VEGETABLE GARDENER

MICHIGAN STATE COLLEGE :: EXTENSION SERVICE
EAST LANSING

## CONTENTS

<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Garden Club Organization</td>
<td>3</td>
</tr>
<tr>
<td>The Club Gardener and His Project</td>
<td>4</td>
</tr>
<tr>
<td>The 4-H Garden</td>
<td>5</td>
</tr>
<tr>
<td>The Exhibit</td>
<td>19</td>
</tr>
<tr>
<td>Awards</td>
<td>20</td>
</tr>
<tr>
<td>Your Record</td>
<td>21</td>
</tr>
<tr>
<td>Demonstrations</td>
<td>21</td>
</tr>
<tr>
<td>Judging and Identification</td>
<td>22</td>
</tr>
</tbody>
</table>

---

**4-H Vegetable Gardening**

It's fun to plant seeds, cover them gently with soil, and watch them grow through the surface of the earth. With a little care and attention, planting a garden can be a rewarding experience. Members of our family have planted gardens all times during the spring months.

One of the best ways of getting started is to participate in the 4-H project. In this project you will learn how to grow vegetables, and will also have the fun of sharing these vegetables with others.

This bulletin contains brief information on how to plan and carry out vegetable gardening, planning and planting gardens, and activities of 4-H. It also contains brief information on how to conduct vegetable demonstrations.

### GARDEN CLUB ORGANIZATION

**LOCAL LEADER**

Some older person in the community should be selected as local leader for each 4-H garden club. This person should be an older member of the community, familiar with local conditions, and with a demonstrated interest in bettering the lives of others through horticultural activities.

**ADVISORY COMMITTEE**

It is a good plan to have a committee of five members selected from the garden club. This committee should assist the local leader in planning the program for meetings and activities.

### MEETINGS

The club should hold regular meetings at least once a month. Meetings should be the most interesting.

The regular meeting should consist of (1) a business meeting, (2) the planning of recreational period.

---

*For helpful suggestions regarding this bulletin, the author extends appreciation to the Extension Service, Michigan State College, and to other experts.**

**For more complete information, see Bulletin 4, "The Home Vegetable Garden," East Lansing, Michigan.
4-H Vegetable Gardener

By M. H. AVERY

It’s fun to plant seeds, watch the tiny plants force themselves through the surface of the soil, and continue to grow to maturity. In addition, planting a garden also enables us to make certain that members of our family have plenty of healthful, garden-fresh vegetables at all times during the spring, summer and fall.

One of the best ways of doing this is to carry on a 4-H garden club project. In this project you will learn how to grow vegetable crops and will also have the fun of working together with your friends.

This bulletin contains information on the organization, requirements, and activities of 4-H garden club members. It also contains brief information on how to grow vegetables.*

GARDEN CLUB ORGANIZATION

LOCAL LEADER

Some older persons in the community should be chosen to act as a local leader for each 4-H garden club. For a large club, assistant leaders should be selected.

ADVISORY COMMITTEE

It is a good plan to have an advisory committee of from three to five members selected from among the parents of the club members. This committee should assist the leader in planning and conducting the program for meetings and other activities of the club.

MEETINGS

The club should hold regular meetings about every 2 weeks or at least once a month. Meetings held at the homes of the members will be the most interesting.

The regular meeting should be divided into three parts: (1) the business meeting, (2) the project discussion and (3) the social and recreational period.

*For helpful suggestions received in the preparation of this bulletin, the author extends appreciation to members of the Department of Horticulture, Michigan State College, and to the Beech-Nut Packing Company.

**For more complete information on growing vegetables, refer to Extension Bulletin 4, "The Home Vegetable Garden." A copy may be obtained from your county extension office, or from the Michigan State College Bulletin Office, East Lansing, Michigan.
Special meetings may be called for planning a club picnic, a club tour of projects, a discussion of records, etc.

GARDEN VISITS

Visiting the club members’ gardens is very important in keeping up interest. This may be done by the leader, the advisory committee or by older club members.

DEMONSTRATIONS

Your meetings can be made more interesting by individual or team demonstrations given by club members. These demonstrations should be on topics with which club members are familiar. Those who give the best demonstration in your club should be selected to compete in the county contest. More complete information is on page 21.

JUDGING

Club members will gain interest and knowledge by learning to know vegetable varieties and insects. The vegetable judging program is briefly outlined on page 22.

THE CLUB GARDENER AND HIS PROJECT

REQUIREMENTS

Garden club members should be between the ages of 10 and 20 years inclusive.

Each member should keep a record of time spent in caring for the garden on the daily record card.

Each member should make an exhibit of vegetables grown at a local or county show.

Each member should complete the record book at the close of the project and turn it in to the leader by the date requested.

GARDEN PROJECTS

The 4-H vegetable garden project has three divisions: the home garden, the farm garden and the commercial garden.

You should select the one which will fit your home conditions.

Use care in making plans for your garden. A small garden well
cared for will produce more than a large garden not taken care of properly.

The Home Garden may be grown on a small plot. It should have only a small amount of space available.

The home gardener should grow at least six kinds of vegetables.

The Farm Garden includes gardens between 5,000 and 10,000 square feet in which vegetables are grown primarily for home use. The farm gardener should grow more kinds of vegetables.

The Commercial Garden is a large garden of 10,000 square feet or more, or less if there are special crops grown or vegetables for sale. It will include:

(a) large garden growing
(b) special crops grown
(c) special crops grown
(d) small fruits such as

THE LOCATION

The garden should be located in the most sunlight.

It should not be close to

© NORTH
cared for will produce more vegetables than one too large and which is not taken care of properly.

The Home Garden may be as small as 200 square feet. This size garden should be grown by the younger members and by those who have only a small amount of space available.

The home gardener should grow at least six kinds of vegetables.

The Farm Garden includes all gardens between 5,000 and 10,000 square feet in which vegetables are grown primarily for home use. The farm gardener should grow 15 or more kinds of vegetables.

The Commercial Garden includes all gardens of an area of 10,000 square feet or more, or large gardens grown primarily for raising vegetables for sale. It will include:

(a) large garden growing a variety of vegetables
(b) special crops grown for canning as: string beans and pickles
(c) special crops grown for market as: popcorn and melons
(d) small fruits such as strawberries and raspberries

THE 4-H GARDEN

THE LOCATION

The garden should be located near the house and where it will get the most sunlight.

It should not be close to the roots of trees.
It should have good drainage and be on sandy loam soil for easy working.

Choose level ground if you can. If your ground is sloping, run the rows across the slope to keep the soil from washing during heavy rains.

**WATERING**

If water is available use plenty.

A good soaking once a week to a depth of 4 to 6 inches is recommended during the dry season.

**THINNING**

Plants must have room to grow.

Thin plants while they are small. Beets, radishes and other roots need more space to use before thinning.

For spacing in the row see successional planting.

**SUCCESSION PLANTING**

The small garden may be planted so that one crop by another. Beans, late cabbage or tomatoes may be planted after the first crop is harvested.

The planting plan on page 7 will help you.

**THE GARDEN PLAN**

The first and most important thing is to make a plan on paper and follow it.

The plan should show the distance between rows and the kinds of crops to be grown in each row.

This garden plan may be used for permanent gardens.

If you are going to cultivate the garden by hand or by tractor they should run the rows the same way.

If the rows run east and west and the sun is on the north side, more sunlight will be available to the west side of the garden.

If the rows run north and south and the sun is on the east side, more sunlight will be available to the east side of the garden.
4-H VEGETABLE GARDENER

**THINNING**

Plants must have room to grow.

Thin plants while they are young. Many kinds can be transplanted when you are thinning them.

Beets, radishes and others may be allowed to grow large enough to use before thinning.

For spacing in the row see the vegetable variety table, page 9.

**SUCCESSION PLANTING**

The small garden may be made to yield much heavier by following one crop by another on the same soil. For example: peas followed by beans, late cabbage or tomatoes set between rows of early peas.

The planting plan on page 8 gives some suggestions for planting.

**THE GARDEN PLAN**

The first and most important step in growing a vegetable garden is to make a plan on paper and then follow it.

The plan should show the direction of the rows, the distance between rows and the kinds of and varieties of vegetables to be planted in each row.

This garden plan may be changed to fit your location.

If you are going to cultivate the garden with hand tools the rows can run the short way of the garden. If you are going to use a horse or tractor they should run the long way.

If the rows run east and west, plant tall-growing vegetables like corn on the north side. If the rows run north and south, plant tall things on the west side. This will give the shorter growing plants more sunlight.
**A 25-BY-50-FOOT GARDEN**

<table>
<thead>
<tr>
<th>0'</th>
<th>5'</th>
<th>10'</th>
<th>20'</th>
<th>25'</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Radish</strong> (1)</td>
<td><strong>Lettuce</strong> (1)</td>
<td><strong>Carrots</strong> (4)</td>
<td><strong>Onion Sets or Plants</strong> (1)</td>
<td></td>
</tr>
<tr>
<td><strong>Spinach</strong> (1)</td>
<td><strong>Beets</strong> (1)</td>
<td><strong>Spinach</strong> (4)</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Peas</strong> (1)</td>
<td><strong>Beets</strong> (4)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Peas</strong> (1)</td>
<td><strong>Late Cabbage</strong> (4)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Peas</strong> (1)</td>
<td><strong>Late Cabbage</strong> (4)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Peas</strong> (1)</td>
<td><strong>Late Broccoli</strong> (4)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Peas</strong> (1)</td>
<td><strong>Late Beans</strong> (4)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Peas</strong> (1)</td>
<td><strong>Late Beans</strong> (4)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Onion Sets or Plants</strong> (1)</td>
<td><strong>Spinach</strong> (1)</td>
<td><strong>Carrots</strong> (4)</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Lettuce</strong> (1)</td>
<td><strong>Carrots</strong> (4)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Lettuce</strong> (2)</td>
<td><strong>Beans</strong> (3)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Lettuce</strong> (2)</td>
<td><strong>Beans</strong> (3)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Broccoli</strong> (4)</td>
<td><strong>Beans</strong> (3)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Chard</strong> (1)</td>
<td><strong>Beans</strong> (2)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Chard</strong> (1)</td>
<td><strong>Beans</strong> (2)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Carrots</strong> (2)</td>
<td><strong>Beans</strong> (3)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Tomatoes</strong> (3)</td>
<td><strong>Beans</strong> (3)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Tomatoes</strong> (3)</td>
<td><strong>Beans</strong> (3)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Tomatoes</strong> (3)</td>
<td><strong>Beans</strong> (3)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Tomatoes</strong> (3)</td>
<td><strong>Beans</strong> (3)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Tomatoes</strong> (3)</td>
<td><strong>Beans</strong> (3)</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Rows 18 in. Apart

Rows 3 ft. Apart

*Those crops listed in parentheses would be planted after the other crops had matured.

The figures in parentheses indicate planting dates as follows: (1) Very early as soon as the soil can be worked. (2) 10 days after No. 1 planting. (3) As soon as danger of frost is past. (4) Late June--planting--for fall.

### THE TOOLS NEEDED

A few tools, well taken care of, will make your gardening easier. (Left to right) Rule, rake, trowel, twine, hoe, spade, watering can duster.

### KINDS

Plant the kinds of vegetables that would be well to plant once your family has learned to like. This will help you to eat food more often.

Buy your seeds from a reliable source. Younger cooks may need to be taught how to like vegetables such as tomatoes, cabbage, peppers, etc.

### VARIETIES TO PLANT

The selection of good varieties is important if you wish to grow the kinds of vegetables that will mature early or late in the season.

The varieties listed below are recommended for successful gardening in Michigan throughout the state, although this list is not exhaustive.

**RECOMMENDED CROPS**

<table>
<thead>
<tr>
<th>CROPS</th>
<th>RECOMMENDED VARIETIES</th>
</tr>
</thead>
<tbody>
<tr>
<td>Asparagus</td>
<td>Mary Washington</td>
</tr>
<tr>
<td>Early Green Beans</td>
<td>Tendergreen, Green Pod</td>
</tr>
<tr>
<td>Late Green Beans</td>
<td>Stringless Ref. Kentucky Wax Beans</td>
</tr>
<tr>
<td>Late Green Beans</td>
<td>Kentucky Wax Beans</td>
</tr>
<tr>
<td>Lima Beans</td>
<td>Henderson's Fordhook</td>
</tr>
<tr>
<td>Soybeans</td>
<td>Banse; Giant</td>
</tr>
<tr>
<td>Beets</td>
<td>Detroit Dark</td>
</tr>
<tr>
<td>Broccoli</td>
<td>Italian Green</td>
</tr>
</tbody>
</table>

Note: Upper Peninsula varieties listed at the end of the following list.
KINDS

Plant the kinds of vegetables which your family like. However, it would be well to plant one or more new kinds each year for your family to learn to like. This will make it possible to have a variety of food more often.

Buy your seeds from a reliable dealer who handles well known brands of seeds. Younger club members should buy plants for tomatoes, cabbage, peppers, etc.

VARIETIES TO PLANT

The selection of good varieties that are adapted to Michigan's climatic conditions is important. In the northern part of the state, varieties that mature early must be used. There are many new varieties which are distinct improvements, but some may not be adapted to your soil or climatic conditions. Usually it is better to grow varieties of established worth than to devote too much space and time to novelties. You will have a better selection of varieties if you buy your seed early.

The varieties listed below have given good results in home gardens throughout the state, although there are many others that are excellent.

Note: Upper Peninsula—See tomatoes, pepper and corn varieties listed at the end of the following table.

RECOMMENDED VARIETIES FOR HOME GARDEN

<table>
<thead>
<tr>
<th>CROPS</th>
<th>RECOMMENDED VARIETIES</th>
<th>AMOUNT OF SEED PER 50-FOOT ROW</th>
<th>WILL PRODUCE (POUNDS)</th>
<th>PLANTING TIME</th>
<th>SPACE PLANTS IN ROW</th>
</tr>
</thead>
<tbody>
<tr>
<td>Asparagus</td>
<td>Mary Washington</td>
<td>25 plants</td>
<td>18</td>
<td>1</td>
<td>18-24”</td>
</tr>
<tr>
<td>Early Green Beans</td>
<td>Tendergreen, Stringless Green Pod</td>
<td>¼ lb.</td>
<td>15</td>
<td>3-4</td>
<td>4-6”</td>
</tr>
<tr>
<td>Late Green Beans</td>
<td>Stringless Refugee; Kentucky Wonder (pole)</td>
<td>½ lb.</td>
<td>15</td>
<td>3-4</td>
<td>4-6” Pole 12-15”</td>
</tr>
<tr>
<td>Wax Beans</td>
<td>Pencil Pod; Kidney Wax</td>
<td>¼ lb.</td>
<td>20</td>
<td>3-4</td>
<td>4-6”</td>
</tr>
<tr>
<td>Lima Beans</td>
<td>Henderson’s Bush; Fordhook</td>
<td>¼ lb.</td>
<td>12</td>
<td>3</td>
<td>4-8”</td>
</tr>
<tr>
<td>Soybeans</td>
<td>Banse; Giant Green</td>
<td>¼ lb.</td>
<td>20</td>
<td>2</td>
<td>4-6”</td>
</tr>
<tr>
<td>Beets</td>
<td>Detroit Dark Red; Early Wonder</td>
<td>½ oz.</td>
<td>50</td>
<td>1-4</td>
<td>2-3”</td>
</tr>
<tr>
<td>Broccoli</td>
<td>Italian Green Sprouting</td>
<td>1 pkt.</td>
<td>25</td>
<td>1-4</td>
<td>24”</td>
</tr>
</tbody>
</table>
### RECOMMENDED VARIETIES FOR HOME GARDEN (Continued)

<table>
<thead>
<tr>
<th>CROPS</th>
<th>RECOMMENDED VARIETIES</th>
<th>AMOUNT OF SEED PER 50-FOOT ROW</th>
<th>WILL PRODUCE IN ROW</th>
<th>PLANTING TIME</th>
<th>SPACE PLANTS IN ROW</th>
</tr>
</thead>
<tbody>
<tr>
<td>Brussels Sprouts</td>
<td>Catskill</td>
<td>1 pkt.</td>
<td>25</td>
<td>2</td>
<td>18-24&quot;</td>
</tr>
<tr>
<td>Early Cabbage</td>
<td>Copenhagen Market; Golden Acre</td>
<td>1 pkt.</td>
<td>75</td>
<td>1-4</td>
<td>15-24&quot;</td>
</tr>
<tr>
<td>Late Cabbage</td>
<td>Hollander; Ballhead</td>
<td>1 pkt.</td>
<td>100</td>
<td>1-4</td>
<td>15-24&quot;</td>
</tr>
<tr>
<td>Cauliflower</td>
<td>Snowdrift; Early Snowball</td>
<td>1 pkt.</td>
<td>50</td>
<td>2-4</td>
<td>18-24&quot;</td>
</tr>
<tr>
<td>Carrots</td>
<td>Chantenay; Danvers Half Long, Imperator and Nantes</td>
<td>1/4 oz.</td>
<td>50</td>
<td>1-4</td>
<td>1-3&quot;</td>
</tr>
<tr>
<td>Celery</td>
<td>Summer Pascal; Utah; Easy Blanching</td>
<td>1 pkt.</td>
<td>50</td>
<td>2</td>
<td>4-8&quot;</td>
</tr>
<tr>
<td>Chard</td>
<td>Lucullus; Large Ribbed Green</td>
<td>1 pkt.</td>
<td>40</td>
<td>2</td>
<td>6&quot;</td>
</tr>
<tr>
<td>Chinese Cabbage</td>
<td>Chihili</td>
<td>1 pkt.</td>
<td>50</td>
<td>4-5</td>
<td>8-12&quot;</td>
</tr>
<tr>
<td>Early Sweet Corn</td>
<td>Marcross; Golden Early Market</td>
<td>1/4 lb.</td>
<td>175</td>
<td>3</td>
<td>8-12&quot;</td>
</tr>
<tr>
<td>Mid-season Sweet Corn</td>
<td>Bancross; Golden Bantam; Lincoln</td>
<td>1/4 lb.</td>
<td>175</td>
<td>3-4</td>
<td>8-12&quot;</td>
</tr>
<tr>
<td>Late Sweet Corn</td>
<td>Golden Cross Bantam; Charlevoix; Ioana</td>
<td>1/4 lb.</td>
<td>175</td>
<td>1-4</td>
<td>8-12&quot;</td>
</tr>
<tr>
<td>Cucumber</td>
<td>A &amp; C; Straight Eight; National Pickling</td>
<td>1/4 oz.</td>
<td>35</td>
<td>3</td>
<td>3-5&quot;</td>
</tr>
<tr>
<td>Eggplant</td>
<td>Black Beauty; New Hampshire Hybrid</td>
<td>1 pkt.</td>
<td>50</td>
<td>3</td>
<td>24-30&quot;</td>
</tr>
<tr>
<td>Endive</td>
<td>Green Curled; Full Heart Batavian</td>
<td>1 pkt.</td>
<td>25</td>
<td>1-4</td>
<td>8-12&quot;</td>
</tr>
<tr>
<td>Kale</td>
<td>Dwarf Curled</td>
<td>1 pkt.</td>
<td>25</td>
<td>5</td>
<td>8-15&quot;</td>
</tr>
<tr>
<td>Kohlrabi</td>
<td>Early White Vienna</td>
<td>1 pkt.</td>
<td>30</td>
<td>1-4</td>
<td>4-8&quot;</td>
</tr>
<tr>
<td>Head Lettuce</td>
<td>Great Lakes; Imperial 44; Imperial 84</td>
<td>1 pkt.</td>
<td>50</td>
<td>1-2-4</td>
<td>8-10&quot;</td>
</tr>
<tr>
<td>Leaf Lettuce</td>
<td>Grand Rapids; Simpson</td>
<td>2 pkt.</td>
<td>25-40</td>
<td>1-3-5</td>
<td>2-4&quot;</td>
</tr>
<tr>
<td>Muskmelon</td>
<td>Honey Rock; Hearts O' Gold</td>
<td>1 pkt.</td>
<td>75</td>
<td>3</td>
<td>3-6&quot;</td>
</tr>
<tr>
<td>Mustard Greens</td>
<td>Giant Southern Curled; Tendergreen</td>
<td>1 pkt.</td>
<td>25</td>
<td>3</td>
<td>4-8&quot;</td>
</tr>
<tr>
<td>New Zealand Spinach</td>
<td>There are no separate varieties</td>
<td>1 pkt.</td>
<td>30</td>
<td>3</td>
<td>4-6&quot;</td>
</tr>
<tr>
<td>Onions</td>
<td>Seeds: Yellow Globe; Plants; Sweet Spanish; Sets: Yellow or White</td>
<td>1/4 oz.</td>
<td>50</td>
<td>1</td>
<td>4-6&quot;</td>
</tr>
<tr>
<td></td>
<td></td>
<td>2 qts.</td>
<td>50</td>
<td>1</td>
<td>2-3&quot;</td>
</tr>
</tbody>
</table>

*1. Very early—as soon as 2. 10 days after No. 1 planting 3. As soon as danger of frost 4. Late June planting—for fall planting 5. July planting—for fall planting

**Special varieties for Upper Peninsula**
- Corn—North Star, Extra Early
- Pepper—Harris Earliest
- Tomato—Early Chatham, Black Beauty

For additional varieties, see the Michigan Magazine of Science and Education.
### RECOMMENDED VARIETIES FOR HOME GARDEN (Continued)

<table>
<thead>
<tr>
<th>CROPS</th>
<th>RECOMMENDED VARIETIES</th>
<th>AMOUNT OF SEED PER 50-FOOT ROW</th>
<th>WILL PRODUCE (POUNDS)</th>
<th>PLANTING TIME</th>
<th>SPACE PLANTS IN ROW</th>
</tr>
</thead>
<tbody>
<tr>
<td>Parsnip</td>
<td>Hollow Crown; Model</td>
<td>1 pkt.</td>
<td>50</td>
<td>2</td>
<td>3-4&quot;</td>
</tr>
<tr>
<td>Early Peas</td>
<td>Thomas Laxton; World’s Record</td>
<td>3/4 lb.</td>
<td>30</td>
<td>1</td>
<td>2-6&quot;</td>
</tr>
<tr>
<td></td>
<td>Laxton’s Progress; Little Marvel</td>
<td>3/4 lb.</td>
<td>30</td>
<td>1</td>
<td>2-6&quot;</td>
</tr>
<tr>
<td>Late Peas</td>
<td>Alderman; Morse Mkt.; Dwarf Telephone</td>
<td>3/4 lb.</td>
<td>30</td>
<td>1</td>
<td>2-6&quot;</td>
</tr>
<tr>
<td>Peppers</td>
<td>Oakview Wonder; Calif. Wonder; Harris Early Giant</td>
<td>1 pkt.</td>
<td>30</td>
<td>3</td>
<td>14-18&quot;</td>
</tr>
<tr>
<td>Pumpkin</td>
<td>Sugar Pie</td>
<td>1 pkt.</td>
<td>200</td>
<td>3</td>
<td>6-10'</td>
</tr>
<tr>
<td>Radish</td>
<td>Scarlet Globe; Icicle</td>
<td>3/4 oz.</td>
<td>12</td>
<td>1-3-5</td>
<td>1-2&quot;</td>
</tr>
<tr>
<td>Rhubarb</td>
<td>McDonald</td>
<td>20 plants</td>
<td>50</td>
<td>1</td>
<td>3'</td>
</tr>
<tr>
<td>Rutabaga</td>
<td>American Purple Top</td>
<td>1 pkt.</td>
<td>50</td>
<td>4</td>
<td>6-10&quot;</td>
</tr>
<tr>
<td>Salsify</td>
<td>Mammoth Sandwich Island</td>
<td>1 pkt.</td>
<td>50</td>
<td>2</td>
<td>3-4&quot;</td>
</tr>
<tr>
<td>Spinach</td>
<td>Long Standing B loomsdale; Giant Thick Leaved</td>
<td>1/2 oz.</td>
<td>25</td>
<td>1-3-5</td>
<td>3-6&quot;</td>
</tr>
<tr>
<td>Summer Squash</td>
<td>Early Prolific Straight Neck; Zucchini (Green Italian Type)</td>
<td>1 pkt.</td>
<td>50</td>
<td>3</td>
<td>2-4'</td>
</tr>
<tr>
<td>Winter Squash</td>
<td>Table Queen; Buttercup; Hubbard; Delicious</td>
<td>1/2 oz.</td>
<td>50</td>
<td>3</td>
<td>3-5'</td>
</tr>
<tr>
<td>Tomato (early)</td>
<td>Victor; Early Chatham</td>
<td>1 pkt. (12 pl.)</td>
<td>75</td>
<td>3</td>
<td>3-6'</td>
</tr>
<tr>
<td>Tomato (midseason)</td>
<td>Stokesdale; John Baer or Bonnie Best</td>
<td>1 pkt. (12 pl.)</td>
<td>100</td>
<td>3</td>
<td>3-6'</td>
</tr>
<tr>
<td>Tomato (late)</td>
<td>Rutgers; Jubilee (Yellow)</td>
<td>1 pkt. (12 pl.)</td>
<td>100</td>
<td>3</td>
<td>3-6'</td>
</tr>
<tr>
<td>Turnip</td>
<td>Purple Top White Globe</td>
<td>1 pkt.</td>
<td>50</td>
<td>5</td>
<td>3-5&quot;</td>
</tr>
<tr>
<td>Watermelon</td>
<td>Harris Earliest; Honey Cream (Yellow); Northern Sweet</td>
<td>1 pkt.</td>
<td>200</td>
<td>3</td>
<td>6-10'</td>
</tr>
</tbody>
</table>

*1. Very early—as soon as the soil can be worked.
2. 10 days after No. 1 planting.
3. As soon as danger of frost is past.
4. Late June planting—for fall.
5. July planting—for fall and winter storage.

Special varieties for Upper Peninsula:
- Corn—North Star, Extra Early Bantam.
- Pepper—Harris Earliest, Harris Early Giant.
- Tomato—Early Chatham, Bounty, Victor, Firesteel.

For additional varieties, see your county agricultural agent.
PREPARING THE SOIL

Fertilizer—A garden soil needs humus and plant food. To provide this, apply rotted barnyard manure, leaves or peat moss before spading or plowing the garden. This will help to hold soil moisture and to loosen heavy soils.

A green crop of oats or rye may be planted in the late summer or fall.

Commercial Fertilizer of a complete analysis, such as 4-12-6, should be spread evenly over the ground at the rate of about 40 pounds for each 1,000 square feet of surface.

Best results will be obtained by applying one-half of the fertilizer before plowing or spading your soil. The rest may be worked into the soil during the summer.

PLANTING THE SEED

After the surface of the planting. Follow your plan vegetables to be planted.

Drive stakes at each end of the row. Tie binder twine or other marking rows.

Spread seeds thinly along the row, with the fore-finger and thumb. Mixing equal parts of sand and the seeds makes them spread evenly.

Follow directions on the package for depth of planting. A general rule is to seeds to a depth of 2 to...
PLANTING THE SEED

After the surface of the soil has been raked smooth, it is ready for planting. Follow your planting plan for width of rows and order of vegetables to be planted.

Drive stakes at each end of the row. Tie binder twine or other strong string to the stakes as a guide in marking rows.

To make the trench for seeds, draw the end of the hoe or rake handle along the string.

Spread seeds thinly along the row with the fore-finger and thumb. Mixing equal parts of sand with the seeds makes them spread easier.

Follow directions on the seed package for depth of planting and spacing. A general rule is to plant seeds to a depth of 2 to 4 times their diameter. Larger seeds such as peas should be spaced evenly along the rows.
Firm the soil over seeds.

**TRANSPLANTING**

When setting plants keep them moist.

Soak the soil on the plants before removing them from the flat or package so that the soil will stick to the roots.

After the seeds are planted, firm the soil over them well with the back of the hoe or rake.

A good plan is to mark each variety. Use a flat, smooth stake at the end of the row with the kind of vegetable, variety and planting date printed on it. Use a pencil or waterproof ink directly on the wood.

Rake the garden just before planting to kill small weeds coming through the soil.

Pull weeds in the row as soon as they can be identified from the vegetables.

A horse or tractor cultivator is not available a hand cultivator.

**CULTIVATION VS. WEEDS**

Cultivation serves two purposes—loosen the top soil. Weed. They crowd or shade the plants.

Dig the hole wide and deep so that roots are set in their natural position.

Complete filling the hole with dirt and press it firmly around the plant.

After placing a little soil in the hole partly filled by the plant, pour a small amount of water into the hole.

Be sure to get a good sized ball of dirt around the roots when you remove the plant from the flat.

Plant quick-growing tables (as radishes) with slow-growing (as carrots) to the row so the ground can be cultivated sooner.

Protect the plant after setting it with a paper bag.

Efficient Insect Control

It is more economical and helpful to control them before they become a problem.

 Mexic rotene sides
It is best to set the plants in the evening or on a cloudy day.

You may protect the plant for a few days with berry boxes, shingles set on the south side or a paper bag held down with soil covering the edges of the bag.

**CULTIVATION VS. WEEDS**

Cultivation serves two main purposes, to kill the weeds and loosen the top soil. Weeds rob vegetables of plant food and water. They crowd or shade the plants and thus reduce the yield of vegetables.

Rake the garden just before planting to kill small weeds just coming through the soil.

Plant quick-growing vegetables (as radishes) with slow growing (as carrots) to mark the row so the ground can be cultivated sooner.

Pull weeds in the row as soon as they can be identified from the vegetables.

A horse or tractor cultivator will save time; where either of these is not available a hand cultivator is the next best tool to use.

**EFFICIENT INSECT CONTROL**

It is more economical and easier to control insects if you check them before they become numerous. Have a supply of necessary
poison on hand so that you can spray or dust the minute you find any
sign of these enemies.

You will need:
For a 25-by-50-foot garden—
1 pound poison bait (dry)
3 pounds calcium arsenate-gypsum dust
1 pound nicotine dust
1 pound rotenone dust (do not mix with lime)

Buy these materials ready mixed if possible. If only a few insects
are present, hand picking is the easiest way to remove them.

**HOW TO PREPARE BAIT AND DUSTS**

1. Poison bait for cutworms, grasshoppers and crickets:
   2 pounds of dandelions cut up fine
   1 ounce white arsenic, paris green or sodium fluosilicate
   Prepare this bait in the morning to permit wilting.

   ![Cutworm](image1)
   Cutworm. Spread bait on ground in evening.

   ![Cabbageworm](image2)
   Cabbageworm. Use a poison dust.

2. Calcium arsenate-gypsum dust for worms and beetles eating
   plant leaves:
   1 part calcium arsenate to 19 parts gypsum.

   ![Colorado potato beetle](image3)
   Colorado potato beetle. Use a poison dust.

   ![Aphid or louse](image4)
   Aphid or louse. Use nicotine dust.

3. Nicotine dust for plant lice and other sucking insects:
   ½ teaspoon nicotine sulfate plus ½ pound lime
   or three parts fixed nicotine—1 part lime
   (Mix by shaking in tight can)
   Clean culture and rotation will help solve many garden pest prob-
   lems. Pull and destroy all plant refuse as soon as each row is har-
vested. Commercial combination dusts are available and effective.
Use as manufacturer recommends.

**HOW TO APPLY BAIT AND DUSTS**

1. If white grubs are present on your land, other land should be selected

2. For cutworms, grasshoppers and other pests that appear every year, scatter poison dust when plants appear above the ground or when insects appear on the ground.

3. Cucumbers and melons should not be planted where tomato and aphids carry disease infecting vegetables. For melons and tomatoes, rotenone is the best dust. Use as manufacturer recommends.

4. For slugs and sow bugs, under pieces of board or under plant supports.

5. For worms and beetles, rotenone is the best dust. Apply with small dust gun to soil around plants to prevent future damage from these insects. For melons and tomatoes, rotenone is the best dust. Use as manufacturer recommends.

6. For plant lice use nicotine dust. Make home-mixed dust from nicotine and lime and dust under plant leaves. Use dust gun to apply dust to leaves.

   To control root maggots:

   **Radishes**—Plant several rows 5 to 7 days apart.

   **Cabbage**—Protect plan...
4-H VEGETABLE GARDENER

vested. Commercial combination arsenate and fixed copper sprays and
dusts are available and effective for general use in the home garden.
Use as manufacturer recommends.

HOW TO APPLY BAIT AND DUSTS

1. If white grubs are present and too numerous for hand picking,
other land should be selected and prepared.

2. For cutworms, grasshoppers and crickets, which appear nearly
every year, scatter poison bait on a warm evening soon after the first
plants appear above the ground and just before "set plants" are put in
the ground or when insects appear.

3. Cucumbers and melons present special problems because beetles
and aphids carry disease in addition to eating the plants. Watch for
and combat these from the time plants appear.

4. For slugs and sow bugs, you may also apply poison bait. Use it
under pieces of board or low dense vegetation.

5. For worms and beetles eating plant leaves, use calcium arsenate
dust. Apply with small dust gun, or shake through cloth sack. Start
soon after plants appear above ground. Make applications in the
evening or early morning while the dew is on, once each week,
or whenever insects appear later in the season. This will control
tomato worms. For Mexican bean beetles, rotenone is the best control. Do
not use on leafy vegetables or beans.

6. For plant lice use nicotine dust.
Make home-mixed dust fresh each time
used. Use dust gun to reach under
leaves.

To control root maggots:

Radishes—Plant several short rows,
5 to 7 days apart.

Cabbage—Protect plants with squares or circles of tarpaper.
Caution: Do not eat leaves of plants which have been treated with a compound containing arsenic, such as calcium or lead arsenate.

Note: For further information on controlling garden insects, consult your County Extension Agent.

Flea beetle. Use a poison dust.

Squashbug. Use poison dust, or lay boards beside plants for bugs to hide under. Early each morning, turn over the boards and kill the bugs found.

KEEP YOUR PLANTS HEALTHY

It is better to prevent diseases than to try to cure them. The following simple suggestions will help materially to avoid the more common plant diseases:

1. Rotate the location of the crops planted each year.
2. Grow disease-resistant varieties.
3. Provide good drainage.
4. Sow thinly—thin properly.
5. Do not walk between the rows or work near bean plants when they are wet.
6. Use treated seed if possible.
7. Keep insects under control.
8. Use of commercial copper fungicides will control many leaf diseases.

Seed Treatments to Prevent Seed Decay and Damping-off—Spergon, Semesan, red copper oxide, and similar material are commonly used to prevent seed-borne diseases, such as damping-off or seedling rot. Follow the manufacturer’s recommendations as printed on the container.
THE EXHIBIT

SELECT YOUR EXHIBIT

When—Select vegetables early in the morning while they are fresh.

What—Select vegetables that are uniform in size, shape and color; that are true to variety type, and free from disease or blemish. Select vegetables that are ready to eat.

How to Prepare—After the vegetables have been selected, prepare them as you would for market but be careful not to bruise them.
Most root crops should be washed. It is important not to bruise the surface. Leave the tops on; tie them in a bunch. Do not wash potatoes.

Vine crops may be wiped off with a soft, moistened cloth.

Cabbage should have a few of the outer leaves taken off.

Green, leafy vegetables like chard, if you need to exhibit them, should have the root wrapped in moist material or set in water.

Corn may have a “window” cut through one side of husk.

Dry onions may have a few of the discolored skins removed.

Peas and beans are best displayed in the pods, using a small handful of each variety.

Arrange the vegetables in the basket in an attractive manner so that the edible part of the vegetable is showing.

Do not use extra material for decoration which has no relation to the exhibit.

If you are growing a commercial garden do not select a basket exhibit. Select specimens of those vegetables you have grown. Follow the directions given above for selecting and preparing the vegetables for exhibit.

AWARDS

Your garden club project will be judged for honors and awards on the following basis:

1. The quality of the garden grown,
2. The placing of the exhibit,
3. A complete and correct report,
4. The story, and
5. Other projects and activities carried on as a 4-H club member.

YOUR RECORD

The record is an important part of your club program.

The club should discuss records at a meeting so that all members will understand them.

Plan to keep your record date by putting down at least a week:

1. The amount of time spent caring for your garden,
2. Any cash expenses, and
3. The amounts of vegetables used.

Also, try to get a photograph taken of you working in your garden when it is at its best.

Note: If vegetables are used at home, value them according to price in the local grocery store. If you sell vegetables use their selling price.

DEMONSTRATION

A demonstration is usually made.

1. Introduction—The team introduces the speaker of the team. The speaker introduces the subject, the club, and its location; and presents a statement of the work the club is going to demonstrate.

2. Demonstration Proper—Proper preparations of the work follow the introduction. The work is presented by the team to the audience, the other should assist the speaker, and preparing other material, and preparing other material, and preparing other material are well illuminated during the demonstration. The audience should be well illuminated in speaking, each discoursing on the time. The team should conclude their demonstration by the demonstrations are proper.

3. Conclusion—The demonstration will be a brief summary of the purposes and results of the demonstration.
YOUR RECORD

The record is an important part of your club program.

The club should discuss reports at a meeting so that all members understand them.

Plan to keep your record up to date by putting down at least once a week:

1. The amount of time spent in caring for your garden.
2. Any cash expenses, and
3. The amounts of vegetables used.

Also, try to get a photograph taken of you working in your garden when it is at its best.

Note: If vegetables are used at home, value them according to the price in the local grocery store. If you sell vegetables use the actual price received for them.

DEMONSTRATIONS

A demonstration is usually composed of three parts:

1. Introduction—The team should be introduced by the better speaker of the team. The subject of the demonstration, the name of the club, and its location are usually given, followed by a brief statement of the work the club is doing.

2. Demonstration Proper—The demonstration proper or main part of the work follows the introduction. The various phases of the subject are presented by the team members. While one speaks to the audience, the other should assist by holding charts, arranging material, and preparing other material for use so that each point brought out by the speaker is well illustrated. The team members should alternate in speaking, each discussing only one part of the subject at a time. The team should convince the audience that the methods shown by the demonstrations are practical.

3. Conclusion—The demonstration should be concluded by giving a brief summary of the points covered. Then give the audience a
chance to ask questions and to view the result of the work. Cour-
teously avoid answering questions that do not pertain to the work.

Ask your County Extension Agent for a copy of a demonstration
already written. Such a demonstration may be used as written, altered
to fit your group or as a guide in preparing one of your own.

JUDGING AND IDENTIFICATION

As a club member you will be interested in learning to know:
(1) the varieties of vegetables recommended for your community,
(2) how to select quality vegetables, (3) the more common insect pests
and methods for controlling them, (4) what to look for in judging
vegetables, (5) and how to identify grade defects of potatoes. This
information is included in the 4-H garden club judging and identifica-
tion program for Michigan. Ask your leader or County Extension
Agent where to get information and material on this program.

In both the judging and demonstration programs club members
will be selected to represent your county at state and national meet-
ings. You will want your club to be represented in one of these pro-
grams.
GARDEN CLUB NOTES
4-H CLUB MOTTO—"To Make the Best Better"

4-H CLUB EMBLEM

4-H CLUB COLORS—Green and White

4-H CLUB PLEDGE

I pledge
My head to clearer thinking,
My heart to greater loyalty,
My hands to larger service and
My health to better living

For
My Club
My Community and
My Country.