon be a thing of the past but everyone can have a good fall and winter garden. Now is the time to plan for and plant that garden. Recent rains throughout the state have made the prospect for fall gardens most encouraging. Cash crops have in many instances sold at a loss, but no farmer need lack a bountiful supply of vegetables for fall and winter use. It all rests with the gardeners.

Planting. Beans, beets, kale, lettuce, mustard, radishes, spinach, Swiss chard, turnips, and turnip salad may be planted in all sections of the state. Carrots, collards and corn may be planted in Tidewater and Middle Virginia. Cabbage, tomato, and celery plants may be set in the same section. A variety of vegetables for the fall garden may still be planted in every section of the state. Refer to the July garden letter or to V.P.I. Circular E-263, Vegetable Gardening Suggestions for Virginia Farmers, for planting dates. If you do not have either of these get in touch with me or write the Vegetable Extension Service, Blacksburg, Virginia.

Sow the seed thickly in order to insure a good stand. Mulching the row with well rotted stable manure, woods mold, sawdust or woodpile dirt will also help to obtain a stand. Firm the soil after planting. After the plants are up, do not neglect to thin them. Give the vegetables room to grow and develop properly. You cannot grow two beets or any other vegetable where only one is supposed to grow. Both size and quality are injured by crowding.

Soil Preparation. Prepare the soil thoroughly before planting. Break up all clods and lumps.

Cultivation. At least 50% of the labor in gardening can easily be eliminated by proper cultivation at the right time. It takes just as much plant-food and moisture to grow a good crop of weeds as to grow a good crop of vegetables. Weeds rob your vegetables of this food and moisture. Destroy them before the injury is done. The time to kill a weed is when it is small, before it gets a start. Practice frequent, shallow cultivation. Do not cultivate when the foliage is wet.

Fertilization. Use a fertilizer analyzing from 4% to 6% nitrogen; 8% to 12% phosphorous; and 5% potash. In Eastern Virginia a 6-8-5 is recommended; in other sections of the state, a 5-8-5 or 4-12-4.

If no fertilizer has been applied to the land, broadcast 1000 pounds per acre (25 pounds per 1000 square feet). If a good application of fertilizer has been made for the spring crop, this amount may be reduced from one-third to one-half.

Watering. Do not water the garden unless you give the soil a thorough soaking. Sprinkling does more harm than good.

Chewing Insects. Chewing insects, as the name implies, eat portions of the plant. Among the more common chewing insects are the Mexican bean beetle, potato beetle, cabbage worm and others. They may be controlled by spraying or dusting with magnesium arsenate. For spraying use 5 level tablespoonfuls of magnesium arsenate to 3 gallons of water; for dusting use 1 part magnesium arsenate to 3 parts hydrated lime. Place the poison where the insect feeds, which is usually on the undersides of the leaves. Thoroughness is essential for control. Start spraying or dusting when the insect first appears.

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Sucking Insects. Sucking insects, such as aphids or plant lice, injure the plant by sucking the juice from the leaves and causing them to yellow and curl. They may be controlled by spraying with Black Leaf 40 (nicotine sulphate) in these proportions: nicotine sulphate 1½ teaspoonfuls, soap 1-inch cube, water 1 gallon. Remember it is necessary that the spray hit the sucking insect to kill it. Thoroughness as well as timeliness is essential. A satisfactory homemade tobacco spray may be prepared by soaking a pound of cured tobacco stems, stalks, etc. in a gallon of water for 24 hours and spraying with the resultant mixture. Fairly good results may also be secured by spraying with a soap solution made by dissolving a 1-inch cube of hard laundry soap in a quart of water.

Arsenical substitutes. The use of pyrethrum and derris compounds in insect control has increased considerably throughout Virginia. These materials, poisonous to insects but non-poisonous to man, can be used with safety on vegetable crops at any stage of their growth. Pyrethrum kills quicker than derris but it acts only as a contact insecticide, loses its strength quickly, and usually costs more. Pyrethrum dusts and sprays vary in strength and should be used in the proportions recommended by the manufacturer.

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Diseases. Many of our worst garden diseases of tomatoes, potatoes, cucumbers, cantaloupes, etc. may be controlled by spraying with Bordeaux mixture made up in these proportions: bluestone (copper sulphate) 4 ounces, rock lime 4 ounces or 6 ounces of hydrated lime, water 3 gallons. Dissolve the bluestone in a small amount of hot water and add water to make 1½ gallons. Slake the lime in a small amount of water and then add water to make 1½ gallons. Pour the two solutions together just before spraying. Magnesium arsenate and Black Leaf 40 may be combined with Bordeaux mixture if either chewing or sucking insects are present.

Very truly yours,

_____

County Agent

Exhibit M

17578 COOPERATIVE EXTENSION WORK IN AGRICULTURE AND HOME ECONOMICS
State of Virginia, A & M College, Poly.Inst. and U.S.D.A.Coop.
EXTENSION SERVICE

October Suggestions for Garden Club Leaders and Gardeners

October should be a busy month in the home garden. Much may be done this month to round out the present garden season and insure a successful garden for next year.

Planting. In the eastern part of the state there is still time to plant leaf lettuce and spinach for the home garden.

Potato onions may be planted any time in all sections. This variety is an exrellent keeper and should be found in all home gardens. Small onions or sets produce large bulbs; the larger onions produce sets. Include both sizes in your planting.

Another good onion for the home garden which should be planted now is the Egyptian, Tree or Top, onion. This variety produces practically no bulb but comes in early in the spring for salad or green onions. Sets are produced at the top of the green stalk. A bed six feet square or a row fifty feet long will supply an abundance for the average family and the planting will not have to be renewed for several years.

Strawberries. Strawberries should be fertilized in the fall for best results. Apply from 400 to 600 pounds per acre of a 5-8-5 fertilizer around the middle of October to the first of November. This fertilizer should be broadcast directly over the row and then knocked off the plants with brush or a broom. After cold weather arrives, mulch the strawberry bed with straw to protect the plants. Do not use manure, as it has a tendency to mat down and rot the crowns of the plants.

Asparagus and rhubarb. Mulch your asparagus and rhubarb planting with a heavy covering of good stable manure. The soil cannot be made too rich for these crops. The mulch will protect the plants throughout the winter months and enrich the soil when worked into it in the spring.

Cover crop. Sow all portions of your garden not occupied with vegetable crops to abruzzi rye as a cover crop to increase the humus content of the soil.

Sanitation. Clean up and destroy all trash and refuse in and around your garden. These serve as winter harboring places for many garden insects. Destroy them now and you have helped to solve next year's pest control problems. Fall plowing will give further control. Among the pests which you will help to control are potato beetles, Mexican bean beetles, cucumber beetles, flea beetles, squash bugs, squash vine borers, cabbage worms, pickle worms, onion maggots, cutworms, white grubs, aphids or plant lice and many others.

Storage. Although the season of garden planting is practically over for another year, there is, however, still an abundance of food available in your garden. A goodly share of this will soon cease to exist. A little care will prevent this loss and at the same time supply the farm table with an abundance of fresh vegetables through the winter months. Store this food and thereby reduce the cost of the winter menu, as well as improve the health of the family.

The successful storage of vegetables is not difficult. In fact good storage facilities are already available on most farms. There are two chief types of home storage--cellar storage and pit storage. A cool, well ventilated cellar under the dwelling offers good conditions for the storage of vegetables, provided the cellar is properly insulated. If the cellar contains a furnace, a room may be partitioned off at one end suitable for the storage of vegetables. Ventilation may be afforded by windows. Beets, carrots, turnips, rutabagas, Irish potatoes, salsify and parsnips may be stored in such a cellar. Do not store cabbage in a cellar or basement beneath the home as the odors will penetrate the dwelling.

Another type of storage, closely allied to the above, is the outdoor storage cellar. It may be easily constructed and affords a convenient and inexpensive storage for surplus vegetables. Storage rooms above the surface of the ground may also be used but the temperature is more difficult to control. Many gardeners, however, lack a good storage cellar, either under the house or outdoors. In that case they can secure very satisfactory results with pit storage.

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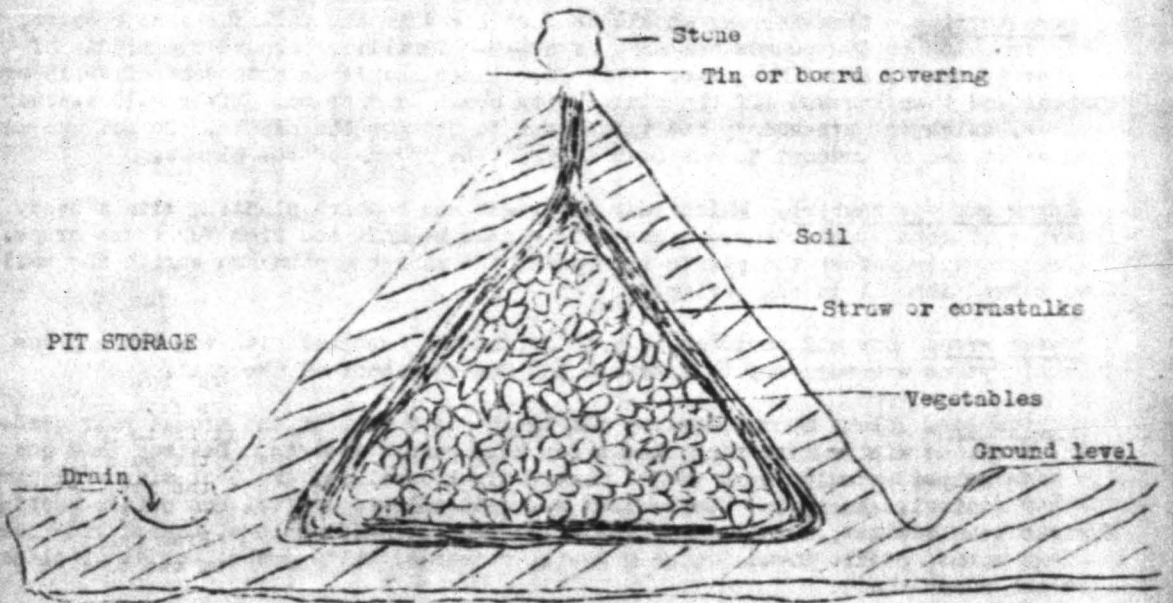
If pit storage is to be used, select a well-drained place in the garden or in some place convenient to the kitchen. The pit may be of any convenient size, but it is suggested that several small pits be made rather than one large one. When a pit is once opened it is desirable to remove all the contents at once, thus the advisability of the small pit. For the same reason, it is best to store small quantities of several crops in each pit. It will then be necessary to open only one pit in order to secure a supply of all vegetables.

After deciding upon the location of the pit, dig out the soil to a depth of six to eight inches over an area sufficiently large to accomodate the vegetables to be stored. Place a layer of three or four inches of straw or cornstalks in the bottom of this pit and place the vegetables in a conical pile on top of this material. They are generally piled to form a mound about 2½ or 3 feet in height. They should then be covered with a layer of straw or cornstalks. Over this should be placed a layer of dirt to the depth of 2 or 3 inches. As winter approaches, the dirt covering should be increased until it is from 4 to 6 inches deep. Ventilation should be secured through a small opening in the top of the pit, loosely filled with straw or cornstalks and covered to prevent rain entering the pit. Shallow trenches should be dug to conduct the water away from the pit.



PIT STORAGE

Among the vegetables that may be kept in pit storage are Irish potatoes, beets, carrots, turnips, rutebagas, parsnips and salsify. Parsnips and salsify may be left in the ground if desired, as freezing does not injure these two crops. Spinach and kale will also live through the winter in normal years. Sweet potatoes for home use should be placed in the basement near the furnace, on a shelf near the kitchen stove, or near the chimney on the second floor.

Onions should be stored in a dry, well-ventilated place such as the attic. Pumpkins and squash may be kept in dry, well-ventilated cellars, but a dry, frost-proof place above the ground is best. Individual specimens should not be allowed to touch each other. Cabbage may be stored in out-door cellars or pits. Celery may also be stored in a specially constructed trench, or in a hotbed pit.

Tomatoes may be picked green and stored on shelves in the cellar, allowing a small space between each fruit. Another method is to pull the entire plant and hang it up in the cellar. The green fruit will gradually ripen and become available for use.

Beans and peas should be picked as soon as mature and spread out on a warm dry place such as the attic floor until thoroughly dried. They should then be shelled out and stored in bags in a dry well-ventilated place. If infested with weevils they should be fumigated with carbon bisulfide.

Store the surplus food for winter use. For additional information, see me or write the Vegetable Extension Service, V.P.I., Blacksburg, Virginia

Agent

Exhibit N

#16,566 COOPERATIVE EXTENSION WORK IN AGRICULTURE AND HOME ECONOMICS
State of Virginia, Va. A & M College, Poly. Inst. and U.S.D.A. Coop.
EXTENSION SERVICE

PRODUCTION OF CUCUMBERS FOR PICKLES

SOILS. Cucumbers can be grown on any good soil which is fertile and well supplied with organic matter. The ideal soil, however, is a sandy or medium clay loam, well supplied with organic matter, fertile and well drained. Only the best land can be depended upon to produce high yields of well formed cucumbers. Since cucumbers are injured by cold weather and winds, land with a windbreak to the north and northwest will lessen this injury and increase yields.

PREPARATION OF SEED BED. Plow the soil to a depth of from six to eight inches, or even deeper if the character of the land will permit. Disk and harrow thoroughly to insure a good firm, level seed bed, free from clods and air pockets.

MANURE, FERTILIZER AND LIME. Broadcast from ten to fifteen tons of well rotted manure on the land and work thoroughly into the soil at least two weeks before planting. Where the land is plowed in the fall, it is advisable to make the application of manure at that time. Fall applications will permit the use of fresh manure since it will allow ample time for decomposition. If only a limited amount of manure is available, it may be placed in the row or hill and mixed with the soil.

Use a 5-8-5 fertilizer at the rate of 1000 to 1200 pounds per acre. Apply one-half of this fertilizer in the row or hill and mix thoroughly with the soil a week to ten days before seeding; broadcast the balance and cultivate it in. Where heavy applications of manure have been used, or where leguminous cover crops have been turned under, the nitrogen in the mixture may be reduced to 2% and a 2-8-5 fertilizer used.

Cucumbers are sensitive to acid soils and an application of lime is often necessary to produce profitable yields. Consult your county agent to determine whether or not your soil needs lime to produce this crop. Do this at once, as lime should be applied a considerable time before planting if the cucumber crop is to get the full benefit of it.

PLANTING. Cucumbers may be drilled or planted in hills. If the first system is used, drill the seed from three-fourths of an inch to one inch deep in rows five to six feet apart after danger of frost is past. This date will vary from April 25 to May 20, depending upon the section of the state. In the hill system, plant the seed in rows five to seven feet apart with the hills three to four feet apart in the row. The row system usually gives a more uniform stand and makes harvesting easier. The hill system, however, permits cross cultivation and cuts down on hoe work. From one to one and a half pounds of seed will be required per acre in hills and from two to four pounds in drills.

THINNING. When the plants are two to three inches high and have from four to six leaves, thin out the weak plants. Make the final thinning when the plants are twelve to eighteen inches long. In the drill system, thin to one plant every eighteen to twenty-four inches in the row. In the hill system, leave one, or not over two, plants to the hill.

CULTIVATION. Cucumbers are a quick growing crop and require an abundance of moisture. The initial preparation of the seed bed is the most important cultivation given the crop. After the crop is planted, cultivate often enough to kill the weeds and prevent a soil crust from forming. This cultivation should not be over two inches in depth. Continue cultivation as late in the season as possible without injury to the vines. Turning the vines will permit later working and prevent injury. Remove weeds and grass from the row by hand. Avoid working when the vines are wet.

See Pages 5–6

BULLETIN

OF THE

VIRGINIA POLYTECHNIC INSTITUTE

ANNOUNCEMENT AND PROGRAM

OF

INSTITUTE OF RURAL AFFAIRS

JULY 30-AUGUST 1, 1935

VOL. XXVIII, No. 9 JULY, 1935

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THE INSTITUTE OF RURAL AFFAIRS

BLACKSBURG, VIRGINIA

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Institute of Rural Affairs

The program for the seventh session of the Institute of Rural Affairs has as its general theme "Adjustments Affecting Rural Life." This topic was chosen for the current year in order to give farm leaders in Virginia and the surrounding states an opportunity of making an appraisal of the principal programs of the federal government affecting rural people. Men and women who have been close enough in touch with these programs to be thoroughly informed as to their direction and purpose have been chosen as discussion leaders. Ample time has been provided for open forum discussions.

The Institute of Rural Affairs was started seven years ago at the suggestion of the American Country Life Association in order to provide a place in the southern states where there might be open forum discussions devoted entirely to rural problems. The Institute is directed by the agricultural faculty of the Virginia Polytechnic Institute, and is receiving the wholehearted support of the State Farmers' Institute, the Federation of Home Demonstration Clubs, and the Agricultural Conference Board. Each of these organizations will hold meetings concurrently with the seventh session of the Institute of Rural Affairs.

In order that all who attend these meetings held at the agricultural college from July 30 to August 1 inclusive may have an opportunity to participate in the various sessions of the organizations meeting concurrently, the Institute of Rural Affairs will hold round table conferences in the mornings and the other groups will hold their sessions in the afternoons. Joint sessions will be held in the evening.

As in the past, the Institute of Rural Affairs will be divided into two sections: One section will devote its discussions largely to adjustments affecting standards of living, and the other to problems of an economic nature.

DIRECTIONS AND ACCOMMODATIONS

Immediately on arrival in Blacksburg each person attending the Institute is requested to go to the registration booth and register. Upon registration full information will be given as to quarters and meals.

Arrangements have been made for those attending the Institute to occupy the military and non-military dormitories. Those bringing their own bedclothing, towels and toilet articles may secure lodging for the entire period of the Institute for the nominal charge of $1. Those who do not wish to bring bedclothing, towels and toilet articles will be charged 50 cents per person per night. Comfortable quarters may also be had in the hotels and private homes in Blacksburg. It will be well, however, for persons desiring such accommodations to make reservations in advance by communicating directly with John R. Hutcheson, Blacksburg, Virginia.

Meals will be served at the college dining hall at 35 cents each, or $1 a day. Meals may also be secured at restaurants and hotels in Blacksburg at reasonable rates.

PROGRAM

General Theme: "Adjustments Affecting Rural Life."

Tuesday, July 30

MORNING SESSION

9:00 Business meeting State Federation of Home Demonstration Clubs.
Mrs. Guy Roop, Presiding
(Patton Hall)

10:00 Business meeting Agricultural Conference Board.
C. Nelson Beck, Presiding
(Auditorium Dairy Building)

EVENING SESSION

Frank S. Walker, President of State Farmers' Institute, Presiding
(World War Memorial Building)

7:30 Group Singing. Led by Miss Ella Gardner.

7:55 Invocation. Rev. E. D. Witherspoon, Blacksburg Presbyterian Church.

8:00 Address. Mrs. Guy Roop, State Federation of Home Demonstration Clubs.

8:15 Presentation Certificates of Merit. Dr. Julian A. Burruss, President, Virginia Polytechnic Institute.

8:30 Group Singing. Led by Miss Ella Gardner.

8:40 Adjust or Adjourn. P. Roland Wagner, Norfolk.

Wednesday, July 31

MORNING SESSIONS

INSTITUTE OF RURAL AFFAIRS, ECONOMICS SECTION
(Lyric Theatre)

9:00 Sound Land Policies for Agriculture. Dr. Carl E. Ladd, Cornell University.

9:45 Land Policies Affecting Virginia Farmers. Prof. T. B. Hutcheson, V. P. I.

10:15 Open Forum.

10:45 The Effect of Recent Monetary Changes on the Income of Farmers. Dr. F. A. Pearson, Cornell University.

11:30 Open Forum.

INSTITUTE OF RURAL AFFAIRS, STANDARDS OF LIVING SECTION

(Auditorium, Patton Hall)

9:00 Group Singing. Led by Miss Ella Gardner.

9:15 Future Adjustments of the Farm Home. Miss Mary Rokahr, United States Department of Agriculture.

10:00 Open Forum.

10:30 Population Trends Affecting Agriculture. Dr. O. E. Baker, Bureau of Agricultural Economics.

11:15 The Rural Rehabilitation Program. Paul V. Maris, Division of Rural Rehabilitation.

AFTERNOON SESSIONS

FEDERATION OF HOME DEMONSTRATION CLUBS

Miss Maude E. Wallace, Presiding

2:00 Conference Hour. Led by Miss Mary Rokahr. (Auditorium, Patton Hall)

2:00 Conference Hour. Led by Dr. Baker and Dr. Garnett. (Y. M. C. A. Lounge)

3:00 Good Times in the Home. Miss Ella Gardner. (Auditorium, Patton Hall)

FARMERS' INSTITUTE, AGRONOMY SECTION

T. B. Hutcheson, Presiding

(Plat Barns)

2:00 The TVA Program in Virginia. Prof. T. B. Hutcheson, V. P. I.

2:30 Virginia's Seed Improvement Program. S. F. Grubbs.

3:00 How to Determine the Fertilizer Needs of Your Soil. Dr. N. A. Pettinger, V. P. I.

3:30 Soil Survey Progress. Dr. S. S. Obenshain, V. P. I.
Tour of experiment station plats and college farm.

FARMERS' INSTITUTE, VEGETABLE GARDEN SECTION

L. B. Dietrick, Presiding

(Room 300, Agricultural Hall)

2:00 Growing Early Vegetable Plants under Glass. H. H. Parker, Virginia Truck Experiment Station.

2:45 Control of Diseases on Seedlings. Dr. Harold T. Cook, Virginia Truck Experiment Station.

3:30 The Relation of Magnesium Deficiency to Vegetable Crop Production. R. L. Carolus, Virginia Truck Experiment Station.

4:00 New Insecticides for the Control of Mexican Bean Beetle and Other Pests. Dr. Harry G. Walker, Virginia Truck Experiment Station.

FARMERS' INSTITUTE, ANIMAL HUSBANDRY SECTION

R. E. Hunt, Presiding

(Room 208, Agricultural Hall)

2:00 The Production of Lambs. Walter P. Stuart, Cedar Bluff, Virginia.

3:00 The Future of the Livestock Industry. C. A. Burmeister, Bureau of Agricultural Economics, Washington, D. C.

COUNTY AGENTS' MEETING

2:30 (After all meetings of the Institute are well under way all farm demonstration agents are requested to meet in the auditorium of the dairy building)

EVENING SESSION

(World War Memorial Hall)

7:30 Music. The Jubilee Quartet.

8:00 Adjustments in Rural Life Affecting the Home. Miss Connie Bonslagel, State Home Demonstration Agent of Arkansas.

8:45 Music. Jubilee Quartet.

Thursday, August 1

MORNING SESSIONS

INSTITUTE OF RURAL AFFAIRS, ECONOMICS SECTION

(Lyric Theatre)

9:00 Adjustments Affecting Farm Credit. Dr. F. B. Bomberger, Farm Credit Administration, Baltimore, Maryland.

9:45 Open Forum.

10:15 The Importance of Foreign Markets to Farmers of the United States. Henry F. Grady, Department of State.

11:00 Open Forum.

11:30 New Uses for Farm Products. Wheeler McMillen, *Country Home.*

Exhibit O

INSTITUTE OF RURAL AFFAIRS, STANDARDS OF LIVING SECTION

(Auditorium, Patton Hall)

9:00 Singing. Led by Miss Ella Gardner.

9:15 Opportunities of the Modern Parent. Dr. Ruth Andrus, New York State Department of Education.

10:00 Open Forum.

10:30 Making the Most of Yourself. Mrs. Evelyn Tobey, New York City.

11:00 Open Forum.

AFTERNOON SESSIONS

FEDERATION OF HOME DEMONSTRATION CLUBS

Miss Maude E. Wallace, Presiding

2:00 Conference Hour on Family Relationships. Led by Dr. Ruth Andrus. (Y. M. C. A. Lounge).

2:00 Conference Hour on Clothing Problems. Led by Mrs. Evelyn Tobey. (Auditorium Patton Hall).

FARMERS' INSTITUTE, POULTRY SECTION

H. L. Moore, Presiding

(Auditorium, Dairy Building)

2:00 Recent Poultry Investigations of Interest to Farmers. Dr. R. L. Bryant, V. P. I.

2:30 Round Table Discussion.

3:15 Tour of poultry plant.

4:00 Discussion of Common Poultry Diseases. Dr. E. P. Johnson, V. P. I.

FARMERS' INSTITUTE, DAIRY SECTION

C. W. Holdaway, Presiding

2:00 Meet in front of dairy building for visit to pasture experiments at "Smithfield."

4:00 Discussion in front of dairy barns of common ailments of dairy cows. Dr. L. E. Starr.

5:00 Demonstration of Combine Milker and inspection of dairy barns.

FARMERS' INSTITUTE, HORTICULTURAL SECTION

A. H. Teske, Presiding

(New Packing House)

2:00 Virginia's 1935 Apple Crop. Henry M. Taylor, Agricultural Statistician.

2:30 World Fruit Crop Prospects for 1935 and the Foreign Market Outlook for Virginia Apples. F. A. Motz, London, England.

3:00 Advertising Virginia Apples. W. S. Campfield, Staunton, Virginia.

3:15 Scab Control in 1935. R. H. Hurt, V. P. I.

3:30 Methods and Equipment for Washing Apples. Dr. W. S. Hough, V. P. I.

3:45 Stationary Spray System and Economical Apple Production. Dean H. L. Price, V. P. I.

EVENING SESSION

(World War Memorial Hall)

7:30 Music. White Top Folk Musicians.

8:00 An Appraisal of the Agricultural Adjustment Program. Clifford V. Gregory, *The Prairie Farmer*.

9:00 Social Hour. Home Demonstration Department.