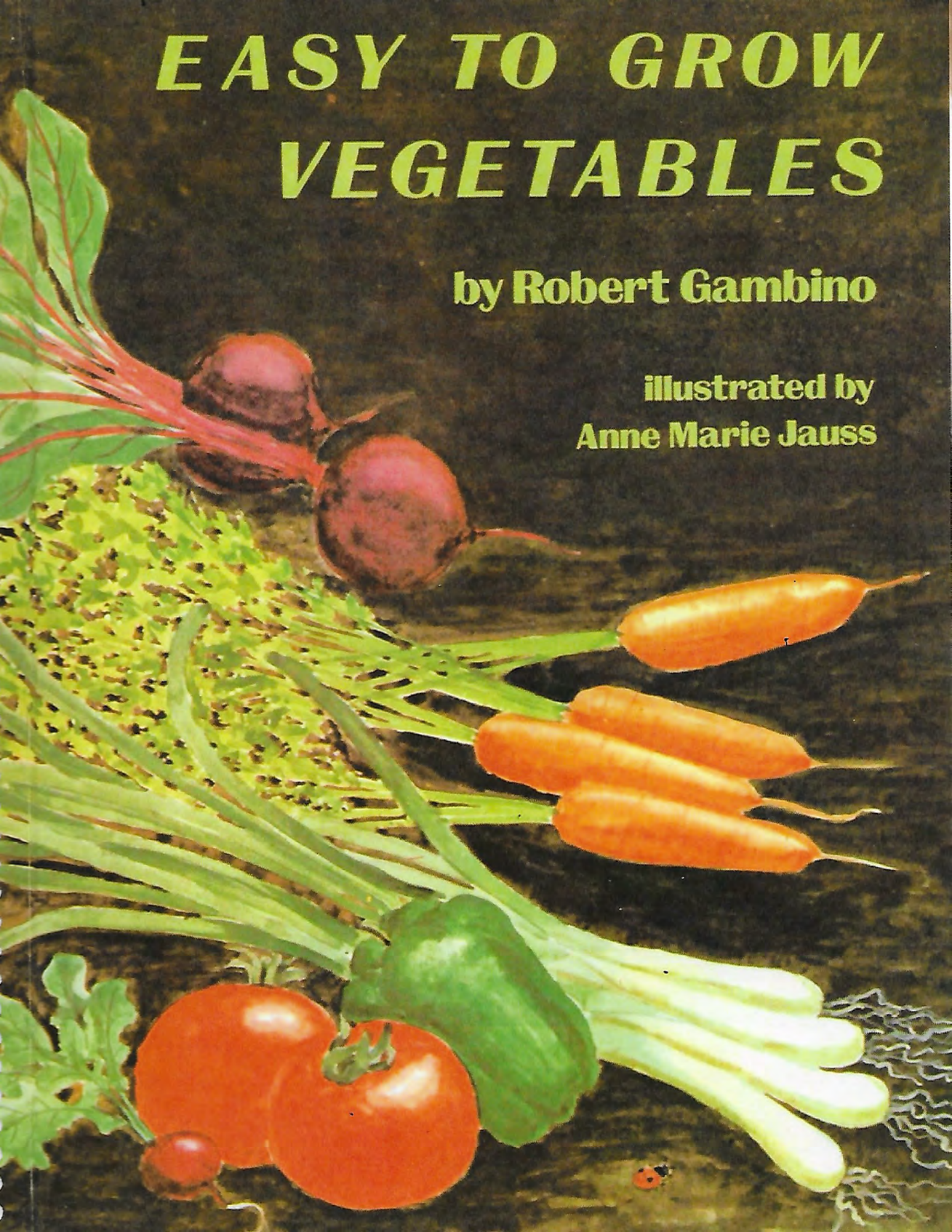
EASY TO GROW VEGETABLES

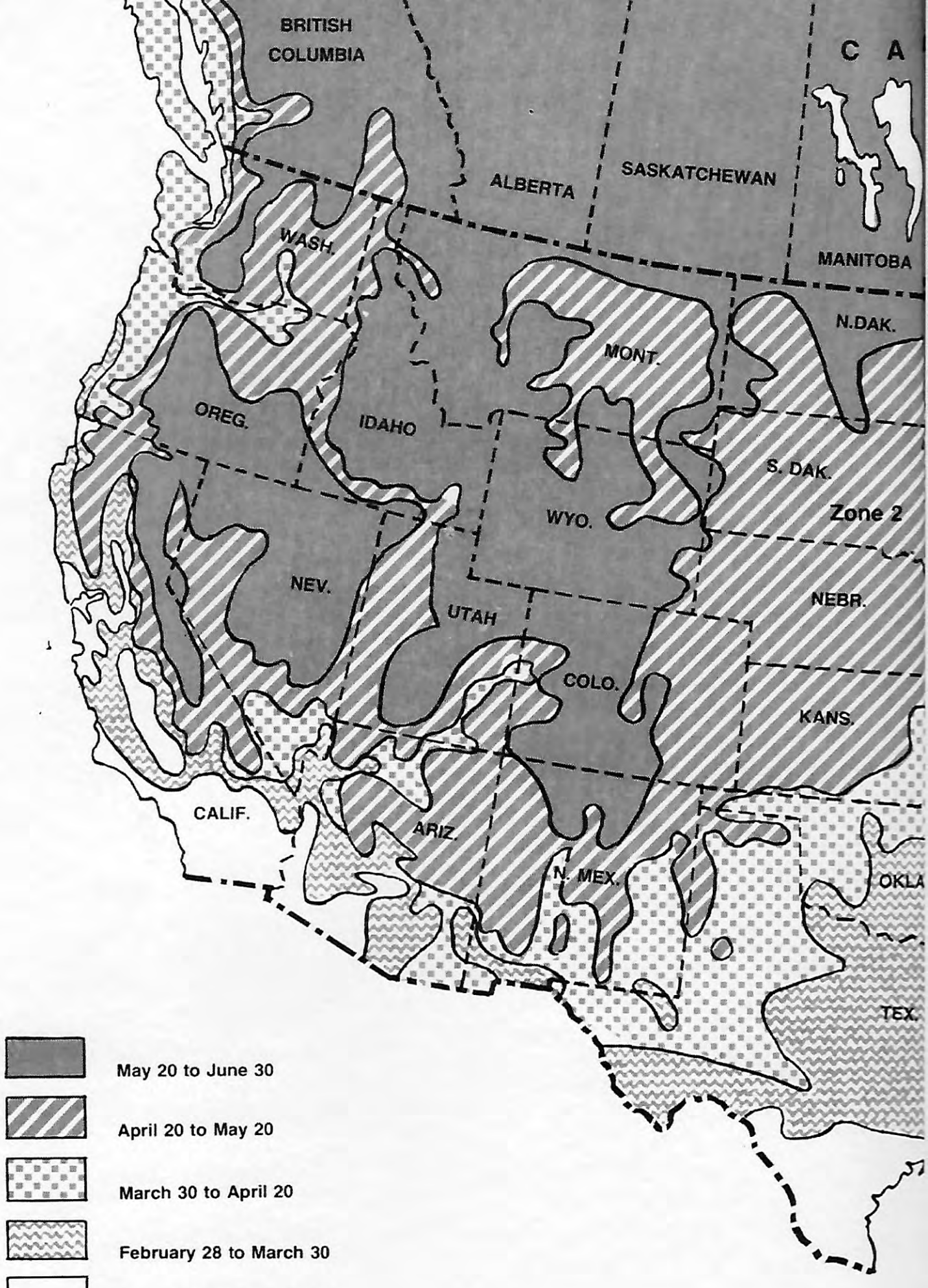
by Robert Gambino

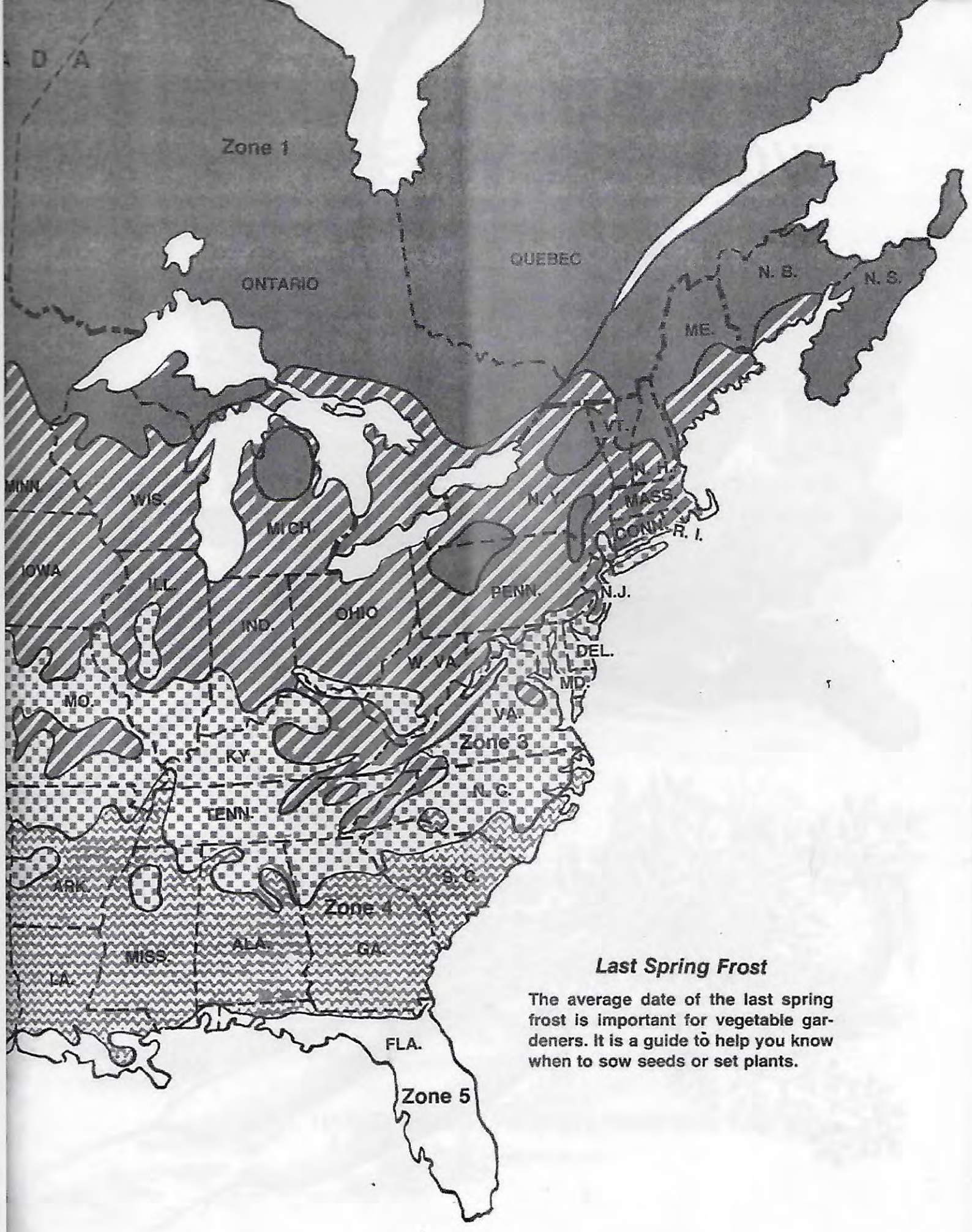
illustrated by
Anne Marie Jauss



About the Book

Clear and complete instructions make this the perfect book for beginning gardeners, who can choose between a modest plot or a larger, more ambitious layout. Nine vegetables, from preparation to harvest, are covered in full detail with illustrations that amplify the text and inspire the young gardener to give proper care to his plants. When, where, and how to plant a garden are explained in words and pictures, including a glossary, maps, two scaled plot plans, and specific measurements, which are also given in the metric system.


BRITISH
COLUMBIA
ALBERTA
SASKATCHEWAN
C A
MANITOBA
WASH.
N.DAK.
MONT.
OREG.
IDAHO
S. DAK.
WYO.
Zone 2
NEV.
NEBR.
UTAH
COLO.
KANS.
CALIF.
ARIZ.
N. MEX.
OKLA
TEX.
May 20 to June 30
April 20 to May 20
March 30 to April 20
February 28 to March 30
January 1 to February 28



Last Spring Frost

The average date of the last spring frost is important for vegetable gardeners. It is a guide to help you know when to sow seeds or set plants.

To Willy,
so that he may experience the joys of gardening,
and to Kathy
and my parents.



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Library of Congress Catalog Card Number 74-32546
Manufactured in the United States of America
ISBN 0-8178-5321-9, Trade Edition; ISBN 0-8178-5322-7, Library Edition

Harvey House, Publishers, New York, New York
A division of E. M. Hale & Company
Eau Claire, Wisconsin

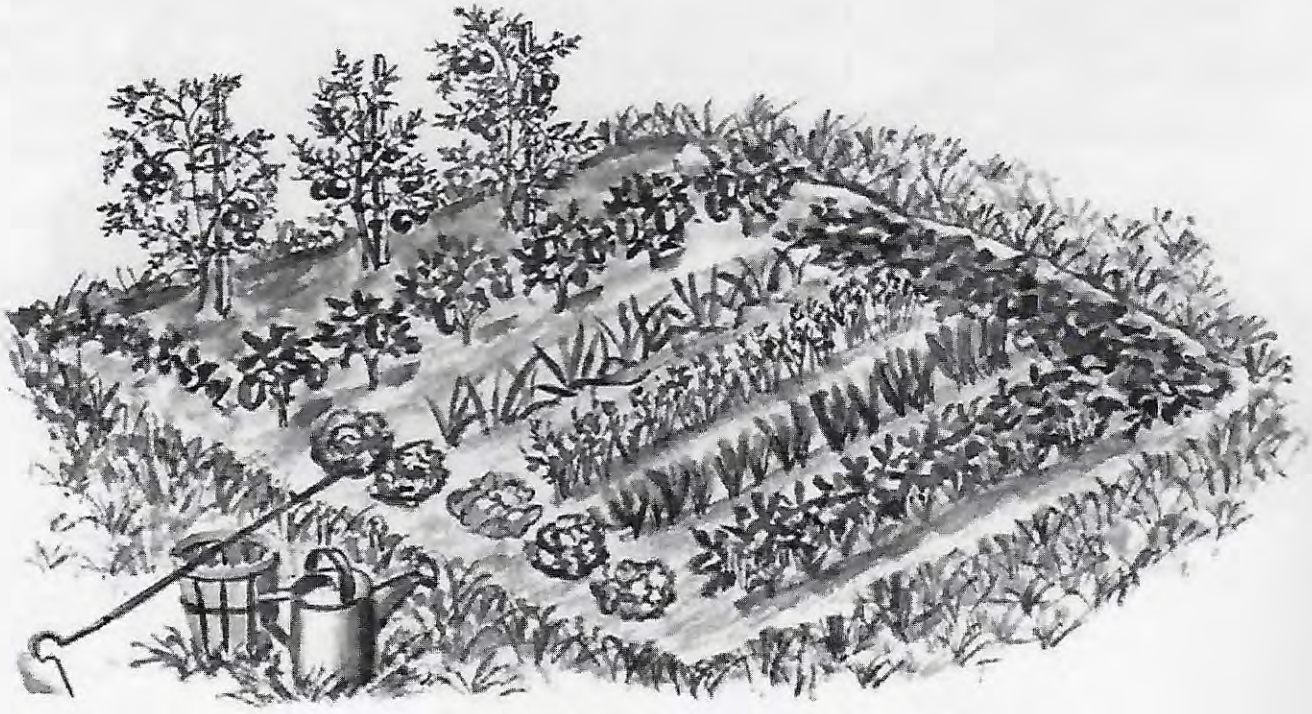
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Planning Your Vegetable Garden

The first thing you will want to know about growing vegetables is *where shall I grow them?* A vegetable garden needs to be in the sunshine all day and close to the house so you can watch it and care for it. Pick a place that won't be in the way of walking and playing.

How big shall your garden be? A small garden will be best to start with. It will have to be looked after every few days. A big garden could be more work than fun. A garden about 12 feet wide and 12 feet long (this is nearly 4 meters by 4 meters) is big enough to produce all the vegetables your family needs. A smaller and easier size is 4 feet wide and 10 feet long (this is 1.3 meters by 3.4 meters). It will enable you to sample all the vegetables in smaller quantities. Plans of these gardens are on pages 15 and 16.



What To Grow in Your Vegetable Garden

Leafy Vegetables—These are plants that have edible leaves.



Lettuce is very easy to grow. Pick a leafy type such as "buttercrunch." Lettuce likes cool weather and will do best early in the season. The seeds are small and will have to be carefully sown. The leaves are tender and juicy and will make excellent salad.

Spinach grows fast and also likes cool weather. The best kind to grow is not really spinach, but looks and tastes like spinach. It is called New Zealand Spinach, and is the easiest to grow and tastes good.



Root Vegetables—These plants have roots that we eat.



Radishes grow very fast. When you plant the seeds in the garden you will be able to eat them in a few weeks. Remember, radishes taste "hot," so they will be best when cut up and mixed in a salad. "Cherry Belle" is an excellent variety to plant.

Beets are easy to grow and you can eat the tops as well as the delicious red root. Choose an early beet such as "Early Wonder" or "Detroit Dark Red" and you will have beets in six to eight weeks after planting.

Carrots have long roots that like to grow in deeply dug soil. They take a little longer than other root crops. Try planting "Scarlet Nantes" or "Royal Chantenay" for the earliest variety.

Onions should be grown from small onions or "sets" rather than from seed. Otherwise they will take a very long time to be ready to eat. Choose sets sold locally in your area. Remember, you can use the early growth as scallions for salads or cooking.

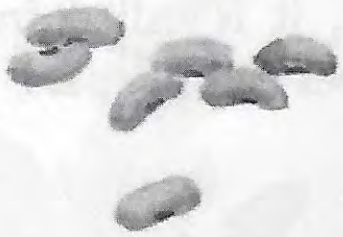
Fruit-producing Vegetables—A fruit is part of the flower of a plant. If it is cooked, we usually call it a vegetable. If we eat it as a dessert, it is called fruit. Some vegetable fruits, such as tomatoes and peppers, we enjoy raw as well as cooked.



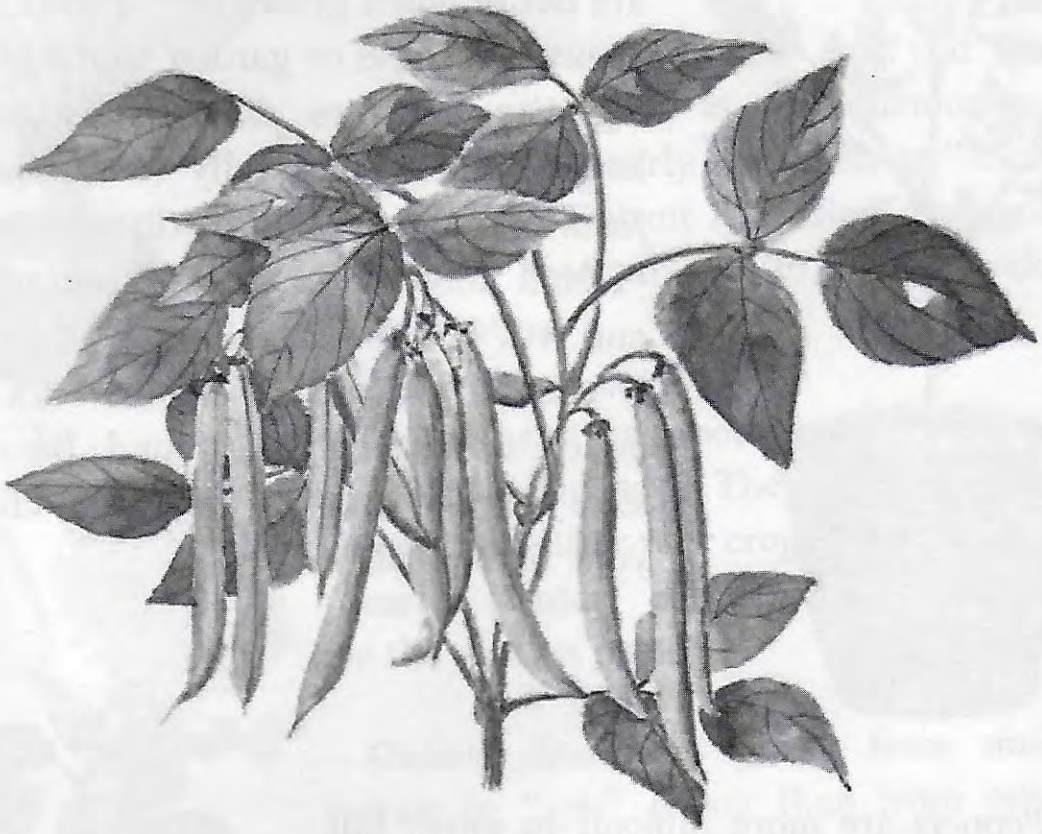
Tomatoes can be grown from seed, but are better when grown from plants bought at a greenhouse or garden center. Choose varieties that are disease-resistant. The letters V and F usually mean they are *fusarium and verticillium* disease-resistant. "Heinz 1350" is a disease-resistant type and will give tomatoes earlier than most. It can be grown on a trellis or a stake, or left to trail on the ground. Be sure to look for the letters VF when choosing your tomato plants.

Peppers are more difficult to grow, but if you get plants from a greenhouse or garden center, they will be more likely to produce fruits. Peppers come in "sweet" and "hot" varieties. Try "California Wonder" for a sweet, block-shaped pepper.



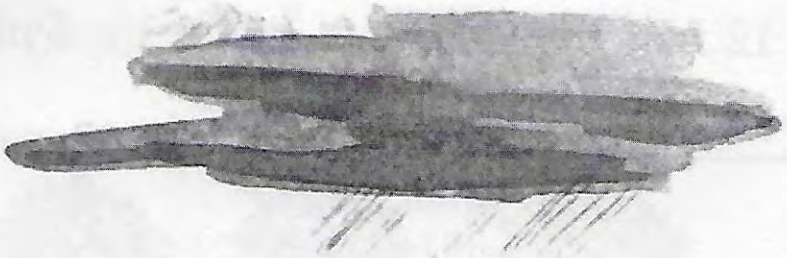


Snap Beans.or string beans are the easiest and most productive garden vegetable. The "bush" types are best for beginning gardeners. Try varieties such as "Bountiful" or "Provider." A 10-foot (340 meters) row will produce enough beans for several meals and can continue producing for a while if you keep picking the young tender beans.

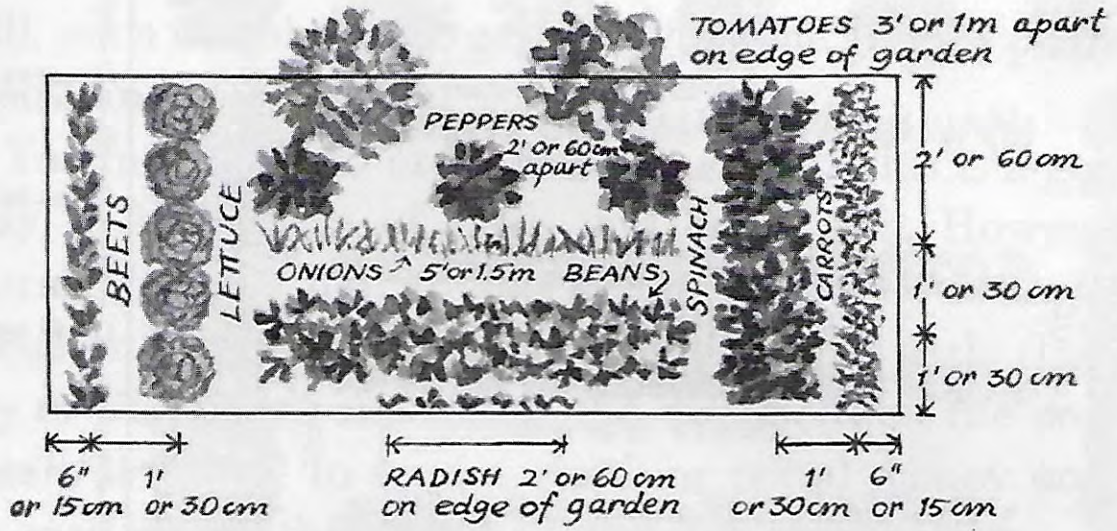


Now that you know about the vegetables you can grow in your garden you will have to decide on the number of plants and packs of seeds you will need.

Look at the plans:



The 4 foot by 10 foot (1.3 meter by 3.4 meter) garden



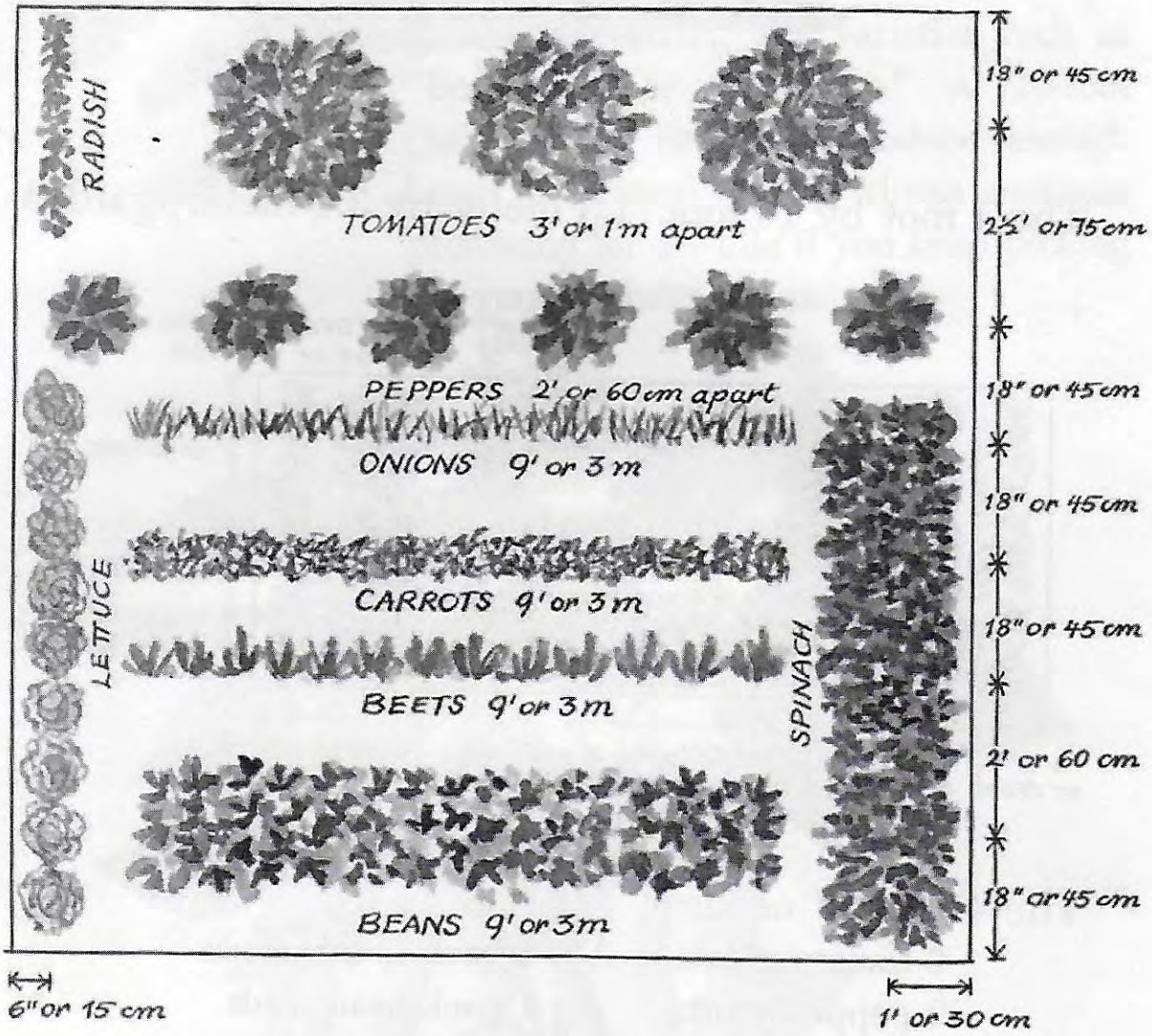
The 4′ × 10′ needs:

2 tomato plants	1 pack radish seeds
3 pepper plants	1 pack bean seeds
1 pack carrot seeds	1 pack lettuce seeds
1 pack spinach seeds	1 pack beet seeds

36 onion sets or 1½ ounces (45 grams)

You will have some seeds left over. Sharing leftover seeds with a friend is a good idea because when you save the seed for next year, it does not germinate, or start, as well.

The 12 foot by 12 foot (4 meter by 4 meter) garden



The 12′ × 12′ needs:

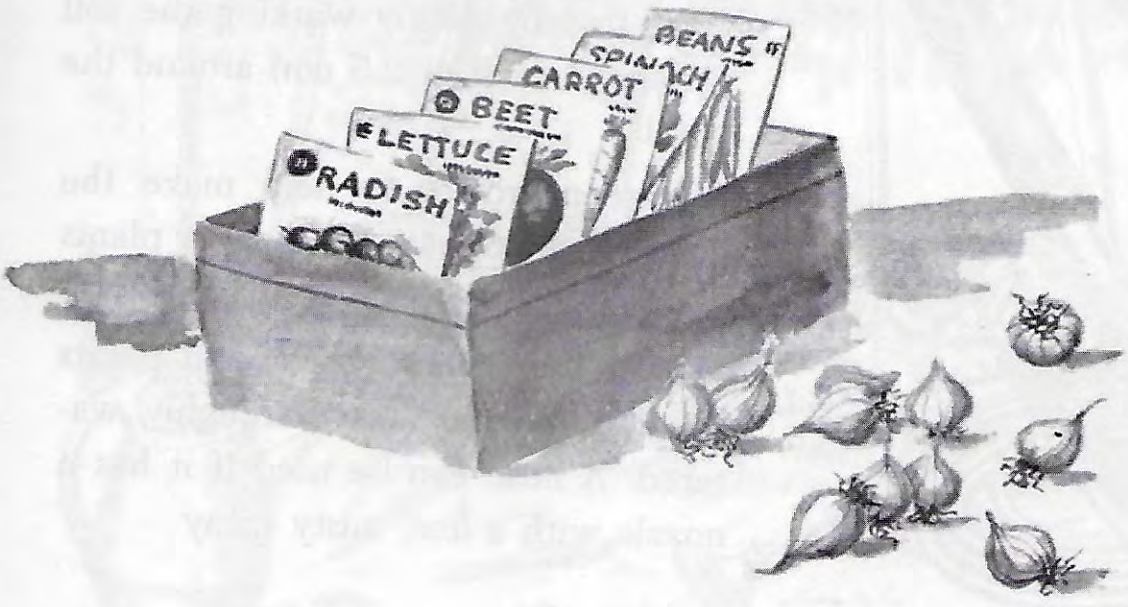
3 tomato plants
6 pepper plants
50 onion sets or
2 ounces (60 grams)
1 pack carrot seeds
1 pack beet seeds
1 pack bean seeds
1 pack lettuce seeds
1 pack spinach seeds
1 pack radish seeds

Where To Get Seeds, Sets, and Plants

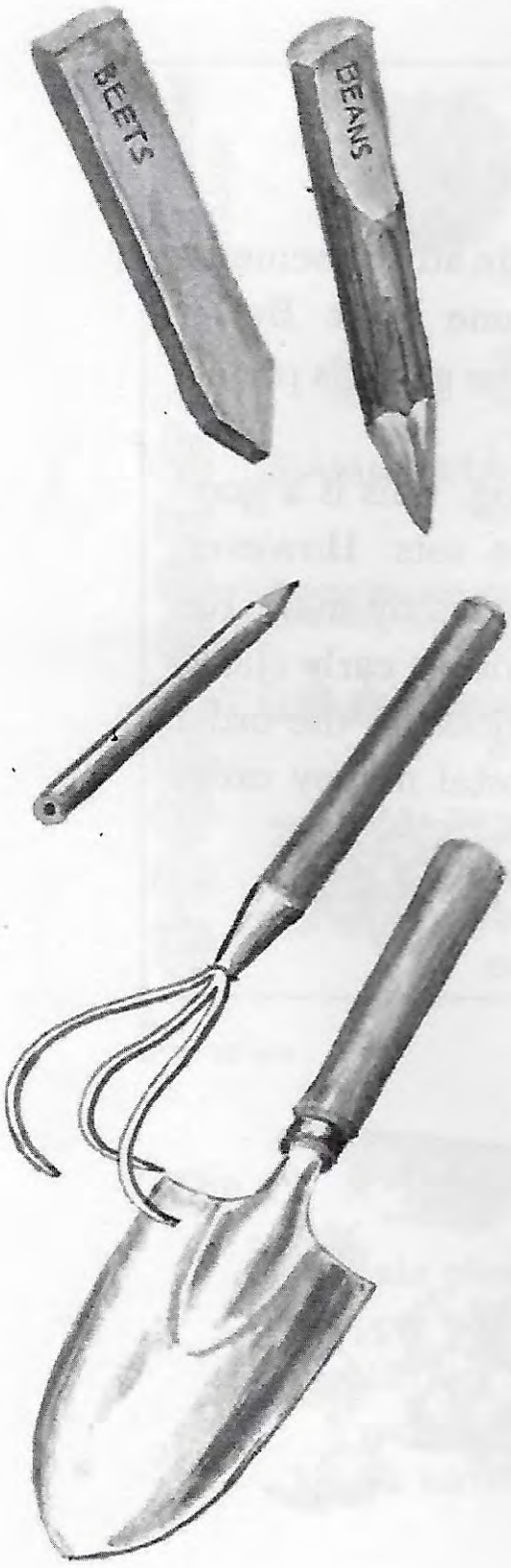
Farm Supply stores
Hardware stores
Garden Centers
Greenhouses
Nurseries
Variety stores
Supermarkets

Look in the local newspapers for their advertisements or in the yellow pages of the telephone book. Better still, ask a neighbor who gardens where he gets his plants, seeds, and sets.

You may want to order from a catalog. This is a good way to buy packs of seeds and onion sets. However, you cannot buy tomato and pepper plants by mail. Remember to read the catalog carefully, order early (January or February), and follow the directions on the order blank. It is best to send a check or postal money order by mail rather than cash.



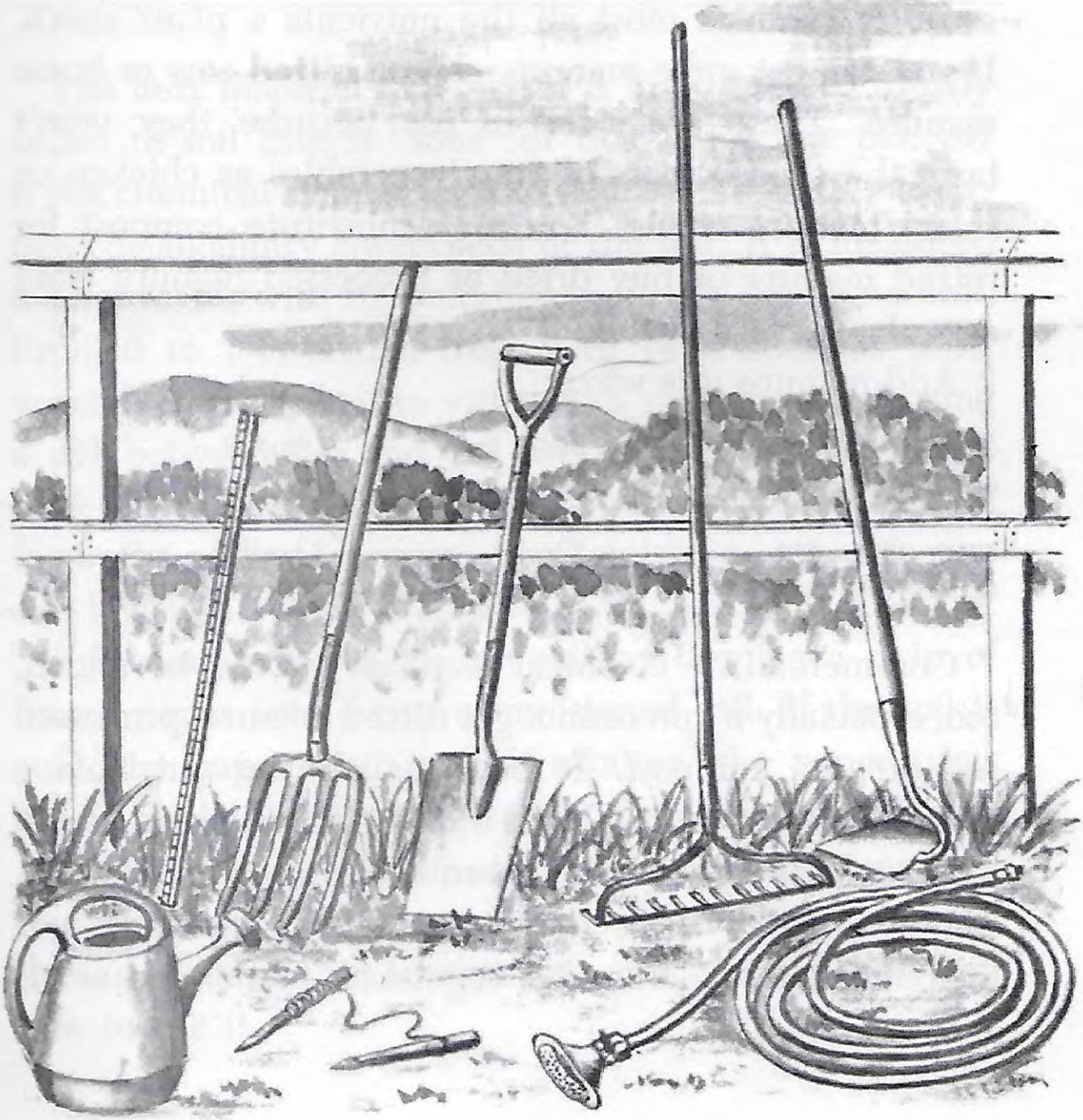
Tools You Will Need for Your Garden



1. A spading fork or spade to turn the soil: a shovel, if these are not available
2. A rake to remove stones, roots, sod, and to make the garden smooth
3. A hoe to open rows for seeding and to help remove weeds by careful cutting
4. String, so that the rows will be in a straight line
5. Wood stakes or large wood labels 12 to 18 inches long (30 to 50 cm) to mark both ends of the rows
6. A pencil (not a ball point pen—the ink washes off) to mark the stakes or labels with the names of the vegetables in the rows
7. A hand cultivator to help keep the soil weed-free by gently working the soil surface (1 inch or 2.5 cm) around the plants
8. A garden trowel to help make the holes for the tomato and pepper plants
9. A watering can with a sprinkler end so that the rows of seeds and plants can be carefully but thoroughly watered. A hose can be used if it has a nozzle with a fine, misty spray

10. A yard stick or meter stick so you can measure the length and width of your garden before planting, the distance between rows, the distance between the seeds or plants in the row, and the depth the seeds are planted or sown





What To Feed Your Garden

Plants in your garden, just like people, need food in order to grow strong. Plant food is called fertilizer. The best time to fertilize is when you are preparing the soil.

The best fertilizer is rotted (over one year old) manure. It contains most all the nutrients a plant needs. If you can get some manure, choose rotted cow or horse manure. These are safer to use because they won't burn the tender roots of your vegetables as chicken or sheep manure would. You may substitute compost for rotted manure or buy dried or processed manure from a garden supply dealer.

Add manure this way:

4′ × 10′ = 40 square feet or 4.4 square meters	**a 2-inch layer or 5 cm layer**	**1 bushel or 3 decaliters**
12′ × 12′ = 144 cubic feet or 16 square meters	**a 2-inch layer or 5 cm layer**	**3 bushels or 9 decaliters**

Commercial or chemical fertilizer should be added, too, especially if you cannot get rotted manure, processed manure, or compost. It contains all the nutrients a plant needs. In a bag of 5-10-5 fertilizer, there is 5% nitrogen, which helps the green leaves grow; 10% phosphorous, which helps the root and fruit develop; and 5% potassium, which makes vegetables tender and available sooner.

Add commercial fertilizer this way:

	40 square feet or 4.4 square meters	144 square feet or 16 square meters
If you use manure	1 pound 5-10-5 or .5 kilogram	3 pounds 5-10-5 or 1.5 kilograms
If you do not use manure	2 pounds 5-10-5 or 1 kilogram	6 pounds 5-10-5 or 3 kilograms

The next material to consider is lime. Lime is usually added to soil that is "sour" or that has a low pH. pH is the chemical symbol used to express the acidity (sourness) or alkalinity (sweetness) of the soil. It is measured from 0 to 14, with the middle number, 7, being neutral. From 0 to 7 is acidic; from 7 to 14 is alkaline. Most vegetables grow well in soil that is slightly acid, having a pH between 6.0 and 7.0. By adding lime to "sour" soils, we raise the pH and help the fertilizer release its food. By adding aluminum sulfate to sweet soils, we can lower the pH.

You can test your garden soil by dipping a strip of litmus paper into a cup of moistened soil. If the soil is acid, the paper turns red. If alkaline, the paper turns blue. Litmus paper changes color depending on the pH. An inexpensive package, complete with directions, can be purchased at garden centers or farm supply stores. Perhaps your science teacher has some and will show you how to use it.

Or you can have your soil tested by bringing a cup (250 milliliters) of soil to your county agricultural agent's office. They will tell you if you need lime or aluminum sulfate.

If the soil is very acid (sour), add ground agricultural limestone this way:

	pH 6.5	pH 6.0	pH 5.5	pH 5.0
4′ × 10′ = 40′ square or 4.4 square meters	None	2 pounds or 1 kilogram	4 pounds or 2 kilograms	6 pounds or 3 kilograms
12′ × 12′ = 144′ square 16 square meters	None	6 pounds or 3 kilograms	12 pounds or 6 kilograms	18 pounds or 9 kilograms

If the soil is very alkaline (sweet) add aluminum sulfate this way:

	pH 7.5	pH 8.0	pH 8.5
4′ × 10′ = 40′ square or 4.4 square meters	1 pound or .5 kilogram	2 pounds or 1 kilogram	3 pounds or 1.5 kilograms
12′ × 12′ = 144′ square or 16 square meters	3 pounds or 1.5 kilograms	6 pounds or 3 kilograms	9 pounds or 4.5 kilograms



Preparing Your Garden



Try to choose a spot that is free of large weed clumps and tough sod. Use the yardstick or meter stick to get the length and width, and place large wood stakes at the corners. Tie string from each stake at ground level around the garden to make sure the sides are straight.

Next, see if your soil is dry enough to work. Take a handful and squeeze it in your hand. Does it form a sticky ball that does not break easily? If so, it is too wet. Wait a day or so until the ball you make on that day crumbles when you press it between your thumb and fingers.

Now add half the fertilizer that you need for the garden size you chose. Then add the manure to the area and, if necessary, the lime or aluminum sulfate.

Next, using the spade or fork, turn over a spade full of soil by pressing down on the blade of the spade with your foot and lifting the earth and turning it upside down into its hole. Work from one end of a line and along that line until you have completed a row. Standing on the inside of the garden strings, work backwards to to dig another row.

Be careful not to step on the newly-turned soil. Spade up the whole garden this way, row by row. Now, if you have access to a rototiller, this machine could make the job easier for you. It is best to let someone with experience operate it.

Next, using the rake, break up clods and remove any sod, roots, and stones while you make the surface smooth. Add the remaining fertilizer, sprinkling it carefully, and rake it in.

Let the garden stand for a day or so before planting so that the ground has a chance to settle and the fertilizer can begin to work.

Remember—plants need food, heat, and moisture. *Food* comes from the manure and fertilizer. *Heat* comes from the sun. *Moisture* comes from the rain and from your watering can.

Now you can begin to plant.





Planting Your Garden

Once the garden soil has been prepared and you know which garden plan you are going to follow, you are ready to stake out the rows.

Using the string and wood stakes, follow the design of the plan you selected. Mark the rows by measuring from the edge of the garden with the yardstick or meter stick and place a wood stake at each end. Using a pencil, write the name of the vegetable you will plant in that row on the stake.

You can use your hoe to open up the row, or furrow. For small seeds, use the handle end and follow a string line between the stakes for that vegetable row. For larger seeds, use the blade of the hoe held on a slant, and follow the same procedure along the string stretched for that vegetable row.

The garden will be planted at different times, so be careful not to step on rows that have already been planted.

You should have no trouble planting onion sets, beans, and New Zealand spinach seeds, because they are large and you can hold them easily. The small seeds, such as lettuce, carrot, and radish, can be more difficult. Pour some into your hand carefully. Take a few of the seeds between your thumb and forefinger and sprinkle them in a row according to the directions on the pack, or the chart on the following page. Be sure to open the seed pack in such a way that you do not lose the name of the seed or the directions how to plant and care for them.



When to Plant Your Garden

EARLY OR FIRST PLANTING

Zone*	1	2	3	4	5
	May 1-30	April 1-30	March 1-31	Feb. 1-28	Jan. 1-31

*** To find your zone, see map at front of book.**

Onions



Place them flat end down, 3 inches (7.5 cm) apart and cover with soil to their tips.

Carrots



Prepare soil deeply, 10 inches (25 cm), and sow the fine seed carefully ¼ inch (.5 cm) deep, 4 seeds per inch (2.5).

Lettuce



Prepare the soil well and plant the fine seeds in a shallow row ¼ inch (.5 cm) deep, 4 seeds per inch (2.5 cm) and cover them with ¼ inch (.5 cm) of soil.

Radish



Sow these big seeds 4 seeds to the inch (2.5 cm) and cover them with ½ inch (1.5 cm) of soil.

Beets



These can be planted in rows, placing seeds every ½ inch (1.5 cm) and covering them with ½ inch (1.5 cm) of soil.

LATER OR SECOND PLANTING

Zone*	1	2	3	4	5
	May 31 or later	May 1–31	April 1–30	March 1–31	Feb. 1 to 28

* To find your zone, see map at front of book.

Beans



These are planted deeply, about 2 inches (5 cm) deep, and every 2 inches (5 cm) in the row.

New Zealand Spinach



Seeds should be soaked in water overnight because they sprout slowly and need this moisture. Pour off the water and spread the seeds on newspaper to absorb the excess moisture. Then sow the seeds 2 inches (5 cm) apart in rows and cover them with 1 inch (2.5 cm) of soil.

WARM SEASON PLANTING

Zone*	1	2	3	4	5
	June 15 or later	June 1 or later	May 1 or later	April 1 or later	March 1 or later

* To find your zone, see map at front of book.

Tomatoes



The plants should be carefully removed from their pots or containers and set in well-prepared soil every 3 feet (1 m) apart, and just a little deeper than they were in the pot.

Peppers

These are handled the same as tomatoes, but are set every 2 feet (60 cm) in the row.

Make sure the rows of seeds are lightly, but thoroughly, watered to soak through to the seeds. Each plant should get about one quart (1 liter) of water.

What Happens Now?

Your seeds will germinate. Germination is a process whereby the dormant, or sleeping, plant within the seed-coat starts to grow. Eventually, with the aid of moisture and warmth, it sends out a tiny root system and the beginnings of leaves. As the seedling grows, it uses the food stored in these first leaves, but after awhile the roots start to take up food from the soil and then the plant really starts growing.

Here is how your seedlings will look when they come out of the ground. The first leaves will not look like the true leaves, which come next. In the case of the bean, the bean seed will be held above the ground by the stalk. It furnishes food for the new plant. You can see the bean gradually shrink.



Radish



Lettuce



Beets



Carrots



Beans



Spinach



Watering

Water is necessary for germination and growth. If the soil is dry to the touch when you sow the seeds or plant the plants, use your watering can to moisten the soil. Apply the water in such a way as to prevent the soil from washing away.

Apply enough water to soak the soil about one inch (2.5 cm) deep. Afterward, water the garden only if there has been no rain for a week. If you water after the seeds have sprouted, apply enough to moisten the soil about 6 inches (15 cm) deep. To do this you will have to carry many cans of water.

Thinning

This process will help you obtain the best yield from your row of plants, and prevent crowding. When the seedlings are showing their "true" leaves, or the second set of leaves, it is time to thin. Water the row lightly. Then select a sturdy seedling and gently remove the one or two seedlings on each side of it. Try not to uproot the sturdy seedling. Press back the soil you have loosened.

Thinned seedlings will look like this:

Radish



Thin to ¾ inch (2 cm) apart when they are two inches (5 cm) high.

Lettuce



Thin to 3 inches (7.5 cm) apart when they are 3 inches (7.5 cm) high. You will want to thin them again in a week to 6 inches (15 cm) apart and use the thinnings in a small salad.

New Zealand Spinach

Thin to 12 inches (30 cm) apart when they are 4 inches (10 cm) high.



Beets



Thin to 1½ inches (4 cm) apart when they are 2 inches (5 cm) high. Then, when the red beet root is 1½ inches (4 cm) wide, pull every other one. You can cook and eat these roots with their tops, leaving room for the remaining roots to enlarge.

Carrots

Thin to 2 inches (5 cm) apart when they are 2 inches (5 cm) high.



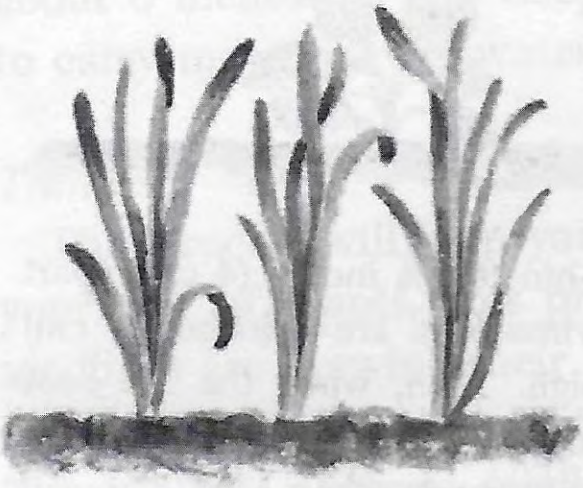
Beans

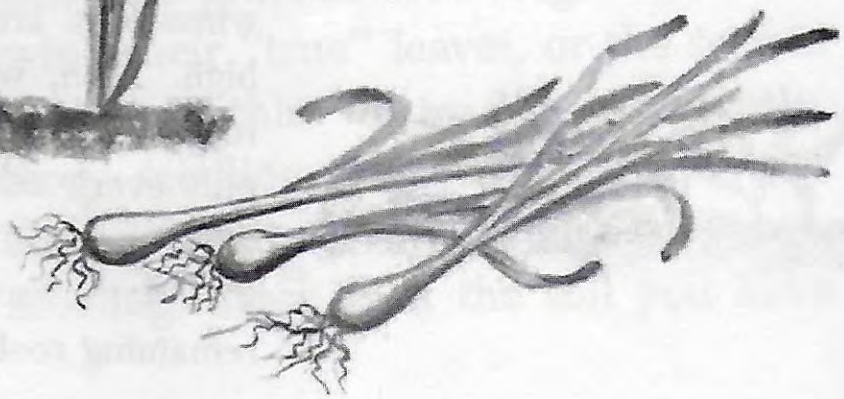
Thin to 4 inches (10 cm) apart when they are 4 inches (10 cm) high.



Onions

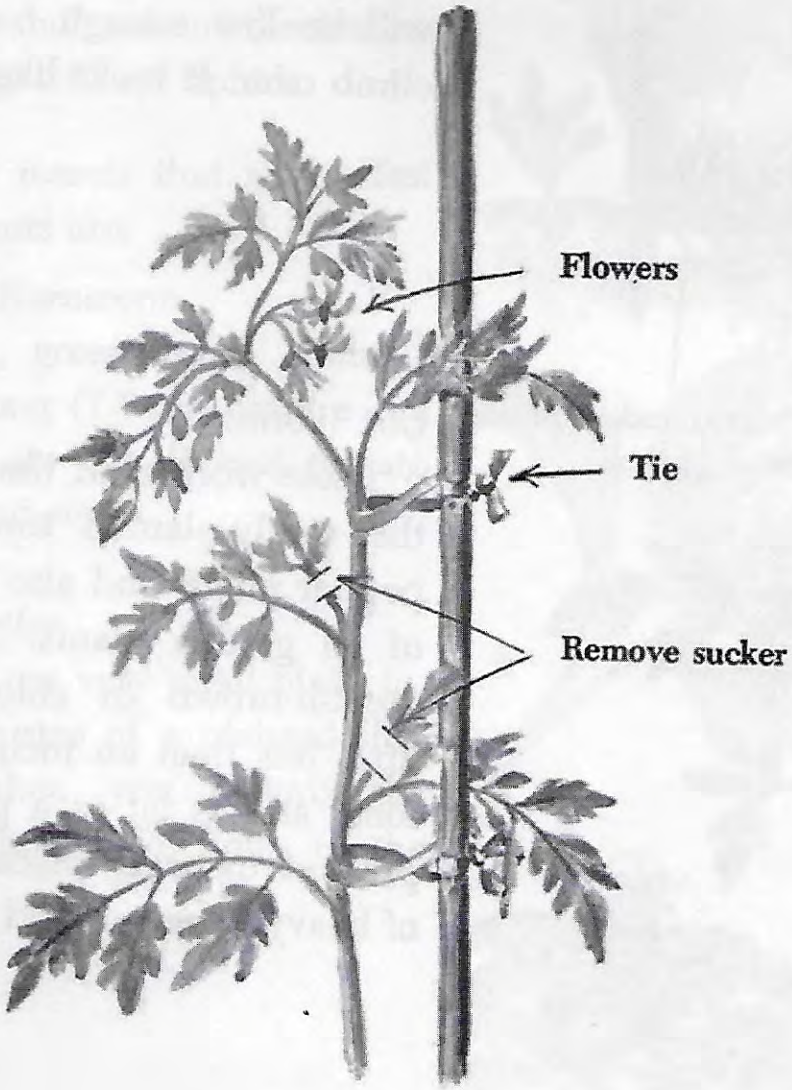
Pull every other one as you need them for cooking, eating raw, or for salads. At this stage they are known as scallions. The remaining ones can be left to mature to full size.



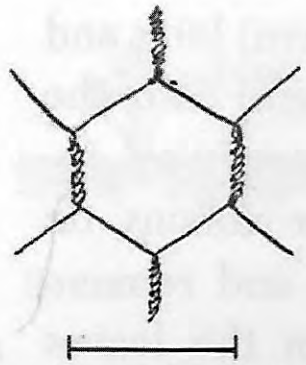


Tying Tomatoes

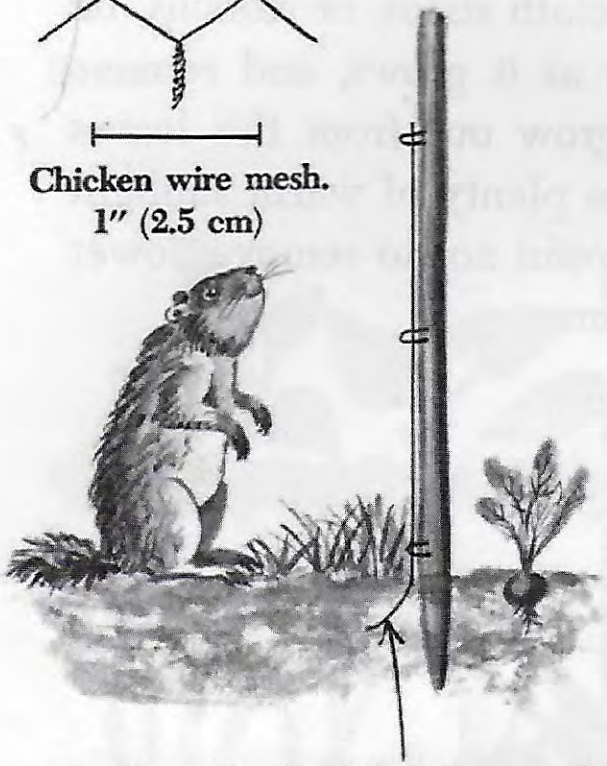
The tomato, in order to produce clean, ripe fruit, and not take up too much room, will have to be tied to a stake. Select a stout pole about 4 feet (150 cm) long and pound or hammer it about one foot (30 cm) into the ground about 6 inches (15 cm) from the newly-set tomato plant. Using soft twine, cloth strips, or ribbons, tie the tomato stem to the stake as it grows, and remove the shoots—or suckers—that grow out from the leaves near the stem. This will insure plenty of warm sunlight on the developing fruit. Be careful not to remove flower stalks or damage the main stem.







Chicken wire mesh.
1″ (2.5 cm)



Chicken wire, buried underground, curving away from garden

GARDEN ENEMIES

Rabbits and Woodchucks

A fence around your garden may prevent nibbling by these animals. A 3-foot (100 cm) chicken wire fence with 3 inches (7.5 cm) underground and fastened to stout posts will help. It will be low enough for you to climb over. It looks like this:

Cut Worms

These worms eat the stems of the newly-planted tomato and pepper plants and also the roots of all garden plants. They are greyish-brown in color and a little less than an inch (2.5 cm) long, and as fat as a pencil. To prevent damage, place a collar of heavy paper around the stem.



Japanese Beetles

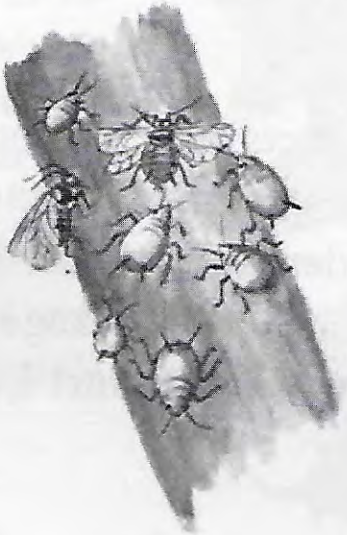
Pick off these shiny green and copper-toned insects. Drop them in a juice can that has a little kerosene on the bottom. Otherwise they will eat the foliage and flowers of some plants. They are about the size of a small shirt button.



Actual size

Aphids

These tiny pear-shaped, soft-bodied insects will suck juices from the plant and live on the stem or underside of the leaves. Ladybugs will eat aphids.



Actual size

Other insects that may infest your plants are:

Tomato Hornworm

A fat, green worm about 3 inches long (7.5 cm) with a red horn on its tail. It eats tomato leaves and stems.



Flea Beetles

These are very small black insects the size of a pinhead that jump when you disturb the plant. They make holes in the leaves.



Actual size



Actual size

Mexican Bean Beetles

An oval-shaped, yellow-brown insect with black spots on its wing covers. It is about the same size as the Japanese beetle. It eats the leaves and flowers of bean plants.

Most insects can be controlled by picking them off. Sometimes you may have to resort to an insecticide. The safest garden insecticide is rotenone dust. Follow the directions on the package. Rotenone is safe to use on plants and will not hurt humans or pets.



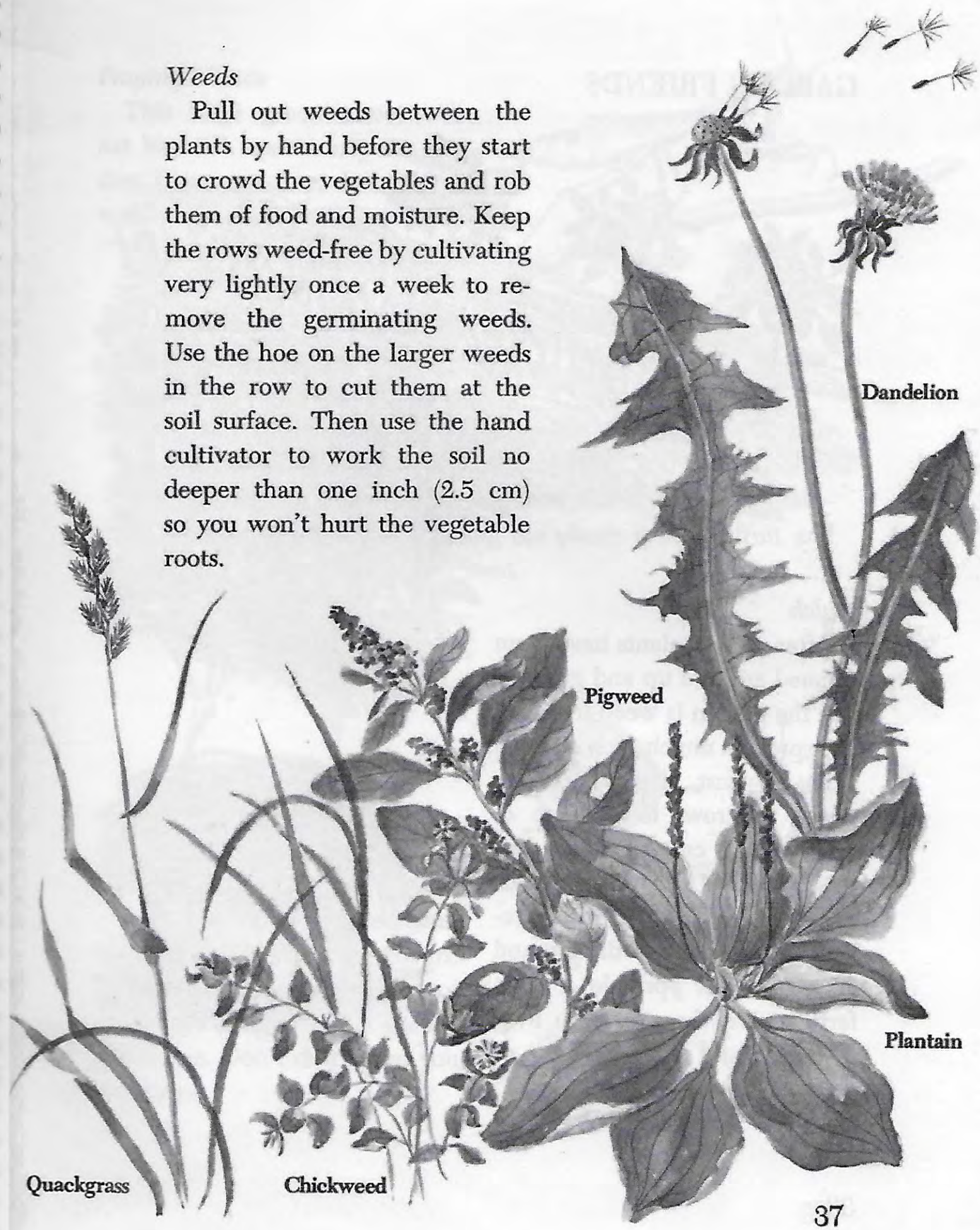
Diseases

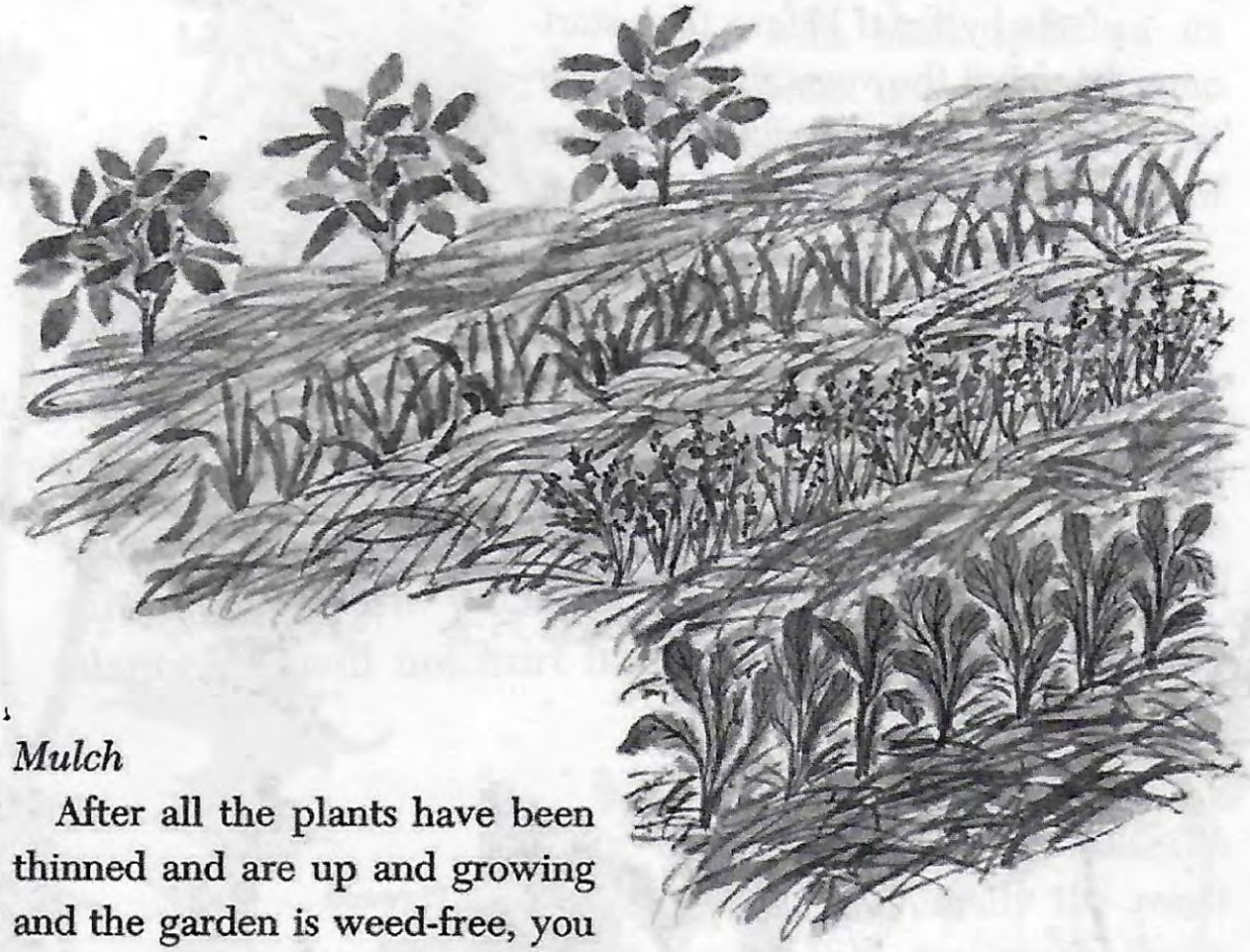
Plants can get sick. Diseases of plants are usually the result of crowding, too much shade, and insect damage. Wilt, spotting, and rot are examples of disease.

If you select disease-resistant seeds and plants, and keep the garden clean and weed-free, disease problems should be slight. When a plant becomes harmed by a disease, remove it before the disease spreads to other plants. Place it in the garbage.

Weeds

Pull out weeds between the plants by hand before they start to crowd the vegetables and rob them of food and moisture. Keep the rows weed-free by cultivating very lightly once a week to remove the germinating weeds. Use the hoe on the larger weeds in the row to cut them at the soil surface. Then use the hand cultivator to work the soil no deeper than one inch (2.5 cm) so you won't hurt the vegetable roots.





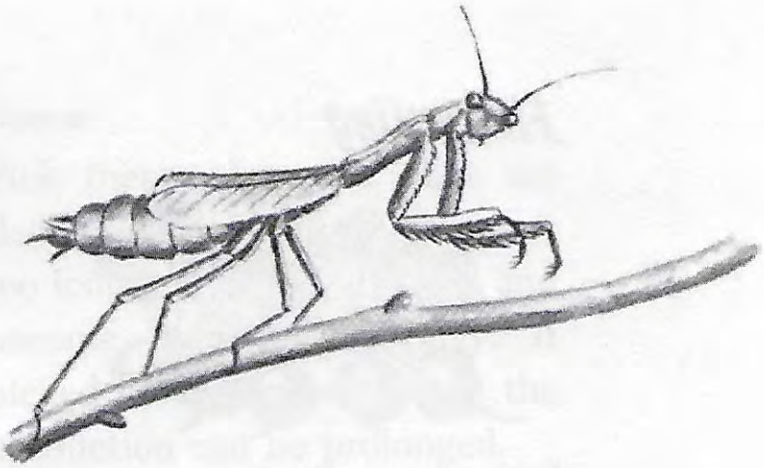
Mulch

After all the plants have been thinned and are up and growing and the garden is weed-free, you can spread a mulch such as clean straw, sawdust, or peat moss between the rows to a depth of 4 inches (10 cm). A mulch like this will not only keep weeds from coming up, but will prevent the soil from drying and keep it loose. Sprinkle a little fertilizer on the mulch to help it decay and become part of your soil next year.



Praying Mantis

This large green insect will eat harmful insects in your garden. If you see one, do not dust with rotenone.





Bees

Bees are very helpful in your garden. They will carry pollen from one flower to another, helping the plants produce fruit and seed.



Actual size





larva

Lady Bugs

Lady bugs are rusty red with black spots on their wing covers. They eat aphids and a few of them can keep a small garden aphid-free. Don't dust when you see them.

Harvesting



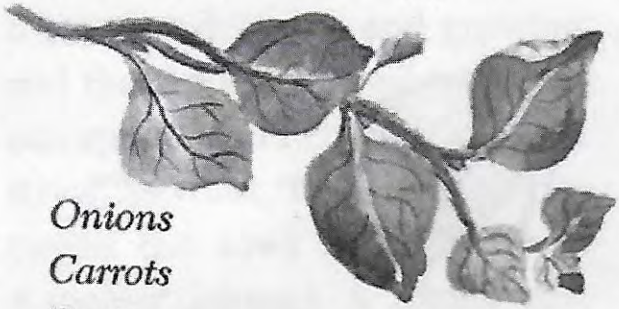
Radishes

Harvest when the roots are as big around as a nickel, or ¾" (2 cm) in diameter. This is early in the gardening season.

Lettuce

Lettuce is ready to eat when the leaves are 4 inches (10 cm) long. You may pick the outer leaves, or you may harvest the entire plant. If you pick the leaves, the plant will eventually slow its growth. As the season gets warmer, the leaves will taste bitter. It is best to remove the plants when this happens.



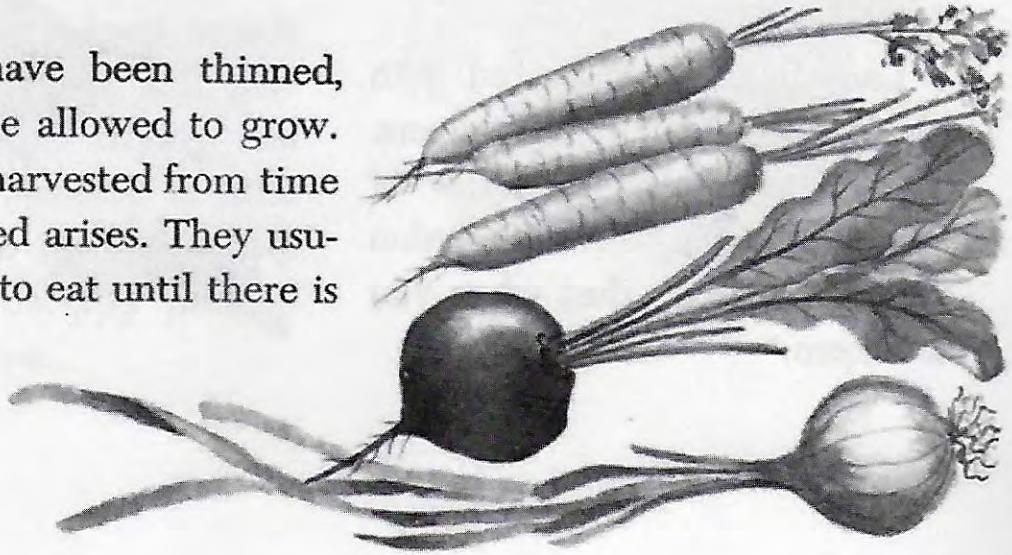


Onions
Carrots
Beets

Once they have been thinned, they should be allowed to grow. They can be harvested from time to time as need arises. They usually are good to eat until there is a hard frost.

Spinach

Pick off about 4 inches (10 cm) from the tips of the stems. That way, new growth will develop.





Beans

Pick them when the pods are slender and tender. If you wait too long, the bean will swell and become tough and stringy. If picked carefully and often, the production can be prolonged.

Tomatoes

Pick them when they are red ripe on the plant. Remove them carefully by cutting or slowly twisting them off the flower stem. Tomatoes can be picked when they are pink or green-yellow and allowed to ripen inside. This usually happens with late varieties in the fall.





Peppers

Peppers take a long time to ripen and grow to a nice size. They can be picked when they are 4 inches (10 cm) long, or allowed to ripen fully and turn red. If you selected sweet peppers, these red peppers will not be hot to the taste.

Fall Clean-Up



Before frost kills the plants in the garden, you might want to lengthen the season in order to ripen tomatoes and peppers. You can cover the garden with a plastic sheet on nights when a light frost is predicted, or you can run the water sprinkler slowly all night and, by doing so, prevent, on some occasions, the plants from freezing. That is because water freezes before plants do.

Once plants have been killed by frost, remove them and place them in the garbage or in a compost pile so they can decompose and eventually create new soil. Do not leave them in the garden plot because they usually have insects and disease on them and will serve to infect next year's garden plants.

At this time you can remove the remaining carrots, beets, and onions and use them. The onions will store well in a cool, dry place, and the beets and carrots will store well in a cool, moist place such as the refrigerator. Make sure these root crops are clean and dry before you store them.

The garden can be raked clean and allowed to rest through the winter. While it is resting, you can be making plans for your next vegetable garden.

Glossary

acid sour, containing excess hydrogen ions

acidify to make something acid or sour

absorb to soak up or drink in

alkaline the opposite of acid, sweet, having an excess of hydroxyl ions

alkalinity the state of being alkaline, expressed as pH or having a pH from 7 to 14

aphids small, soft-bodied, pear-shaped insects that suck juices from tender plants. Usually found on the stems or underside of leaves.

beetles various chewing insects with hard, shell-like coverings over their wings. Found eating holes in leaves.

clod a lump of earth

cm the abbreviation for centimeter

compost a mixture of decayed leaves, grass clippings, vegetable wastes, manures and fertilizer. It is crumbly and black. Gardeners use it as a potting soil or garden soil.

disease an illness caused by bacteria, fungi, virus, or physical activities and resulting in visible symptoms such as wilting, yellowing, rotting or spotting.

disease-resistant a quality inherent in a plant that enables it to withstand the attack of certain diseases

dormant an inactive or sleeping stage of a plant

edible able to be eaten

fertile rich, full of food or nutrients

fertilizer a material added to soil to provide food or nutrition to plants. Fertilizers contain elements necessary for plant growth such as nitrogen, phosphorus, potassium, magnesium and sulfur.

flower the part of the plant that contains the reproductive organs.

flower stalk stem or branch that holds flowers

freezes/freezing when the ground hardens due to cold weather—usually below 32 fahrenheit or 0 centigrade. Tender plants are killed by freezing.

frost frozen dew occurring on the ground or on plants in the early spring or late fall

fruit the part of the plant that contains the seed, usually associated with a flower

fusarium a fungus disease that lives in the soil and attacks tomatoes causing them to wilt; it cannot be controlled by spraying

germinate to begin to grow, to sprout

hybrid the result of crossing two or more different plants of the same specie or group. Usually, larger, stronger and more productive than either of the original plants.

insect a six legged animal, usually with a hard shell-like covering and having chewing, sucking or rasping mouth parts. The worm stage of any insect is known as larva.

insecticides materials that will poison or kill insects

leaf the foliage, or thin, flat outgrowth of a plant. Responsible for producing food for the plant.

lime a crushed or ground calcium or magnesium carbonate rock. It will make "sour" soil "sweet" and help the fertilizer release its food.

litmus paper a light blue paper that turns blue in "sweet" or alkaline solutions and red in "sour" or acid solutions. Used to determine the pH of soil

manure the waste product of animals. When rotted, used as a fertilizer.

mature to complete growth or development, ripe

meter stick a stick that is the measurement for the fundamental unit of length in the metric system. Equal to 39.37 inches, containing 100 centimeters

metric equivalents

1 inch	=	2.54 centimeters
1 foot	=	30.48 centimeters
1 yard	=	91.44 centimeters
1 ounce	=	approx. 30 grams
1 pound	=	approx. 454 grams or 4.5 kilograms
1 cup	=	approx. .25 liters
1 quart	=	1.101 liters
1 quart liquid	=	.9463 liters
1 bushel	=	35.24 liters or 3.52 decaliters

mulch soil covering used to keep weeds from growing, to prevent soil from drying, and to protect plant roots. It is usually made of straw, leaves, compost, old hay, or sawdust.

nitrogen one part of the food or nutrients found in fertilizers. It is soluble in water and readily used by plants.

nutrients substances that provide food or nourishment for plants. Usually elements like nitrogen, phosphorus, potassium, sulfur and magnesium.

onion sets small onions that have been grown months before they are sold to gardeners so that a good crop of onions can be produced in a short time.

organic matter decomposed plant or animal materials that become part of the soil

peat moss partly decomposed sphagnum moss sold as a soil conditioner or mulch

pH test a test, using litmus paper, which determines the acidity or alkalinity of soil

phosphorus a part of the food or nutrients found in fertilizer. As a fertilizer it is not soluble and must be mixed thoroughly in the soil.

pods an elongated fruit that holds seeds such as peas or beans

potassium a part of the food or nutrients found in fertilizers. it is found in an impure form in wood ashes.

processed manure animal waste that has been heated becoming odorless and weed free

prolong to cause to become longer. To extend the duration or time.

resistant anything that withstands or opposes something or, a plant that will not get certain diseases.

ripe fully grown or developed, in the best condition

root the part of the plant that grows downward into the soil and absorbs nutrients and moisture

rot to decompose or decay, usually caused by fungi or bacteria

rotenone an insect poison or insecticide made from the root of the derris plant.

rototiller a machine with mechanically operated digging tines that can mix or churn soil prior to planting

seed the part of a plant, usually associated with the flower, that is used to grow a new plant.

shoots new or young growth that comes off the main stem of a plant, young sprouts.

sour having excessive acidity or a low pH

sow/sown to scatter or place seed for the production of a crop

spotting the result of a fungus disease causing small, roundish usually dark marks on leaves

sprout/sprouted to begin to grow, to put forth buds or shoots

stalk the stem or main branch of a plant or the part of a plant that supports something

stem the part of a plant that grows upright in opposite direction to the main root. A stalk

stringy to have strings or string-like pieces and be coarse or tough

sucker a shoot rising from below the ground or from the main stem of the plant. Usually not very productive.

sweet having excessive alkalinity or a high pH

"true" leaves the second set of leaves that appear after the seed germinates and sprouts. These begin to produce food so the plant can grow.

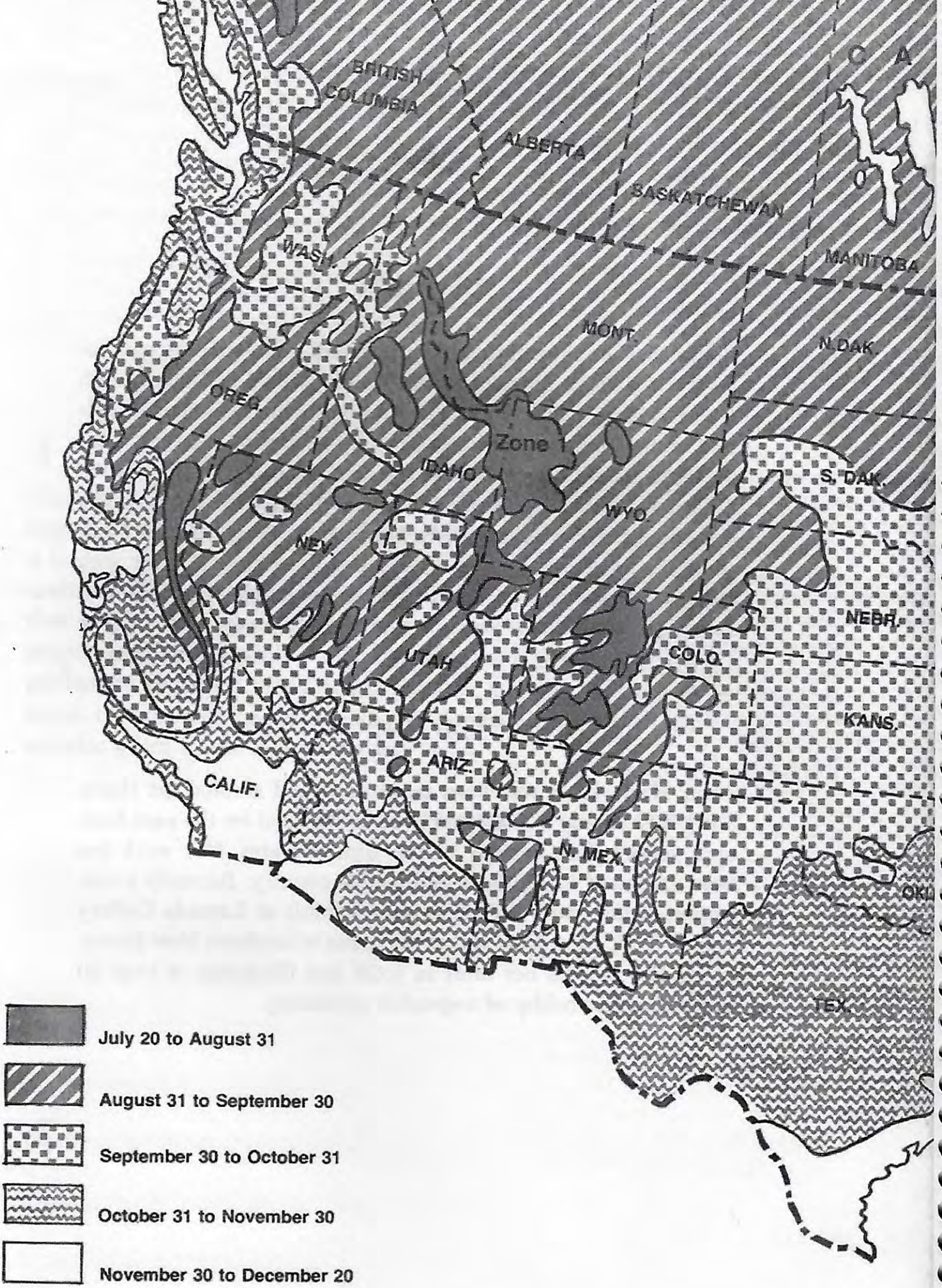
vegetable any plant whose fruits, seeds, roots, tubers, bulbs, stems, leaves or flower parts are used as food.

verticillium a fungus disease that lives in the soil and attacks tomatoes and peppers. The disease causes yellow spotting of the older leaves followed by wilting. It cannot be controlled by spraying.

VF a verticillium and fusarium disease resistant variety of tomato

wilt a plant disease in which the leaves droop and eventually dry up

worms a long, slender soft bodied animal usually with short legs and capable of eating vegetable plants


BRITISH COLUMBIA
ALBERTA
SASKATCHEWAN
MANITOBA
WASH.
OREG.
MONT.
N.DAK.
IDAHO
Zone
S. DAK.
WYO.
NEV.
NEBR.
UTAH
COLO.
KANS.
ARIZ.
CALIF.
N. MEX.
TEX.
July 20 to August 31
August 31 to September 30
September 30 to October 31
October 31 to November 30
November 30 to December 20



First Fall Frost

The average date of the first fall frost is important for vegetable gardeners. It is a guide to help determine the length of the growing season. Compare the first fall frost date for your area with the last spring frost date (end flap) to figure the length of the growing season.

The Author

Robert B. Gambino, author, educator, and prize-winning gardener, teaches Plant Sciences at a secondary school in Connecticut. He holds a BS degree in Floriculture and Ornamental Horticulture from Cornell University and an MS from Western Connecticut State College. He served four years as a Cooperative Extension Agent in New York State, working with homeowners and commercial horticulturists. His home in New Milford, Connecticut, which he and his wife and their two sons share with rabbits, cats, and dogs, includes a greenhouse, vegetable and flower gardens, and a small orchard.

The Artist

Anne Marie Jauss was born in Munich and studied art there. She left Germany in 1932 and lived in Portugal for the next fourteen years before coming to the United States. Her work has been exhibited in Portugal and in this country. Recently a collection of her water colors were on exhibit at Larcada Gallery in New York. Miss Jauss makes her home in northern New Jersey, where she pursues her craft as artist and illustrator of over 60 books, and her hobby of vegetable gardening.



ISBN 0-8178-5322-7