Chart VI. The programs dealing with Miscellaneous Truck Crops required assistance of Extension Horticulture Specialists in 50 counties in Virginia in 1958.

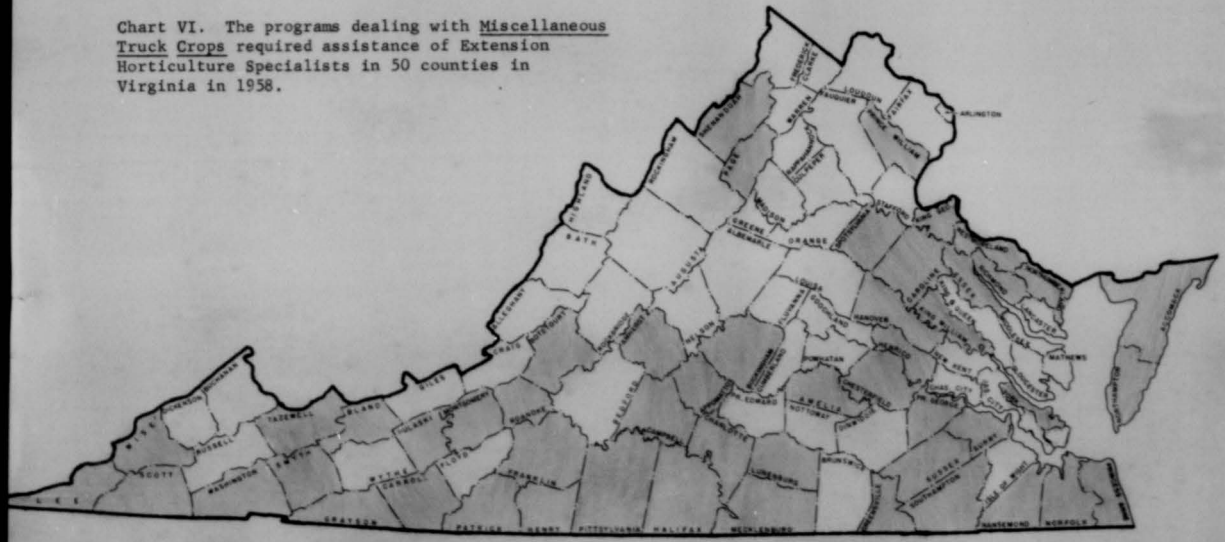

Chart V. The Tomato Program was boosted in 34 counties in Virginia in 1958 by Extension Horticulture Specialists.

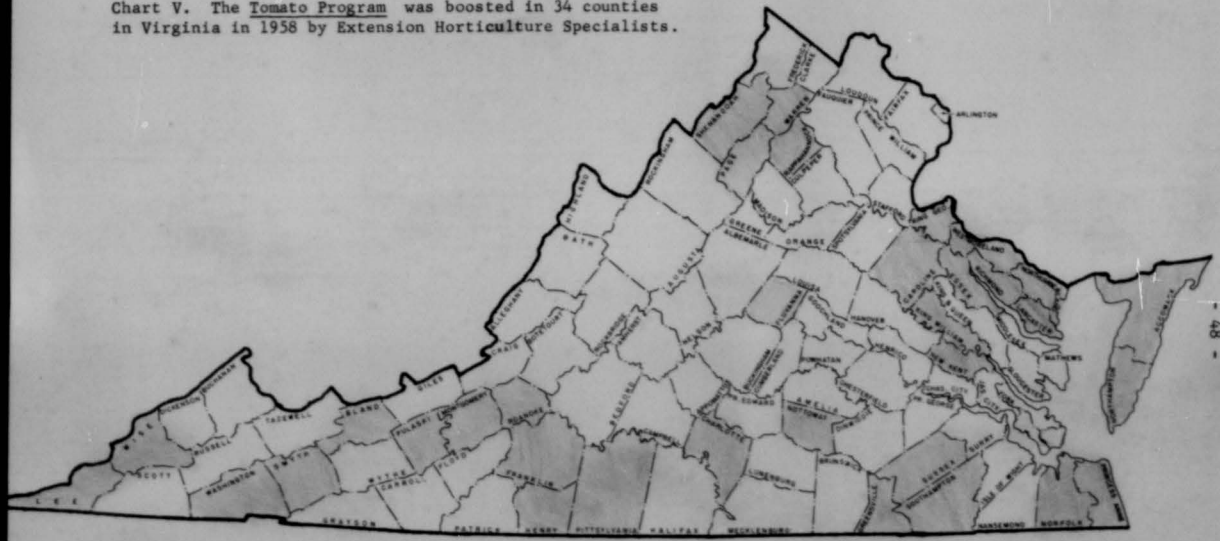

Chart IV. A Sweet Potato Program, requiring the assistance of Extension Horticulture Specialists was conducted in 25 counties in Virginia in 1958.

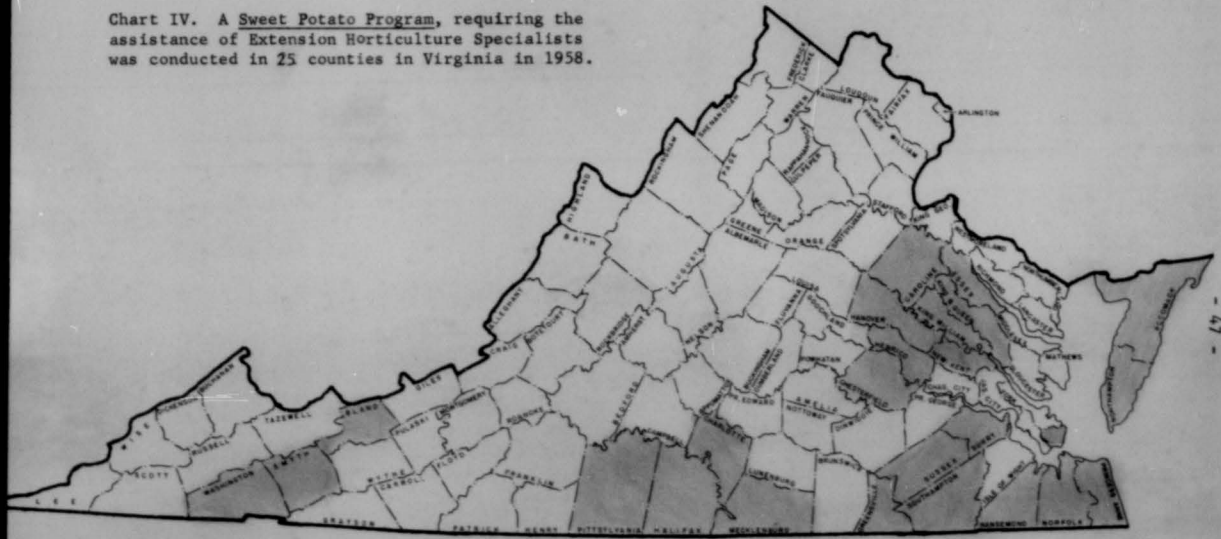

Chart III. Irish Potato Program required the assistance of Extension Horticulture Specialists in 22 counties in Virginia in 1958.

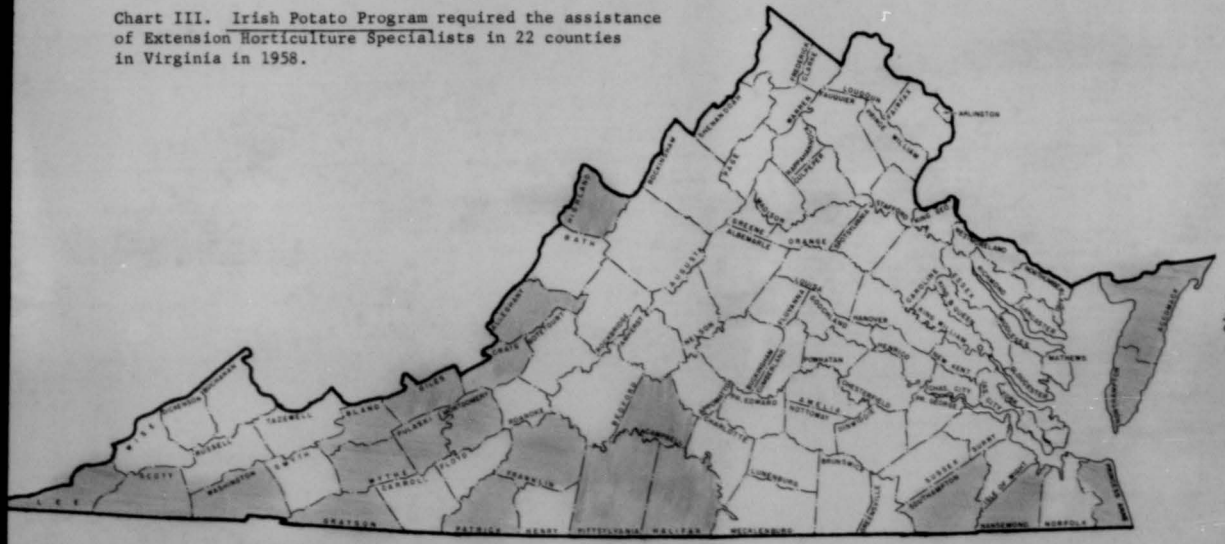

Chart II. The Home Garden Program, as conducted by the Extension Horticulture Specialists, reached 65 counties in Virginia in 1958.

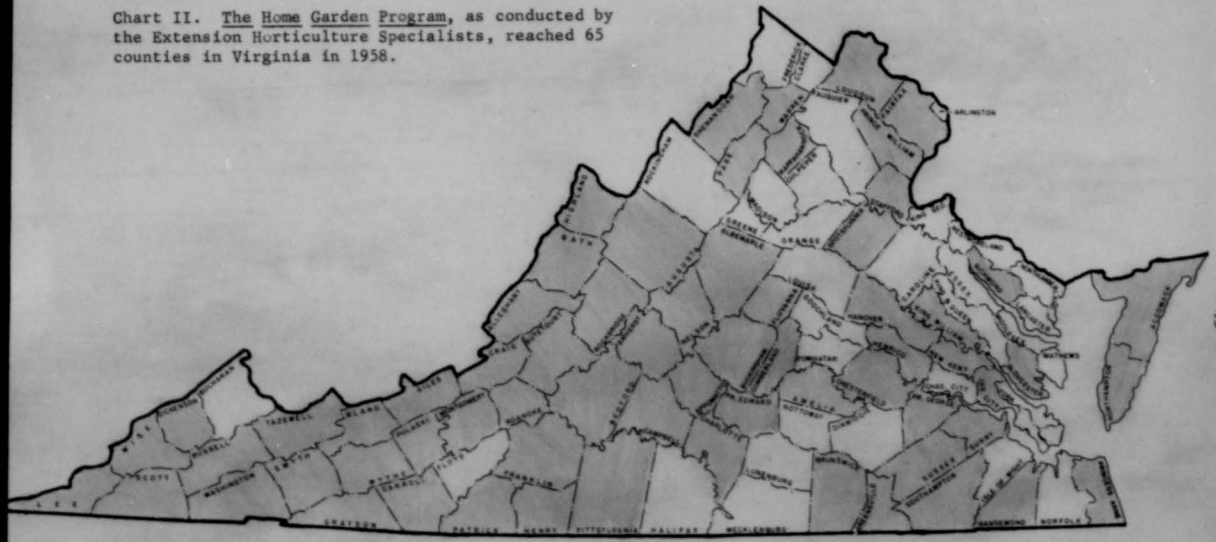

Chart I. Some phase of the work of Extension Horticulture Specialists was conducted in each of the counties marked in 1958. Even in the 19 counties not marked, some correspondence took place relative to specific problems and "Garden Suggestions" were provided the County Extension workers for general distribution.

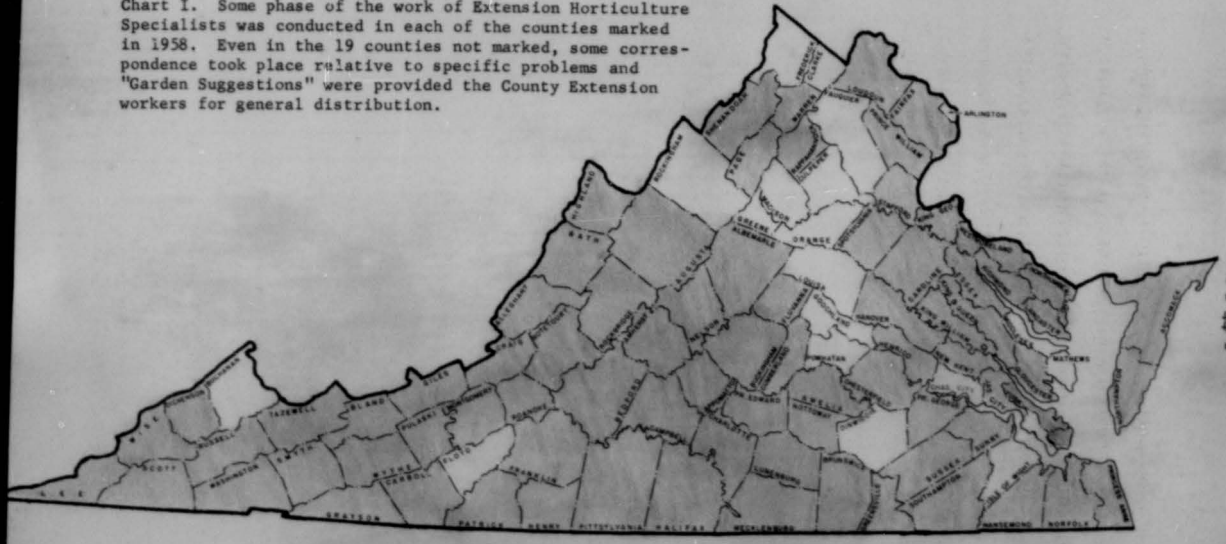

Table I (continued)

| | Total | Home Garden | Potatoes | Sweet Potatoes | Tomatoes | Misc. Truck Crops | Misc. |
|---|---|---|---|---|---|---|---|
| Publications (cont.) | | | | | | | |
| Radio programs | 76 | 50 | 0 | 5 | 7 | 14 | 0 |
| Circular letters | 11 | 10 | 0 | 0 | 1 | 0 | 0 |
| Leaflets | 3 | 2 | 0 | 0 | 1 | 0 | 0 |
| Special articles | 7 | 3 | 0 | 1 | 1 | 2 | 0 |

Table I - Summary of Activities of Extension Vegetable Specialists in 1958

| | Total | Home Garden | Potatoes | Sweet Potatoes | Tomatoes | Misc. Truck Crops | Misc. |
|---|---|---|---|---|---|---|---|
| Days in office | 621 | 202 | 16 | 65 | 49 | 148 | 141 |
| Days in field | 408 | 116 | 20 | 68 | 54 | 93 | 57 |
| Total days | 1029 | 318 | 36 | 133 | 103 | 241 | 198 |
| Conferences: | | | | | | | |
| Agents | 565 | 217 | 14 | 92 | 65 | 147 | 30 |
| Other staff members | 158 | 13 | 14 | 34 | 21 | 40 | 36 |
| Others | 83 | 0 | 9 | 14 | 19 | 32 | 9 |
| Tours and field days | 17 | 5 | 1 | 1 | 0 | 8 | 2 |
| Attendance | 1398 | 99 | 22 | 5 | 0 | 1205 | 67 |
| Visits: | | | | | | | |
| Farm and home | 885 | 395 | 32 | 194 | 77 | 149 | 38 |
| 4-H projects | 250 | 250 | 0 | 0 | 0 | 0 | 0 |
| Demonstrations | 77 | 50 | 9 | 8 | 5 | 5 | 5 |
| County Visits | 244 | 98 | 13 | 38 | 38 | 47 | 10 |
| Meetings: | | | | | | | |
| Extension agents | 217 | 98 | 5 | 12 | 16 | 54 | 32 |
| Leader training | | | | | | | |
| Adult | 19 | 13 | 0 | 2 | 0 | 3 | 1 |
| 4-H | 26 | 25 | 0 | 1 | 0 | 0 | 0 |
| Other | 130 | 10 | 2 | 9 | 14 | 22 | 73 |
| Attendance at all meetings | 15323 | 3442 | 105 | 737 | 377 | 3173 | 7489 |
| Publications: | | | | | | | |
| News Articles | 75 | 49 | 0 | 9 | 3 | 14 | 0 |

The specialists are working closely with the county Extension agents in an attempt to get this committee, comprised of producers and processors, to spell out their problems and what they want to do about them. If they will do this, then the county Extension programs can be developed to co-incide with this program.

potatoes, was an excellent example of quality. Producers, including 4-H club members, are aware of the value of quality in a sweet potato package.

The decline in the acreage of vegetables, which has been very noticeable for the past fifteen years, has about leveled off and farmers in 1958 produced approximately the same quantity of vegetables that were produced in 1957. Although some smaller farms have discontinued production of vegetables, other farmers with larger acreage and considerable machinery have increased their acreages of several of the vegetables which has offset some of the loss.

New techniques in growing and marketing the Virginia potato crop must be developed in order for the producers to hole their position in the market. Although potato prices were low in 1958, many of our growers using newer techniques made small profits and are in a position to continue to produce potatoes.

Tomato growers and processors are getting together with Extension and other agencies in an attempt to work out a long time program to improve the yield and quality of tomatoes. They have realized that farmers can not continue to operate under present conditions and unless definite improvement is made rapidly, tomato production in Virginia will continue to decline. To date, several planning meetings have been held and others are being planned for the winter months.

The Home Garden Program, to which more than 30% of the specialists time was devoted this year, affects more people than any of the other activities. Garden contests, in which gardens were judged and awards made, played a leading part in stimulating interest in the home gardens in approximately 20 counties. Some of these contests were set up for 4-H Club members and others were on a community basis. Through conferences and meetings with county Extension agents, the specialists were able to stimulate more interest in the home garden program. The "Garden Suggestions", a monthly letter prepared by the specialists, continued to be of interest to home gardeners in this state.

Two new features have been added to the home garden program this year. One is the establishment of a home garden committee under the county Extension program and the other is the development of the 4-H club garden project as a community project on a county-wide basis. These two projects have just been introduced to county Extension agents and several counties are expected to follow up the suggestions in their 1959 program.

The quality of sweet potatoes was emphasized at the annual 4-H and open class Sweet Potato Show and Sale held in the sweet potato producing area of Virginia. Several contests, emphasizing quality and grades, were conducted during the morning session of the show and participants indicated quite a bit of interest. The show itself, involving approximately 50 exhibits of sweet

The specialists attended regular meetings of the horticultural staff, the Extension staff and the Communications Training Program during the year. Specialists also participated in many community and area meetings to discuss problems relating to vegetable production.

During the year, assistance has been received from other subject matter specialists in Home Economics, Agricultural Engineering, Agriculture Economics, Plant Pathology, Entomology, 4-H Club and members of the teaching and research staff of the Horticulture Department have been especially cooperative in all of the efforts of the specialists. Staff members of the Virginia Truck Experiment Station have been most cooperative with the vegetable specialists. Valuable assistance has also been rendered by the State Department of Agriculture on many projects.

Appraisal of the Years Work

The vegetable Extension work in 1958 was concerned primarily with developing and strengthening county Extension programs in home gardening, potatoes, sweet potatoes, tomatoes and miscellaneous truck crops. During 1958, four men were assigned to the Extension project - Horticulture 16, Vegetables. Two of these men devoted their full time to the work while one devoted 75% of his time and the other 80% of his time to the Extension program. The remainder of their time was devoted to research work in vegetables.

General Vegetable Project Activities

Many other activities of the vegetable specialists, which were not confined to any single phase of the vegetable projects need to be recorded. Specialists assisted in arranging and conducting seven tours of farm groups. Horticultural exhibits were judged at 35 local and state fairs during the year. One large exhibit, centering around the value of horticultural crops in Virginia, was prepared and displayed at the State Agricultural Fair. Parts of this exhibit were used at two other locations where they were seen by several thousand people.

Work with agents in the bright tobacco section of Virginia continued during the year. The specialists visited seven counties, at the request of the agents, and worked with small groups of farmers on vegetable production problems in an attempt to supplement the income of these tobacco growers. The agents in these counties report continued interest and in some instances, some of the farmers are making progress with vegetable enterprises. In many instances, these farmers are experiencing more problems with marketing than they are with the production of vegetables.

Several days of the specialists' time has been devoted to conducting visitors to the campus. These included farmers, out of state visitors and in some instances foreign visitors. Many of them were interested in problems relating to research work being conducted here at V.P.I.

Twelve copies of "The Vegetable Growers News" were prepared; one for each month. About 4,000 copies were mailed each month to persons who had requested to be on the mailing list. The 12 copies are planned in December of the previous year so that each issue will include timely articles. Staff members of the Virginia Truck Experiment Station provided most of the 75 articles although quite a few were provided by staff members of the Horticulture Department. This publication is popular and copies have been requested by persons in foreign countries.

Work was started on revision of Bulletin 212, "Fertilizing Commercial Vegetable Crops in Virginia", but will not be completed in time to publish before January 1959.

The specialists have provided county Extension personnel with much information, including economic outlook, marketing conditions, fertilizing and pest control programs and new varieties. Much time was necessarily used by specialists with county agents in making farm visits in order to solve specific problems.

a. Continue preparing and distributing monthly "The Vegetable Growers News".

b. Keep up-to-date the brief production series on miscellaneous vegetable crops.

c. Revise Bulletin 212, "Fertilizing Commercial Vegetable Crops in Virginia".

3. Improve cultural practices.

a. Encourage use of better varieties and cultural practices.

b. Assist county Extension personnel with individual grower problems.

D. Results

Two-hundred forty-one work days of specialists were used to accomplish the following results.

The county agent and the State Department of Agriculture were assisted by specialists in revitalizing a vegetable growers organization near Richmond in order to make it a strong movement toward better marketing facilities and practices. Aid was also given by specialists through county Extension agents in an effort to solve individual marketing problems. Several meetings were held in cooperation with the Extension Department of Agricultural Economics to help alleviate the situation in south central Virginia resulting from a reduction in tobacco acreage allotments. This problem has not yet been solved, but work on it will continue.

accounted for by only three crops, which are watermelons, Lima beans, and peppers. Also certain crops, over longer periods, indicated an upward trend. As an example, the average acreage of snap beans for the period 1939-48 was 10,960 as compared to 12,769 for the period 1949-57.

As in most of agriculture, marketing practices are changing rapidly. Many growers are not financially able or temperamentally suited to adopt newer practices. A few growers, who are using modern methods of marketing, are increasing their acreages. Also there are still too many low yielding and poor quality crops. To succeed in today's highly competitive market the grower must use every good cultural practice available to him. Again, a few successful growers are doing this, but many economic border-line growers are not.

B. Major Problems

1. Need better marketing practices.
2. Need better marketing facilities.
3. Ineffective cultural practices.

C. Goals for 1958

1. Aid in improving marketing practices and facilities.
   a. Assist county Extension personnel.
   b. Continue cooperation with Extension Agricultural Economics Department.
   c. Continue cooperation with Marketing Division, Virginia Department of Agriculture.
2. Prepare information publications.

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Miscellaneous Truck Crops Program

Miscellaneous truck crops are all vegetable crops of commercial importance in Virginia, except potatoes, sweet potatoes, and tomatoes.

A. The Situation

The acreages and production values of miscellaneous truck crops for 1955, 1956, and 1957 are given in the following table.

| Crop | Acreage | | | Value ($1000) | | |
|---|---|---|---|---|---|---|
| | 1955 | 1956 | 1957 | 1955 | 1956 | 1957 |
| Snap bean | 14,500 | 12,650 | 12,800 | 2,803 | 2,117 | 2,185 |
| Cucumber | 6,500 | 6,300 | 7,400 | 774 | 1,018 | 1,059 |
| Cabbage | 3,750 | 3,350 | 3,700 | 900 | 900 | 1,092 |
| Sweet corn | 3,400 | 2,800 | 3,400 | 645 | 700 | 970 |
| Watermelon | 4,200 | 3,400 | 3,300 | 246 | 260 | 454 |
| Spinach | 2,300 | 3,500 | 3,150 | 924 | 928 | 947 |
| Kale | 2,700 | 2,600 | 2,600 | 819 | 701 | 708 |
| Lima bean | 3,350 | 3,700 | 2,500 | 236 | 414 | 200 |
| Green pea | 2,700 | 2,300 | 2,400 | 186 | 268 | 124 |
| Broccoli | - | 3,200 | 1,420 | - | 875 | 576 |
| Pepper | 2,300 | 1,600 | 1,100 | 134 | 232 | 136 |
| Onion | 170 | 190 | 210 | 55 | 133 | 91 |
| Totals | 46,170 | 45,790 | 43,980 | 7,723 | 8,546 | 8,542 |

As indicated by the above table, the total acreage continues to decline slowly. However, this is not a general decline as the reduction in acreage can be

will develop further and continue into 1939.

the quality of tomatoes. Home grown tomatoes are available at the best planting time, are sometimes healthier and sturdier, are not wilted and have not had the shock of long transportation. Also the grower has a wider selection of varieties. The plants may be produced at relatively low cost in plastic greenhouses. Growers on Eastern Shore are continuing their plastic greenhouse construction program, so they are apparently finding it profitable. Specialists, working with county agents and Virginia Agricultural Experiment Station personnel, have been able to make helpful recommendations in the construction of plastic greenhouses and the production of tomato plants. Also, of much aid in this problem were two publications prepared by an Extension specialist and Virginia Agricultural Experiment Station staff members in 1958. The publications were Ext. Cir. 760 "Plastic Greenhouses" and Ext. Cir. 764 "Starting Early Plants".

During the late summer and fall much interest has been engendered in the Northern Neck area in improved marketing practices for tomatoes. County agents, specialists, and other Horticultural Department and Agricultural Economics Department staff members, and representatives of the State Department of Agriculture, canners associations, and local chambers of commerce have participated in several enthusiastic meetings and conferences in an effort to improve the tomato marketing situation. Much of the interest has been in tomatoes for the local processing market. This movement

5. Work closely with other departments and agencies in an effort to develop better markets and marketing practices.

D. Results

Specialists used 103 work days to accomplish the results described below.

Specialists participated in 30 meetings on cultural practices, pest control, and marketing. At the meetings on cultural practices and pest control a movie on tomato production was shown. This movie had been made during the previous year by the V.P.I. Motion Picture Unit. The meetings were arranged by the county Extension agents and the specialists supplied subject matter in support of the agents' programs.

Timely information on cultural practices and pest control was provided county agents during the growing season. This information was used by the agents in news articles, radio programs, and in letters to growers.

County agents,whose counties were in the vicinity of Painter, Norfolk, or Warsaw encouraged growers to visit the tomato variety trials at nearby experiment station plantings. These variety trials, while entirely within the field of research, did serve as demonstrations, as the yields were much higher than average and new and better varieties could be inspected.

Tomato growers have been encouraged to grow their own plants in an effort to increase yield and improve

Yields of processing tomatoes are low as compared to northern and western crops, but they are higher than other comparable states in the southeast. Yields for fresh market tomatoes are usually higher than the average for the early summer group. However, yields of 93 cwt. for fresh and 81 cwt. for processing tomatoes could be considerably higher as demonstrated by successful growers in many areas of the state.

Canners are having difficulty because (1) the low quality of tomatoes adds to their costs and (2) a weakness of the market for canned whole tomatoes resulting from a consumer preference for other types of processed tomatoes.

B. Major Problems

1. Low quality of tomatoes.
2. Need additional markets.
3. Relatively low yields.

C. Goals for 1958

1. Conduct educational meetings with growers. The meetings to be arranged by the county agents.
2. Assist county Extension agents in encouraging the use of home grown plants.
3. Prepare a series of letters containing timely information on cultural practices and marketing. County agents to mail letters to growers.
4. Assist county agents in developing better markets and marketing practices.

Tomato Program

A. The Situation

The total acreage of tomatoes grown in Virginia was greater in 1958 than in 1957 by about 2,500 acres. For the period 1949-1953 the average acreage was 20,440, and for 1954-1958 it was 18,080. The trend in acreage during the past 20 years has been downward but the trend now seems to be leveling off in the area of 18,000 to 20,000 acres. Fresh market tomato acreage has remained fairly constant; for the 1949-1953 period the average acreage was 5,040, for 1954-1958 it was 5,560, and in 1958 the acreage was 5,700. Processed tomato acreage has declined from an average of 15,400 in the 1949-1953 period to 12,520 in the 1954-1958 period. The lowest acreage for the past 20 years occurred in 1957 which was 10,000. In 1958 the acreage was 12,300 which may indicate a leveling off or even reversal of the trend, although it is too early to draw any definite conclusions.

| Year | Acres | | Yield in cwt. | |
|---|---|---|---|---|
| | Fresh | Processing | Fresh | Processing |
| 1958 | 5,700 | 12,300 | 80 | 78 |
| 1957 | 5,400 | 10,100 | 100 | 84 |
| 1956 | 4,400 | 14,000 | 71 | 81 |
| 1955 | 5,000 | 12,500 | 111 | 86 |
| 1954 | 7,300 | 13,700 | 69 | 74 |
| 1949-53 | 5,040 | 15,400 | 98 | 87 |

show and in the overall interest shown in promoting a quality product.

It is anticipated that this project will be continued in 1959.

Considered in its entirety, the progress being made in the sweet potato program, while not what the specialists had hoped for, is moving forward. The acreage is increasing, the number of growers of certified seed is increasing, hill selection is increasing, storage space is increasing, cultural recommendations are being followed and an awareness of quality is being manifested in the area. So we feel that progress is being made in improving the sweet potato situation.

as a regular 4-H Club project and it involved all of the practices of production and marketing as recommended by the specialists. Each 4-H Club member exhibited 3 bushels of cured sweet potatoes at the show which was held in early December. The open class of 5-bushel exhibits of sweet potatoes was again included in the show. Approximately 18 4-H Club members participated in the show and sale and about 30 growers brought in 5-bushel exhibits. Prior to the show and sale, buyers of sweet potatoes were contacted by the county Extension agents and specialists and urged to support this activity. The event was well attended by 4-H Club members, growers, buyers and others interested in sweet potatoes. A new feature was added to the show this year when growers and 4-H Club members were given a 1/2 bu. basket of potatoes and asked to grade them. Then their work was commented on by a Federal-State Inspection Service employee. A similar idea dealing with the diseases of sweet potatoes was employed. Both features were well received. Representatives of the Virginia Truck Experiment Station and Division of Markets served as judges and made brief but effective talks in connection with their placings.

This project has been effective in pointing up the need for a quality pack of Virginia sweet potatoes. Farmers and 4-H Club members have had an opportunity to compare the quality of their sweet potato pack with one another, which is very educational. The buyers in attendance were favorably impressed with the quality of the sweets evidenced in the

seed stock is the answer. No "Black Rot" was observed on any of the plots.

This demonstration will be repeated in 1959 on a farm of lower fertility and where nematodes are known to be a problem.

On another farm in Princess Anne County that was known to be infested with nematodes, a demonstration was conducted with the following results. When the percentage of cracked potatoes for each plot was analysed by statistical methods, the results showed that the soil fumigation gave a significant reduction. In the untreated plots the percentage of cracked potatoes was 41 compared to 23 for the treated plots.

The baby food industry has become quite active in buying "Jumbo" (large sized) Porto Rico's in Virginia in recent years, so active in fact, that they are unable to fill their orders this year. The fact that they are active materially assists Virginia growers in sending to market a better pack of sweet potatoes. We are making every effort to continue to attract these buyers by helping them locate supplies.

The specialists participated in the colored 4-H Club Sweet Potato Show and Sale again this year and were pleased to note the improvement in the quality of the exhibits this year.

The 4-H Club sweet potato production and marketing project was continued for 1958. This project was carried

6. Test soil - for lime and fertilizer needs.
7. Use recommended analysis on the test plot of 1,000 lbs. per acre of 3-9-12 applied 10 days after plants set in the field in comparison with 300 lbs. of 3-18-18 plus 100 lbs. Muriate of Potash on check plot applied prior to setting the plants.
8. Use proper size plants.
   a. Pull plants for one plot.
   b. Cut plants for one plot.
   c. Dip both cut and pulled plants in Ferbam for two more plots.
9. Set plants 12 inches apart in 36 in. rows.
10. Follow normal cultivation.
11. Control insects and diseases.
12. Hold a field day or demonstration at harvest.

The field day was held and about 30 growers and handlers of sweet potatoes attended. On this farm the fertility level was high; therefore there was no noticeable difference in the fertilizer treatment. The fact that this farmer had no nematode problem also gave no response to the nematode control treatment. There was a significant difference in the treatments to control "Scurf" and "Black Rot" in that no "Scurf" or "Black Rot" was found on the plots that had been dipped in Ferbam, treated with Semesan Bel or had the roots cut off of the plants. We feel that as far as "Scurf" is concerned, sprout or vine cuttings for the production of

D. Results

In an effort to increase storage facilities on farms, the specialists have worked with the agricultural engineering department and other departments in developing better plans for storage houses. Some progress has been made along these lines and we hope to have modern plans for sweet potato storage houses.

During the growing and harvesting season timely information on production, harvesting and storage has been supplied the county Extension agents for distribution to growers.

Several colored county farm agents held a sweet potato grading demonstration for 4-H Club members at which one of the specialists was in charge.

In an attempt to encourage the adoption of improved cultural practices in the production of sweet potatoes, a comprehensive demonstration was set up in Princess Anne County in cooperation with the county Extension agent.

The demonstration consisted of the following:

1. Selecting seed stock (shape, size, etc.).
2. Check for internal color (by cutting ends).
3. Treating seed of a portion of the test (with Semesan Bel).
4. Bedding (spacing, covering, bedding medium).
5. Treat soil for nematode control (with Ethylene Di-Bromide 2 weeks prior to setting the plants).

and other departments toward developing better plans for storage houses.

b. Provide county Extension agents with more information that can be used to justify storing sweet potatoes.

c. Assist county Extension agents in setting up tours and demonstrations in their respective counties on selecting seed sweet potatoes, harvesting and storing.

2. Investigate markets for off-grade sweet potatoes by cooperating with agricultural economics specialists and county Extension agents and contact prospective buyers.

3. Make available to growers, through county Extension agents, the latest cultural practices including fertilizing, disease control and harvesting and curing methods.

4. Continue the 4-H Club sweet potato production and marketing project.

a. Working with county Extension agents, marketing specialists, State Department of Agriculture, Virginia Truck Experiment Station and industry.

b. Meet with sweet potato buyers and explain program to them.

c. Assist in conducting show and sale.

made in the direction of providing better seed stock to growers and this effort is being encouraged by the specialists.

Production of sweet potatoes in the United States has declined sharply since World War II. This rapid decline appears to have resulted partly from a decline in demand and partly from factors associated with the production aspects of the industry. Although a majority of the areas producing sweet potatoes have reduced their acreage, Virginia has been an exception. Some improvement in varieties, improved production methods, and more effecient marketing have enabled Virginia growers to make a profit while other areas have reduced production.

Supplies of sweet potatoes in storage for the 1958-59 marketing season are slightly larger than last year but materially below those of a year earlier. As the season advances into winter and spring, prices are expected to advance, but they are likely to average somewhat lower than last year. The average price for the crop is estimated at 1.95 per cwt. for the 1958 crop.

B. Major Problems

1. Lack of storage facilities on farms.
2. Need for better seed stock.
3. Lack of market for off-grade sweet potatoes.

C. Goals for 1958

1. Increase storage facilities.
   a. Work with the agricultural engineering specialists

## Sweet Potato Program

### A. The Situation

The 1958 acreage of sweet potatoes for harvest was 20,500 and is up 11 percent from 1957 with practically all of the increase in the important Eastern Shore area. The production on the Eastern Shore was 1,500,000 cwt., 19 percent larger than last year. A yield per acre of 100 cwt. compares favorably with 97 cwt. in 1957. Total production for the state was 1,866,000 cwt.

Prices to date have been seasonally low but should advance as the season progresses.

| Year | Acreage | Yield | Production |
|---|---|---|---|
| 1958 | 20,500 | 91 cwt. | 1,866,000 cwt. |
| 1957 | 18,400 | 90 | 1,656,000 cwt. |
| 1956 | 16,900 | 78 | 1,318,000 cwt. |
| 1946-55 ave. | 16,900 | 76 | 1,287,000 cwt. |

Virginia needs, and is gradually acquiring, additional sweet potato storage. The Unit 1 Porto Rico is still the favorite potato for storage but there is a considerable volume of the Nemagold variety stored on the Eastern Shore this fall. There are several promising newer varieties being tried in volume such as the Gold Rush and the Oklahomas. Inadequate supplies of good seed is still a major problem of Virginia sweet potato growers. Some progress is being

Many shippers are now using washing equipment and are packing in smaller packages at the request of the buyers. Some shippers are using pre-coolers to remove excess moisture and cool the potatoes prior to shipping to market.

The specialists worked with the Virginia State Seed Potato Committee in an effort to bring better seed stock into the Commonwealth. The specialists and county agents also worked with the Virginia Truck Experiment Station on the State Blight Forecasting Service conducted by the Pathology Department.

Even though the prices were disappointing to all this past season, progress was made in techniques of growing and marketing the Virginia potato crop, and we are looking forward to greater progress in 1959!

check plot had sized up when the vines were killed and only 1/3 to 1/2 of the tubers on the test plot were of U. S. No. Grade size and still the yields were comparable.

9. A demonstration was held at digging time and the treatments of the test were explained to growers and other interested persons who attended.

It has been recommended that this demonstration be conducted again in 1959.

The specialists, by working closely with the county agents, encouraged large commercial growers and shippers to let the potatoes reach full maturity before digging. Due to the low prices, the crop was more mature this year when dug than in any previous year. In spite of constantly pointing out the danger of sun scald to the potatoes exposed to the sun, some growers left potatoes in the fields at noon on extremely hot days. However, this practice is finally becoming the exception rather than the rule; so we feel some progress is being made.

The specialists participated in production meetings in the commercial areas last winter and spring, giving out the results of research on varieties and cultural practices. Radio talks, letters, publications and personal visits were also used to get the production and marketing information to the growers particularly at the time the specific information was usable by the growers and shippers.

4. Certified seed was used in both plots.

5. On the test plot the seed pieces were cut to 1½ to 2 oz. in size in comparison with approximately 1 oz. for the check plot.

6. Seed pieces were planted 12" apart in 36" rows.

7. Normal cultivation was followed on both plots.

8. (a) The soil of the test plot was treated with 2½ lbs. per acre of Heptachlor prior to planting to control wireworms and flea beetles.

   (b) Excellent control of the Colorado potato beetle was effected on both test and check plots by the use of 25 lbs. per acre of 2½% Heptachlor dust.

   (c) The European corn borer injured the vines severely in the test plot. They were still green and the vines were too rank to spray or dust. This caused a partial failure of the test, in the mind of the writer. A soil test was made at digging time and ample plant food elements were found to be present in the test plot along with a very heavy set of tubers. The fact that the vines were completely killed, while still green, and ample plant food present in the soil, indicated that had the vines lived there would have been a tremendous increase in yield on the test plot over the check. Even though the vines were killed prematurely, there was no significant difference in yield. Practically all the tubers set on the

(b) Delay harvest until potatoes are more mature by education of growers and planning with buyers to place premium on quality.

(c) Encourage more farmers to wash and pack potatoes in consumer size packages.

(d) Improve growing conditions by visiting individual farmers with county agricultural extension agents.

(e) This program will be conducted by assisting the agents of the larger commercial producing counties in working out plans to assist the growers in carrying out the recommended practices.

(f) Improve marketing facilities and outlets by working with growers, packing house operators, dealers and buyers.

D. Results

In an attempt to encourage the adoption of improved cultural practices in the production of potatoes, a comprehensive demonstration conducted in Princess Anne County in cooperation with the county agent.

The demonstration consisted of the following:

1. Plowed under a rye cover crop.
2. Soil was tested.
3. The recommended analysis of 10-10-10 fertilizer was used at the recommended rate of 1250 lbs. per acre on the test plow beside a similar plot fertilized with 2000 lb. per acre of 5-10-5. No lime was needed on either plot, as pH was 5.02.

diversion programs in the late states, supplies of storage potatoes which compete with the production in Virginia will probably increase in the future.

In general, Virginia growers of commercial acreages of potatoes do a better job of growing the crop than they do in harvesting and marketing. Many growers dig the potatoes before they are mature enough to have the skin set. This is done because of fear of rainy weather with resulting rot and foliage diseases and also due to the fact that experience has shown a decline in the market price frequently as the harvest season progresses. Many potato growers, on the Eastern Shore especially, are now using supplemental irrigation in the growing of the potato crop. This has presented some new problems in fertilizing, spacing, how often and how much to irrigate the crop. Growers are hesitant to give up the old 100 lb. burlap bag for smaller packages which are more acceptable to the trade in many instances.

B. Major Problems

1. Low yields.
2. Only one suitable variety for the early market.
3. Low quality.
4. A decline in acreage in Virginia.

C. Goals for 1958

1. Improve quality by

(a) Improving methods of harvesting and grading.

the late 1920's to the early 1950's. Consumption per person has been near 100 pounds for the last few years. With the introduction of new processed potato products, improved fresh potato quality, and more intensive merchandising of both fresh and processed products, prospects appear good for maintaining consumption near the present level for the next several years.

Potato prices in Virginia depend largely on the volume of potatoes coming on the market from other areas. This volume of potatoes may come from the late spring and summer states of South Carolina, North Carolina, Alabama, California, or from Maryland and Delaware, depending on the weather conditions. Also potatoes out of storage compete with Virginia. If early spring weather conditions are more normal in 1959, supplies of potatoes from other areas which compete with Virginia should be less. On the other hand, the total acreage of fall potatoes for storage is up 7 percent this year. High yields are anticipated which indicate production may be up substantially.

It appears that Virginia growers of potatoes may receive more competition from the storage areas in the next five years than in the past. This spring, shipments from Maine were substantial through June, while Idaho shipments were substantial up to mid-June. With the increasing use of sprout inhibitors, better storage facilities, and potato

Potato Program

A. The Situation

The 1958 early commercial potato acreage for harvest was 24,900 compared with 23,800 for 1957. Production on the Eastern Shore was 2,860,000 cwt., up 707,000 from last year or up roughly 32 percent. It was only 10 percent above average. Production in the Norfolk area was 232,000 cwt. and compares with 209,000 for 1957, only 50 percent of the average production. The late summer crop, which is produced principally west of the Blue Ridge Mountains, is estimated at 416 acres compared to 400 acres in 1957. A production of 18,268 cwt. is indicated which compares with 18,053 for 1957 or about the same acreage and production for the late summer crop both years.

EXTRACT - VA. CROPS & LIVESTOCK

| Year | Va. Acreage | Yield | Production |
|---|---|---|---|
| 1958 | 36.8 | 110 | 4,048,000 cwt. |
| 1957 | 36.1 | 89 | 3,215,000 cwt. |
| 1956 | 34.5 | 110 | 3,784,000 cwt. |
| 1946 to 1955 ave. | 39.0 | 101 | 3,970,000 cwt. |

Prices for the early crop estimated at $1.40 per cwt. were exceptionally low while yields were very satisfactory. The new returns from the crop were very low. Demand for potatoes and per capita consumption declined sharply from

counties and help them set up a 4-H garden contest to encourage more participation in the garden project.

In August about 150 home gardeners from approximately twenty counties visited the VPI campus on a one-day tour of the horticultural experiments and other places of interest. The tour was planned in cooperation with the district agents. Several members of the research and teaching staff, as well as members of other departments, volunteered their assistance in conducting this tour. County Extension agents from the various counties were designated as guides for groups and staff members who had charge of the research work were stationed at their respective projects. Lunch was provided at the college dining hall for the group. This tour created considerable interest and county Extension personnel attending asked that it be held again next year.

The specialists continued to provide the county Extension agents with timely information, in letter form, on the home garden each month. Ten of these letters were prepared and approximately 20,000 copies were provided the agents for local distribution. These letters contained information on cultural practices such as fertilizing, varieties, insect and disease control, harvesting and storing. In most instances, the agents addressed these letters to special groups such as 4-H club members, home demonstration club members, and certain individuals having a definite interest in the home garden including newspaper editors, key bankers, fertilizer dealers and others.

The agents in one district have set up county garden committees under the county Extension program similar to other commodity committees. This was proposed to agents in meetings in the fall at the request of the district agents. The specialists are planning to discuss the plan with the agents individually, as they are visited during the winter months.

The specialists with the assistance of other staff members of the horticulture department conducted classes on judging and scoring gardens at the State 4-H Short Course.

Several of the agents reported that 4-H club members who attended these classes offered to assist the agents in scoring and judging gardens on their return to their respective counties. Several of the agents who assisted with the classes requested the specialists to visit their

This type program has been continued since about 1942 and local interest has been lagging for the past several years. Attempts are being made to establish other programs which will be more interesting to local people.

The 4-H Club garden program was expanded in 1958 by adding five counties to the list having county-wide 4-H garden contests which were sponsored by local seedsmen and fertilizer dealers. To date approximately 20 counties have similar programs in Virginia and they have created considerable interest in the 4-H Club garden project. Although the number of garden project members for the state of Virginia has not increased to any extent, the quality of these gardens has improved greatly. One county has set up the garden project as a community project with approximately 250 4-H club members participating. The specialists are working with the agents, assisting in planning demonstrations, meetings, community club and county-wide contests and revising the project to fit the needs of the county.

The specialists have assisted six counties in setting up contests, outlining plans for judging the gardens and assisted the county Extension agents in training the judges who were usually 4-H club leaders, local sponsors or parents of 4-H club garden project members. Where this type program has been promoted, the specialists have noted more interest on the part of the local agents such as more and better news articles and radio programs and generally a better appreciation of the home garden.

form, on the home garden each month. These letters will discuss information on cultural practices such as fertilizing, varieties, insect and disease control, harvesting and storing. Agents will order the number they expect to use for distribution to groups, individuals, 4-H club members and others interested in the home garden.

4. Stimulate interest and encourage families to produce more of their home food supply in the home garden by:
   a. Encouraging local contests through garden clubs, civic clubs and other groups.
   b. Assisting additional counties with conducting leader training meetings, and
   c. Promoting garden tours
      (1) Southwest Virginia garden tour to include 20 counties by working with district agents and county Extension agents at V.P.I. in August.
      (2) Assist other groups in planning.

D. Results

The specialists assisted county Extension agents in conducting county-wide meetings in fifteen counties on the home garden. These meetings were set up to supplement the programs being conducted both in 4-H club and the home garden programs. Local seedsmen, fertilizer dealers and newspaper editors were present at many of these meetings. On several occasions the specialists visited local seedsmen with the county agents.

C. Goals for 1958

1. Help county Extension agents conduct training meetings in winter and spring months in 30 counties on the home garden. These meetings will supplement the programs being conducted in these counties both in 4-H and home demonstration clubs.
   a. County Extension agents will be encouraged to invite local seedsmen, newspaper editors, bankers and other county professional workers to these meetings.
   b. While specialists are in the county, visit the local seedsmen and discuss varieties of vegetables and other problems.
   c. All meetings and visits will be arranged by county Extension agents.
2. Encourage participation in 4-H garden projects.
   a. Go back and visit counties that attended planning meetings last year in order to help them complete the development of their home garden programs. This will involve approximately 20 counties.
   b. Assist approximately 20 counties in planning and conducting contests and with judging the garden projects.
   c. Outline and conduct a class on the value of the home garden and how to judge gardens for the 4-H Short Course.
3. Provide counties with timely information, in letter

5. In some sections of the state, where cash crops are being reduced each year, there is a greater need for more and better home gardens.
6. The facts needed to determine the problems of the home gardens are not available.
7. The number of 4-H club members with garden projects has declined for the past several years.

B. Major Problems

1. Need to plan the home garden.
   a. To improve the diet of the family.
   b. To supply more of the family's food.
2. Vegetables are available from the home garden for too short a period of time.
3. Production of most gardens is too low.
4. Damage from insects and diseases is too great.
5. Lack of interest in the home garden.
6. Some of the recommended varieties of vegetables are not being stocked by seedsmen or are not being planted.
7. There is a definite need for more time to be devoted to working up contests, judging and demonstration teams, and materials to glamorize the 4-H garden project, and to make it interesting to more of our youth.
8. Where cash crops have been reduced, more consideration should be given the home garden.

## PROJECT PROGRAMS

### Home Garden Program

The home garden is a very important source of food on most farms in Virginia. Estimates place the number of gardens at 175,000 and the total value at $30,000,000 annually. If we added the urban and city gardens to these figures, they could easily be doubled. In addition to its monetary value, the home garden has a beneficial influence upon the diet of our Virginia farmers.

Interest in the home garden program seems to continue to rise as indicated by the additional requests of county Extension workers for assistance, the increased requests for literature, and the increased number of individual requests for information on the home garden.

A. The Situation

1. There is a lack of planning of the home garden.
   a. To more nearly meet the dietetic requirements of the family.
   b. To provide more vegetables for a longer period of time.
2. Most garden soils are not properly treated and other cultural practices are not followed.
3. The production and quality of vegetables from the average family garden are low.
4. Families are not producing enough of their home food supply in the garden.

month. Other radio programs were prepared in cooperation with agents while visiting the counties. Approximately 75 news articles were written by the specialists.

county Extension personnel during the year.

The specialists have called upon the U. S. Department of Agriculture, the Virginia Agricultural Experiment Station, and other experiment stations for subject matter material. Cooperation of the Virginia Truck Experiment Station has been of particular value.

During 1958 the following 4-H project contests were sponsored on a state-wide basis:

| Project | Sponsor |
|---|---|
| 4-H Tomato . . . . . | Tidewater Canner's Association |
| 4-H Garden . . . . . | Allis Chalmer's Manufacturing Co. and Colonial Stores, Inc. |
| 4-H Sweet Potato Production and Marketing . . . . . | American Veneer Package Association, Northampton Farmers Club, and Association of Virginia Potato and Vegetable Growers |
| 4-H Special Garden Production and Preservation (in Lynchburg and Danville trade areas) . . . . . | Sears Roebuck and Company |

In addition to the state-wide 4-H projects, which are listed above, the specialists have assisted five counties in developing 4-H Garden Contest and obtaining sponsors on a county basis.

During the year, the specialists made more than 1000 farm visits in all phases of the Extension work. Most of these visits were made at the request of and with the County Extension Agents. In addition to giving farmers information, these visits helped the specialists maintain a closer contact with local problems.

The specialists cooperated in the Extension radio service program by preparing and recording approximately five programs each

## METHODS AND AGENCIES

The Extension organizations in the counties were the main agencies through which vegetable information was carried to farm people of the state. Most of the information was disseminated through the county offices. Other agencies such as chambers of commerce and civic organizations were very helpful in this program.

The specialists have worked closely with other departments, including 4-H Club, Agricultural Economics, Home Economics, Plant Pathology and Physiology, Biology, Agronomy, Agricultural Engineering, and Information and Publications in order to carry out a more effective program of informing farm people.

County Extension agents in one of the districts devoted a day to discussing vegetable production and home gardens with the specialists. These meetings were planned with the district agents and held at three convenient locations in the district. Each day's program was concluded with a discussion of how to include the subject matter in the county Extension program and plan of work.

The objective of the program has been one of service to county Extension personnel, groups, and leaders, rather than to individuals. Demonstrations, planning meetings and conferences, and visual aids were used as much as possible. State and federal publications have been distributed as well as letters which were prepared for distribution by agents on specific problems, in order to inform farmers of improved cultural practices. Production leaflets and bulletins carrying the recommended cultural practices for twenty different vegetables grown in Virginia were made available to

COOPERATIVE EXTENSION WORK IN AGRICULTURE AND HOME ECONOMICS

*VIRGINIA POLYTECHNIC INSTITUTE AND THE UNITED STATES DEPARTMENT OF AGRICULTURE COOPERATING*

STATE OF VIRGINIA
December 30, 1958

V. P. I. AGRICULTURAL EXTENSION SERVICE

Mr. W. H. Daughtrey
Associate Director
Virginia Agricultural Extension Service
Blacksburg, Virginia

Dear Mr. Daughtrey:

Vegetable Extension Project 16 received the equivalent full time of two men, 75% of one and 80% of another. The period covered in this report was from December 1, 1957 to November 30, 1958.

The personnel and the distribution of time was as follows:

L. B. Wilkins, Associate Horticulturist, full time
L. C. Beamer, Associate Horticulturist, full time
F. H. Scott, Assistant Horticulturist, 80% Extension and 20% Experiment Station
A. V. Watts, Associate Horticulturist, 75% time Extension and 25% time Virginia Truck Experiment Station

Mr. Watts is stationed at the Virginia Truck Experiment Station, Norfolk, Virginia. His Extension work consists of assisting county agents and commercial growers in the concentrated vegetable areas around Norfolk and the two Eastern Shore counties and publishing the "Vegetable Growers News". The other 25% of his time is devoted to research work in vegetable crops.

The following report combines the work of the above four men and part of the time of the head of the department of Horticulture into one report on vegetable Extension work.

Yours very truly,

L. B. Wilkins

L. B. Wilkins
Vegetable Project Leader
Associate Extension Horticulturist

LBW/nc

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A. V. Watts, Associate Extension Horticulturist

L. B. Wilkins, Associate Extension Horticulturist
and Project Leader

Horticulture Department
Virginia Polytechnic Institute