

# 4-H BEGINNING GARDENING UNIT 1 VEGETABLE GARDENING

This book belongs to:

Name \_\_\_\_\_

Address \_\_\_\_\_

Parent's Name \_\_\_\_\_

Name of Club \_\_\_\_\_

# Table of Contents

	<i>Page</i>
Requirements of the Project .....	3
About Gardening .....	3
Plan Your Garden .....	3
Florida Planting Guide .....	5
Location .....	4
Arrangement .....	4
Tools .....	4
Soil Sampling .....	4
Liming .....	5
Spading .....	5
Garden Layout .....	6
Nematode Control .....	6
Bedding .....	6
Fertilizing .....	6
Planting Seed .....	6
Transplanting .....	7
Weeds .....	7
Irrigating .....	7
Insects .....	8
Diseases .....	8
Dusters and Sprayers .....	8
Pesticide Precautions .....	8
Harvesting .....	8
4-H Garden Record .....	10
Gardening References .....	12

Prepared by: James M. Stephens, Vegetable Crops Specialist, Florida Cooperative Extension Service,  
University of Florida, Gainesville.

# BEGINNING GARDENING

## UNIT 1

### Vegetable Gardening

Those of you enrolling in this gardening project area will be growing a vegetable garden. Better health should come from working in the sun and eating nourishing, fresh vegetables which you grow and pick yourself. Successful gardening is a sure-fire way to strengthen the four H's:

Your Head—by drawing up a garden plan  
—by selecting seeds and supplies  
—by choosing the right soil and the best time to plant and harvest

Your Hands—by plowing  
—by planting  
—by hoeing  
—by harvesting

Your Heart—by learning to love growing plants  
—by appreciating the earth's goodness  
—by being thankful for our blessings  
—by enjoying success

Your Health—by eating nourishing, fresh vegetables  
—by working in the sunshine and fresh air

#### Requirements of the Project Area

You should have your own garden plot or care for part of the family garden. The size of your garden will depend on the amount of space you have available and the time you have to tend it. Do not take more than you can properly take care of. For most beginning gardeners, at least 200 square feet of garden space is sufficient. More than 2,000 square feet is probably too much.

You should plant crops that you like to eat and that are fairly easy to grow. Plant such crops as tomatoes, beans, radishes, beets, turnips, squash,

peas, strawberries, lettuce and sweet corn.

You should exhibit your garden vegetables at a community, county, or district event.

Keep a record of your garden's progress. Fill out the report form included in the back of this booklet. Answer the questions and write your story as indicated.

#### Other Beginning Gardening Project Areas

Vegetable Gardening is one of four areas you may select in the **Beginning Gardening (Unit 1)** project. The four areas are: (1) Vegetable Gardening, (2) Plant Science Experiments, (3) Growing Vegetables in Containers, and (4) Vegetable Identification Workbook. There is a separate booklet for each area.

You may choose at least one of the four areas. If you complete one area one year, you may wish to do another area the next year. You should be 9 to 12 years old to do this project.

#### About Gardening

To grow a successful garden in Florida requires a great deal of gardening know-how. Use the following information and tips on gardening to help you with your gardening fun.

#### Plan Your Garden

You wouldn't take a vacation trip without taking along a map. It's important to "map" your garden, too, before you do anything else. Then you'll know where you are going. To plan a garden, you should ask yourself these questions:

Which crops will I grow?

Which varieties are best?

How much seed will I need?

How far apart should the rows and plants be spaced?

When is the best time to plant?

Draw a plan of your garden in the space provided in your record section. This sample plan should be helpful:

## Sample Plan (Central Florida)

N ← → S

Row Width	Plant Spacing	Crop	Variety	Planting Date
1½'	1"	Radish	Cherry Belle	Sept. 15
2'	4"	Turnips	Purple Top	Sept. 15
2'	4"	Mustard	Fla. Broad Leaf	Sept. 15
2'	4"	Onions	<b>Yellow Granex</b>	Sept. 15
2'	24"	Cabbage	Marion Market	Sept. 15
2½'	24"	Collards	Vates	Sept. 15
2½'	4"	Beans, snap	Contender	Sept. 1
3½'	36"	Squash	Summer Crookneck	Sept. 1
3½'	36"	Tomatoes	<b>Better Boy</b>	Sept. 1
3½'	36"	Tomatoes	<b>Flora-Dade</b>	Sept. 1
3'	12"	Strawberries	<b>Florida Belle</b>	Sept. 15
2'				

50 feet long — 30 feet wide  
1,500 square feet

### Location

A garden spot handy to the house and kitchen is best. A good water supply, such as a spigot, should be nearby. Choose a spot where the soil is as rich as possible and one which is not shaded, especially in the morning hours.

### Arrangement

How you arrange the vegetables in the garden is important. Keep tall vegetables, such as corn, to one side and low-growing plants, as radishes, to the other side. Otherwise, the tall plants will shade the little ones. Run the rows north and south so more sunlight can strike the plants.

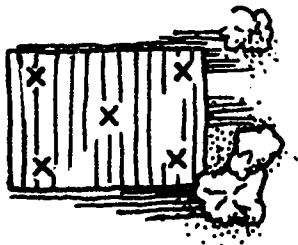
### Tools

For a small garden only a few simple tools, such as a spade, rake, hoe, trowel, bucket, garden hose, and hand duster, are needed. Also, a quart can for putting out fertilizer, a ball of twine, and garden labels will make your gardening easier.

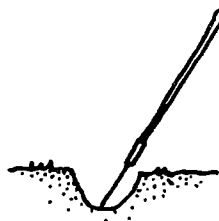
### Soil Sampling

Your garden soil should be sampled and this sample tested to find out what fertilizer and lime are needed. After you have taken a sample of your soil, ask your 4-H leader or County Agent to test it for you.

How to Take Soil Sample for Testing:



Take samples from 5 different places in your garden



Take a slice of ground to spade depth at each spot



Place the samples in bucket and mix

Place sample from bucket in a clean container with your name and address on the container.

1 pound coffee can



Ice cream package



## Florida Planting Guide

Crop	Varieties	Spacing in Inches		Seed Depth Inches	Planting Dates in Florida			Days to Harvest
		Rows	Plants		North	Central	South	
Beans, Snap	Contender, Harvester	18-30	2- 4	1½-2	Mar-Apr Aug-Sept	Feb-Mar Sept	Sept-Apr	50- 60
Beans, Pole	McCaslan, Dade, Kentucky 191	40-48	15-18	1½-2	Mar-Apr Aug-Sept	Feb-Mar Aug-Sept	Sept-Apr	60- 65
Beets	Detroit Dark Red	14-24	3- 5	½-1	Sept-Mar	Oct-Mar	Oct-Feb	60- 70
Cabbage	Marion Market, Red Acre	24-36	14-24	½	Sept-Feb	Sept-Jan	Sept-Jan	70- 90
Carrots	Imperator, Chantenay	16-24	1- 3	½	Sept-Mar	Oct-Mar	Oct-Feb	70- 75
Collards	Georgia Strains, Vates	24-30	14-24	½	Feb-Mar	Jan-Apr Sept-Nov	Sept-Jan Aug-Nov	50- 55
Corn, Sweet	Silver Queen, Florida Staysweet, Golden Cross Bantam	34-42	12-18	½-1	Mar-Apr	Feb-Mar	Jan-Feb	80- 85
Cantaloupes	Smith's Perfect, Seminole, Edisto	70-80	48-60	½-1	Mar-Apr	Feb-Apr	Feb-Mar	75- 90
Cucumbers	Ashley, Poinsett	48-60	15-24	½-1	Feb-Apr	Feb-Mar Sept	Sept-Feb	50- 55
Eggplant	Florida Market, Black Beauty	36-42	36-48	½	Feb-Mar July	Jan-Feb Aug-Sept	Sept-Feb	80- 85
Lettuce	Bibb, Salad Bowl, Premier, Minetto	12-18	12-18	½	Feb-Mar Sept	Jan-Feb Sept	Sept-Jan	50- 80
Mustard	Florida Broad Leaf, Southern Giant Curled	12-24	4- 8	½	Jan-Mar Sept-May	Jan-Mar Sept-Nov	Sept-Mar	40- 45
Okra	Clemson Spineless, Emerald	24-40	18-24	1 -2	Mar-May Aug	Mar-May Aug	Feb-Mar Aug-Sept	50- 55
Onions	Granex, Texas Grano	12-24	3- 4	½-1	Sept-Dec	Aug-Nov	Oct-Nov	100-130
Peas, Southern	Florcream, Blackeye	30-36	2- 3	1 -2	Mar-May	Mar-May	Feb-Apr	70- 80
Pepper	Calif. Wonder, Florida Giant	20-36	18-24	½	Feb-Apr	Jan-Mar Aug-Sept	Jan-Feb Aug-Oct	70- 80
Potatoes	Sebago, Red La Soda	36-42	12-15	4 -8	Jan-Feb	Jan	Sept-Jan	80- 95
Potatoes, Sweet	Centennial, Porto Rico	48-54	18-24	—	Mar-June	Feb-June	Feb-June	120-140
Radish	Cherry Belle, Early Scarlet Globe	12-18	1- 2	½-1	Sept-Mar	Sept-Mar	Oct-Mar	20- 25
Squash, Summer	Early Summer Crook-neck, Zucchini, Patty Pan	42-48	36-48	½	Mar-Apr Aug	Feb-Mar Aug	Jan-Mar Sept-Oct	45- 60
Strawberry	Florida 90, Florida Belle	36-40	12	—	Sept-Oct	Sept-Oct	Oct-Nov	90-110
Tomatoes	Manalucie, Floramerica, Homestead 24	40-60	36-40	½	Feb-Apr Aug	Feb-Mar Sept	Aug-Mar	75- 85
Turnips	Purple Top White Globe, Shogoin	12-24	4- 6	½	Jan-Apr Aug-Oct	Jan-Mar Sept-Nov	Oct-Feb	40- 50

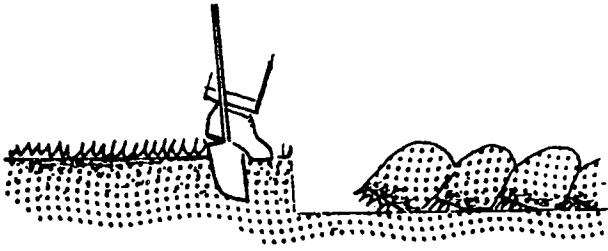
### Liming

The most important test of your soil is a test for soil pH. The best pH range for garden soils is 5.5 to 6.2. If your soil tests under pH 5.5, your soil is sour and lime may be needed. Use 3 to 4 pounds of finely ground limestone to every 100 square feet of soil. Scatter the lime evenly over the soil surface and then spade it in to a depth of 6 inches. You should apply lime 2 to 3 months ahead of planting.

Some soils are sweet (alkaline), such as the marl and rock soils of Dade County. These do not need lime, but require special fertilizer instead.

### Spading

Turn the soil completely over when spading. Weeds, cover crops, and added lime can all be spaded under at the same time. Break all clods and level with a rake. Remove all woody weeds and trash from the plot.



Turn the soil completely over when spading

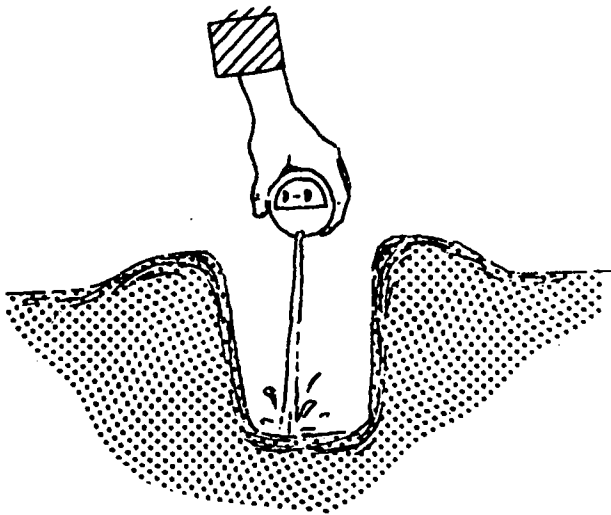
## Garden Layout

Use stakes, string, and a yardstick to lay off straight rows. Follow your previously prepared plan. Place a garden label at the head of each row. Information on the label should include the crop, variety, and planting date.

## Nematode Control

Tiny, eel-like worms called nematodes may live in the soil in your garden. Nematodes can only be seen with a microscope. These tiny worms feed on plant roots and cause them to become knotted or stunted.

To kill these nematodes you should fumigate the soil with a chemical such as SMDC (Vapam or Fume-V). These chemicals are and dribbled about 6 inches deep in the planting row following the directions on the label of the chemical. Rake the



Applying fumigant in the row.

soil back into the furrow immediately to keep the fumigant from escaping and then wet the soil to seal it in. The soil should be treated 2 to 3 weeks before planting.

## Bedding

A raised bed is made for the puposes of drain-

age, keeping plant roots up out of water, and in some cases for furrow-irrigating the plants. For most vegetables, a small bed about one foot across and six inches high is best. Later this bed may be enlarged by cultivation and sidedressing with fertilizer. Where possible, you may wish to plant flat without raised beds.

## Fertilizing

Commercial fertilizer should be applied right before or at planting time. The best way is to place it in one or two bands. Each band should be



Fertilizer Placement  
in a Bed



Fertilizer Placement Flat

3 inches to the side and 2 inches below the level of the seed. Do not put the fertilizer directly under the seed.

Soil	Fertilizer Grade	Amount, 100 sq. ft.
Sand, Clay, or Marl	6-8-8	4
Muck or Peat	0-12-20	2

Additional fertilizer, called side dressings, may be needed during the growing season. Apply sidedressings at about  $\frac{1}{4}$  the rates listed above. Most gardens will need from 2 to 4 sidedressings at about two week intervals, or whenever needed.

Some gardeners prefer to broadcast their fertilizer over the entire garden plot before planting. This should be done a week or ten days before the seed are planted.

## Planting Seed

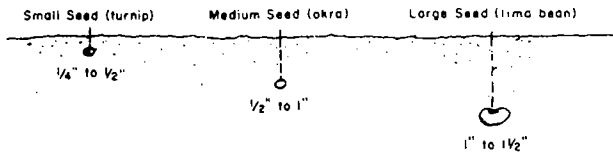
Be sure you have good fresh seed to start your garden. Plant the variety suggested in this booklet. Since some diseases may be carried on the seed, buy **treated** seed.

Rake and smooth out your planting surface. To plant in straight rows, tie a string between the garden labels at both ends of each row. Follow this string with the end of a hoe handle or your finger, to make a planting furrow.

Seeds should be planted at the proper depth. Use the **Planting Information Chart** to find out how deep to put the seed.

Plant spacing is important. Place the seed somewhat closer together in the row than the suggested plant spacing. Then you can thin out the tiny plants to obtain the "stand" you want.

When you transplant young plants directly into your garden, put them at the *proper spacing*.



## Transplanting

It is best to start some vegetables in your garden by setting transplants rather than by direct seeding. By transplanting, you can have an earlier garden and sometimes a better stand.

Not all vegetables can be successfully transplanted. Some that you might try are tomatoes, pepper, eggplant, lettuce, and cabbage.

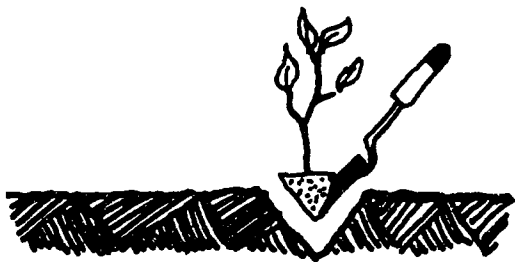
Young vegetable plants for transplanting may be obtained from a neighbor's garden, from a garden supply store, or by growing your own in a seedbed or plant box.

Transplant when conditions are best.



Soon after a rain or when cloudy or in late afternoon.

Handle plants carefully when transplanting.



Use a trowel or large spoon to lift the plants carefully from the box. Leave as much soil on the roots as possible. Dip roots in soft mud.

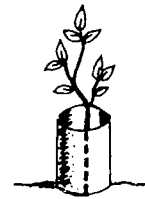


Water when setting. (Starter solution may be used.) Firm soil around roots and put dry soil over moist soil.

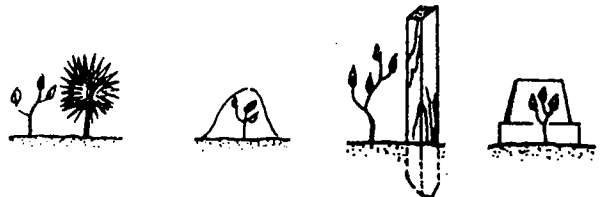
To make a starter solution, use 2 tablespoons of 6-8-8 fertilizer per gallon of water. Apply 1/2 to

1 pint to each plant. This will get your plants off to a quick start.

You should place a cardboard band around the base of the plant to protect it from cutworms.



Protect plants 2 to 4 days after transplanting.



Palmetto Leaf Newspaper

Board

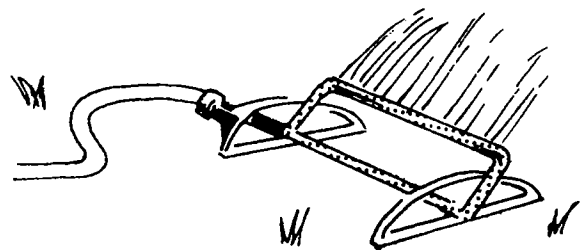
Flower Pot

## Weeds

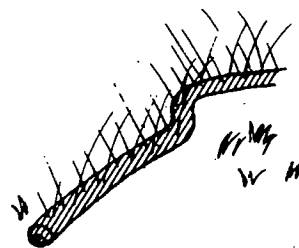
Knock out weeds before they get started. They compete with the plants for food and water. They may shade the crop. They are hiding places for insects and other pests. Pull or hoe weeds when they are young and tender. When hoeing, do not cut too deeply, as vegetable roots might be damaged.

## Irrigating

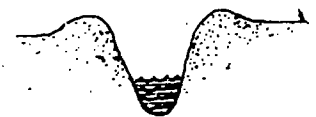
Never let your garden suffer from lack of water. Most vegetables need about one inch of water per week when young and nearly 2 inches when older. It is better to water heavily once a week than to sprinkle a little each day. Several methods of irrigating may be used:



Lawn sprinkler



Perforated hose



Furrow irrigation

## Insects

There are many insect pests which may injure or even destroy your garden vegetables if they are not controlled.

Go to work on bugs early. Dust or spray at the first sign of them and continue at 4 to 7 day intervals. Some insects such as the tomato hornworm may be picked off and controlled by hand.

The spray or dust should contain one or more safe, vegetable insecticides. These control such pests as worms, aphids, and beetles.

If your garden has ants, mole crickets or cut-worms apply an insecticide to the soil.

## Diseases

Again, early and frequent action is best for keeping plant diseases from damaging your garden. A spray is best since it will stick to the plant. A dust may also be used. The dust or spray should contain either zineb or maneb.

Some diseases, such as wilts and viruses, cannot be controlled by spraying and dusting. Planting varieties which are resistant to these diseases is very helpful.

## Pesticide Precautions

Consider all pesticides as potential poisons. Read the labels on the containers and strictly follow the directions. It is the responsibility of the user to use these products only within the limits which have been set for their use. Do not apply pesticides on the same day you harvest. Thoroughly wash vegetables from the garden before using them.

## Harvesting

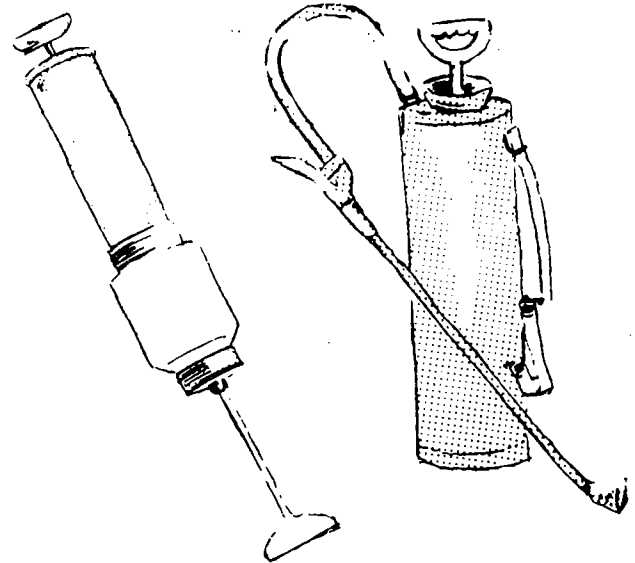
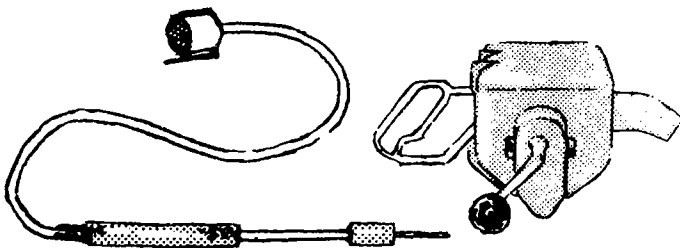
Be ready to harvest your vegetables when they are ready. Some, like tomatoes, have best quality when they are ripe. Others, like beans and cucumbers, should be eaten before they are fully ripe.

## Dusters and Sprayers

Several different kinds of hand sprayers and dusters are available. Here are a few examples of some that you might use.

Trombone sprayer

Rotary duster



Plunger duster

Pressure sprayer

## UNIT 1

### Beginning Gardening Activities

Those of you who are taking this Beginning Gardening Project should also take part in one or more of the following activities. They are fun to do and will help you get a lot more from your project.

1. Horticulture Demonstrations.—You should participate in a demonstration once a year. If you have ever shown anyone how to make a kite or mix a spray solution, you have given a demonstration. In a vegetable demonstration you show how while you tell about some gardening practice.

There is a 4-H pamphlet which you can get that tells how to prepare a demonstration. It is called "4-H Horticulture Demonstrations." Ask your leader for a copy.

2. Horticulture Judging.—This activity is in the form of a contest. By competing in it, you will learn about kinds and varieties of vegetables, and how to pick the good ones from the bad ones. You might have a chance to be in a club or county contest and test your knowledge of these things. Any of you taking any part of Beginning Gardening may participate in horticulture judging.

Get a copy of "4-H Horticulture Identification and Judging Contest" to find out more about this contest.



**3. Exhibiting.**—At every opportunity you have, such as at a fair, you should be proud to show others the produce that you have grown. When you show others how well you have done, they may benefit by trying to do as well.

To find out how your vegetables should be exhibited, review Fact Sheet VC 32, "Exhibiting Vegetables in Florida."

Exact requirements must be met by exhibits entered for contest. The number called for should be used—no more, no less—and other rules of the Exhibit Committee should be closely followed.

### Suggested Number of Vegetables to Make an Exhibit

#### Major Crops

Beans, bush green, 1 qt.	Onions, cured, 6
Beans, pole green, 1 qt.	Onions, green, 12
Beans, lima, 1 qt.	Peas, English, 1 pt.
Broccoli, 3 flower stems	Peas, Southern, 1 pt.
Cabbage, 3	Peppers, bell, 6
Carrots, 6	Potato, Irish, 6
Collards, 3 plants	Radish, 12
Corn, sweet, 6 ears	Spinach, 1 bunch
Cucumbers, 6	Squash, summer, 3

Eggplants, 3  
Lettuce, 3  
Melon, cantaloupe, 3  
Melon, watermelon, 1  
Mustard, 1 bunch  
Okra, 1 qt.

Squash, winter, 1  
Sweetpotato, 6  
Tomato, slicing and greenripe, 6  
Turnip roots, 6  
Turnip tops, 1 bunch

#### Minor Crops

Artichoke, Globe, 3	Kale, 1 bunch
Artichoke, Jerusalem, 6	Kohlrabi, 6
Asparagus, 12 spears	Leek, 12
Brussel Sprouts, 1 qt.	Parsley, 1 bunch
Cauliflower, 1	Peppers, hot, 1 pt.
Celery, 3	Popcorn, 12 ears
Chard, Swiss, 1 bunch	Pumpkin, 1
Citron, 1	Rhubarb, 6 stalks
Endive, 1 plant	Rutabaga, 6
Herbs, Collection of 3 kinds	Soybeans, 1 qt.
Horseradish roots, 3	Tomato, cherry, 1 plate

**4. Tours.**—Visit the gardens of your neighbors and other members of your club. Field trips into farming areas are fun and educational. Group trips through local market places to see how produce is sold will be very worthwhile.

# 4-H GARDEN RECORD

For Year 19\_\_\_\_

My \_\_\_\_ Year in Beginning Gardening

## UNIT I — VEGETABLE GARDENING

My name is \_\_\_\_\_ My parents are \_\_\_\_\_

My address is \_\_\_\_\_  
(Street or Route) (Town) (County)

I am \_\_\_\_ years old. I am in the \_\_\_\_ grade. This my \_\_\_\_ year in 4-H Club work. My leader's name is \_\_\_\_\_

### About Your Garden

(Complete this outline plan of your garden.)

Row Width	Crop	Variety	Planting Date

My garden is \_\_\_\_\_ feet wide.

My garden is \_\_\_\_\_ feet long.

N, S, E, W  
(Circle proper direction)

### Expenses

(List a value for items used even if they did not cost you anything.)

Item	What Kind?	How Much?	Cost
Seed			\$
Fertilizer			
Lime			
Manure			
Dust Material			
Spray Material			
Other			
<b>A. Total Cost</b>			<b>\$</b>

Cut here to hand in.

### Returns

(List the value of vegetables used, given away, or sold.)

How Used	Amount	Value
Sold		\$
Eaten		
Canned		
Frozen		
Given Away		
<b>B. Total Value</b>		<b>\$</b>

### Summary

Total Value (Line B) \_\_\_\_\_ minus Total Cost (Line A) \_\_\_\_\_ = Gain on Project \_\_\_\_\_

What problems did you have with your garden? \_\_\_\_\_

\_\_\_\_\_

## Your Garden Story

(What have you learned by taking this project?)

### 4-H Gardening References

Florida Cooperative Extension Service—  
Gainesville

*Vegetable Gardening Guide*  
*Manual of Minor Vegetables*  
*Grow Your Own Vegetables Without Soil*  
*Exhibiting Vegetables in Florida*  
*4-H Horticulture Demonstrations*  
*4-H Horticulture Identification and Judging*  
*Contest Volume 1, Fruits and Vegetables*  
*Managing Pests in Vegetable Gardens*  
*Vegetable Gardening Fact Sheet Series*

Florida State Department of Agriculture  
Tallahassee

*Vegetable Gardening in Florida*

U. S. Department of Agriculture  
Washington, D. C.

*MiniGardening*  
*Insects and Diseases of Vegetables in the*  
*Home Garden*

This publication was produced at a cost of \$253.55, or 25.4 cents per copy, to serve as a 4-H project record book in gardening. 9-1.5M-88

COOPERATIVE EXTENSION SERVICE, UNIVERSITY OF FLORIDA, INSTITUTE OF FOOD AND AGRICULTURAL SCIENCES, K.R. Tefertiller, director, in cooperation with the United States Department of Agriculture, publishes this information to further the purpose of the May 8 and June 30, 1914 Acts of Congress; and is authorized to provide research, educational information and other services only to individuals and institutions that function without regard to race, color, sex or national origin. Single copies of Extension publications (excluding 4-H and Youth publications) are available free to Florida residents from County Extension Offices. Information on bulk rates or copies for out-of-state purchasers is available from C.M. Hinton, Publications Distribution Center, IFAS Building 664, University of Florida, Gainesville, Florida 32611. Before publicizing this publication, editors should contact this address to determine availability.

