

EXPERT GIVES HINTS TO HOME GARDENER

Best Methods Explained to
Raise Vegetable Supply.

INSECTS WORST ENEMY

Cultivator Strongly Advised to Keep
Hoe Constantly in Use After
Seed Is Planted.

Directions for the preparation, planting and cultivation of the vegetable garden so as to secure the greatest quantity of vegetables and for providing continuous ripening, later varieties following the early, are contained in a paper on home gardening just completed by Ralph H. Routledge of the Routledge Seed & Floral company.

Mr. Routledge stresses the advisability of carefully planning the garden, particularly if the amount of land available is small, careful preparation of the soil and planting, and plenty of cultivation during the growing season. Portions of the article, selected as being particularly adapted to the needs of the Portland home gardener, are given below as follows:

Intelligence Spells Success.
In one sentence we may spell success for the gardener: Prepare soil, use manure, buy good seed, cultivate the crop, control insects and diseases intelligently.

Many gardeners have no range of choice in the location of their garden, but if it can be so situated as to get the maximum sunshine and in a well-drained spot, disappointments will be fewer. Clean your land of weeds and rubbish. Such material will be greatly in the way when spading, sowing seed or hoeing.

Where space is limited one is apt to make mistakes unless he has planned out the most economical way of arrangement. Usually, one cannot afford to grow most of the vegetables which require a good deal of room, such as corn, potatoes and pumpkins, or of similar kinds where the yield is comparatively light and the plant fruit but once.

Such things as beans, early peas, radishes and lettuce probably give the best returns on a limited space. This is possible by doing a little scheming to grow three and four crops on the same land during one season.

Even with a limited space, if given high culture, one can grow an enormous amount of food if he will devote time to planning so that all of the ground may be producing something throughout the entire season.

All soil should be made loose and friable. In that condition it is moisture holding, gives a greater chance for a well-balanced root system and provides for the proper aeration of the root, besides making some of the plant food available.

It is difficult to spade anything but the smaller gardens, but there is little doubt but that thorough spading is more efficient than plowing. The spade will allow spading much more than the heavy or clay soil. Soil which adheres together in a heavy lump is too wet for working. Allow such soil to dry a little more, because if it is wet the clods will often remain unbroken throughout the whole summer, baking harder and harder as they become dry.

Hoe Should Be Used Freely.
From the moment that the seed is sown or the plants are set, in the field the hoe must be ready for use. Keep the soil thoroughly pulped, never allowing it to become hard. One of the great benefits to the garden which comes from frequent hoeing is that it keeps the soil around the plants with a dustlike covering of soil which keeps the moisture from evaporating.

Nearly every garden has seen how a lamp wick sucks oil up from the oil tank. The oil is lifted by a scientific principle known as "capillary attraction." In the same way, the soil is lifted the same way. When soil is packed hard it acts as a wick and the moisture evaporates when it reaches the surface. The dust cover, or dust "mulch," as it is called, stops this wick action and holds the water in the soil.

During dry spells, however, it is necessary to water the garden artificially for best results. Do not make the common mistake of watering the garden every day on the theory that if a little water is good for plants a lot is better. Watering the garden shows that they need water. You can safely water the garden at any time during the day when it is most convenient, but as a rule the best time is immediately after the sun is off the plants.

Seeds of most plants have to be sown more thickly than the plants should be allowed to grow. This is because not all seeds have the germ life within them and it is desirable to plant a surplus so as to insure a sufficient number of plants. But when these plants, often coming up thickly together, are big enough to handle, they should be thinned out severely. It may seem heartless to destroy many good plants, but those remaining will give a greater crop of a better quality.

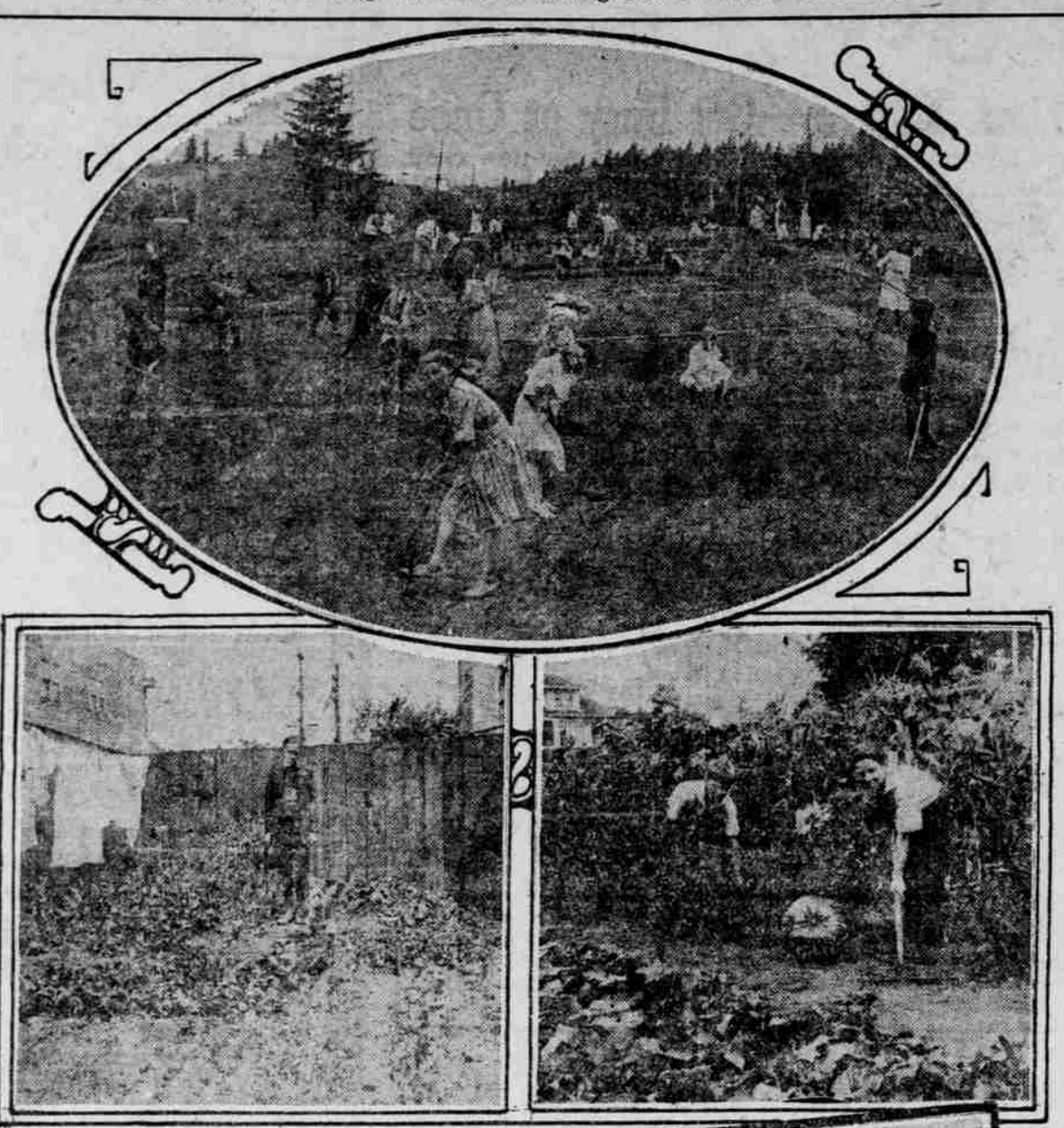
Thin enough so that the roots of each plant have plenty of room to spread out and seek the plant food in the soil. By having the monopoly of all the food within its little area the plant will grow vigorously. This explains why it is important to keep out all weeds which attempt to share this plant food with the valuable ones. In thinning out allow these distances apart: Carrots, 2 inches; celery, 6 inches; endive, 3 inches; kale, 12 to 15 inches; kohlrabi, 6 inches; lettuce, 6 inches; onions, 3 inches; parsley, 4 inches; parsnip, 3 inches; peas, 2 inches; radish, 2 inches; radish, 2 inches; radish, 2 inches; radish, 2 inches; radish, 2 inches.

Diligence Eradicates Pests.
The pests of the garden are numerous and the home gardener must ever be diligent. Much can be accomplished in the control of insects and diseases that infest garden crops by careful, sanitary management. Several of the garden insects find protection during the winter under boards and any loose material that may remain in the garden. Dead vines or leaves of plants are frequently covered with spores of diseases that affect those crops during the growing season, and these should be burned, as they possess very little fertilizing value. Weeds often harbor the same insects and diseases as the garden crops, and these should be pulled up and burned. A great amount of labor can be saved by burning the weeds in the spring which have gone to seed.

The wise gardener follows the old adage: "An ounce of prevention is better than a pound of cure."

PORTLAND GRAMMAR SCHOOL GARDENS RECEIVE 10,000 PACKAGES OF SEEDS

Youngsters Fall in With Spades and Rakes and Prepare to Align Companies of Radishes and Carrots and Pumpkins and Other Things With Idea of Passing Them in Review Before Judges Next Fall.



BY LUCILE F. SAUNDERS.

TEN thousand packages of garden seeds seem like a tremendous quantity of green things growing.

This big order represents the contents of sacks sent by the department of agriculture through Congressman McArthur to every grammar school in the city of Portland. It is the nucleus of many a back-yard garden plot this coming summer.

Already the robins are pecking from the old adage concerning the proper time to get the early worm, for many of the grammar school youngsters have been putting about with shovels and hoes and marking off with strings just where the radishes are to be planted and where the pumpkins vines will have the most room. If father won't consent to have some of his 36-a-day landscape gardening torn up to accommodate the corn patch, you may be sure Jimmie is figuring on borrowing a portion of the vacant lot next door.

Each year it has been the custom to distribute seeds among the children, especially since the formation of industrial clubs. The old practice of giving up a half block near the school building and planting it in a general garden, with sections for each grade, has proved a failure and it is probable that there will not be more than six of these this season. Only the Astoria and Fulton Park schools have gone ahead with theirs thus far and had them plowed and fertilized. The chief objection to the school garden has been that it is neglected in the summer and by fall has become a veritable wilderness unless perchance a stray cow or goat has come out of bounds and cleaned up the eighth-grade cabbages or masticated all the primary's peas.

Home Garden Popular.
The better method has been found to be the home garden. Wherever five children express a desire to form an organization is formed, the youngsters receive registration blanks and suggestion leaflets, all the seeds they wish and are told to go to it. The best exhibits are sent to state and county fairs and for this reason the young agriculturists must carefully plan to have at least five varieties of vegetables properly ripened and waiting to be plucked by the end of September. Smaller children generally have best luck with radishes, lettuce, onions and other early-ripening products and on this account seldom have fair entries.

Last year 800 boys and girls signed up in the spring with the garden clubs, 437 actually started and 349 carried their projects through and made their final reports. Because so many drop out, City Club Leader T. D. Kirkpatrick is carefully working out his membership applications and hopes to have possibly 500 begin the work and carry it through in 1920. Clubs will probably have from 20 to 30 members. Arieta, Creston, Clinton Kelly, Fulton Park, Holladay, Joseph Kellogg, Lents, Oakley Green, Rightmond, Rose City Park and Sunnydale already have organized and ten more buildings are preparing to do this. Smaller groups have proven the most successful and many children likely to be quitters are being discouraged early in the season.

Bulletins Aid Youngsters.
As soon as a club is organized and leaders are appointed Mr. Kirkpatrick sends out garden bulletins. A series of four is sent out during the year, the first ones having planting advice. These are already being eagerly perused and James Jr. is setting out his onions and his potatoes and anticipating an early harvest.

Efforts are made to have a club meeting once each month for the purpose of assisting the amateur farmers and talking over Johnny's mammoth corn or the outworn in Bob's cantaloupes. A new feature this year will be exhibition of a series of educational lantern slides. Where night meetings are being held, the children are co-operating with the children and getting the benefit of the illustrated lecture.

It is hoped that the children often are not prompted by purely patriotic impulses to till the soil. Pulling weeds would lose some of its attraction were it not for the money gains. The 20 acres of land planted by the children of Portland last year in vegetables cost them \$293.52, but at the end of the season there was a profit of \$418.68. Besides this, those who were so fortunate as to win prizes received them in cash.

Trust Young America to foster ingenuity. Take the example of the youthful personage who belonged to a garden club and found the moles tunneling around his tract every time he went over it with a spade. Since the mole family seemed to fancy the spot as a playground the young man decided to encourage the burrowing



Top—Fulton Park pupils are always numbered among the early birds. Center—This is Paul Hurd of Kera school and his tomatop vegetable patch last season. On the right are James and Charles Laird of Highland, who had the most showy plot. Lower—Mildred Jones of Falling spaded up all his mother's back yard and won a prize as a result.

creatures and, taking a wooden box, constructed from it an attractive trap. One time a mole was tempted inside, he skinned it and added the bit of fur to a growing stack of tiny pelts. At the end of the season he sold them for \$14. In the meantime the garden sprouted serenely and the hills of freshly-turned earth grew to be less common. The numerous family underground finally gave up its last ghost.

Portland's garden-club records have ranked well with those of more agricultural communities. For instance, 14-year-old Elizabeth Watson of Sunnydale made a record by winning first prize for garden exhibits at the state fair and received as a reward a fair entrée.

SMALL GARDEN MAY PRODUCE FOOD IN GREAT ABUNDANCE

Careful Planning for Succession and "Companion Crops" Shown by Results to Be Well Worth While.

EVERY amateur gardener of Portland who is willing to spend a little more time and effort than he has usually spent on his vegetable garden can plan for a succession of crops which will provide the family table with fresh vegetables continuously from spring until late fall, and from a given piece of ground obtain a great amount of produce.

Careful planning of the garden to provide for succession of crops will make this possible. Late vegetables may be planted after the earlier crops have been harvested, or between the rows of the earlier crops and thus the growing season be utilized to the limit. Such succession of crops is particularly to be desired when the plot of ground available is small, as is generally the case with the city gardener, and careful planning is necessary.

Another method of increasing production of the garden plot is by planting certain vegetables in the same bed. Care must be exercised in this, however, and not all vegetables thrive together as "companion crops."

General directions for successive plantings and also for planting of companion crops in the vegetable garden may be given as follows:
Turnips may be sown on any land made vacant by an earlier crop. Celery may follow early peas, beans, radishes, lettuce, onions, spinach or the like.

Beans and turnips may be sown between rows of early sweet corn. Early potatoes may be followed by sweet corn, celery, beans, beets, carrots or spinach.

Tomatoes, peppers, beans or sweet corn may follow onion sets.

Turnips, string beans or winter radishes may follow such crops as early peas, beets or potatoes. Lettuce may be planted practically throughout the growing season. Several successive crops may be had from the same bed throughout the season, as follows:
Lettuce, followed by summer radishes, then followed by beans, and then spinach.
Leaf lettuce may be followed by string beans, fall turnips.
Spinach may be followed by early sweet corn, string beans or early cabbage, then fall radishes or lettuce.

ASTER IS IDEAL SUMMER FLOWER

Portland Florist Gives Rules
for Making Garden.

BLOOMS RIVAL "MUMS"

Annual Flower Garden Can Be
Made a Continual Mass of
Bloom, Says Grower.

BY G. S. CRIGO

While the planning and planting of the vegetable garden is probably and properly given first place in the thought of the city and suburban householder and gardener, some time and attention may profitably be given to the more ornamental department of the home garden.

The early part of the growing season is usually well supplied with bloom from Holland bulbs and pansies, followed by a wealth of roses, Portland's most famous product, but unless some preparation is made in advance there is likely to be a time in July and August, between the passing of the roses and the arrival of the dahlias, when there is a distinct shortage of bloom.

To tide over this period no better place can be found than the aster, which will thrive in any soil and in any position except dense shade, and which, for the space occupied, will probably produce more flowers for cutting than any other single product of the garden. The early sorts, such as Queen of the Market and Lavender Gem, begin flowering in July, followed by the mid-season varieties, usually at their best during August. Then come the late-blooming sorts, which carry the supply through September and usually well into October.

Probably the least troublesome method of securing a supply of plants is to buy them from the seed houses, a plan which usually limits the planting to a dozen or two, where they should be planted by the hundred if a creditable showing is to be made. Procure a few packets of seeds, selecting varieties covering the season as fully as possible, prepare a few shallow boxes two to three inches deep, fill them nearly full of well-sifted garden soil and the foundation is laid for a supply for yourself with a probable surplus for the neighbors.

The soil for the seed boxes need not be rich, but it should be fine and soft. Press on the surface with a piece of board, then scatter the seed thinly on the surface and cover with a quarter-inch of the same sifted soil. Water well and cover the box with a piece of glass to prevent too rapid evaporation. The seedlings should appear in about four days and as soon as they are well through the surface remove the glass and place the box where the plants will have full air and full daylight. Leaving the box covered with glass even for a day after the plants are up is very likely to cause them to be "leggy," a condition difficult to remedy.

Rich Mass of Roots Desired.
When the seedlings are about one-half inch high the second leaves should appear and as soon as these are well through the transplanting should be made, setting the little plants out about an inch apart in flats prepared in the same manner as those used to receive the seed. The seedlings should remain in this box only a short time, usually until the surface is practically hidden by the new leaves, when they should be transferred to a prepared bed in the open garden, where they should be set about four inches apart each way.

We are still growing the plants in companion garden soil, without the addition of fertilizer, the object being to encourage the formation of a great mass of roots. If the seedlings are grown in a rich soil, with an abundance of nourishment within easy reach, there will be a rank growth of foliage, with a correspondingly small supply of roots. If the first two transplantings have been well made, the mass of roots of an aster plant ready for its permanent location should be larger than the top, a condition necessary to the production of the largest possible crop of flowers.

When the plants have again attained a size in which they touch each other in the bed, they are ready for the last transplanting, that to the border where they are to remain. From this point the main essentials to insure a crop of fine asters are rich soil, frequent cultivation, no check to their growth and ample room in which to develop. If wanted for cutting with long stems they should be set not closer than 12 inches apart each way, although 15 inches would be better. If wanted for a mass effect they may be set as close as eight to nine inches each way.

Blooms Will Rival "Mums."
While asters do not require a great quantity of water, the soil should never be allowed to dry out to the wilting point. A thorough watering once or twice a week, with thorough cultivation within a few hours after watering, should keep them growing in good health. When the buds begin to show a light application of nitrate of soda should be made, at the rate of about one pound per acre, which will result in longer stems and larger blooms. The application may be repeated in two to three weeks, in each case followed by a thorough watering.

If exhibition blooms are desired the plants may be disbudded in the same manner that florists disbud their chrysanthemums to produce the immense blooms so common in the market, leaving but three to five buds to each plant. This treatment, with a slight additional amount of fertilizer

will do anything that a 4-horsepower stationary gasoline engine will do.

Handy on a farm as well as on a garden tract.

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Seed Can Go In Now.

Portland amateur gardeners who have not yet even taken any steps toward preparing their vegetable or flower gardens should have no fear that the season will now be too far advanced before they can get their seeds into the ground. Portland seed men say that it is no loss of time to wait until spring weather is settled, as many plants if started early would not do well in case of a spell of cold, damp weather.

Brazil to Aid Investigation.
RIO DE JANEIRO.—The Brazilian government is endeavoring to facilitate the coming of immigration from Europe to Brazil. It has directed that government-owned vessels in European service shall bring on their return voyages such immigrants as have been vouchered for by Brazilian consuls. Immigration has recently been checked because of high rates for third-class passage from Europe.

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and water, will frequently produce blooms five to seven inches in diameter and of a quality equalling the best of the early "mums."

When cutting asters for use in the house the blooms should be taken just before they have reached full maturity, while there are still a few petals in the center of the flower yet to unfold. Place immediately in water, preferably fairly deep, and allow them to stand over night in the basement or some cool room. They may then be arranged wherever needed and the base of the stems of water and an occasional clipping of the end of the stems they will keep in good condition for ten days to two weeks.

The aster plant has but few enemies in this climate, the most destructive being the green tarnish bug which attacks the base of the stems, causing the blossoms to be more or less deformed. A dusting of tobacco dust occasionally during the time

buds are forming will usually prevent this injury.

Hard Work in Preparation.

Those who plan the cultivation of a vacant lot which has hitherto never been used for garden purposes are advised that the most important factor in the development of a successful garden the first season is elbow grease. The ground must be thoroughly broken up and cultivated. Fertilization is also generally necessary and the gardener must keep a constant eye out during the season

against weeds, grass, etc., which will want to spring up from the roots and seeds which remain from years past.

Alaska Has Poultry Center.

FAIRBANKS, Alaska.—Hot Springs, on the lower Tanana river, bids fair to become the poultry center of Alaska, according to claims of residents of that district. Poultry raising is attracting much attention in the camp, it is reported, a number of the settlers having fine flocks of Rhode Island Reds and other varieties.

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