HORTICULTURE

Garden for Fun and Health

You can help the nation's defense effort by planting a "liberty" garden this spring. Government urges more food production in urban and suburban home gardens.

By ANN EWING

► FOR FUN and healthy exercise from now until next October:

Plant a "liberty" garden. You will, at the same time, be helping America's defense effort. And you will be assuring for yourself and your family, as well as your friends also perhaps, a steady and ample supply of vitamin-packed vegetables and other foods.

Seed catalogues are the earliest harbingers of spring; they are out now and many people already have made their selections for this year's planting. But if you have not done so, there is still time to plan and plant health-giving vegetables and your favorite flowers.

The government has called for more food production in urban and suburban home gardens as well as on farms during 1952. Such a program can make a real contribution to diets and health as well as to our food supply.

During World War II around 18,000,000 Victory Gardens produced over 4,000,000,000 quarts of home preserved food. Not only individuals, but industries, Boy Scouts, church groups, Parent-Teachers Associations and other organizations cooperated in the effort.

Manpower Savings

Every time a vegetable or fruit is served at or very close to the place where it was grown, there is saved for other purposes the amount of manpower necessary to package and ship it from its source to the consumer. And it also helps to make available its equivalent in other food stuffs needed by the armed forces.

So if you have or can use a little piece of land, with soil reasonably fertile, and if you have the patience to go on planting, tending and weeding after the first flush of spring-planting enthusiasm, then by all means help yourself to fun, fresh air and a part in the U. S. defense effort by starting a "liberty" garden this spring.

If you have only a small space for a garden, it is well to keep your planting list short, and put in it the vegetables that the family likes and that pay the highest return for the space they occupy. Tomatoes, snap beans, all leafy green vegetables, beets and lima beans are usually good bets for this.

Vegetables are grown—and eaten—for a number of values: for energy food elements,

for proteins, for vitamins (particularly A and C), for bulk or roughage, for mineral salts (especially bone-building calcium) and finally, simply because they taste good—that is, for flavor.

Energy foods are primarily the starches and sugars: potatoes and other root crops; beans, peas and other legumes. Legumes are the great protein vegetables, though they do not compete with meat, eggs and dairy products. There is bulk or roughage in all fresh vegetables.

Vitamins and mineral salts are the things that receive most emphasis in present-day garden planning. Outstanding as vitamin vegetables are tomatoes, carrots, snap beans, all kinds of "greens." Worth noting is the fact that two rather neglected greens, collards and kale, outrank familiar and long-favored spinach. While beets and turnips do not rate very high as vitamin vegetables, their tops are among the best of "greens."

Old favorites, planted in almost every small garden simply because they taste good are the standby triad of radishes, onions and lettuce, although the last does have considerable vitamin value also.

New varieties, just introduced this year, that you may want to try include Salad Bowl lettuce, and Wade Snapbeans. If there is room in your garden, you may be delighted with the new dwarf watermelons. Originated in New Hampshire, one midget variety matures early and is just about the right size for an ice box, five to six inches in diameter.

Figure Needs Carefully

Before you rush out and buy a lot of seed, measure your ground and see how much you have room for, then figure how many feet of this and of that you will want, and buy accordingly. Your seed catalogue or the brief printed directions on the seed packets will tell you how much space the plants need for good growth. A good rule, unless you have room for a big garden, is to buy the smallest size packet offered of each kind that you want to grow. It is easy to get more later if you want them.

Several plantings of most vegetables should be made, anyway, to get a succession of fresh crops coming on through the season.

Gardening can be carried on very successfully with only a few simple tools. In



GARDEN PLANTING—Robert E. Wester, horticulturist at the U. S. Department of Agriculture, Beltsville, Md., shows here how small seed such as spinach, radish, lettuce and kale are planted in shallow furrows about one-half inch deep.

a pinch you can get along with just three: a four-tined spading fork, a hoe and a straight-backed, straight-toothed steel rake. A straight spade comes in handy, but you can get along without it if you must. That goes for a trowel, too; you can make an old butcher-knife do instead. You will also need a pair of sharpened stakes and a long string to mark your garden rows.

It is bad economy, of course, to lay out more money in tools, seed and fertilizer than you are likely to get back in carrots and tomatoes. But do not let an attempt at money-saving induce you to buy low-quality tools. That is bad economy, too. Get good tools, and take care of them.

Never leave your fork sticking in the ground, or your rake and hoe lying outdoors overnight, even in dry weather. Dew can encourage rust quite as readily as rain. Clean off all tools every night as soon as you have finished using them, and hang them away in garage or basement. It will not only make them last longer, but will be safer for the family. Children at play often get serious injuries from stepping on the upturned teeth of a rake or stumbling over the blade of a hoe.

Compost Improves Soil

Probably one of the best ways to improve your garden soil, unless you are lucky enough to have access to well-rotted stable manure, is to apply compost. To be ready for spring of 1953 you have to start a compost pile now. Rake up all last year's dead leaves you can get hold of—the moister and mustier the better—and pile them in a back corner of your lot. Throw some earth on them, and also a little manure if you can get it.

During the summer, pile all weeds from your garden and the clippings from your lawn on the heap, together with the clean vegetable and fruit parings and trimmings usually thrown into the garbage pail. Soil added to the heap has an important biological function: it introduces a complex swarm of fungi, bacteria and tiny earthanimals that reduce the raw vegetable tissues to the good black humus that makes soil fertile.

In addition to manure or compost it is always well to use some commercial fertilizer. But again you should calculate your costs, comparing them with what you expect to get out of your garden. Do not make the mistake of trying to force raw clay or dumped-in coal ashes into fertile soil by piling on expensive fertilizer out of a bag.

No blanket recommendations can be made for the kind of commercial fertilizer. The kind your dealer keeps for professional gardeners of your own region is likeliest to be satisfactory for small gardens as well.

It is impossible to give a hard-and-fast rule for quantity to use, but roughly about one pound for every 30 feet of garden row should be about right. Fertilizer should be applied after the soil is spaded and raked, just before planting. One way is to lay a strip of the powder on top of the soil, a few inches away from the line where the seeds will go. If you put it right along with the seeds it will "burn" the tender seedlings. If you broadcast it all over the garden, some will be wasted.

Spading Hard Job

Spading up a garden in the spring is not as simple a job as it looks. The basic trick is to turn each forkful of soil completely over, so that what was at the top is at the bottom and vice versa. This is essential not only to getting the nutrients already in the soil properly distributed but also to aerate the soil and get the manure or compost fertilizer down where the roots will reach it.

You can tell when your soil is in the proper condition for spading by taking a lump and squeezing it between thumb and fingers. If it does not wad into mud, but gently breaks like a rich piecrust, then it is ready for spading.

When you have finished spading, and smoothing and leveling the surface with the rake, you are ready to plant. Set your stakes at either end of your plot and stretch the line between them, trace a furrow for the seeds, observing proper depth for the different kind of seeds, drop them in and cover them up. Be careful not to cover them with the fertilizer laid alongside.

Depths and spacing vary according to the size of the seed and the amount of space the plant takes up when grown. In general, the smaller the seed the shallower the planting.

Weeding Required

Planting is undoubtedly the most enjoyable part of growing a garden. But the job is not finished when the seeds are in the ground. A little hoeing and a great deal of laborious thumb-and-finger thinning and weeding are often necessary if you are to reap where you have sown. There are no particular instructions for weeding, but to keep everlastingly at it. The one important thing about hoeing is to do it often and thoroughly enough to kill all weeds between rows, but not too deeply, for that can cut off important feeding roots of plants you want to grow, and it will bring up dormant weed seeds from below to cause more trouble.

To water or not to water a garden, when summer dry weather comes, is a question that each gardener must decide for himself, mainly on the balance of costs in water and time on one side and of threatened loss of carefully tended crops on the other. If you do water, water thoroughly, for the water must get down to where the roots are if it is to do the plants any good.

Insect control and plant diseases in your garden are such a complex subject that no

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blanket recommendations can be given in a short space. At the first sign of disease or insect damage, consult your state college or agricultural experiment station's local agent. Experts there will be able to tell you the proper poison dust to apply. Insects and diseases can easily ruin the best garden, so an alert eye is needed.

Your garden need not be confined entirely to vegetable production. Several of the small fruits, such, as the blueberry, strawberry, raspberry, blackberry and grape, will give you added variety as well as a taste treat during the summer.

Plant a few flowers, too. Here you can choose annuals, quick-producing perennials, or biennials planted now to bloom next year. You can have almost any size and shape and almost every color in the rainbow, so for your flowers, plant whatever suits your fancy best.

For the suburban or farm family which wants more information on garden possibilities for this year, a copy of "Suburban and Farm Vegetable Gardens" (H.G. No. 9) is available from the Office of Information, U. S. Department of Agriculture, Washington 25, D. C.

Science News Letter, March 15, 1952

Reliable specific tornado forecasts cannot yet be made but meteorologists have learned the conditions which are favorable to the development of tornadoes over a wide area.

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Dry, But Not Warm

➤ JUST ABOUT now, or in a couple of weeks more at most, trees and shrubs will be unwrapping their buds and getting ready for another season of green growth.

The varnished scales that have enclosed them for months have served their turn and are now discarded; they litter the ground at the base of trees. Almost inevitably, some one will liken them to garments that have kept the young leaves and flowers dry and warm all winter long and can now be shed. Warm-blooded egocentrists that we are, we think of plants in human terms.

We would be nearer the facts if we stopped at the halfway point in our nursery metaphor. For bud-coverings keep the buds

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dry, but not warm. The tight-packed beginnings of leaves and flowers within the closely shingled roofs of scales become zero-cold when the outside air drops to zero.

The real job of the bud scales is to keep outside water out, and inside water in. Wet snow may fall until every twig is "ridged inch-deep with pearl," freezing rain may sheathe all the trees and bushes with ice, but within the tight little houses of the buds the coming spring's leaves and flowers reck nothing of it.

The scales are waterproof, so that moisture cannot penetrate; they are tenacious against outside pulling and buffetings. Only the pressure of swelling new life within will serve to push them open and finally break them off.

Probably even more important than their function in keeping buds dry is their opposite task of keeping them from drying out.

Science News Letter, March 15, 1952

PROJECTS EXHIBITED — Left to right, beginning at top: Ilmar Raudsep demonstrates the effects of ultra high frequency sound waves on moisture in the air; E. P. Papadakis, thrust tester for carbon dioxide cylinders used on model aircraft; D. Y. Smith, home-made Geiger counter; M. B. Boat, growing radish seeds without soil; J. R. Seaman, learning ability of hamsters; Louise Schmir, unusual films formed by soap solutions on metal shapes; G. W. Luhrmann, organisms in bacteriological culture; R. T. Braden, electric computer; W. W. Hooker, producing hydrogen peroxide by electrolysis; A. E. Beck, work of an archaeologist; and R. A. Bideaux, specimens from his mineral collection.

The Nature of Some of Our Physical Concepts

by P. W. Bridgman

Professor of physics at Harvard University and Nobel Prize winner

Three lectures were given at the University of London in the spring of 1950. The particular object was to distinguish between the "instrumental" and the "paper and pen" component of the operations of the physicist. In the first lecture, among others, the concepts of field and empty space are examined, and it is shown that there is no instrumental operation by which action at a distance can be distinguished from action through a field. In the second lecture the fundamental concepts of thermodynamics are examined, and in the third the phenomena of conduction of electricity in massive conductors. \$2.75

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