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# VEGETABLE GARDENING



**VIRGINIA 4-H CLUB SERIES**  
**AGRICULTURAL EXTENSION DIVISION**  
**OF V. P. I., BLACKSBURG, VA.**

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**Circular E-376**

**March, 1944**

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Virginia Agricultural and Mechanical College and Polytechnic  
Institute and the United States Department of Agriculture  
Cooperating. Blacksburg, Virginia

# The 4-H Garden Club Project

A proper diet is essential to good health and good health is essential to highest efficiency in any activity. Food grown and used at home will build strong bodies to carry on essential activities. The home garden plays an important part in the nutrition of the Nation in normal times. In periods of emergency, it is even more important. Food produced in your garden for home consumption not only benefits yourself and family but also releases transportation facilities and manpower for other essential uses.

The home garden goal for Virginia this and every year should be an adequate garden for every family on every farm. If you live in a city or town, you should have a garden only if you have suitable soil and are thoroughly interested in gardening.

## Purpose

The broad, general purpose of the 4-H garden project is to increase the number of all-year-round gardens in Virginia and to encourage 4-H Club members in their contribution to the war effort. Specifically, the project will help to (1) teach club members, parents, and others through practical demonstrations the best methods of growing vegetables, (2) emphasize the value of the home garden in the nutrition of the family, and (3) interest the youth in a wholesome and profitable enterprise that will better living standards.

## Requirements

As a 4-H garden club member, you may have a garden plot of your own or you may take over a part or all of the home garden as a project. In either case, your goal should be the production of an abundance of vegetables for use throughout the year. Your

project should extend over the gardening period. In general, February 1 through October 30 would include most of the work on the project. The interest and cooperation of your parents should be secured. They will be able to give you much valuable assistance, gained from many years of experience. Your 4-H garden club leader and your extension agents can also help you in your project.

You should keep records complete enough that at the end of the project year you can tell whether or not your garden has been successful. Write down the cost of such items as seed, fertilizer, spray, and dust materials, and the amount received from sales. A reasonably complete record should be kept of the vegetables stored and used in the home. This record should not be so detailed, however, as to be burdensome.

This folder has been prepared to help you in your garden effort. Whether or not your project is successful, however, will depend primarily upon your own efforts. Your garden club leaders, your extension agents, and printed material can only help to direct your activities.

### **Select Location Carefully**

Have a permanent garden on fertile, well-drained soil, convenient to the house. Patches scattered over the farm are not satisfactory. Convenience is the most important single factor. Fertility and drainage can be improved. Protection should be afforded from poultry, other livestock, and animal pests.

One-half an acre is recommended for the average farm family. Regardless of the size of your garden, the plan included in this folder should prove of value to you in planning your project. A small garden well cared for will produce more than a large garden that is neglected. If the garden plot is small, plant those crops which require the least room.

## Every Good Garden Should Include These Late Crops

Feet of row	Vegetable	Variety	For 100 ft. of row	One planting	Two or more plantings
200	Snap Beans (C)	Stringless Green Pod or Bountiful	1 to 2 lbs.		July & Aug. after peas
50	Beets (S)	Detroit	2 oz.	July & Aug. after onions	
50	Lettuce (leaf) (head)	Black Seeded Simpson Imperial No. 44	¼ oz.	August	August
100	Mustard	Tendergreen	1 oz.	July & Aug. after sp'ch	
100	Spinach	Virginia Savoy <sup>1</sup>	1 to 2 oz.		Aug. & Sept. after onions
100	Kale	Dwarf Blue Curled Scotch	1 oz.	July & Aug. after peas	
250	Cabbage (S)	Late Flat Dutch or Danish Ballhead <sup>2</sup> Wisconsin All Seasons <sup>1</sup>	66 plants	Set June to Aug. after peas	
200	Turnips (S)	Purple Top White Globe	1 oz.	Aug. after potatoes	
100	Turnip Salad	Pomeranian White Globe	1 oz.	Aug. after potatoes	

(C) Part to be canned.  
(S) Part to be stored.

<sup>1</sup> Disease resistant.

<sup>2</sup> Should not be planted in Eastern and Middle Virginia.

### Prepare Soil Thoroughly

As your house is your home, so the soil is the home of the vegetable from the time the seed is planted until the crop is harvested. Anything which you do to make that home congenial will increase production. Plow your garden early and allow it to remain rough until just before planting. Harrow thoroughly just before planting. A firm, well-prepared seed bed will increase germination and production. Don't let the urge to plant cause you to neglect thorough soil preparation.

### Apply Manure Liberally

Manure is the best soil conditioner known. It is an excellent source of humus and in

addition contains considerable plant food. The chief reason for applying manure, however, is to improve the condition of the garden soil. It would be cheaper to secure the plant food necessary from commercial fertilizers. Apply approximately 20 tons per acre (½ ton per 1,000 square feet) annually before plowing.

If manure is not available, use composts, leaves, pine needles, straw, crop residues, and green manure crops. Green manure crops, such as rye, wheat, and crimson clover, or mixtures of these, seeded in the fall are of considerable value in keeping up the organic content of the soil, particularly where you cannot secure ample supplies of manure.

# Suggested Garden Plan for Family of Five

Feet of row	Vegetable	Variety	For 100 ft. of row	One planting	Two or more plantings
100	Parsnips (S)	Hollow Crown	½ to 1 oz.	Mar. & Apr.	
100	Salsify (S)	Sandwich Island	1 to 2 oz.	Apr. & May	
200	Carrots (S)	Imperator or Improved Chantenay	1 oz.		Mar. to May
100	Beets (C)	Detroit	2 oz.		Mar. to May
100	Spinach	Virginia Savoy <sup>1</sup> Long-Standing Bloomsdale	1 to 2 oz.	Mar. & Apr.	
100	Mustard	Tendergreen	1 oz.		Mar. to May
300	Onion sets (S)	Ebenezer	1 to 2 lbs.	Mar. & Apr.	
50	Radish	Scarlet Globe	1 oz.		Mar. to May
50	Lettuce (leaf head)	Black Seeded Simpson Imperial No. 44	¼ oz.	Mar. to Apr.	Mar. to May
300	Peas (C)	Thomas Laxton	1 to 2 lbs.		Feb. to Apr.
100	Cabbage (early)	Copenhagen Market or Wisconsin All Seasons <sup>1</sup>	66 plants	Set in Mar. & Apr.	
300	Lima Beans (C)	Prolific Bush (small) or Fordhook (large)	1 lb.	May	
300	Snap Beans (C)	Stringless Green Pod or Bountiful	1 to 2 lbs.		Apr. to June
100	Kale	Dwarf Blue Curled Scotch	1 oz.	Mar. & Apr.	
800	Potatoes (S)	Irish Cobbler (early) Green Mountain <sup>2</sup> or Sebago (late)	½ peck	Mar. & Apr.	
275	Tomatoes (C)	Rutgers <sup>1</sup> or Marglobe <sup>1</sup>	33 to 40 plants	After frost	
25	Peppers	California Wonder	66 plants	Set in May	
500	Sweet Potatoes (S)	Nancy Hall or Porto Rico	66 to 100 plants	Set in May	
500	Corn (C)	Golden Cross Bantam; Country Gentleman or Stowell's Evergreen	¼ to ½ lb.		Apr. to June
In corn	Pumpkins (S)	Virginia Mammoth or Cashaw	½ oz.	May	
10-15 hills	Squash	Yellow Crookneck or White Bush	½ oz.	Apr. & May	
10-15 hills	Cucumber (C)	Long Green or Prosperity	½ oz.	Apr. & May	

## Fertilize Properly

No animal or plant can grow without food. If the vegetables are to grow as they should, they must be supplied with plant food. Most garden soils contain sufficient plant foods with the exception of nitrogen, phosphorus, and potash.

Each of these three plant foods serves a specific purpose in the growth of the plant. Nitrogen increases the growth of the foliage and gives a dark green color to the leaves. Phosphorus stimulates the development of roots, fruits, and seed. Potash likewise encourages root development and aids in the formation of fruits and tubers.

Use a fertilizer analyzing from 4 to 5% nitrogen, 10 to 12% phosphoric acid, and 4 to 5% potash, such as a 5-10-5 or a 4-12-4. The first figure in the analysis always refers to nitrogen, the second figure to phosphoric acid, and the third to potash.

Fertilize at the rate of 1,000 to 1,500 lbs. per acre (25 to 35 pounds per 1,000 square feet) thoroughly mixed with the soil a few days before planting. With some crops, such as tomatoes, potatoes, and corn, half of the fertilizer might well be placed in the row and thoroughly mixed with the soil. With small crops which are grown close together and where sufficient fertilizer is used, broadcasting all the fertilizer will prove satisfactory.

## Use *Good* Seed

It is impossible to produce a thoroughbred calf from a scrub bull. It is just as impossible to grow good vegetables from poor, inferior seed.

Plant only good seed of suitable varieties. In general, standard varieties should be used.

If your garden soil is infested with certain diseases, resistant strains of many vegetables are available. For example, Rutgers and Marglobe varieties are resistant to tomato

wilt. Wisconsin All Seasons is resistant to cabbage yellows. County agents can give you further information on resistant varieties.

Purchase your seed from a reliable source. Due to the tremendous demand for seed, it may be necessary for your seedsman to substitute varieties. The reliable dealer may be trusted to do this. **Order your seed early.** Order all the seed you need but no more than you need or someone else may have to go without.

What has been said of seed applies largely also to plants. The plants which you use should have been produced from good seed and should have been grown properly in order to produce stocky, vigorous plants, free from disease.

### **Draw Up a Definite Plan**

No contractor would attempt to build a house or a barn without some definite plans and specifications. Such a plan for your garden, well thought out and put down on paper, will help you considerably throughout the gardening season. In making such a plan, you should consider the kind and amount of vegetables you desire to grow and their arrangement in the garden. The first will depend largely upon your likes and dislikes and the size of your garden. Don't grow what you dislike but you should grow a good selection of green or leafy, root, and fruit vegetables.

Plan your rows to run the long way of the garden, if the slope will permit.

In general, you should plant tall growing vegetables in one section of the garden and low growing vegetables in another. For example, it would not be advisable to plant a row of beets or lettuce between a row of corn and a row of pole beans. The beets or lettuce would not get enough sunlight to grow properly.

Group those vegetables which mature at approximately the same time in one section of the garden. You can then harvest these vegetables at about the same time and use this land for later or succession plantings. Most of the garden soil should produce at least two crops during the gardening season. By careful planning, you can do this. The garden plan, included in this folder, should give you some ideas on this.

### **Make Several Plantings**

Make two or more plantings of corn, beans, cabbage, peas, beets, salad crops, greens, etc. This practice will give a supply of fresh vegetables over a longer period. Give special attention to plantings for the fall and winter gardens. The time of planting will depend upon the vegetables and the section of the state. Consult the chart included in this folder for planting dates. Sow the seed thick enough to secure a stand but not so thick as to be wasteful.

No hard and fast rule can be given on the depth of sowing seed. Sow seed deeper in sandy soils than in clay soils. In the spring, shallow plantings benefit more from the sun's heat and, therefore, germinate more quickly. In later plantings, the seed should be sown more deeply as the upper surface of the soil is dry. The size of the seed likewise plays an important part. A general rule is to sow the seed to a depth that is 2 to 4 times the diameter of the seed. This rule, however, should be interpreted by common sense and experience.

After the seed is planted, firm the soil over the seed, particularly with small seed. Firming brings the seed in contact with the soil particles which furnish the moisture required for germination. Rows should be straight not only for the appearance of the garden but also to make cultivation, spraying, and other garden practices easier.

## **Thin Carefully**

Do not attempt to grow two vegetables where only one should grow. Each will injure the other both in quality and production. Give each plant room in which to develop properly. Discard the weakest plants and retain the strongest. Thin as soon as there is reasonable assurance that the plants will not be killed by unfavorable conditions. Thinnings of some crops, such as beets, may be used as transplants.

## **Practice Shallow Cultivation**

The chief reason for cultivation is to kill weeds. Weeds rob the vegetables of moisture and plant food which rightly belong to the vegetables. Cultivate often enough to keep the weeds killed out. Don't cultivate deep enough to injure the roots. Have sufficient tools on hand to cultivate properly. A wheel-hoe is of great advantage where the cultivation must be done by hand.

## **Follow a Thorough Pest Control Program**

Probably the two most important insecticides for the garden are rotenone and nicotine. Rotenone will control most of the chewing insects, such as beetles and worms, and will likewise control many of the sucking insects, such as the Harlequin cabbage bug, the squash bug, and others. Nicotine is the best material for plant lice.

Use 5 level tablespoonfuls of 4% rotenone in 1 gallon of water as a spray, or use a commercial dust containing from  $\frac{1}{2}$  to  $\frac{3}{4}$  of 1% rotenone. If rotenone is not available, use substitutes, such as calcium arsenate and cryolite, according to the directions on the containers.

Nicotine sulfate should be used at the rate of  $1\frac{1}{2}$  teaspoonfuls in 1 gallon of water. A pound of old tobacco trash soaked in 1 gallon of cold water for 24 hours is also effec-

tive against plant lice. An inch cube of ordinary soap or 2 tablespoonfuls of soap flakes dissolved in 1 quart of water will also help to control plant lice.

### **Conserve All Surplus Products**

The garden should supply an abundance of fresh food throughout as long a period as possible. It should also produce a large amount for canning, drying, and storing. Secure information from your extension agents as to methods of conserving. Do not permit food to go to waste after you have gone to the expense and energy of producing it.

### **Secure Additional Information**

This folder can only "hit the high spots" on gardening. Consult your county farm and home demonstration agents for further information. They will be glad to discuss your problems with you. Considerable printed material on the home garden is available through their office. Make use of it.