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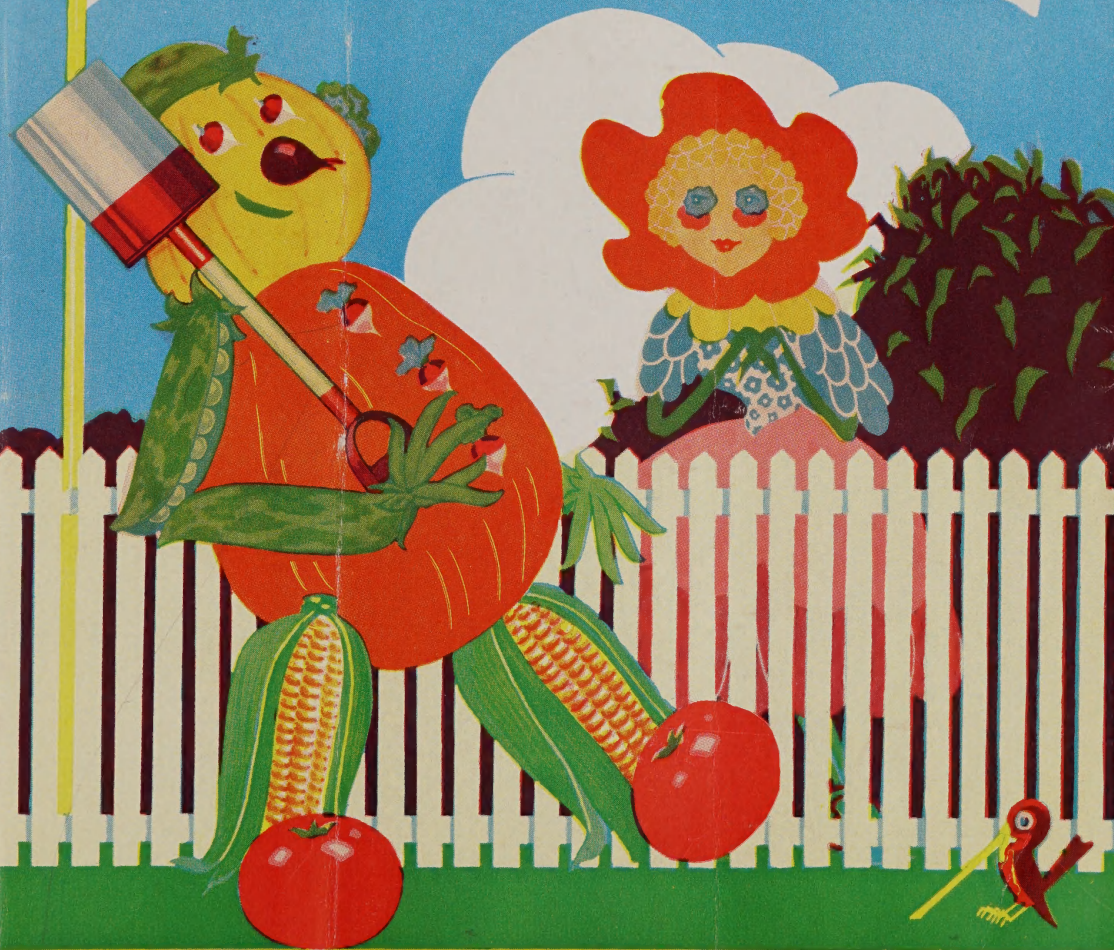


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# A GUIDE TO BETTER *Defense* GARDENS



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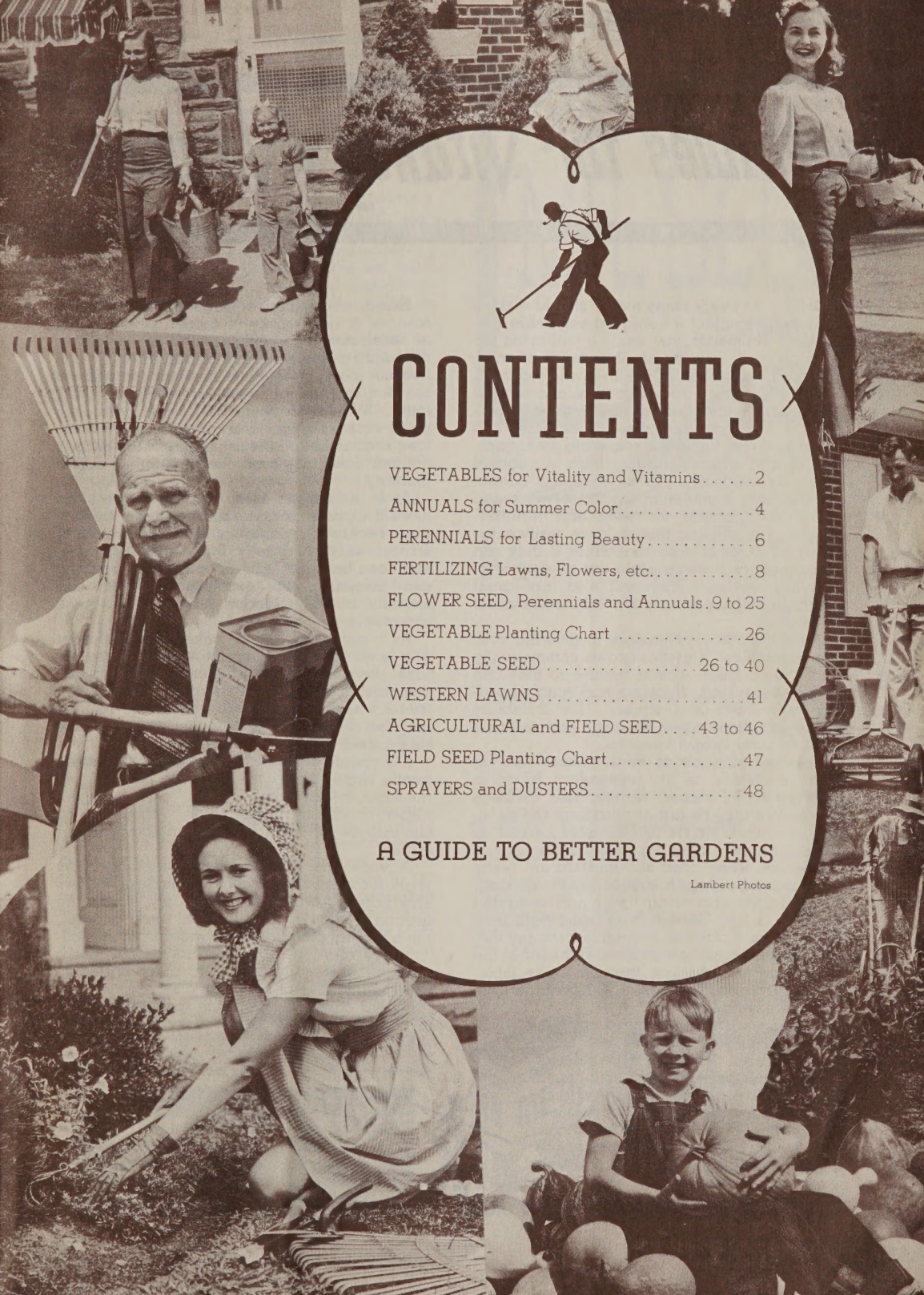


# CONTENTS

VEGETABLES for Vitality and Vitamins . . . . . 2  
ANNUALS for Summer Color . . . . . 4  
PERENNIALS for Lasting Beauty . . . . . 6  
FERTILIZING Lawns, Flowers, etc. . . . . 8  
FLOWER SEED, Perennials and Annuals . 9 to 25  
VEGETABLE Planting Chart . . . . . 26  
VEGETABLE SEED . . . . . 26 to 40  
WESTERN LAWNS . . . . . 41  
AGRICULTURAL and FIELD SEED . . . . 43 to 46  
FIELD SEED Planting Chart . . . . . 47  
SPRAYERS and DUSTERS . . . . . 48

## A GUIDE TO BETTER GARDENS

Lambert Photos



# Vegetables for Vitality + Vitamins

THIS year every home owner should make it a point to plant a backyard vegetable garden. No matter how small, it will bring unusual pleasure, besides an abundance of crisp, tasty food, chuck full of health-giving vitamins. Also, it will prove a real help in balancing your household budget during this national emergency as food costs have steadily increased and our large armed forces are requiring great quantities of food which naturally drain our normal supply tremendously. To have such a garden requires only a minimum amount of work and just a few pennies for seed and fertilizer. Mothers, too, will find that children really enjoy eating all kinds of fresh vegetables if they can select their own meals right out of their own backyard garden. They will also take great delight in helping to maintain this storehouse of vitamins.

There are many advantages in growing your own vegetables. Varieties grown commercially must have a tough, coarse texture so they can withstand packing, shipping and rough handling in markets and stores. This durability always sacrifices some delicacy and tastiness found in home-grown varieties.

Freshness, though of minor importance in some vegetables, is an outstanding factor in many others. Potatoes, turnips, late cabbage and the like may be just as nutritious and palatable one month or six months after harvest as when fresh; but unless the salad crops such as leaf-lettuce, water cress and mustard are ready for your table within an hour or so after picking, much of their appetizing flavor and delightful crispness is lost. Garden fresh peas, right from the vine, are a different vegetable from any that can be bought; and sweet corn, right out of the garden and into the pot, then on to the table, all within an hour, will give you genuine taste pleasure unsurpassed.

If you are planning a limited area, it is advisable to select your varieties with care. In many cases, varieties, especially of garden peas, sweet corn and bush beans, require different lengths of time in which to reach edible maturity. These may be started according to two plans: First, by making successional sowings of a quick-maturing variety at intervals of ten days or two weeks. Second, by sowing, all at one time, several varieties that require different maturities.

Except where there is irrigation, successional sowings of one variety of garden peas are not as satisfactory as sowing several varieties with different ripening periods at one time. This is because peas make their best growth and set the best crop in cool weather, while the soil is moist. With bush beans and sweet corn both plans work well, provided the sowings are made long enough before the usual date of the earliest autumn frost to permit their reaching edible maturity.

As to the garden itself, it is impossible to do more than present generalizations and suggestions because environment and other circumstances vary so greatly that almost no statement can be made to fit all conditions. Nothing can compare with experience which, fortunately, can be gained in gardening at a small expense.

As to soil and situation, make the best of what you have. Few of us can pick and choose the ideal site, soil and other factors so emphatically emphasized by most writers on gardening. Yet it is advisable to know what these are so they may be recognized and as nearly as possible established.

If a choice of exposure is possible, choose a gentle slope toward the east, the southeast or the south, because these are the "early facings." Other conditions being equal, vegetables on such slopes will mature earlier and be of higher quality.

A vegetable garden should be away from shallow-rooted trees such as maples, willows and poplars, which will not only shade the ground if situated on the east, south or west, but also steal plant food and water from the soil.

Heavy clay-type soil does not easily absorb moisture or readily assimilate plant nutrients; yet it is retentive of both. As clay retains moisture, it is cold and late in the spring, also hard to cultivate because of its sticky nature. This soil can be improved by working in a mixture of one-third each of peat moss, sand and good loam. Very light sandy soils are easy to work even when wet. They are loose and readily receptive but not retentive of water and plant nutrients, which consequently tend to wash out and be lost. Combinations of these two extreme types, known as loam, especially the sandy loams, are better than either type.



Though plant nutrients are sometimes abundant in readily available form in a garden soil, they can be added as needed. In general, dark colored soils are usually (though not necessarily) more fertile than lighter ones; the latter are generally deficient in humus. At the time of planting seed it is advisable to fertilize. This helps to produce earlier and better crops as it makes plant food immediately available when the seed first germinates. Generally speaking, most vegetables prefer a fertilizer mainly consisting of potash and phosphate with a small percentage of nitrogen. Well rotted sheep or barnyard manure will help build the soil, however, huge amounts of weed seed brought in with this type of fertilizer more than offset its advantages.

Apart from the preceding considerations, nothing is more conducive to success than careful planning and arrangement of the garden. Having the rows extend the long way of the area will make cultivations easier. In small areas the rows may extend either lengthwise or crosswise, as far as convenience is concerned. But in the interest of the crops it is advisable (theoretically at least) to have the rows extending north and south because thereby they receive more even distribution of sunlight. Otherwise, the tallest growing vegetables—sweet corn, pole beans, etc.—should be placed on the north side of the plot so they will not cast shadows on the lower sorts growing beside them. On a slope, run the rows, and cultivate, around and not up and down, to prevent washing and erosion.

Vegetables are a rich, natural source of vitamins. This is particularly true of salad type crops that can be served raw. The British government has found that raw carrots are an excellent source of sight vitamins and aid their night-flying aviators to see in the dark. **This year plant a garden for defense!**

\*\*\*

Community and school gardens are being encouraged by the United States Department of Agriculture for the production of vegetables for use in the local communities by under-privileged families. During the 1941 season, over 9,000 school gardens were established in connection with school lunch programs, the staple foods for which were supplied free by the Surplus Marketing Administration. As 67,000 schools had lunch programs under the S.M.A. during 1940-41, it is possible that the number of these school gardens might easily rise to a total of 40,000 or 50,000 during the 1942 season. Is your community doing its share for these under-privileged people? The cost of materials is very little.

# Good-bye MR. SLUG



**M**ETA Slug and Snail Bait is truly sensational. The way META actually attracts slugs and snails away from tender young plants and kills them right there on the spot is really amazing.

Many gardeners do not realize that these two pests are robbing their garden and killing young plants. Snails and slugs are night feeders and never in sight during the day. An application of META will no doubt surprise you. Buy a package from your local seed store today, clean up these "night-feeding" pests early and give your young garden a chance.

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*kills* SLUGS AND SNAILS

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quickly, neatly, permanently! **25¢**



# ANNUALS FOR SUMMER COLOR

**A**NNUALS play a most important part in making your flower garden really outstanding. They grow and bloom quickly and bring such fine results for just a few pennies invested. Most all annuals produce strong, sturdy plants and bloom profusely all summer long.

This group of flowers comes to us from almost all parts of the world, and like true cosmopolitans are most adaptable. Properly chosen, they can provide bloom and fragrance in the garden from early spring to late fall. As they come in many forms, heights and colors, they lend themselves to many uses, and a very brilliant effect can be secured from a few packets of seed. Some are excellent for borders, either massed by themselves, in varied combinations, as fillers among perennials or to follow spring-blooming bulbs. The most effective results can be obtained if straight, or assorted, colors of one kind of flower is massed together. This year, many gardeners will be featuring "Federal Gardens" with mass plantings of red, white and blue annuals spotted in that order in their beds.

Many attractive vines for covering fences or screening off unsightly buildings, etc., are offered in annuals. Most all annual vines grow rapidly and blossom profusely. Others are suitable for window boxes and hanging baskets, and still others can be used for edging and for prolonging blooms in rock gardens after the normal season of many of the best rock garden subjects. They are invaluable as cut flowers, and some, especially the everlastings and grasses, can be used in winter bouquets.

Two things must be remembered in growing annuals. The first is the necessity of obtaining the best seed possible. Your local seed merchant prides himself in serving you with quality mer-

chandise. His success depends upon faithfully serving his neighbors and you can be assured that his stock is carefully selected for purity, germination and the ability for producing the most bountiful crops for your locality. The second thing to remember is that if you wish to prolong the blooming period of an annual the flowers must be picked before they start to fade in order that no seed may form. A true annual has a slight root system, as it stores no food for future seasons and it lives to bloom quickly, set seed, and finish its existence; therefore constant picking conserves its energy and stimulates it to use this energy in producing new blossoms as fast as the old ones are removed.

The majority of annuals prefer a moderate amount of sunshine. Some, such as Marigolds and Zinnias, like it hot, the hotter the better. There are many varieties that prefer a partial shade, even a few that like it extremely shady. However, they will all do well in almost any bed in your garden.

Good garden loam produces best results and the plants should be fed with a complete fertilizer about every six weeks during the summer. Feed small amounts so as not to cause excessive foliage growth and be sure to soak the soil thoroughly after each application. If fed regularly at six-week intervals, an application of not more than one pound to a hundred square feet will produce splendid results.

Generally speaking, Annuals prefer a moderate amount of moisture. Never water the foliage, but soak the soil thoroughly each time you water, getting the moisture down six or eight inches. If this is done you will only have to water once a week, **except during extremely hot weather.** Watering in early morning or early evening is more economical and better for the plants than during the heat of the day. You will find the new Water Wand an excellent tool for proper watering of all types of flower beds. The Water Wand supplies plenty of water at the roots of the plants without washing away the soil.

Annuals may be divided into three classes: **Hardy**, which can withstand a light spring frost, and can therefore be started from seed sown in the open as soon as the soil can be worked. Many gardeners have had splendid results sowing these hardier types out of doors in late fall. However, if you are planting at this time, be careful not to put the seed too deeply, and don't put them in until after the first hard frost. Annuals which may be sown out of doors in the fall or early spring here in the Pacific Northwest include: Snapdragons, Clarkia, Phlox, Pinks, Cosmos, Pansies, Poppies, Godetia, Larkspur, Candytuft and Calendula.

When these germinate in the spring, thin them out soon so as to give plenty of room for spreading the growing into strong, sturdy plants.

Second type is **Half-hardy**, which requires a long season to attain maturity, and therefore must be given an early start under glass. This group can be started on an enclosed back porch if there is ample sunlight, or better still, construct a small cold frame and place it on the



## BUILD A COMPOST PIT

The economical and wise gardener builds himself a compost pile and improves his garden soil by working this decayed vegetation back into his flower beds and kitchen garden plot.

Many gardeners make the mistake of working dried leaves, grass clippings, etc., into the soil without ageing them into humus. This actually does more damage than good as this material must rob the growing plants of nitrogen during its process of breaking down, which takes about a year.

The most satisfactory method for most home gardeners is to dig a pit about five feet deep. Width and length determined by the amount of material collected during the summer and fall. First, put in a layer of coarse material such as corn stalks, straw or annual stocks and foliage. This layer should be 4 to 6 inches deep. On this place 3 to 4 inches of manure (preferably cow manure). Next a layer 2 or 3 inches deep of soil. This makes your base, from now on you add layers of grass clippings, plant cuttings, etc., then manure and next soil.

After the first base is laid, sulphate of ammonia can be used in place of the manure. If this is the case it is not necessary to make a solid layer, as sulphate of ammonia is highly concentrated nitrogen and will break down vegetation readily if used in small amounts. Merely sprinkle the crystals lightly over a 4-inch layer of vegetation and then put on a layer of soil.

As the pile is built, the top should be kept flat or slightly concave so as to collect rather than shed rain. If the weather is dry, the pile should be wetted down once a week.

During the late fall and winter months, while the pile is dormant, it should be spaded over about once a month and sprinkle a little sulphate of ammonia on top each time. This will make more uniform decaying and "season" the material so it will be ready for use the following spring.

protected side of your home or garage, but where it will get most all of the afternoon sun. The third type is the **tender** annual, which require a still earlier start in the greenhouse or hot bed and cannot be transplanted to the open until the ground is warm and all danger of frost is over. Unless you have proper equipment it is best to buy hardy plants from your seed dealer.

As annual plants grow older, pinch off the top bud, or buds. This will make the growth stockier, the plants will branch out and develop more large flowers at the sides. As they grow older, pinch off any smaller buds growing out along side the larger ones. The strength that was to have gone into growth of the two buds will be concentrated into the one that is left.

This is one of the ways in which the large blooms are created by specialists.

**For Sun and Dry Soil.** Most annuals like full sun, and a few are particularly useful for hot, dry locations where the midsummer sun bakes out most other plants: Portulaca, California Poppy, Shirley Poppy, Zinnia.

**For Partial Shade.** Some which will thrive and sometimes bloom longer in partial shade include: Nasturtium, Snapdragon, Pansy, Sweet William, Balsam, Clarkia, Nemophila, Annual Stock.

**For Cutting.** Annuals are prolific and constant in bloom and vary widely in color and size, so they naturally become the chief reliance in the cutting garden or border. Those particularly useful in view of their ease of growth and long season of bloom are: Snapdragon, Calendula, Coreopsis, Cosmos, Larkspur, California Poppy, Gypsophila, Ageratum, Heliotrope, Sweet Pea, Gaillardia, Zinnia, Blue Laceflower, Annual Chrysanthemum, Aster, Marigold, Clarkia, Lupine, Verbena, Nasturtium, Annual Phlox, Salpiglossis, Stock.

**For Continuous Bloom.** Annuals which reach flowering size in a short period may be given several sowings, 2 or 3 weeks apart, during the summer. These include: Gypsophila, Cornflower, Poppy, Phlox, Coreopsis, Candytuft, Mignonette.

Sweet Alyssum and Edging Lobelia may be cut back to produce later bloom.

**For Window and Porch Boxes.** As the plants in boxes must usually be replaced each year, the use of annuals here is inevitable.

For center of box—Zinnia, Marigold, Salvia. To trail over edge—Sweet Alyssum, Verbena, Petunia, Thunbergia, Lobelia.

**Annual Vines.** These offer an excellent group of plants for covering unsightly fences or walls quickly, or for filling bare spots against a new house or fence while the flowering perennial plants are becoming established. The most interesting of the annual vines are:

Morning Glory, Heavenly Blue, Scarlet O'Hara; Moonflower; Scarlet Runner Bean; Canary Bird Vine; Cardinal Climber. Gourds, mixed. Nasturtium, tall mixed.

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# PERENNIALS FOR LASTING BEAUTY

PERENNIALS are the very backbone of every flower garden. They bloom profusely from early spring until late fall if planted with a definite blooming program in mind. The very name of this group means they live for several years and up to a certain point, improve with the years. They are generally the first to break into blossom following the spring flowering bulbs. Some perennials live indefinitely; others, like Sweet William, tend to die out after three or four years, unless the roots are taken up, divided and replanted every two or three years. The latter are known as "imperfect perennials."

In many old-time gardens most of the plants were hardy perennials, such as Phlox, Peonies, Delphinium and Bleeding Heart; hence, although they are just as popular and probably even more widely grown in all well-balanced gardens, they are known as "old-fashion" plants. Because of their hardiness, permanency and variations in color, height, foliage, and nature of bloom, those old-fashioned flowers form the background of modern gardens. They are often referred to as the "busy man's favorite", for they render unnecessary the sowing of seed every year. While some perennials will flower the first season from seed if it is sown early, they often are not at their best until the second year. Because of this you will naturally ask yourself the question: "Shall I grow perennials from seed or get plants ready to set out in my garden?"

The answer to this depends a lot on your patience, and how long you are willing to wait for flowers. If you grow them from seed you have the satisfaction of having grown your own plants literally from the ground up. On the other hand you may have better success by purchasing your plants from your local seed store.

Differing from annuals in many respects, especially in their flowering habit, perennials offer the gardener many advantages. For one thing, as new plants come into bloom and old ones pass, the garden scene presents changes almost from week to week, constantly giving the gardener something to look forward to. In a garden of annuals the picture of the same plants in blossom for long periods is apt to become monotonous. Only a few perennials bloom all

season, and most of them in congenial surroundings increase in beauty with the passing of the years. With judicious selection and arrangement of plants one may be assured of continuous change from early spring until fall, and because of this ever-shifting picture the perennial border has become more and more a feature of American gardens.

The perennial border is also one of the most flexible parts of the garden, having no regular formal design but lending itself to variations according to the taste of the individual gardener. Plants should be arranged with reference to the space allotted them. Place the tallest species in the background, especially those which provide a good display of foliage. Some of these tall sorts should, however, extend into the front, especially in the wider parts of the border, to provide interest and relieve any possible monotony. Dwarf edging plants of compact growth (either perennial or annual), should be used in the foreground, with plants of intermediate height distributed throughout the rest of the border.

If a border is devoted entirely to perennials it should be at least five feet wide. If the grounds are small and there is a hedge or a shrub border, the space between that feature and the lawn can be widened by two or three feet and beautified by planting perennials in the bed so created. Perennials are always best when planted in masses or clumps; these are more interesting and attractive than a hit-or-miss planting, especially if consideration is given to color harmony or contrast. A generous use of white flowers is frequently advisable.

As for planting directions of perennials, it is best to follow the general rules of all planting plus these special ones. Make your planting holes large enough so that the plant to be set in has enough room for its roots to spread with no crowding.

The holes should be spaced a little closer than half the height of the plant. This rule varies with some. If you are transplanting a field grown plant, or one from your own garden proper, mark off 18 inches between holes. They may crowd as they establish themselves and grow, but you can thin them out later next season. Don't worry about this; it is always necessary to go over your perennial groups each year, re-spacing them, etc. This is a regular part of their care.

If you are growing Phlox or Delphiniums, give them still more space in which to grow.

With this wide spacing, your perennial beds and borders may look sparse during the first year. This is an excellent time to fill out not only with annuals but also bulbous flowers.

When the plant is set, scatter topsoil down around the roots, being careful not to cram them together, and when the hole is filled, firm the earth around the stem. This firming should be done well. Then you give the plant plenty of water, so that the soil will settle still closer around the roots, without leaving any air pockets.

After watering, take some compost (decayed vegetable matter from your compost heap), or

peat moss, or even dry soil, and spread it around the base of the plant to keep the moisture in. This is a mulch.

The foregoing paragraph covered the planting of perennial plants. Many gardeners prefer to raise their own perennials from seed. This is not at all difficult and by far the most inexpensive method, though for a first year start, it is well to buy a few established plants. Here in the Pacific Northwest seed should be sown early enough to make a good growth before winter; some are sown in the spring at the same time as many annuals, others in the summer and a few in the early fall.

For many years the general practice was to sow seed in midsummer, but in recent years experts have been advocating April and May planting. One of the chief reasons is that then the weather is cool and moist, aiding germination which with many perennials is best accomplished in cool weather. Delphiniums, for example, start best in a temperature of about 40 degrees and in summer it is often difficult to obtain germination; also at that time seedlings must have extra attention to prevent their being scorched. When seeds are sown in spring the little plants should be shifted to the garden by July, to give them time and space to develop into sturdy plants, so that by fall they will be large enough to set in their permanent locations in the border.

**Perennials to insure succession of bloom:**

(In order of blooming season) Bleeding Heart, Primrose, Columbine, Peony, Phlox, Oriental Poppy, Japanese Iris, Delphinium, Aster, Chrysanthemum.

**For shade:** Few of our garden perennials will succeed in dense shade. Where no sun penetrates, the list must be restricted largely to those plants which are native to thick woodlands. Where there are two or three hours of sun, or flickering shade from trees, certain of our garden favorites will bloom satisfactorily. **Dense Shade:** Lily-of-the-Valley, Trillium, Violets, Plain-tain Lily. **Semi-shade:** Japanese Anemone, Foxglove, Bleeding Heart, Primrose, Fuchsia and Begonia.

**For Cutting:** Japanese Anemone, Aquilegia, Shasta Daisy, Lily-of-the-Valley, Coreopsis, Delphinium, Peonies, Sweet William, Baby's Breath, Helenium, Coral Bells, Iris, Gold Band Lily.

**Easily Grown from Seed:** English Daisy, Shasta Daisy, Painted Daisy, Delphinium, Foxglove, Gaillardia, Batchelor Button, Gypsophila, Candytuft, Iceland Poppy, Oriental Poppy and Salvia.

*To own a bit of ground,  
to scratch it with a hoe.  
To plant seeds, and watch them grow.  
This is the commonest delight of the race,  
the most satisfactory thing a man can do.*

—Charles Dudley Warner.



## THE PERFECT COMBINATION

**HAYES-ETTE** Garden Hose Sprayer efficiently does the work of much larger sprayers. It weighs just a little over a pound, filled. Simply attach to your garden hose, lightly press the new No-Leak thumb-button—that's all. It operates so easily, you can spray for hours without tiring. Capacity is 1½ gallons of mixed spray material. Sprays all modern liquid spray materials, free from soap. Operates perfectly with EXTRAX and GREENOL. . . . . **\$2.95**

**EXTRAX** Garden Spray is the new, complete garden insecticide (containing Pyrethrum, Rotenone, Spreader and Penetrant) that controls most garden insects. Easy and Economical to use—one capful (equal to a teaspoonful) to a gallon of water. Combines with GREENOL for control of both insects and diseases. 4 oz. bottle (24 gal. spray) . . . **\$1.00**

**GREENOL** Liquid Fungicide is a most effective control of Mildews and many other plant diseases. Use this in combination with EXTRAX for all spraying throughout spring and summer. The foliage and blossoms in your garden will look ever so much better. 4 oz. bottle (24 gal. spray) **60¢**

Regular price for these three items . . . . . **\$4.55**

Special, all three (until March 15, 1942) . . . . . **\$4.38**



point as a healthy established lawn requires far less water and care than one that lacks plant food. As soon as the grass on an established lawn shows signs of beginning spring growth the first feeding of the year should be made with a good complete plant food at the rate of 4 pounds per 100 square feet and watered well into the soil. A second application should be made in May at the rate of 2 pounds per 100 square feet and this same quantity should again be applied

**FLOWERS** Liberal feeding with fertilizer promotes a vigorous growth of annual flowers and hastens the flowering period. Plant food should be applied with a spreader and raked into the soil at the rate of 4 pounds to each 100 square feet or 2 level tablespoonsful per square foot of bed after the seed bed has been prepared and well tilled but before the seeds are sown.

A second feeding should be made when the flowers are in the bud stage, by this time much of the plant food of the original application will have been used by the growing flowers and they will need additional food to carry them through the blooming period. This application may be lighter, consisting of 2 pounds of complete plant food per 100 square feet of soil. Immediately after the application has been made the plant food should be worked into the soil with a hoe or rake and then thoroughly water the bed.

One should be careful to avoid spilling plant food on the foliage of plants. If this does occur the plant food should be immediately washed from the leaves.

Perennial flowers should be fed at the same rate, however, more care should be taken to protect the foliage from the plant food as most perennials are grown in clumps.

**LAWN** Every day we have inquiries on how to fertilize a new lawn or an established lawn or flower beds, etc. With this in mind we have set down a few facts generally covering this subject. If more detailed information is desired, please come in and let us help you.

The proper feeding of a new lawn is extremely important as the early stages in the growth of the grass are most crucial ones. A good supply of plant food is necessary for the production of vigorous grass that will soon cover the entire seeded area and keep weeds crowded out.

After the seed bed is prepared, a well balanced plant food should be applied at the rate of 4 pounds per 100 square feet, raked into the top 2 or 3 inches of soil. If plant food is applied just before the raking of the soil prior to seeding it can be forked into the soil and the soil surface smoothed and finely pulverized in the same operation.

The proper feeding of an established lawn is extremely important from an economical stand-

about the middle of July. If this program is followed you can be assured of having an outstandingly beautiful turf of thick velvety grass. Just before winter sets in an application of raw bone meal at the rate of 4 pounds per 100 square feet will give your lawn the necessary food it requires during the winter months.

**SHRUBS** All shrubs respond to the application of plant food. The first feeding should be broadcast in the early spring at the rate of 3 pounds per 100 square feet of the area lying beneath the spread of the branches.

The second application should be given to the shrubs about two months after the first feeding. This application should be made at the rate of about 2 pounds per 100 square feet and thoroughly soaked into the ground. If the shrubs are growing as a hedge plant, food should be spread on either side of the hedge at the rate of 4 pounds for each 50 feet of row. The application should cover the soil as far as away from the base of the hedge as corresponds with the branch spread. In most cases this will not be less than 2 feet on either side of the hedge. It is important that a great deal of water should be used in washing the fertilizer down to the roots as all good healthy shrubs are deep rooted.

**VEGETABLES** The feeding of a vegetable garden is very important as an abundant supply of complete plant food is necessary for the development of good quality and tasty vegetables. The garden plot should be fertilized with a spreader before seed is planted at the rate of 4 pounds per 100 square feet. This should be done after the bed is completely prepared but before the seeds are sown.

Six weeks after the original application, plants such as tomatoes, cabbage, celery, peppers and egg plant will be greatly benefited by an application of plant food. This application should be made at the rate of 2 pounds for each 100 square feet or 1 pound to 50 feet of row and cultivated into the soil thoroughly with a hoe or garden plow. The second feeding will carry the plants through to maturity and greatly increase the yield and flavor. Care should be taken not to over-fertilize vegetables as too much plant food will cause abnormal growth and poor flavor will result.

# Flower Seed

## PERENNIALS - ANNUALS

**ASTERS** are among the most useful, decorative, late summer plants for the amateur gardener. They are easily grown requiring only a normal amount of care for the abundance of flowers they will give in return. In warm sections seed can be sown directly in the garden after first frosts. Here in the Northwest they should be started in flats indoors and plants set out about the middle of May or thereabouts.

Asters prefer a rich soil rather than a sandy loam. They should be cultivated regularly and watered before the soil becomes too dry. Every plant must have plenty of space to develop fully without being crowded. The tall branching variety should be set about 15 to 18 inches apart each way and the medium growing sorts 10 to 12 inches apart, while the dwarf types can be as close as 8 to 10 inches.

**Improved Crego Wilt-Resistant Aster.** Beautiful, large colorful flowers 4 to 5 inches in diameter. Blooms are fully double, about 2½ inches thick, carried on long, strong stems. The individual petals are gracefully curled and twisted, giving the whole flower an artistic appearance not unlike a Japanese Chrysanthemum. Plants grow about 2½ feet tall and bloom from late August until the middle of October. Colors: **White, shell pink, deep rose, crimson, orchid, azure blue, purple, lavender and mixed.** Packet, 10c.

**Improved California Sunshine Aster.** The flowers are 4 to 5 inches across, are composed of a single row of loosely placed outer petals, which contrast with the unique yellow quill-like center disc. Stems are long and heavy, on plants 2 to 3 feet in height. **Mixed.** Packet, 10c.

**Super Giant El Monte Aster.** Deep glowing crimson blooms composed of daintily interlaced bloom-like petals somewhat similar in form to Giant California, but earlier and much larger. The huge flowers are borne on unusually heavy, non-lateral base-branching stems. Earlier in blooming than other types. **Packet, 10c.**

**Super Giant Los Angeles Aster.** Same type as the El Monte, however, the color is a pure shell pink blending to creamy pink in the center. **Packet, 10c.**

**Golden Sheaf Aster.** The deepest yellow aster yet offered and the only pure yellow aster of giant size. The flowers are fully double with an attractive crest-like center of good substance and depth of petal. **Packet, 10c.**

**AGERATUM** (Flossflower). An attractive herbaceous annual and one of the most popular summer flowering plants grown from seed. It is covered with blossoms from early summer until frost and excellent for borders, edgings, or pots. Combines with Columbines, Pink Sweet Williams, French Mari-



CREGO ENCHANTRESS

gold and Salpiglossis. Varieties: **Blue Perfection Medium**, grows 8 inches tall, compact plant bearing large vivid dark purple flowers, freely produced; **Midget Blue**, a very fine dwarf only two to three inches high. Growth is very uniform and even, the entire plant is practically smothered with small blue flowers; **Little Dorrit**, white, midget. **Packet, 10c.**

**ALYSSUM** Annual and perennial, easily grown from seed in any good garden soil and especially suited in rockeries and edges in open sunny situations. The foliage tends to be grayish and the flowers are white, violet or yellow. Grows best in rich, light, well fertilized loam. Combines exceedingly well with Violets, Forget-me-nots, Gypsophila. Varieties: **Benthami Martiumum** (hA) Sweet white, honey scented, grows 1 foot tall; **Little Gem** (hA) grows 4 inches, the plants are covered with snow-white blossoms; **Gold Dust** (Saxatile Compactum) (hP) a perennial yellow type, growing 1 foot tall; **Violet Queen** (hA) a beautiful, fragrant sweet Alyssum of bright clear violet hue, holding its colors through the hottest, driest summer. Considered best violet all-season edging plant. **Packet, 10c.**

**ANCHUSA** (Sea Buglose) (hP). A hardy, easy to grow perennial and biennial herbaceous plant, growing from 4 to 6 feet tall. Makes a good sized clump of rather coarse, usually hairy foliage, from which rise leafy stalks bearing from mid-July to September or later, loose masses of small blue flowers. Sow seed in spring (in hotbed or frame) or in early summer (outside) will produce flowers first season. Plant in the perennial border, combining with Coreopsis, Gaillardia, Orange and Yellow Chrysanthemums. **Dropmore** variety. **Packet, 10c.**



COSMOS



BACHELOR BUTTON



CALENDULA



LITTLE GEM ALYSSUM



AGERATUM



COLUMBINE



CANTERBURY BELL



CARNATION

**ANEMONE** (Wind Flower). (tP). Bright-green, finely dissected leaves with large poppy-like flowers, 1½ inches across in various shades and mixtures of red, white and blue. Blooms from March to June. Sow seeds in warm fall or early spring. Thrives in rich, light garden loam, keep moist during blooming period. Effective in beds combined with Scabiosa, Candytuft. **St. Brigid Variety.**

**Packet, 10c.**

**ARABIS** (Rock Cross). Perennial of 6 inches, but spreading out, forming a matty growth. Gray-green leaves forming a sort of rosette with white, fragrant, radish-like flowers borne in loose racemes. Blooms in early spring. Seeds sown in fall or early spring. Grows well in any soil. Attractive in the rock garden, in the regular flower border, or as a border plant. **Packet, 10c.**

**ARMERIA** (Sea Pink). Perennial growing 8 inches. Bunches of narrow grass-like leaves coming from the base of the plant. Closely contracted heads of small pink, white or reddish flowers. Blooms profusely in summer, but quite continuously throughout the year. Very hardy, enduring a variety of soils, but preferring a rather light, moderately rich loam. Used as a plant along walks, rockeries. **Packet, 10c.**

**BALLOON VINE** (Love in a Puff). (hA). Excellent for covering wire fences or trellises, with support will grow to a height of 10 feet. The seed pods are inflated like balloons, and each black seed is marked with a white, heart-shaped spot. Quick growing vines are graceful with their deeply cut leaves and small white 4-petaled flowers. Seed should be sown where the plants are to grow. Prefer a light soil and sheltered spot. **Packet, 10c.**

**BALSAM** (Lady Slipper). (hA). Requires a fertile but light, sandy soil. Grows 2½ feet. Its double blossoms, from white to red, purple or yellow, are borne close to the stems and overtopped by leafy shoots. Combined with Alyssum or Verbena, is best used as a border subject. **Packet, 10c.**

**BARTONIA** (Blazing Star). (hA). Its large, single, fragrant, 5-petaled, light yellow flowers with bristling stamens open late in the afternoon during July and August. The foliage, in contrast to the blossoms, which produce a metallic effect in the sunlight, is gray and downy. Grows 3 feet tall, flowers 3 to 4 inches across. **Packet, 10c.**

**BACHELOR'S BUTTON** (Corn Flower). (hA). This old-fashioned hardy annual is very easily grown from seed and is still a great favorite for cutting purposes. Sow the seed in either autumn or spring. Height 2 to 3 feet. Hardy, rather thistle-like

flowers, fine for cutting and border planting. Bloom from early summer until hard frost. Varieties: **Jubilee Gem**, splendid for edging, borders, or cutting. Tidy compact plant, covered with double, rich blue blossoms. **Blue Boy**, excellent rich blue, tall with strong stems. **Double Rose**, same as Blue Boy except in color. **Double Mixed.** **Packet, 10c.**

**BRACHYCOME** (Swan River Daisy). (hA). Grows 10 to 18 inches tall with branching stems, making an excellent plant for the rock garden or border, or for edging. Its deeply cut, lacy foliage, compact growth and free flowering quality make it a garden favorite. Covered during the greater part of the summer with a profusion of small daisy-like flowers. **Mixed colors.** **Packet, 10c.**

**CALENDULA** (Pot Marigold). (hA). This is one of the easiest annuals to grow; blooms from May to frost. Plants are from 1 to 2 feet high. Does well under average soil conditions, but responds to a moderately rich loam and in either full sun or semi-shade. Easily started from seed sown in the spring. Grouping—for bedding out; in front of shrubbery; for the mixed border, combining with Delphinium, Shasta Daisy, Salvia or Alyssum. Varieties: **Orange Shaggy**, deep orange shading to lighter center. **Balls Orange**, bright orange shades; **Lemon Queen**; **Double Mixed.** **Packet, 10c.**

**CALLIOPSIS** (hA). Graceful for border plant, supplying throughout the summer an abundance of snowy flowers of yellow, crimson and maroon. Growth from six inches to one foot. Seed sown in early spring to summer. Grows in any soil, but prefers a rich, light, well fertilized loam. Grouping—with Coreopsis, Deep-blue Delphiniums, Snapdragons and Salvia. Varieties: **Golden Crown**, a rich orange-yellow with a pleasing fragrance. Nice for cuttings, with 12-inch wiry stems. **Drummondii** (Golden Wave). Yellow with circle of crimson-brown around the eye. **Tall Semi Double Mixed.** **Packet, 10c.**

**CANARY BIRD VINE** (Tropaeolum). (hA). This vine bears curiously cut yellow flowers with curved green spurs, the entire blossoms vaguely resembling canary birds in flight. Will grow in almost any soil. Ideal for covering trellises, often reaching a height of 15 feet. **Packet, 10c.**

**CANDYTUFT** (Iberis). (hA). Very showy, branching plant, growing 12 to 15 inches. Excellent for beds, masses, rock gardens and cut flowers. Blooming prolifically in spring, and during other seasons by successive sowing of seeds. Grows in ordinary soil, in sun and slight shade. Varieties: **Coronaria**, giant white hyacinth flowered; **Umbellata Type**, crimson, rose, white, lavender and mixed. **Packet, 10c.**



DOUBLE SUNBURST COREOPSIS

**CANTERBURY BELLS** (hB). The real bell flower. Branching plant heavily loaded with large pendant bells. Excellent for flower borders and rockery background. Grown in ordinary soil, fertilized with complete fertilizer. Does well in sun or slight shade. Blooms May and June; growth 3 to 4 feet. Grouping with Scabiosa, Perennial Aster and Lupine. Seeds sown in July to produce flowering clumps next year. Varieties: **Calycanthema** (cup and saucer), **light blue**, **dark blue**, **white**, **rose pink**, and **mixed**. Packet, 10c.

**CARDINAL CLIMBER** (*Lobelia cardinalis*). (hA). Growth 2 to 4 feet. Erect, smooth, glistening plant with large, dark-green, lanceolate leaves. Racemose spikes of rather large, slender-tubular, intense cardinal flowers. Blooms July to September. Accent plant in rockery, near pools, in perennial border. Packet, 10c.

**CARNATION** (tP). Grows from 1 to 1½ feet. Easily winter killed, should be sown in flats during March. Transplant to other boxes when plants are 1 inch high, transfer to open soil when ground becomes warm. Carnations are best planted by themselves. Varieties: **Chabaud**, **Double Giant**, cardinal red, deep rose, flesh pink, white, mixed. (Annual). **Marguerite**, blooms four months from sowing, in mixed shades only. Packet, 10c.

**CELOSIA CRISTATA** (Cockscomb). (hA) Erect plant, with large leaves, curious spikes of crested or plummy, brightly colored fascicles, the effect extending from July until late in the fall. Growth 9 to 18 inches. Requires a moist, rich soil and sun. Should be planted by themselves in beds, in flower borders, or in front of shrubs with dark-green foliage. Sow seed in early spring. Varieties: **Cristata Tall Crimson**; **Celosia Plumosa Fine Feathered Mixed**. Packet, 10c.

**CHINESE WOOL FLOWER** (*Celosia Childsii*). Plants grow 2 to 3 feet high, are freely branching and bear in profusion elegant ball-shaped, wool-like flowers of scarlet and purplish crimson. Blooms freely until frost. Do best in a fertile soil supplied with plenty of moisture. Packet, 10c.

**CHRYSANTHEMUM** (hA). Attractive long stemmed summer flowering plant, wide varieties of color. Sow seeds in flats and transplant when soil is warm, or sow seed outdoors after all danger of frost has passed. Plant in rich soil. Grows 18 to 24 inches in height. Blooms profusely throughout the summer months and into the late fall. Varieties: **Coronarium**, tall double mixed. **Carinatum**, single mixed. Packet, 10c.

**CLARKIA** (hA). Popularly known as the Rocky Mountain Garland because in form and color it resembles a garland of almond blossoms. Easily cultivated in sunny locations in any light garden soil. It produces graceful, showy blossoms delicately rose or purple. Excellent for mass planting. Plant with Larkspur, Pansies, Nicotiana or Virginia Stock. Varieties: **Scarlet Queen**, **Salmon Queen**, **White**, **Single Mixed**, **Double Mixed**. Packet, 10c.

**COBAEA SCANDENS** (Cup and Saucer Vine). (hP). Evergreen shrubby climber, growing 10 to 20 feet. Rapid growing with pinnate leaves, solitary, light violet or greenish-purple, bell-shaped flowers, blooming in April and May. Seed should be sown in early spring in moist earth. Good for covering porches, arbors, etc. Packet, 10c.

**COLEUS** (tP). Erect, branching plant, grown chiefly for the leaves, which are furrowed serrate, or dentate, colored red, yellow, purple, bright green, frequently blotched or variegated; small blue or lilac flowers. Sun loving plant growing from 1 to 2 feet. Requires a rich, fibrous loam. Used in window boxes and as potted plants for sun porches, conservatories, etc. Packet, 15c.



**COLUMBINE** (*Aquilegia*). (hP). Erect, branching plant, with long, slender stems.

The sepals as well as the petals are colored, and each of the latter has a downward extension which forms a hollow spur. Should be given only partial sun and protection from wind. Tolerates different soils, but prefers rich humus to which bonemeal has been added. Seed sown in spring or early summer will give plants which can be set into their permanent quarters in September. Following spring will bloom abundantly, growing from 1 to 3 feet high. Splendid for the mixed border. Group with *Delphinium*, *Scabiosa*, *Stocks*, *Snapdragons*, *Heuchera*. Varieties: **Mrs. Scott Elliott**, long spurred, packet, 15c; **Pink Shades**, packet, 15c; **Blue shades**, packet, 15c; **Silver Queen**, packet, 15c; **Copper Queen**, packet, 15c; **Double Mixed** and **Single Mixed**, packet, 10c.

**COREOPSIS** (*Grandiflora*). (hP). Spreading plant, with long, smooth, dark green, lanceolate leaves; large, daisy-like flowers, blooming April to frost. Drought resistant; grows in any soil, but best in moderately fertilized, light loam; requires a sunny location. Growth 18 to 24 inches. For the perennial and mixed borders, combining with *Delphinium*, *Blue Scabiosa*, *Blue Larkspur*, *Gaillardia*. Varieties: **Double Sunburst**, large, golden yellow, fully double. **Lanceolata**, golden yellow, semi-double. **Packet, 10c.**

**COSMOS** (hA). Erect, branched, smooth plant, with finely dissected leaves; medium to large single and double flowers, ranging in colors from white to rosy-lilac. Reaches a height from 3 to 10 feet. Thrives in average soil, but preferring a light, rather poor texture, and flourishing in either sun or partial shade. Seed sown in the open ground in April should bloom in July, and will furnish an abundance of cut blooms during the early flower season. Plant between shrubs; in the background of the mixed border, combine with *Shasta Daisy*, *Lavender*, *Michaelmas Daisy*. Varieties: **Klondyke Orange Flare**, deep orange, blooms early; **Early Double Crested** (anemone flowered) mixed; **Early Flowering Mammoth**, light pink, **crimson, mixed.**  
**Packet, 10c.**

**CUT FLOWER MIXTURE** A mixture of easy growing annuals. Assorted colors. **Packet, 5c.**

**DAHLIA** (hhP). It is easy and fascinating to grow Dahlias from seed and enjoy the surprise of new colors and forms. If seed is started early, plants will bloom the same season. Sow seed in shallow box in March, transplant carefully, and keep soil moderately moist. When all danger from frost is over, plant in the garden. Growth 2 to 6 feet. Require rich, moist, fairly light loam. Appear to best advantage when planted in large beds by themselves, or when planted in the foreground of shrub borders. Varieties: **Single Mixed, Double Mixed, Coltness Mignon** (Mixed Bedding).  
**Packet, 10c.**



DWARF GODETIA

**DAISY African Blue Daisy** (*Arctotis*). (hA). Branching plant, with thick, gray-green, woolly leaves; wide, daisy-like, white-lilac blue narrow-petalled flowers. Growth 2 to 3 feet. Blooms from June to December. A sun loving plant. Does best in rich, light, well fertilized garden loam. Important in the mixed border, combining with *Snapdragons*, *Stocks*, *Larkspur*, *Godetia*, *Heuchera*. **Packet, 10c.**

**Double Daisy** (*Bellis Perennis*). (English Daisy). (hP). Blooming from February to May. Height 3 to 6 inches. Fleshy root, making large clumps of fleshy, dark-green leaves, with large, densely rayed heads of white, rose, pink or reddish flowers. Sow seeds in early spring, to give strong plants to set out in October. Used as border plant; naturalized in wild garden and lawns; flower borders. Combine with *Narcissus*, *Winter-blooming Stocks*, *Heuchera*. **Mixed.**  
**Packet, 10c.**

**Shasta Daisy** (hP). This popular flower is noted for its keeping qualities as a cut flower. Should be planted in the fall or early spring. Grows in any moderately rich soil in the sun and partial shade. Has smooth, dark green, lanceolate leaves with large, daisy-like pure white, golden centered flowers. Blooms April to September. Height 1 to 2 feet. **Packet, 10c.**

**Michaelmas Daisy** (*Perennial Aster*). (hP). Erect, tending to make large clumps from the creeping stems, medium green leaves; numerous, daisy-like flowers in dense heads or racemes, white, pink, lavender to deep purple, blooming during summer and fall. Grows from 2 to 6 feet, in sun and partial shade, but preferring mostly sunny positions. Drought resistant. Grows in any soil, but prefers a sandy loam, not too moist.  
**Packet, 10c.**



DOUBLE GAILLARDIA



GEUM



GODETIA



FRENCH MARIGOLD



HEAVENLY BLUE MORNING GLORY



AFRICAN DAISY



SHASTA DAISY



SINGLE GAILLARDIA

**DELPHINIUM** (Perennial Larkspur). (hP). One of the finest garden flowers, even casually grown, are extremely hardy and make satisfactory garden plants, but if given a little special care, they reward the grower many times over. Fine plants depend upon sun, circulation of air, and a rich, light, alkaline soil. Plants should stand at least 2 feet apart. Growth from 3 to 8 feet high. Seed of hybrids sown in late summer to produce good clumps in fall; seed sown in spring to produce summer-blooming plants. Combined with Columbine, Salpiglossis, Snapdragons, Stock, Scabiosa, Gladiolus. Varieties: **Pacific Giants Dark Blue Shades, Light Blue Shades, White, Mixed.** Packet, 25c.

**DIGITALIS** (Foxglove). (hP). Their long spikes on stems 3 or more feet high are crowded with large thimble-like flowers all drooping toward one side and beautifully spotted on outer or inner surface. Easy to grow in the garden, so long as they have some shade. Will thrive in any ordinary soil. Seeds sown preferably in summer for flowers the next year. Harbors sow bugs and snails—work Naphthalene in soil around plants. In the perennial border, alone or grouped with Hollyhock, Canterbury Bells, Shasta Daisy, Begonias, Evening Primrose. Varieties: **Purple, Rose, White and Mixed.** Packet, 10c.

**HELICHRYSUM** (Everlasting Strawflower). (hA). Flowers of papery quality which are extensively used for permanent winter bouquets because when they are dried they retain their form and color. Easily grown in a sunny spot in ordinary soil. Bloom the first year from seed sown in spring outdoors. Flowers in a variety of shapes and colors. Growth 1 to 2 feet in height. Best planted by themselves. **Mixed.** Packet, 10c.

**EUPHORBIA VARIEGATED** (Snow on the Mountain). (hA). Growth 2 to 3 feet bearing an abundance of beautiful green foliage, broadly marked with silvery-white and bearing small flowers. Very attractive and ornamental and can be planted as a background for lower growing plants or in the mixed borders. Sow seeds outdoors after frost is over in place where plants are to stand. Sunny exposure is best. **Packet, 10c.**

**EVENING PRIMROSE** (Biennial). Opens suddenly with a quick nervous motion that can be seen and heard, exposing yellow corollas that attract night-flying moths. Among the best of the evening garden flowers and are excellent for mixed beds, rockery, and borders. Grow in branching form from 1 to 3 feet tall, producing large blossoms continuously. **Packet, 10c.**

**FORGET-ME-NOT** (Myosotis). (hB). Will bloom the first year from seed. Small blue star-like flowers borne in clusters on long stems. Their height ranges from 6 to 12 inches, depending on soil and climatic conditions. Form an excellent border with Tulips and other spring blooming bulbs. Adapted to all ordinary soils, but favor rich, moist, light, moderately fertilized soils. **Blue.** Packet, 10c.



GIANT IMPERIAL LARKSPUR

**FOUR O'CLOCK** (Marvel of Peru). (hA). Does not open its flowers until about 4 o'clock except on dull, cloudy days. Well branched plant about 3 feet tall with bright foliage and fragrant long-tubed blossoms of white, red, yellow. Blooms from July to frost. Excellent for planting in front of porch or fences. Will re-seed themselves. **Tall Mixed.** Packet, 10c.

**GAILLARDIA** (Blanket Flower). (hP). Beautiful show plant, remarkable for the profusion, size and brilliancy of its flowers. Continuous blooms from early summer until late in the fall. Grows best in sun, but endures slight shade. Height 1 to 2 feet. Bears large, showy, solitary heads with yellow or reddish rays and purple disks. Flowers on long stems, which makes them ideal for bouquets. Plant in mixed border, combining with Deep-blue Delphinium, Russet Snapdragons, Yellow Geum. Varieties: (Perennials) **Dazzler,** maroon red, golden yellow; Single Mixed. (Annuals) **Lorenziana** Double Mixed, Single Mixed. **Packet, 10c.**

**GERANIUM** (Pelargonium). (P). This well-known half hardy perennial will bloom the first year from seed if sown early. Grow in pots and when weather is suitable, insert in soil. Subject to frost injury, so remove and give shelter during cold weather. Grow in sun and partial shade. Varieties: **Zonale Mixed.** Packet, 10c. **Lady Washington Mixed.** Packet, 15c.

**GERBERA** (Transvaal Daisy). (tP). Large daisy-like blossoms with flower stems rising to a height of about 2 feet. Flowers are excellent for cutting; stand well above a rosette of gray-green leaves and are solid colored in many pastel shades, from pale amber through salmon and rose to rich ruby red. Raising plants from seed is not difficult, except that germination is uncertain and careful handling is necessary; for this reason propagation is generally done by cuttings. Best to group Gerberas by themselves in beds or flower borders, but can be combined with Ageratum, Blue Lace Flower and certain colors of Snapdragon. **Mixed colors. Packet, 15c.**

**GEUM** (hP). 1 to 2 feet tall. Best in sun, but tolerates some shade. Hardy plants, with rosette formation of large, rough strawberry-like leaves; long flower stalks, bearing double rose-like flowers. Sow seed in early fall or early spring, produces blooming plants in one year. Grows well in moist light soils; attacked by soil pests, use Naphthalene Flakes in soil. Grouping—looks well with Tall Lobelia, Michaelmas Daisy and Salvia. Varieties: **Mrs. Bradshaw**, blooms all summer, bearing fully double, brilliant orange-scarlet flowers. **Lady Stratheden** is a double yellow. **Packet, 10c.**

**GODETIA** (Satin Flower). (hA). Grows from 1 to 2 feet tall in sunny or slightly shady places. Erect, slender branching plant; bright green, lanceolate leaves; large expanded, single and double, satiny flowers, white, crimson, pink, mauve, to purple. Seed should be sown in flats, transplanted when soil is warm. Grows in rather poor, sandy soil. Grouping—generally looks best alone, can be combined with Clarkia, Larkspur, certain Snapdragons and Stocks. Varieties: **Dwarf Single Mixed; Tall Double Azalea Flowered Mixed. Packet, 10c.**

**GYPSOPHILA** (Baby Breath). (hA). These light airy plants have a hair-like foliage and produce a very lovely effect in the garden. Excellent with bouquets. Sow seed outdoors in early spring, repeat sowings for longer season of blooms. Thrive in moist moderately rich soil. Does well in rockeries. Varieties: **Grandiflora Alba**, true white; **Grandiflora Rosea**, pink; (Perennial) **Paniculata Alba**, single white. **Packet, 10c.**

**HELIOTROPE** (hhA). Wellknown and much admired as border and bedding plant and also can be trained for a climber, growing from 1 to 6 feet high. Flowers borne in trusses and are very fragrant, blooming beautiful shades of lilac and lavender. Blooms profusely in summer. Prefers a rich, moist, well fertilized, light loam. For use in window boxes, pots, and in the shrub border. **Packet, 10c.**

**HEUCHERA** (Coral Bells). (hP). Blooming from June to September, they are valuable for the low border or rockery,

growth 12 to 24 inches. In a good loamy soil and sunny location, the plants produce mats of deep green, from which rise slender stalks bearing airy clusters of tiny bell-shaped flowers, which are good for cutting. **Packet, 15c.**

**HOLLYHOCK** (Althaea). (hP). Grows 6 to 12 feet in sun or partial shade. Erect plants, with spire-like, simple, hairy stems; large, rough, heart-shaped leaves; large, regular, round blossoms of various bright colors. Grows in any soil, enrich with sheep manure. Subject to rust; control rust with Greenol copper spray. Appropriate along walls, lattice fences, boundary lines, interspersed among shrubs. Varieties: **Double, maroon, rose pink, scarlet, yellow and mixed. Single mixed. Packet, 10c.**

**HYACINTH BEAN** (Dolichos Lablab). (hhA). A splendid, rapid growing climber, attains a growth of 12 to 20 feet. Bears clusters of hyacinth-like flowers in great profusion, followed by beautiful ornamental seed pods. Sow seed outdoors in rich soil after all danger from frost has passed. **Mixed. Packet, 10c.**

**KOCHIA CHILDSII** (Mexican Fire Bush). (hA). A fast-growing, shrub-like ornamental. The small but dense foliage, which is a clear bright green in spring, and a somewhat deeper shade all summer, turns bronze-red after frost. The plants grow from 1½ to 4 feet tall and are compactly pyramidal or rounded. They are of easy culture in moderately rich soil. Their formal shape and uniform size adapt them for use as a temporary hedge or tall border for walks or drives. **Packet, 10c.**

**KUDZU VINE** (Jack and the Bean Stalk). (hP). A twining vine with large tuberous roots, belonging to the Pea family. In the North it usually dies to the ground in winter, but under favorable conditions, it grows from 40 to 60 feet long each summer. It has large three-part, somewhat lobed leaves, spikes of purple, fragrant flowers, and large flat hairy seed pods. **Packet, 10c.**

**LANTANA** (hA). Low, compact, full flowered varieties whose flowers in flattish clusters vary or change from brilliant yellow through orange to red. Widely grown as a greenhouse subject, being easily raised from either seed or cuttings, it is excellent as a summer bedding plant, blooming continuously until nipped by the frost in the fall. **Packet, 10c.**

**LARKSPUR** (hA). Grows from 3 to 4 feet in sun and light shade. Erect, bushy plants, with light green, finely dissected leaves. For earlier blooms, plant in flats and transplant. Prefers a rich, well fertilized soil. Use a complete plant food. Grouping—Blue Lace Flower, Delphinium, Clarkia, Snapdragons and Candytuft. Varieties: **Giant Imperial Blue, White, Lavender, Rose, Carmine, Mixed. Packet, 10c.**

**LINARIA** (Miniature Snapdragon). (A). Flower resembles miniature Snapdragon and in addition has a long Columbine-like spur. Blooms in about eight weeks after sowing. Height 12 to 18 inches. Flowers come in a wide variety of pastel shades. Well adapted for borders and rockeries, showy effect when grouped in masses. Blooms profusely and continuously until frost. **Mixed.**

**Packet, 10c.**

**LINUM** (Flowering Flax). (hA&P). Growth 1 to 2 feet. Sun and slight shade. Erect, branching freely, with slender branches and flower stems; numerous broadly lanceolate to oblong, sessile, smooth and shining leaves; terminal, salver-shaped flowers blooming in summer until frost. Easy to grow from seeds sown in early spring. For the mixed border combining with Larkspur, Verbena, Heuchera and Ageratum. Varieties: **Annual Scarlet; Perennial Blue.** **Packet, 10c.**

**LOBELIA** (hA). Grows 6 to 12 inches in sun or light shade. Trailing, or compact, bushy plants; variable, dark-green, bronzed, or light-green leaves. Irregular, small tubular flowers, borne on slender pedicels, varying from light to dark blue. Excellent for borders, rock work and hanging baskets. For best results sow thinly in flats, covering with glass until seedlings are through soil. Transplant into a moist, well fertilized bed. Grouping—Gold Tuft, Iceland Poppy, Coreopsis, Siberian Wallflower and Pot Marigold. Varieties: **Crystal Palace**, compact form with deep blue flowers. **Gracilis**, creeping, with light-green foliage and light blue flowers. **Sapphire**, dark blue, white eye, trailing. **Packet, 10c.**

**LUPIN** (Russell Lupin). (P). Distinguished by their deeply cut foliage, which has many lance-like rays radiating from the end of the leaf stalk. The flowers, shaped like those of peas, are borne in great profusion on long-stemmed spikes. The flowers, predominantly blue, yellow, white or rose, are usually borne in May and June. After the first bloom is over, if the plants are cut back, they will often produce a second showing of flowers. Grows about 3 feet tall, thriving in either sun or partial shade. **Mixed. Packet, 15c.**

**MARIGOLDS** are truly the amateur gardener's best friend. They are both hardy and colorful, which makes them ideal for all types of garden work. Blooms start early in July and continue until late fall. They are free from or withstand disease better than most other annuals. These showy annuals may be raised by sowing seed in the open garden as soon as the soil is warm, but a more certain method of procuring fine plants is to sow the seed in flats or hot beds about the first of March.

**Crown of Gold.** Individual plants deviate very little from the average height of 24 inches. The lower branches are clustered near the ground level, while the higher branches are sub-opposite or alternate on the main stem. The plants are extremely floriferous, which gives to a plant in full bloom the appearance of a large orange top with a green base. **Packet, 10c.**



ORIENTAL POPPY

**Sunset Giant.** The very largest Marigold yet developed, blooms reach a size of 5 inches in diameter. The definite sweet scent of the flowers adds to its value as a cut flower, as well as being a good garden plant. The plants are extremely robust, producing a heavy growth of foliage, with 6 to 8 heavy branches each bearing 3 to 6 flowers. The plant grows from 3½ to 4 feet tall. **Packet, 10c.**

**Harmony French Dwarf Double.** The neat, dwarf, compact habit, combined with the extremely early, free flowering character of the plants makes this new dwarf Harmony Hybrid one of the outstanding introductions of the season. Flowers are medium size, rather large for the French type, averaging 1¾ inches in diameter and do not have the strong Marigold odor. The color range includes the popular yellow and innumerable blotches and striped combinations of golden orange and maroon, and various shades of golden and lemon yellow with the contrasting dark maroon. Plants reach a height of 12 to 14 inches. **Packet, 10c.**

**Signata Pumila Little Giant** is the smallest Marigold yet developed, grows but 9 inches tall. These dainty plants make an excellent border as their brilliant golden yellow flowers bloom profusely throughout the entire summer up until late fall. **Packet, 10c.**

**Dwarf French Double.** Grow 1 foot tall. **Mixed. Packet, 10c.**

**Tall African Double.** An especially fine tall (3 feet) branching, bearing enormous flowers of the quilled type. **Orange, Lemon and Mixed. Packet, 10c.**



AFRICAN MARIGOLD



DOUBLE HOLLYHOCK



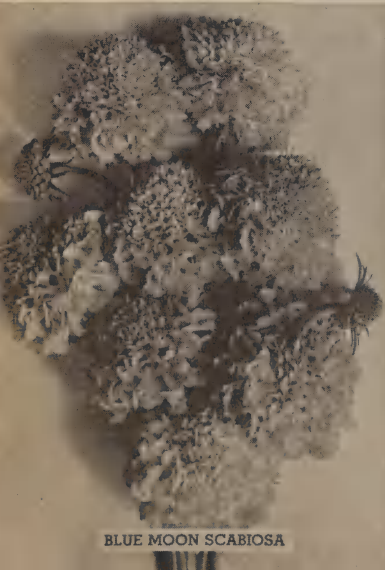
NICOTIANA



SCHIZANTHUS



PHLOX



BLUE MOON SCABIOSA



LOBELIA



RUSSELL LUPIN

## **MIGNONETTE** (Reseda).

(hA). Adapt-

able and growing in either full sun or partial shade; thrives best in cool moderately rich soil. From 6 to 15 inches high. Its vigorous branches spread gracefully and are well clothed with rather heavy, dark green leaves. Plants should be started from seed in the open ground, for they grow quickly and dislike transplanting. Blooming period is from June to frost. Blooms are exceedingly fragrant. For the annual and perennial borders, combining freely with most flowers. Varieties: **Odorata Grandiflora**, white; **Victoria Perfecta**, brilliant red.

**Packet, 10c.**



MINIATURE ROSE GEM PETUNIA

## **MOONFLOWER** (Ipomoea). Annuals, but

mostly perennials in culti-

vation. Splendid rapid growing climber. Flowers are beautiful and varied, resembling giant Morning Glories. Foliage is luxuriant and makes a growth of 10 to 30 feet a season. Seed should have outer shell punctured and then soaked in water for 36 hours to germinate it. The large white fragrant flowers expand at night and early morning and the plant blooms June-September. Suitable for covering garages, outhouses, fences, pergolas, etc. Cut down each fall for new growth. **Packet, 10c.**

## **MORNING GLORY** (hA). Their large, dark

green, heart-shaped

leaves make an excellent screen and the trumpet-shaped flowers are borne in great profusion all summer. Rapidly growing in almost any moderately rich soil. Seed should be sown after danger from frost is passed, germination is hastened by filing small holes or notches through the horny coat. Varieties: **Major Tall Mixed**, attains a height of 15 feet or more, mixed colors; **Heavenly Blue**, sky blue shading to white in throat. **Scarlett O'Hara**, flowers earlier and is able to climb without assistance. Stunning 3½ inch flowers of a soft velvety scarlet. Foliage is distinct and the flowers stay open longer. **Packet, 10c.**

## **NASTURTIIUM** (hA). Includes climbing

and dwarf herbs with showy red, orange or yellow, funnel-shaped flowers consisting of 5 separate petals, the sepals produced into a long spur containing nectar. Has fleshy stems, shield-shaped leaves and bright blossoms which are produced continuously throughout the summer. Seed is sown in the open in the spring. Plants will bloom most prolifically if given a rather poor soil in a North exposure.

**Glorious Gleam.** Color range: salmon, golden yellow, orange scarlet, cerise, cream, orange, maroon and crimson shades, as well as many spotted varieties. **Packet, 10c.**

**Golden Gleam** Nasturtiums are semi-dwarf bearing sweet-scented golden yellow flowers on stems well above the bright green foliage. **Packet, 10c.**

**Scarlet Gleam** Nasturtiums are semi-dwarf, bearing the flowers well above the bright green foliage on long, wiry stems. Fiery orange-scarlet flowers that are fully double, very large, sweet scented. **Packet, 10c.**

**Mixed.** For those who still prefer the good old fashioned type, we offer the **Dwarf Mixed** and the climbing or **Tall Mixed.** **Packet, 5c.**

## **NEMESIA** (hA). Growth 8 to 12 inches.

Has bright yellow, orange and red blossoms, resembling those of snapdragons in miniature. Seed may be planted in flats in March and set out the end of May for early blooms, or may be sown out doors after danger of frost has passed. They should be set close so that the frail stems may support one another. Very effective in window boxes. Grows best in rich, well fertilized, light garden loam. Can be grouped with *Clarkia*, *Salpiglossis*, *Snapdragons.* **Mixed. Packet, 10c.**

## **NEMOPHILA** (hA). Grows 6 inches high.

If seeds are sown early in spring in a semi-shaded spot in the border, or on the edge of the wild garden, the small bright flowers will appear continuously all summer. Has wide-open or broadly bell-shaped blossoms held on short stems above prettily cut leaves. Seed may be sown from October to March. **Blue. Packet, 10c.**



RUST PROOF SNAPDRAGON

the flower border in combination with *Alyssum saxatile*, *Columbine*, *Yellow Snapdragons*, *Stocks* and *Marigolds*. Varieties: **Oregon Giant Mixed**; **Cornflower Blue**; **Golden Queen**, pure yellow; **King of the Blacks**: Packet, 10c. **Steel's Jumbo Mixed**. Packet, 25c.

**PASSIFLORA** (Passion Vine). (hA). Evergreen vine growing 10 to 20 feet or more. Grows in sun and partial shade. Rampant in growth, climbing by tendrils; entire or digitately lobed, glistening, light or dark green leaves; large, tubular flowers with flat, expanded corolla. Grows in any soil. Good for covering screens, covering trellises, arbors, etc. **Packet, 10c.**

**PENTSTEMON** (Beardtongue). (tP). Grows 2 to 4 feet, thriving best in open situations in soil well drained but not too dry. Fast growing, bushy plant, branching from the base, medium-sized, bright-green, shiny leaves. Rather large, long tubular flowers of red, pink, coral and lavender. Blooming April to September. Sow seeds in early spring. Fine for the perennial and mixed borders. Combine with *Clarkia*, *Delphinium*, *Pyrethrum*, *Shasta Daisy*, *Verbena*. **Packet, 10c.**

**PETUNIA** (A). Very showy and popular plants, effective in beds, borders, porch boxes and pots. They thrive in a mixture of 2 parts of loamy soil and 1 part of leaf mold and require plenty of water during summer. The seeds, which are minute, should be sown in March in light, finely sifted soil, very lightly covered and given gentle heat. When large enough, pot singly, and pinch back the points before they get too high, to induce compact growth. For planting out these potted plants should be gradually hardened off early in May. When setting out transplants be careful to avoid the direct sun as tender *Petunia* plants wilt rapidly.

**NEPETA** (Catnip). (hP). Growing to 3 feet, with pale downy foliage and whitish or pale purple flowers 1/4 inch long borne in dense spikes to 5 inches long. The plant has a characteristic pungent odor liked by cats. Grows in any soil but prefers a moderately rich, light loam, either sun or slight shade. Useful as a border plant or in the flower border combining with *French Marigold*, *Gaillardia*, *Calliopsis*. **Blue. Packet, 10c.**

**NICOTIANA** (Flowering Tobacco). (hA). These stately plants are very fine for background in an annual bed. Produces large, trumpet-shaped blooms until frost. Sow seed March-June in rich moist light loam. Grow from 3 to 5 feet. **Crimson, White, Mixed. Packet, 10c.**

**NIGELLA** (Love-in-the-Mist). (hA). Grows to 1 1/2 feet and has pale blue or white flowers surrounded and partially concealed by the finely cut green leaves. The flowers which last well when cut, are most attractive in mixed bouquets. Seed can be sown in the spring as early as the ground can be worked. **Packet, 10c.**

**PANSY** (*Viola Tricolor*). (hA). Has long been grown in beds and borders because of its ease of culture and the wonderful diversity in color and markings. They do well in any good light soil, but prefer a sandy, loamy deep planting where the roots may be kept cool, and a location where they will not be overshadowed by trees or too much exposed to hot dry sun. Planting is best performed in spring or early autumn; it is advisable to sow in June for transplanting in autumn and in late August for the early spring transplants. Sow seed in light soil, cover slightly, and transplant to boxes as soon as large enough. Low growing and blooming from March into fall. Used in mass plantings in

**Martha Washington** ushers in an entirely new version. The plants are about 9 inches tall. Frilled portion of flower is about 3 inches in diameter. It is a beautiful blush pink and center portion is strongly veined a rich wine red, deepening in the throat to dark violet. It comes exceedingly true to color and type. **Packet, 15c.**

**Miniature Petunias Rose Gem and Pink Gem.** These two charming types have filled a vacancy home gardeners have had for years. Where a low, solid bed of color is needed nothing does quite as well as these two varieties of miniature petunias. The plants are neat and compact, 5 to 6 inches in height and smothered with richly colored blossoms about 2 inches in diameter. **Rose Gem; Pink Gem. Packet, 10c.**

**Giant of California** are the largest of the single flowering petunias. The flowers of crimson, white, lavender, violet and pink, are completely ruffled with large, graceful throats. Excellent in beds by themselves or grouped with *Dwarf Lobelia*. **Mixed. Packet, 10c.**

**Dwarf Giant of California** are a compact form of the above. Especially fine for potting and also go well in a bed with the taller variety. **Mixed. Packet, 15c.**



**Bedding Petunias:** Varieties: **Balcony Blue, Balcony White, Balcony Red, Rosy Morn, Single Mixed.** Packet, 10c.

**Taller Varieties:** **Elk's Pride,** deep purple, Packet, 25c; **Pride of Portland,** pink, Packet, 25c; **Double Choice Mixed,** Packet, 25c; **Double Fringed Mixed,** Packet, 35c.

**PHLOX DRUMMONDI** (hA). One of the most beautiful and easiest grown of our hardy garden annuals. The flowers are produced in large trusses. Grows 8 to 10 inches. Requires a sunny position. Bushy, branching plant with linear-lanceolate, bright-green leaves. Sow seed in March in a rich, moist, well fertilized, light loam for best blooms. Blooms from July to October. Used as a cover plant in rose beds, in the foreground of the shrub border, in large mass plantings in the flower border, or combined with Verbenas, Petunias, Gypsophila, Snapdragons. Varieties: **Rose,** carmine eye; **Scarlet; White; Crimson; Mixed.** Packet, 10c.

**PHLOX DECUSSATA** (P). Grows 2 to 4 feet. Stout stems bearing long, dark-green, smooth, oblong-lanceolate leaves; great trusses of soft to brilliantly colored flowers of white, pink, salmon, scarlet, that bloom from June to November. The secret of success in growing Perennial Phlox is to keep the soil moist during the dry season, to provide a mulch of straw, peat, or of leaf mold during winter and summer, and to supply well balanced fertilizers, cut down after flowering. Combine with Scabiosa, Pyrethrum, Michaelmas Daisy, Sweet Williams, Petunias. **Mixed.** Packet, 10c.

**PHYSALLIS** (Chinese Lantern). Growing to 2 feet, bears small white flowers followed by large brilliant red calyxes becoming 2 inches long when the plant is in fruit. It is a perennial and forms long tuberous roots which are not killed by frost and spread all over flower beds. The bright red "lanterns" are valued for winter bouquets, but the plants should be grown only on waste spots where their aggressive attempts to occupy the earth will not become objectionable. **Francheti.** Packet, 10c.

**PINKS** (Dianthus). (A). Grows from 10 to 14 inches high, and bear beautifully colored single and double blossoms in profusion all summer. Blooms are very sweet smelling. For best results seed should be sown in flats and transplanted when soil is warm. Requires a rich, light, fairly moist garden loam well fertilized. Largely used for borders or massed in beds. Excellent for cut flowers. Grouping—can be planted in separate beds or with Snapdragons, Stocks, Carnations, Sweet Williams, Petunias. Varieties: (Annuals) **Chinensis,** flowers produced in clusters, medium sized, fragrant flowers with fringed petals. **Single Mixed; Double Mixed. Heddeewigi,** velvety flowers, **Double Scarlet, Double White, Double Mixed, Single Mixed.** Packet, 10c.

**POPPY** (Papaver). (A&P). Flowers growing from 6 inches to 4 feet, according to type. Erect plants with usually hispid, coarsely toothed pinnatifid leaves. Small to globular, brightly colored flowers, blooming in spring and summer. Perennials are planted in fall and annuals in early spring. All kinds require a well drained, moderately rich, light loam, and not too moist soil. Grouping—effective by themselves or grouped in a mixed border with yellow and orange Snapdragons, Lobelia, etc. Varieties: (Annuals) **Shirley,** height 1 to 2 feet, branching plant with gray-green finely divided leaves; fringed flowers, white, through shades of pink or deep scarlet. **Single Mixed; Double Mixed.**

**Carnation Flowered,** flowers are very double, ball-shaped and well fringed. Plants grow 3 to 4 feet high bearing blooms of brilliant colors. **Tall Double Mixed.**

**American Legion,** a brilliant orange-scarlet with contrasting yellow anthers. Flowers are very large and the plants grow to a height of 2½ to 3 feet.

**California Poppy** (Aurantisca), the true California Poppy—color is deep orange. (Perennial)

**Elmonte Tangerine,** deep orange, grows 2 feet high.

**Iceland,** grows 1 to 1½ feet, slender stemmed, with a tuft of bright green leaves; leafless stems bearing single, medium large, delicately fragrant flowers in light yellow, orange, orange-scarlet, rose pink.

**Stanford Giant Mixed; Oriental Mixed,** grows 3 to 4 feet, stout, leafy stems, rough hairy, large leaves; very large, terminal flowers, mixed colors in salmon, red, orange, pale pink. **Packet, 10c.**

**PORTULACA** (Rose Moss). (hA). An exceptionally fine flower for dry sunny spots where most plants are unable to thrive. A dwarf plant only 6 inches in height that blooms profusely from June to August. Brilliant colors of red, yellow, pink, white, and striped. Sow seed in May, when the ground is thoroughly warmed. In sowing mix seed with many times its bulk in dry sand. Requires a fairly rich sandy loam and the hottest position to give the best results. Used on narrow borders or on dry embankments. Plant alone. Varieties: **Single Mixed and Double Mixed.** **Packet, 10c.**

**PRIMULA** (Primrose). (hP). A favorite for growing outdoors in mild climates and very fine for potting, window boxes and rockeries. Seeds sown in early fall usually, or in early spring. Requires a rich, light, moist, acid moderately fertilized loam. Best in a cool, somewhat shady spot. Use Ortho Nursery Volk

at time of transplanting to avoid root weevil. Variety: **Malcooides**, grows 8 inches high. Soft, light-green leaves, slender scapes bearing lavender-mauve flowers, blooming December to May. **Lilac; Mixed. Packet, 10c.**

**PYRETHRUM** (Painted or Single Daisy). (hP). Grows 1 to 3 feet. Has long, slender flower stems; clear green, finely dissected fern-like leaves; daisy-like flowers several inches across that bloom from April to August. Sow seeds in early spring in a cool, well drained, rich, loamy soil well fertilized. Used in the perennial border combined with pink and rose Sweet Williams, Iceland Poppy, Sweet Scabiosa, Nicotiana and Coral Bells. **Deep Scarlet. Packet, 10c.**

**ROCK GARDEN MIXTURE** On even the smallest lot there is space to build a bit of interesting rock work, for the compactness of a rock garden is one of its greatest charms. A hillside, a ravine, or a roughly uneven piece of ground presents an ideal foundation for a rockery. Taller plants serve to heighten the effect of the rock garden while dwarf trailing varieties mat and cover the rocks and flat surfaces. Best results will be obtained by mixing the seed with quite a bulk of sandy loam, which serves to scatter the seed evenly and also to cover it. **Packet, 10c.**

**SALPIGLOSSIS** (Painted Tongue). (hA). One of the easiest of annuals to grow. Erect branching plants, reaching a height of about 2 feet. Produces funnel-shaped flowers 2½ inches long and wide of velvety texture and in many colors, including rich tones of purples, blues and reds; the interior of the blossoms are strikingly veined, giving a "paisley effect". Blooms from May until killed by frost. Sow in the full sun in fairly rich soil as early as possible and preferably in the place where they are to grow. Impressive in front of the dark-green shrubbery and in the mixed border, combining with *Salvia*, *Lobelia*, Siberian or Common Wallflower and deep blue Delphinium. **Mixed. Packet, 10c.**

**SALVIA** (tP). Grow from 2 to 4 feet high and blooming the first year from seed. The brilliant red tubular blossoms are borne on long stems in racemes or spikes, flowers blooming in summer and fall. Any average garden position suits them, although they are at their best when planted in an enriched loamy soil where they get sun most of the day. Best with background of shrubs having dark-green, glossy leaves. Sow seeds in early fall or early spring. Varieties: **Bonfire**, compact bush 2 feet in height, clear red; **Splendens**, height 3 feet, brilliant scarlet; **Zurich**, dwarf, early mixed. **Packet, 10c.**

**SCABIOSA** (Pincushion Flower). hA&P). Are easily grown in an open sunny position from seed started indoors or planted in the open ground in May. Grow 1½

to 3 feet high. One of the most important annuals for cut flowers, blooms on long, slender stems, which are exceedingly graceful. Grouping—for the perennial and mixed borders combining with *Ageratum*, *Gladiolus*, Snapdragons, Perennial Phlox, Sweet Williams, Stocks and Columbine. Varieties: **Azure Fairy**, blue; **Fire King**, scarlet; **King of the Blacks**, reddish black; **Loveliness**, pink; **Double Mixed; Blue Moon**, deep lavender blue; **Caucasica Hybrids**, perennial growing to 2 feet, with pale blue flowers. **Packet, 10c.**

**SCHIZANTHUS** (Poor Man's Orchid or Butterfly Flower). (hA). Very showy plant having finely-cut foliage and white, lilac, bluish, or pink flowers. Grows 1 to 1½ feet, blooms May to August. Sow seed in early spring in rich, sandy, well fertilized and sandy loam. Grouping—excellent in masses; for the mixed border, combining with *Gypsophila*, Coral Bells, *Gerbera*. **Mixed. Packet, 10c.**

**SNAPDRAGONS** (*Antirrhinum*). (hA). Seed should be sown indoors in March or April. It may be slow to germinate, but after the true leaves have formed the growth is usually rapid. The small plants can be transplanted to the open as soon as danger of frost is over; they will flower from July until frost if the blossoms are picked as soon as they fade. Seed may also be planted in the open in August, and the seedlings transplanted to pots for winter bloom, or the plants can be covered with a mulch over winter to give earlier summer flowers.

To encourage the growth of flower-bearing side branches, the central bud should be pinched out when transplanting; followed by occasional pinching of other too-vigorous shoots, this will result in a compact oval plant covered with short racemes of flowers.

Rust, the most serious snapdragon disease, is found all over the United States on both greenhouse and outdoor plants. Dusty, chocolate-brown pustules (spore masses) are produced on the under side of the leaves and on the stems. Weekly applications of a good copper spray during the rainy periods and fortnightly application in dry weather will effectively control rust if a start is made early in the season. Beds should be surface irrigated if possible, rather than watered with a hose or sprinkler so as to keep the foliage dry and prevent the spores from being spread by splashing water.

Snapdragons may be grouped, according to color with *Scabiosa*, *Gladiolus*, *Larkspur*, *Delphinium*, *Columbine*, Coral Bells, *Michaelmas Daisy*, *Clarkia*, *Chrysanthemum*.

We offer the **Majus Rust Proof** variety in the following colors: **Butter Cup**, canary yellow, shading to creamy yellow; **Copper Shades; Pink Shades; Scarlet; Shasta White; Fiery Red and Mixed. Packet, 10c.**

**SWEET PEAS** are essentially cool weather plants, and they quickly fade away if the temperature persists for long above 75°. In the sea-cooled areas of the Pacific Northwest, sweet peas can be grown successfully throughout the summer. An early start is highly important. The plants should be well established before hot weather arrives, but if the heat is extreme and persistent, nothing will keep the plants growing vigorously, though it is possible to carry the plants through July and even later if a cheese-cloth shading is erected over plants.

Sweet Pea seed is hard shelled, therefore better results can be obtained if the seed is soaked in water for a day or two before planting.

Dig a wide trench to a depth of 12 inches and after breaking up the bottom of trench fill in with several inches of peat or leaf mold to which add a liberal amount of bone meal; fill in the balance of the trench with good top soil. Tamp the soil down firmly and water thoroughly to the base. Let stand a few days until moderately moist. Never put the seed in too wet soil. Pulverize the surface well by raking, make rows and plant seed about one inch deep, and two inches apart. Do not water until all the seed is up at least half inch.

Thin out at least six inches apart and train on wire or string netting when plants are five or six inches high. Applications of Vigoro during flowering period will add greatly to length of stems and size of blossoms. Keep well cultivated and water only as needed, as excessive moisture will cause the buds to drop. Treat seed with Nitragin.



AUSTIN FREDERICK IMPROVED

**CHOICE MIXED SPENCERS**

Packet, 10c. Ounce, 20c.

**GIANT WAVED AND RUFFLED SPENCER SWEET PEAS**

Packet, 10c. Ounce, 35c.

**PINK AND CREAM**

- Ascot.** Clear light rose pink. Very large blooms.
- Mary Pickford.** Cream pink, faintly tinted to salmon.
- Pinkie.** Large flowers in fours. A deep rose pink.
- What Joy.** Colorful primrose, shaded to soft cream.

**RED AND MAROON**

- Charming.** Brilliant blossoms of rose cerise.
- Flamingo.** Long stems. Flowers are orange scarlet.
- Sybil Henshaw.** Deep crimson flowers of giant size.
- Welcome.** The most dazzling of all scarlets. Strong stems.

**ORANGE AND SALMON**

- Barbara.** A beautiful shade of orange salmon.
- Celebrity.** Brilliant orange of exceptional quality.
- Gloriosa.** A dazzling, clear, bright orange scarlet.
- Pirate Gold.** A beautiful, mellow deep golden orange.
- Tangerine Improved.** Exquisite salmon orange.

**LAVENDER, BLUE AND MAUVE**

- Austin Frederick Improved.** Ruffled pure lavender.
- Chieftain.** A giant satiny mauve (deep lavender).

- Fortuna.** A lovely rich, dark blue with long stems.
- Gleneagles.** One of the very best lavender blues.
- Olympia.** Giant ruffled flowers of rich purple.
- Powerscourt.** Clear pure lavender. Best lavender.
- Reflection.** A lovely sun-proof clear cornflower blue.

**WHITE AND PICOTEE**

- Youth.** Large pure white with margin of clear pink.
- Avalanche.** Glistening white of great substance.

**SPECIAL SWEET PEA COLLECTION  
NINE 10c PACKETS FOR 50c**

**EARLY FLOWERING SPENCERS**

Packet, 10c; 1 ounce, 45c

- Apollo.** Extremely long stems. Soft salmon cerise.
- Columbia.** Rose standard with light pink wings.
- Giant Rose.** Truly the best rose-pink variety.
- Harmony.** Very popular clear lavender with large flowers.
- Oriental.** Clear deep cream with black seeded center.
- Shirley Temple.** Giant waved flowers of soft rose pink.
- Snowstorm Improved.** Giant clear white flowers.
- Spring Song.** Brilliant, bright rose-pink flushed salmon.
- Vulcan.** Vivid sun-proof scarlet. Most outstanding red.
- White Harmony.** Glistening pure white with vigorous stems.
- Early Flowering Spencer Mixed.** Well blended mixture. Ounce, 35c.

**STATICE** (Sea-pink, or Thrift). (hP). Dwarf plant, growing from 1 to 2 feet. Has narrow leaves in rosettes and small flowers in heads. Grow in any soil and require but little water. Sow seeds in the early spring. Used in the rock garden or as edgings for beds or borders. Varieties: **Latifolia** (Sea Lavender) (P) produces large branching sprays of minute lavender-blue flowers that are invaluable for cutting; may be dried and used with everlasting flowers. **Sinuata** (hA) an everlasting flower which is increasing in popularity. Throw large sprays of flowers which may be dried and make fine winter bouquets. Mixed colors.

Packet, 10c.

**STOCKS** (Gillyflower). (hA). Sturdy flower spikes (growing 1 to 1½ feet) covered with rosette blossoms in soft colors. Stocks require a rich soil of a sandy, well manured loam. Sow seeds in flats and transplant outside when all danger of frost is over. Seed will produce about 75% plants bearing double flowers. For a mass of all double flowers, set close together and remove the single flowered plants when first flowers appear. Stocks are outstanding garden favorites because of their delicately colored spikes and fascinating penetrating odor. Grouping—Effective in both the annual and mixed borders, grouped alone, several varieties together, or combined with Daffodils and Narcissi, Violas and Pansies. Varieties: **Double Early Giant Imperial**, very early blooming and grows 2½ feet tall; **Rose**, deep rose pink; **Elk's Pride**, royal purple; **Canary Yellow** (Golden Ball); **Blood Red**; **White**; **Mixed**. **Virginia Stocks**, grows 6 to 12 inches high and the pods are not horned, **Rose**; **Mixed**. **Evening Scented Stocks**, grown principally for the sweet perfume in the small, single mauve-colored flowers at twilight. **Mixed**.

Packet, 10c.

**SWEET SULTAN** (*Imperialis Moschata*). (hA). Grows 2½ feet tall. The artistic shaped, sweet-scented flowers are borne on long strong stems, when cut and put in water will last for several days in good condition. Sow seed in early spring in ordinary well fertilized garden soil to which lime has been added. Blooms June to September. Grouping—For the annual and mixed borders combining with Perennial Aster, Larkspur, Gypsophila, Scabiosa. **Mixed**. **Packet, 10c.**

**SWEET WILLIAMS** (*Dianthus Barbatus*). (hP). Among the early hardy plants they are outstanding. Grow 10 to 20 inches tall. Plant either in full sun or slight shade. They form a dense mat of light to dark-green leaves, have dense, round-headed, hairy-petaled, medium-sized flowers. Should be treated as a biennial, sow seeds outdoors in May and transplant them in August to flower the second season. Useful as a border plant and the mixed border combining with Snapdragons, Stocks, Carnations, Petunias, Larkspur. Their large color range makes them excellent for cut

flowers. Varieties: **New Port Pink**; **Scarlet Beauty**, orange red; **Dark Crimson**; **White**; **Single Mixed**; **Double Mixed**. **Packet, 10c.**

**TRITOMA** (Red Hot Poker). (P). One of the most startling of autumn-blooming plants, with dense cigar-shaped spikes of red and yellow tubular flowers rising 4 to 6 feet. Seed sown under glass in very early spring will sometimes produce flowering plants the following autumn. Set outdoors after all danger of frost is passed in loose, well-drained, rather poor soil in a sheltered but sunny location. **Mixed**. **Packet, 10c.**

**VALERIANA** (Garden Heliotrope). (hP). Grows from 2 to 4 feet. Plant in any garden soil in either full sun or partial shade. Erect branching plant, with smooth, compound leaves. Has dense clusters of small, fragrant white or pinkish lavender flowers. Blooms profusely in the summer. Useful for filling in between shrubs and for covering embankments. **Mixed**. **Packet, 10c.**

**VERBENA** (hP). Grows 6 to 8 inches; of trailing habit. Densely branching, with dark-green, wrinkled, dissected leaves, with clusters of medium-sized, salver-shaped, white, pink, red, blue, purple flowers that bloom from May into the winter. Does best in a rich, light, moderately fertilized loam. Plant in seed boxes and transplant to a sunny location. A very good border plant, also for parkings, foreground of shrub border and in the mixed border combined with Petunias, Shirley Poppies, Snapdragons, Stocks, Gypsophila. Varieties: **Golden Queen**, golden yellow; **Scarlet Defiance**, orange red; **Pink Shades**; **Blue Shades**; **White**; **Mixed**. **Packet, 10c.**

**VIOLA** (P). Tufted plant growing 4 to 8 inches, bright to dark green leaves; medium-sized single or double flowers in variety white, yellow, lilac, blue, mauve. Very few other plants have as long a flowering period. Succeed best in a deep, well-enriched, well-drained soil with plenty of water during the hot summer. Prefer a light shade during the hottest part of mid-summer days. Varieties: **Jersey Jem**, deep violet blue. **Packet, 25c.** **Apricot**, **Packet, 25c.**; **Yellow**, **Packet, 25c.**; **Mixed**, **Packet, 10c.**

**VIOLET** (Sweet Violet). Will thrive in any good, light, loamy soil in shade. Blooming in April-May, sometimes earlier. Variety: **Beautiful Blue**. **Packet, 10c.**

**VISCARIA** (Rose of Heaven). (hA). Very showy flower suitable for bedding. Grows 12 to 18 inches. Very branched plant with light-green, linear leaves; slender stems bearing medium-sized, salver-shaped flowers that bloom freely through the summer in shades of white, red, rose, blue. For a succession of blooms, sow seeds from March to July in a rich, moist, well fertilized, light loam. Good

for cutting. Grouping—In the mixed border, combined with Snapdragon, Virginia Stocks, Rosy Morn and Balcony Petunias, Coral Bells, Mignonette. **Mixed. Packet, 10c.**

**WALLFLOWER** (Cheiranthus Cheiri). (hP). A sun loving plant, but endures a little shade. Woody plant, growing 2 to 3 feet, with ribbed stem and dark-green lanceolate leaves; medium-sized that bloom from May to September. Sow seeds in early fall and early spring. Grows in any soil, but prefers a rich, well fertilized, light loam; prune back after flowering. Combine in the mixed border with Anchusa, deep-blue Delphinium, Violets. Varieties: **Siberian Wallflower**, grows 1 foot, bright-orange flowers; **Blood Red**; **Paris Market**, brown; **Single Mixed**; **Double Mixed**. **Packet, 10c.**

**WILD CUCUMBER** (hA). This is a useful climber where a rapid and vigorous growth of vine is desired for covering trellises, tree stumps, fences, etc. The vine has abundant foliage and is thickly covered with sprays of small white fragrant flowers, followed by numerous prickly seed pods. Grows about 20 feet. Sow seeds late in fall or early in spring where plants are wanted. **Packet, 10c.**

**ZINNIAS** (hA). Are one of the most satisfactory flowers to grow through the summer, as being a native of Mexico, it thrives in even the hottest weather if given plenty of fertilizer and a moderate amount of water. For best results, provide a rich, deep soil and give water when needed. Application of a complete fertilizer at 3 or 4 week intervals helps produce larger, more perfect flowers. Sow seeds indoors in flats, or they may be started in the open at the same time as other hardy annuals. Giant types should be no closer than 18 inches apart; this allows free branching and sturdy plant development. All types blossom from early summer until hard frost. Grouping—Makes a fine effect in mass plantings, grouping together varieties that harmonize in color; in the mixed border combine with Anchusa, deep-blue Delphinium, blue Cornflower, Salpiglossis, African Marigold.

**Fantasy Zinnia** flowers are very informal in appearance, composed of a mass of shaggy, ray-like petals, which give a delicate, graceful effect, quite different from the stiff, formal Zinnias to which we are accustomed. Plants grow from 2½ to 3 feet tall. Blossoms are from 2½ to 3 inches in diameter. **Mixed. Packet, 10c.**

**Super Crown O'Gold Pastel Tints** are the very finest large flowered Zinnia introduction in recent years. Strictly a mixture of pastel tints, a wide range of shades, including soft yellow, old gold, light pink, apricot pink, various shades of salmon, peach and buff, lively cerise salmon, as well as pure white and cream. The plants are strong and robust, growing about 3 feet tall, and flowers are borne profusely throughout the season. **Packet, 10c.**

**Dahlia Flowered** are strong and robust, growing about 3 feet tall and bear many long stems of showy, double, huge flowers. This type is preferred for general garden use, producing a very brilliant mass of color, in bright, intense shades. The flowers are more or less cup-shaped in appearance; the petals, instead of lying flat upon each other, are incurved, producing an upstanding, stiff, somewhat coarse flower. Flowers are from 4 to 5 inches in diameter. We offer the following varieties: **Exquisite**, light rose; **Golden State**, golden yellow; **Crimson Monarch**, deep crimson; **Dream**, rose lavender; **Oriole**, orange; **Meteor**, true red; **Polar Bear**, white; **Old Rose**; **Canary Bird**; **Purple Prince**; **Mixed. Packet, 10c.**

**Lilliput or Pompon Zinnia** is among the most popular for cut flower and border use. The flowers are small, compact and symmetrical in shape. 1 to 1½ inches in diameter, borne in great quantities on neat, compact growing plants which usually reach a height of from 12 to 15 inches. If you have room for two rows of Zinnias, sow the seeds of the Dahlia Flowered in the background and Lilliput Pompon in the front row. This makes an effective combination and will give a greater variety of flowers for cutting purposes. We offer the following varieties: **Salmon Rose**; **Canary Yellow**; **Scarlet Gem**; **Golden Gem**; **Lilac Gem**; **White Gem**; **Mixed. Packet, 10c.**

**Mexican Dwarf Zinnia** is by far the finest dwarf type Zinnia yet developed. The sturdy plants reach a height of not over 1 to 1½ feet and are literally covered with blooms throughout the entire summer. A wide range of strikingly different colors make them outstanding in any flower bed. All sorts of reds, yellows and oranges blended with maroon, mahogany, rust or white. Every individual blossom is an interesting study in itself. **Mixed. Packet, 10c.**

**Elegans Dwarf Zinnia** is not a new type but not generally known by most gardeners. The variety is excellent for border use and can be used most effectively in a solid bed where a lot of color is desired in low growing plants. These Zinnias bloom from early summer until late fall and are fine for cut flowers. **Mixed. Packet, 10c.**

**IT'S NEW!!!**

### *A Complete Dust*



A combination of the two best known insecticides, Pyrethrum and Rotenone, and the two best known fungicides, Copper and Sulphur. Packed in a bellows, dust gun package ready for action. **50¢**

# VEGETABLE SEED PLANTING CHART

KIND OF SEED	Time to Plant Outdoors	Distance for Plants		SEED REQUIRED		Ready to Use
		Bet. Rows	In the Row	Row	Acre	
Asparagus	February to April	5 to 6 ft.	18 to 24 in.	1 oz. to 40 ft.	2 to 3 lbs.	2nd Spring.
Beans, Bush	April, May and June	2 to 3 ft.	3 to 4 in.	1 lb. to 250 ft.	90 to 100 lbs.	40 to 65 days.
Beans, Pole	April, May and June	4 ft.	2½ to 3 ft.	1 lb. to 125 hills.	30 to 40 lbs.	70 to 90 days.
Beans, Lima	May and June	2 to 4 ft.	10 to 36 in.	1 lb. to 80 hills.	50 to 60 lbs.	90 to 130 days.
Beets, Table	March to July	14 to 20 in.	2 to 4 in.	1 oz. to 100 ft.	10 to 15 lbs.	45 to 60 days.
Broccoli*	June to August	24 to 30 in.	14 to 18 in.	1 oz. to 1500 plants	6 to 8 oz.	120 to 150 days.
Brussel Sprouts*	April to June	30 to 36 in.	18 to 24 in.	1 oz. to 2000 plants	6 to 7 oz.	100 to 120 days.
Cabbage, Early*	February to April	30 to 36 in.	16 to 24 in.	1 oz. to 2000 plants	6 to 8 oz.	90 to 110 days.
Cabbage, Late*	May and June	36 to 42 in.	24 to 30 in.	1 oz. to 2000 plants	6 to 7 oz.	110 to 120 days.
Carrots	April to July	12 to 24 in.	2 to 3 in.	1 oz. to 250 ft.	3 to 4 lbs.	55 to 80 days.
Cauliflower*	March to June	3 to 4 ft.	24 to 30 in.	1 oz. to 1500 plants	6 to 7 oz.	95 to 110 days.
Celery	April to July	18 to 36 in.	6 to 10 in.	1 oz. to 8000 plants	4 to 5 oz.	120 to 150 days.
Chicory	March to May, Sept.	16 to 20 in.	6 to 8 in.	1 oz. to 200 ft.	3 to 4 lbs.	90 to 120 days.
Chives	April and May	12 to 18 in.	4 to 6 in.	1 oz. to 200 ft.	4 to 5 lbs.	125 to 150 days.
Sweet Corn	April to June	36 to 42 in.	9 to 12 in.	1 lb. to 100 hills.	12 to 15 lbs.	55 to 90 days.
Cress	Feb. to May, Sept.	12 to 18 in.	4 to 6 in.	1 oz. to 250 ft.	3 to 4 lbs.	45 to 60 days.
Cucumber	April to July	4 to 6 ft.	10 to 12 in.	1 oz. to 100 hills.	2 to 3 lbs.	50 to 75 days.
Egg Plant*	April and May	24 to 30 in.	18 to 24 in.	1 oz. to 1500 plants	4 to 5 oz.	125 to 140 days.
Endive	May and June	18 to 20 in.	10 to 12 in.	1 oz. to 300 ft.	3 to 4 lbs.	90 to 100 days.
Herbs, Annual	March and April	20 to 24 in.	10 to 12 in.	1 oz. to 200 to 600 ft.	3 to 10 lbs.	125 to 150 days.
Herbs, Perennial	April to June	20 to 24 in.	10 to 12 in.	1 oz. to 200 to 600 ft.	3 to 10 lbs.	Next Season.
Kale	Mar. and Apr., Aug.	18 to 24 in.	12 to 18 in.	1 oz. to 2000 plants	6 to 8 oz.	55 to 60 days.
Kohl Rabi	March to May	16 to 24 in.	6 to 8 in.	1 oz. to 300 ft.	3 to 4 lbs.	50 to 70 days.
Leek	May to June	14 to 20 in.	4 to 6 in.	1 oz. to 150 ft.	4 to 5 lbs.	120 to 150 days.
Lettuce, Leaf	March to September	12 to 18 in.	4 to 6 in.	1 oz. to 600 ft.	4 to 5 lbs.	40 to 70 days.
Lettuce, Head	February to August	12 to 16 in.	12 to 14 in.	1 oz. to 3000 plants	1 to 1½ lbs.	70 to 90 days.
Muskmelon	April to June	6 to 8 ft.	4 to 6 ft.	1 oz. to 40 hills.	3 to 5 lbs.	90 to 150 days.
Watermelon	May and June	8 to 12 ft.	6 to 10 ft.	1 oz. to 25 hills.	4 to 5 lbs.	100 to 160 days.
Mustard	March to May, Sept.	12 to 18 in.	2 to 3 in.	1 oz. to 600 ft.	4 to 5 lbs.	60 to 90 days.
Okra*	April and May	2½ to 3 ft.	18 to 24 in.	1 oz. to 250 plants	5 to 6 lbs.	70 to 90 days.
Onion, Seed	April and May	12 to 18 in.	2 to 4 in.	1 oz. to 200 ft.	4 to 5 lbs.	125 to 150 days.
Onion, Sets	October to May	12 to 18 in.	2 to 3 in.	1 lb. to 50 ft.	2 to 3 sacks.	50 to 70 days.
Parsley	March to May, Sept.	18 to 24 in.	12 to 16 in.	1 oz. to 250 ft.	3 to 4 lbs.	65 to 90 days.
Parsnip	April to June	15 to 20 in.	2 to 4 in.	1 oz. to 300 ft.	4 to 6 lbs.	130 to 145 days.
Peas, Dwarf	Nov. & Feb. to June	18 to 24 in.	1 to 2 in.	1 lb. to 120 ft.	150 to 175 lbs.	45 to 75 days.
Peas, Tall	Nov. & Feb. to June	4 to 6 ft.	1 to 2 in.	1 lb. to 120 ft.	100 to 125 lbs.	60 to 90 days.
Pepper	May and June	18 to 24 in.	14 to 16 in.	1 oz. to 1500 plants	3 to 4 oz.	130 to 150 days.
Potatoes, Irish	March to June	24 to 36 in.	14 to 18 in.	1 lb. to 15 ft.	7 to 9 sacks.	90 to 150 days.
Pumpkin	May to July	8 to 12 ft.	6 to 8 ft.	1 oz. to 30 hills.	4 to 5 lbs.	75 to 90 days.
Radish	February to Sept.	12 to 18 in.	1 to 2 in.	1 oz. to 100 ft.	8 to 10 lbs.	20 to 75 days.
Rhubarb	March to June	30 to 36 in.	16 to 24 in.	1 oz. to 250 ft.	6 to 8 oz.	3rd Year.
Rutabaga	May and June	18 to 24 in.	6 to 8 in.	1 oz. to 400 ft.	2 to 3 lbs.	90 to 120 days.
Salsify	March to May	18 to 24 in.	2 to 4 in.	1 oz. to 120 ft.	8 to 10 lbs.	120 to 150 days.
Spinach	Feb. to May, Sept.	12 to 18 in.	3 to 6 in.	1 oz. to 100 ft.	10 to 12 lbs.	45 to 60 days.
Squash, Bush	April to June	3 to 4 ft.	3 to 4 ft.	1 oz. to 30 hills.	4 to 6 lbs.	65 to 70 days.
Squash, Winter	May to July	10 to 12 ft.	8 to 10 ft.	1 oz. to 15 hills.	3 to 4 lbs.	120 to 140 days.
Swiss Chard	March to July	12 to 18 in.	4 to 8 in.	1 oz. to 150 ft.	6 to 8 oz.	45 to 60 days.
Tomato*	April to June	3 to 4 ft.	2 to 3 ft.	1 oz. to 3000 plants	3 to 4 oz.	125 to 150 days.
Turnip	March to August	12 to 15 in.	3 to 4 in.	1 oz. to 400 ft.	2 to 4 lbs.	45 to 90 days.

\* Planting dates shown for crops marked "\*" are intended to be for setting plants into the garden. Seeds should be sown 40 to 60 days earlier, indoors or under glass.

Seed should be covered from three to five times its diameter. Press down firmly. Keep moist continuously.

The above chart gives distances between rows for hand cultivation; where horse or tractor is used the rows should be farther apart.

**ARTICHOKEs** Sow early in March and transplant when warm, in rows 4 feet apart in the rows. Cut the tops off in winter and protect with a heavy covering of straw, leaves or peat moss. The first season will yield only a partial crop. The second year, thin the shoots to three of the best, and these will begin to form heads early in summer. **Giant Green Globe.** Packet, 10c; Ounce, 75c.

**ASPARAGUS** may be grown in almost any soil, but succeeds best in rich, sandy friable loam with good under drainage. Avoid planting near trees or tall shrubs, because of the shade and heavy draft on the fertility of the ground. **Giant Washington; Mary Washington.** Packet, 10c; Ounce, 15c.

# BEANS

This vegetable is classified into two groups, the dwarf or bush variety and the pole or climbing type. These two groups are again divided into two distinct types, the green podded varieties and the wax or yellow podded varieties.

Nearly all of the Bush varieties are ten to twelve days earlier than the Pole types which make them a favorite among the home and market gardeners. Also it is not necessary to stake this type because of their low growing habits.

Beans will not stand frost and should not be planted until two weeks after the last killing frost. It takes approximately 1 pound of seed for a row 100 feet long and should be planted in hills approximately three or four seed to the hill. For the most tender and delicious beans they should be picked when about two-thirds grown.

For a succession of crops, plant every ten days or two weeks until about the first of August. Seed sown after this time will probably be caught by early frosts. Bush varieties mature from forty-five to seventy days depending on the heat. Pole varieties, seventy-five to eighty days.

Cultivate frequently but never do this in the early morning or just after a rain as bean foliage is very susceptible to disease which is easily spread when the vines contain an over abundance of moisture.

## LIMA BEANS

**Oregon Pole Lima.** Proven over many years to be well adapted to our cool northwest climate. Strong, vigorous grower, bearing continuously until frost, pods best when turning yellow. Other varieties **Burpee Bush Lima, Henderson Bush Lima.**

## GREENPOD POLE VARIETIES

**Oregon Giant Greenpod.** Keeps producing until killed by frost. Large fleshy pods 10 to 12 inches in length, stringless, light greenish yellow splashed with red.

**Kentucky Wonder Greenpod.** Pods are very fleshy, saddle back, fine grained and stringless. Exceedingly early and prolific. Average 8 to 10 inches in length and are light green.

**Blue Lake.** The popularity of this variety is rapidly increasing here in the Northwest. Its growing habits are well adapted to our soil and climatic conditions. This variety produces bountifully and are being used greatly by canners.

## WAXPOD POLE VARIETY

**Kentucky Wonder Wax** the earliest of all wax varieties. This pole bean starts bearing when scarcely higher than a bush bean and continues until frost. The pods are fleshy, long, crumbled and of creamy yellow color.



KENTUCKY WONDER GREENPOD

## GREENPOD BUSH VARIETIES

**Burpee Stringless Greenpod.** By far the best of the bush varieties, exceedingly early and a very heavy producer. Pods five to six inches long, round and exceedingly fleshy, absolutely stringless and tastiest of all beans.

**Stringless Black Valentine.** The pods are very fleshy, round and saddle back. Produces a large crop of tender beans.

Other varieties—**Dwarf Horticultural or Cranberry, Stringless Refugee, Tender Green and Little Navy.**

## WAXPOD BUSH VARIETIES

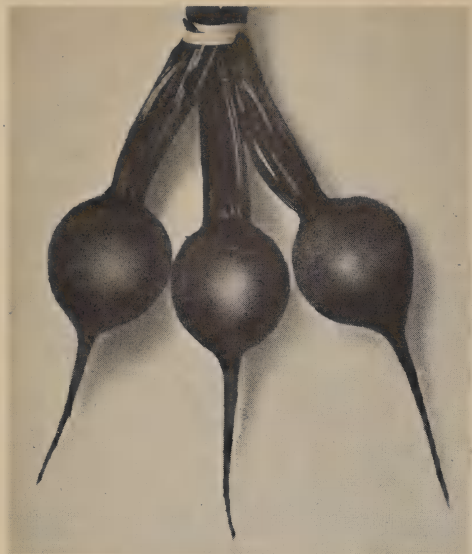
**Improved Golden Wax.** Vigorous and highly productive, this bean reaches table condition in fifty days. Pods are a deep golden yellow about five inches in length.

**Davis Wax.** The pods are long, rust resistant and very tender. The dry white kidney-shaped beans are excellent for baking.

Other varieties—**Pencil Pod Black Wax, Brittle Wax and Prolific Black Wax.**

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**TREAT BEAN SEED WITH  
HANSEN INOCULATOR.  
IT WILL PRODUCE A BETTER CROP.**



DETROIT DARK RED BEETS

**BEETS** This is one of the easiest vegetables to grow. They do exceedingly well in almost any kind of garden soil but prefer a rich sandy loam that is easily worked. They are exceedingly rich feeders, so the soil must be well fertilized in order to get the quickest growth necessary for tender juicy beets. Slow growth means tough roots.

It is always a good idea to sow beet seed thickly and then thin out plants to allow proper root development. When plants are about four inches high thin to two inches apart if you want many small roots and to five and one-half inches if you desire fewer but larger beets.

Make the rows 12 inches apart if you cultivate with a hoe or wheel hoe. Cultivate deeply and often at first but carefully so the young seedlings will not be disturbed.

**Packet, 5c; 1/2 ounce, 10c; ounce, 20c.**

**P. S. C. Market Gardener.** Extra early and remarkable for its fine quality and rapid growth. The tops are small, the roots are deep red, globe shaped and the flesh is of dark red variety. It is preferred by market gardeners because it matures evenly, stands long and does not split.

**Packet, 5c.**

**Detroit Dark Red.** Due to its uniformity in size and smooth, handsome appearance it is a very popular variety with commercial growers as well as home gardeners. Roots are deep red, globe shaped with small tap root. This variety is entirely free of white rings and retains its tasty flavor after it grows to full size. Excellent for pickling. **Packet, 5c.**

**Early Blood Turnip Beet.** An improved variety over the blood turnip type. Tops are large, roots dark red and nearly round. Flesh deep red with lighter zoning, sweet crisp and tender. These beets are recommended for summer and fall use.

**Extra early Egyptian.** One of the best for forcing. Tops are small the roots are dark red and flat on the bottom with a very small tap root.

Other varieties—**Crosby Egyptian** and **Early Wonder.**

**MANGEL WURZEL** Seed should be sown at the rate of 5 to 6 pounds per acre and thinned to 10 inches apart in rows.

Mangels should be planted early in the spring in rows 2 1/2 feet apart, the seed should be 1 inch apart in the rows and covered by 1 1/2 inches of soil firmly pressed down. When plants are 3 inches high begin to thin until roots are 10 inches apart. One ounce of seed plants approximately 100 feet and 5 pounds to the acre.

**P. S. C. Heavy Cropper.** One of the largest Yellow Mangels easily pulled as it grows two-thirds above the ground. We highly recommend this variety because of its outstanding quality. **Packet, 5c; ounce, 15c; 1/4 pound, 45c; 1 pound, \$1.35.**

**Half Sugar Mangels** double the yield of sugar beets. Roots large, smooth, creamy white with few rootlets, tops medium size.

**Danish Sludstrup.** Roots long, reddish yellow, good yielder growing well above the ground.

**Sugar Beets.** Seed should be planted in early spring in rows 2 1/2 feet apart, cultivate frequently. When plants are about 3 inches high begin thinning and continue at intervals until they are 10 inches apart.

**BRUSSELS SPROUTS** Primarily a fall and winter vegetable.

The plant will not mature properly in intense heat and dryness. It is closely related to the cabbage and seed planting should be treated exactly as that of the late cabbage varieties.

When the plants reach a growth of 5 to 7 inches high pinch off a few of the leaves and set out about 18 inches apart in rows that are 2 feet apart.

Cultivate frequently especially after rain. Sprouts begin forming in the leaf bases of the lower leaves first. To stimulate their production it is a good plan to break off most of the lower leaves of the plants beginning about October 1st or when the buds develop. This also forces more food into the forming sprouts, the lowest of which should be picked first. **Packet, 10c; ounce, 75c.**



# CABBAGE

This vegetable will not stand extreme heat or dryness and will grow well only where there is adequate moisture and cool weather. Most good garden soil will produce satisfactory cabbage if it is properly enriched. Commercially it is grown on soil ranging from sandy loam to very hard clay or even mulch. Perhaps what is more important than texture is soil moisture. This must be adequate and conserved by constant cultivation. Most important of all is fertility, no crop repays so richly the expenditure of fertilizer as cabbage. It is most advisable to use a commercial fertilizer that could be applied before planting at the rate of 11 pounds to a 100 foot row. It is also advisable to top dress about three weeks after the plants are set out with Nitrate of Soda at the rate of 1 1/4 pounds to 100 foot row. The Nitrate of Soda application is necessary only for the early varieties.

Sow seed in flats during February and March, use normal soil as richly fertilized types will cause the seedlings to grow too fast and become spindly. When seedlings are 3 to 4 inches high replant further apart in flats or boxes. This insures stocky instead of spindly plants and makes them a month or six weeks earlier than if the plants were set out. Cabbage should be set out at different intervals depending upon variety. Early varieties should be set about 14 inches apart in rows 28 inches apart. Late season varieties should be set 24 inches apart in rows 36 inches apart. If planted much closer they would be crowding and result in small heads. Prices unless otherwise noted. **Packet, 10c; 1/2 ounce, 25c.**

## EARLY VARIETIES

**Early Jersey Wakefield.** Small compact, conical heads. Plants small, short stemmed.

**Copenhagen Market.** Heads small, round, and solid. Plants compact with short stems.

**Golden Acre.** Earlier than Copenhagen Market. Heads are small, round and solid.

## MID-SEASON VARIETIES

**Dwarf Flat Dutch.** Heads globular and solid. Plants are dwarf with short stems.

## LATE VARIETIES

**Danish Ballhead.** Most widely used type of late cabbage. Heads deep, round with hard compact interior, stubby with short stems.

**Late Flat Dutch.** Large, flat, solid heads 6 1/2 to 7 inches deep.

Other varieties: **Danish Roundhead, Red Rock, Late Savoy, Wong Bok and Chinese Petsai.**



DANISH BALL HEAD CABBAGE

# ITALIAN BROCCOLI

A branching herb about 2 feet

high. In summer all of the lateral branches and the circle one end in a small green open head. This, which should be cut before it actually flowers, is cooked like cauliflower or spinach and is very delicious and rich in vitamins.

The plant prefers coolness and moisture. Unless you are in a particularly favorable place, such as the sea coast, Italian Broccoli is best treated as a two-season crop. First it is started in a hotbed or greenhouse in February or March and transplanted to the open after frost. The second crop is sown in the seed bed in June or July and transplanted to the garden a month or six weeks later. The later crop can be harvested throughout the Autumn months.

Plants should be set two feet apart in rows which are themselves two feet apart. A single row of 50 plants is ample for a family of five. The soil should be well cultivated. **Packet, 10c; ounce, \$1.25.**

**St. Valentine Broccoli.** This variety is very similar to cauliflower, it must be planted with the same cultural directions. **Packet, 10c; ounce, \$1.25.**

# CRESS

**True Water Cress.** A very distinct variety of cress with tasty, small, oval leaves. Grown easily

in shallow ponds or along the edges of small streams. Excellent for all kinds of salad. **Pkt., 5c; ounce, 45c; 1/4 pound, \$1.50, postpaid.**

**Curled or Pepper Grass.** Its leaves have a very pleasant pungency, which gives it the common name "Pepper Grass." The spicy foliage is frilled or curled, making it very attractive for salad trimmings. Sow thickly in drills. **Packet, 5c; ounce, 15c; 1/4 pound, 45c, postpaid.**



IMPERATOR CARROT

## CARROTS

Sow seed rather thickly in drills about  $\frac{1}{2}$  to  $\frac{3}{4}$  of an inch deep, the rows being 12 to 24 inches apart depending on hand or machine cultivation. After the plants are up about 5 inches they should be thinned out from 3 to 4 inches apart in the rows. If the soil is rich there will be no trouble about root development. Young, tender, quick growing carrots are better flavored than the old or slow growing type. If the soil is not rich apply a complete commercial fertilizer at the rate of 6 pounds per 100 foot row. It takes about 1 ounce of seed for a row of this length.

In order to have tender, juicy carrots all season long it is advisable to make small sowings at regular two-week intervals up to the middle of July. Later sowings may not mature before early frost.

Carrots like all root crops should be protected against soil insects such as maggots, worms and wire worms. The best control is crude Naphthalene Flakes worked in the soil a few days before planting the seed. **Packet, 5c;  $\frac{1}{2}$  ounce, 25c.**

**Imperator.** An outstanding type bred for market garden use and for shipping. Tops are medium, but strong enough for good bunching. Roots  $7\frac{1}{2}$  to 8 inches long with sloping shoulders, smooth, deep rich, orange, uniformly tapered to blunt end. Flesh rich orange, color extending to the center of the root with distinct core.

## CELERY

Successful celery culture is based on the right climate and the right soil. As to the first the plant requires coolness as well as sufficient moisture.

No garden crop grown is such a rich feeder as celery. The soil must have depth and mellowness and an abundant supply of moisture. It is impossible to grow celery in hard or sun-baked soil. It is advisable to prepare the seed bed with a good commercial fertilizer and peat moss using about 6 pounds per 100 foot row. This should all be done about three weeks before the plants are set in the garden.

In growing celery from seed it is advisable to start the seed in flats and later transplant when the small plants are approximately 5 inches tall.

**Golden Self Blanching.** Indeed, one of the best early spring varieties for Northwest gardens. The long, crisp stalks mature to a beautiful golden yellow, which are easily blanched to a creamy white. **Packet, 5c; ounce, 75c.**

**Golden Plume.** Superior quality, vigorous growing. A favorite with home gardeners. Semi-dwarf in habit. Fine flavored stalks that are brittle, stringless and blanch quickly. **Packet, 5c; ounce, 75c.**

**Utah or Green Crisp Celery.** Matures a week or ten days earlier than most other types of celery. Plants are sturdy, compact, and solid. Stems are broad, thick and rounded. **Packet, 5c; ounce, 75c.**

**P. S. C. New Coreless.** Larger than all other varieties. Crisp, solid, and uniform in size. Truly the outstanding carrot for tasty, crisp vegetable salads during the hot summer months. A genuine stump-rooted type.

**Danvers Half Long.** Grown mainly for its productiveness and adaptability to all classes of soil. A fine quality carrot of uniform size and shape. Sweet, crisp, tasty and tender deep orange flesh.

**Chantenay (Half Long).** Well adapted for home gardens. Requires little cultivation and care. Ideal for lazy gardeners. Medium size tops, small necks, slightly tapering roots, stump-rooted and smooth.

Other Varieties: **Improved Long Orange, Oxheart, Early Scarlet Horn, French Forcing.**

## STOCK CARROTS

**P. S. C. Yellow Giant.** Especially adapted to wet, heavy soils. Half long roots, broad shoulder, growing half out of the ground. Bright yellow flesh. Producing a heavy crop that is most excellent for dairy cows.

**Large White Belgian.** One of the oldest and best known stock carrots. Roots 12 inches in length, producing a heavy yield of marvelous quality.

**Mastodon.** Improved short white flesh, with smooth roots. Very heavy at shoulders, tapering.

# CAULIFLOWER

Cauliflower is more difficult to grow than any other plant of the cabbage tribe, like most of them it will not stand heat and drought which limits its culture to areas free of these conditions. It is best grown in fairly cool climates where there is plenty of moisture. It will not, however, stand as much frost as cabbage or Brussels Sprouts and in very protracted warm weather it will not head. Like other members of the Cabbage family Cauliflower is divided into two groups, early varieties and the late varieties.

Soil and fertilizer conditions are the same as cabbage. It is advisable to use a good commercial fertilizer and to cultivate at regular intervals.

For quicker and better results it is advisable to start cauliflower in flats and later transplant when the young plants are about 4 or 5 inches tall. The plants should be set about 2 feet apart in rows 3 feet apart. This will allow approximately 50 head of Cauliflower to a 100 foot row. This should be more than ample for a family of five.

Solid white heads may be produced by tying the outer leaves over the center of the plant as soon as the first button-like swelling appears. Use string, tape or raffia for tying. Do not pull tight enough to injure outer leaves.



MT. HOOD SNOWBALL CAULIFLOWER

## Portland Seed Co.'s Mt. Hood Snowball.

One of the best early varieties that we highly recommend for early and late planting. Its pure white, fine quality heads of medium uniform size are exceedingly tasty. Popular with home gardeners as well as market gardeners. **Packet, 15c.**

**Danish Giant.** Outstanding because of its ability to yield heavily in dry weather. Its large, solid white heads mature very early if forced indoors during early growth. **Packet, 15c.**

**Early Snowball.** Adapted very well to forcing as well as outdoor planting. Plants are compact, producing medium to large, round heads that are pure white when blanched. **Packet, 15c.**

Other Varieties: **Large Algiers, Autumn Giant. Packet, 15c.**

# CHICORY

**Witloof.** This variety has become exceedingly popular for winter salads. It forms a delicious dish when served like Endive or Cos lettuce with French dressing. The leaves and stems blanch easily. Seed should be sown one inch deep during May or June and spaced about 18 inches apart. **Packet, 10c.**

**Large Rooted.** The roots of this plant are very popular as a coffee substitute. The young tender leaves may be used for salad or cooked for greens. Sow quite thinly in shallow drills in the spring. When well started, thin to stand 2 to 3 inches apart in the row.

# CHIVES

The famous Schnittlauch—highly prized for flavor. The seed is not easily germinated and it will be necessary, therefore, to plant a fairly good quantity of the seed if many plants are desired.

**Packet, 5c; ounce, \$1.00, postpaid.**

# SWISS CHARD

Only the tops of this beet are used, like spinach, and the succulent stalks and midribs may be prepared in the same way as asparagus. The plants are cultivated like beets except that they should be thinned to 8 to 10 inches apart. If only the outer leaves are gathered, the inner leaves will continue to grow, and repeated pickings can be made.

**Lucullus, Dark Green.** The fleshy crumpled leaves of this variety make very choice greens. Plant grows erect, the stalks are rounded and finely ribbed; the foliage is a rich deep green. Favored by many because of its superior flavor. **Packet, 5c; ounce 20c; ¼ pound, 60c.**

# CELERIAC

The same culture as celery. See page 32.

**Large Smooth Prague.** The latest improved form with very few side roots. This is the largest and best variety of the "Turnip Rooted Celery." **Packet, 10c.**

## MINERAL-RICH VEGETABLES

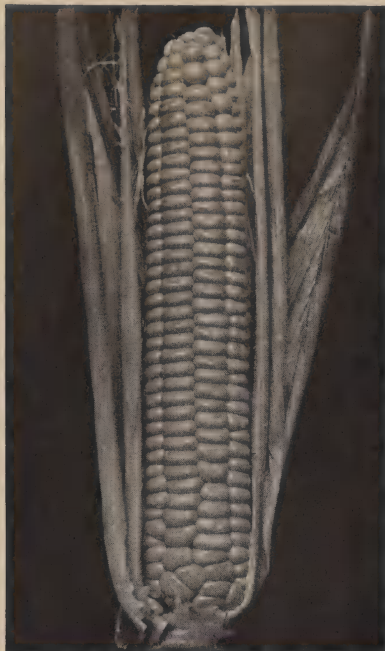
Home-grown vegetables are more delicious and more economical! Grow quality, mineral-rich vegetables in your own garden with Diamond Quality Seed and Vigoro. It supplies all 11 elements plants need from soil. Vigoro is easy to use.

### PRICES

100 lbs.	\$3.50
50 lbs.	2.30
25 lbs.	1.40
10 lbs.	.70
5 lbs.	.45
1 lb.	.10

**VIGORO**  
Complete plant food

For  
LAWNS  
FLOWERS  
SHRUBS  
TREES  
VEGETABLES



GOLDEN BANTAM CORN

## CORN

Corn in truly a native of this country, developed before the new world was discovered. It can be raised with some success in every state in the union, however, for best results it requires a growing season of seventy to eighty days and with plenty of summer heat.

Any good garden soil will grow corn but it will mature quicker and be more tender if a good commercial fertilizer is used at the rate of about 11 pounds to a 100 foot row.

Generally speaking, it is better to plant the early varieties in drills and the later varieties, of course, in hills, so spaced that cultivation may be done both ways without disturbing the plants. If your garden is of the weedy sort it is better to plant all varieties in hills because it is thus possible to control weeds easier when plants are in long rows.

For early types make the drills 2 to 2½ feet apart and 1½ inches deep. For growing in rows put a seed every 3 inches in a drill with the expectation of thinning to 6-inch intervals as soon as possible. The thinned plants cannot be transplanted with any success.

### YELLOW VARIETY

**Golden Bantam.** This variety of corn is second to none for tender, sweet and juicy ears. Although not as early as some types, its exceptionally fine quality makes it well worth waiting for. Stalks about 5 feet tall. Eight straight rows of kernels to the cob.

**Improved Golden Bantam.** An improved strain over the old type Golden Bantam, however, we still recommend the old fashioned variety for Northwest conditions. This newer strain has ten rows of kernels to the cob.

**Golden West.** A very fine early variety. Much the same flavor and tenderness as Golden Bantam and exceedingly popular with market gardeners. Ten to twelve rows to the cob.

**Early Sunshine.** One of the early varieties of sweet corn. Matures 3 or 4 days earlier than the majority of others. Taller and more vigorous with 12 rows to the ear.

Other varieties: **Golden Giant, Golden Evergreen.**

### WHITE VARIETY

**Stowell's Evergreen.** Remarkable for remaining in a fresh condition for a long period. Plants 7 to 7½ feet tall. Ears 8 inches long, 2¼ to 2½ inches thick; 14 to 20 rows to the cob. The most populzr white variety of sweet corn.

**Oregon Evergreen.** Earlier than Stowell's and just as fine and sweet. An exceptionally fine canning variety because of its uniform medium to large ears with 12 to 18 rows.

Other varieties: **Early Portland Market, Country Gentleman, Black Mexican, Early Evergreen, Early Minnesota, Howling Mob, Peep o'Day and White Cory.**

### FIELD CORN

We offer the following varieties: **Minnesota "13", Oregon Yellow Dent, Pride of the North, Northwestern Dent, Champion White Pearl, White Flint, Wisconsin White Dent and King Philips.** We will gladly quote prices on inquiry.

### POP CORN

**Butter Crisp.** The kernels of this variety pop out large and fluffy and resembles buttered pop corn because of its creamy color.

**Packet, 10c; 1 pound, 25c.**

**White Rice.** The standard variety for many years. Kernels pop out large and snowy white. Exceedingly well flavored.

**Packet, 10c; 1 pound, 25c.**

META

KILLS SLUGS  
AND SNAILS

ONE POUND 25c

**Golden Cross Bantam.** This hybrid is undoubtedly one of the best and most prolific of the yellow sweet corns. The ears are 8 to 10 inches long with 14 to 16 rows of kernels, slightly lighter in color and yielding about 40% more marketable ears than Golden Bantam. Grows 5 to 6 feet high with sturdy stalks and deep green foliage. **Packet, 10c; ½ pound, 20c; 1 pound, 35c.**

# CUCUMBERS

**All Cucumbers**—Packet, 5c; ounce, 20c, postpaid.

Gardeners with limited space cannot afford to plant cucumbers, which for outdoor culture must be planted in hills at intervals of at least  $4\frac{1}{2}$  feet each way. The plant is a sprawling tendril-bearing vine. It requires considerable heat, a lot of moisture and a rich soil. Cucumbers are much more sensitive to frost than most vegetable crops. They can only be grown in regions that not only have plenty of heat but a frost-free period of 75 to 90 days.

Warm sandy loam especially if it has a gentle slope southward is the best soil for out-door cucumbers. No other method of fertilizing is so satisfactory as putting 2 quarts of thoroughly rotted manure under each hill or a scant wheelbarrow load is better. Broadcasting manure or fertilizer for plants spaced so far apart is merely wasteful.

See that the manure is covered sufficiently so that no seed touches it. This is easily accomplished by forming a circular hill about a foot wide and 4 inches deep over each lot of buried manure, the site of which had better be marked with a stick, if some days intervene between burying and planting time.

Planting cannot be done until warm or hot weather is assured. Plant six seeds to each hill expecting to reduce them to three as soon as germination is complete, selecting the three best plants. The seed should be planted about  $1\frac{1}{2}$  inches deep.

As the vines become large they will fill all of the space between the hills, so it is very important that you cultivate thoroughly while the plants are still young.

**Diamond Long Green.** Truly the outstanding of the large varieties. It is extremely crisp and tender, sweet, very fine for slicing. It is best for sweet pickles when matured.

**Improved White Spine.** An outstanding variety for table use. It is one of the early types and exceedingly tasty. Uniformly straight and handsome light green fruits, with a few white spines.

**Boston Pickling or Green Prolific.** Truly the finest and most popular pickling variety. The tasty, bright green fruits range from 4 to 5 inches in length and are exceedingly productive. Fine for home and market.

**Davis Perfect.** A vigorous grower. Fruits long, dark green, crisp and tender. Holds its color exceedingly well after pickling, which makes it a favorite with the market gardeners. Seed cavity is small, making them very desirable for home and market uses. One of the outstanding varieties for Northwest climate.



COLORADO CUCUMBER

**Colorado.** Cucumber Colorado won the All American 1935 Award of Merit and is destined to become one of the most popular varieties. One of its outstanding qualities is that it does not taper but is practically the same size from end to end. The fruits are dark green, 9 to 12 inches long and will yield more slicing cucumber than any other variety of approximately its size. Is highly recommended for the shipper and market garden.

Other Varieties—**Short Green or Early Frame, Lemon, Japanese Climbing, Small Gherkin, Deltus, Vaughn, Straight Eight.**

**ENDIVE** Culture similar to lettuce. Outer leaves should be tied over the head to bleach. **Packet, 5c; ounce, 15c.**

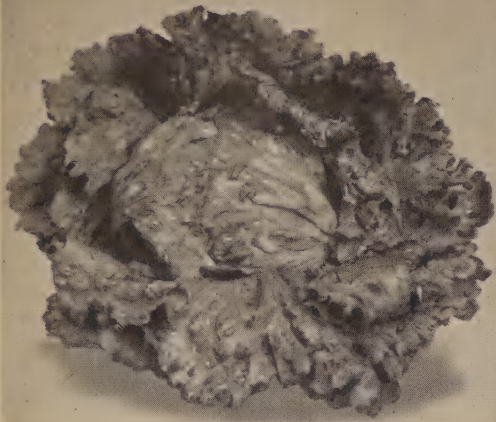
**EGG PLANT** **Black Beauty.** Extra early, quick growing, vigorous variety, uniform size. Color deep, blackish purple. Excellent for market. **Packet, 10c; ounce, 65c, postpaid.**

**New York Improved Large Purple.** Leading market variety. Not quite as early as Black Beauty. Large and productive. **Packet, 10c; ounce, 60c, postpaid.**

**FENNEL** **Florence Fennel.** An Italian vegetable with thick leaf stem. Served boiled or sliced, also cooked in soups. Easily grown. **Packet, 5c; ounce, 25c, postpaid.**

**LEEK** **American Flag.** Used very extensively throughout the entire country. A very strong hardy grower that is very easily cultivated in the home garden. It is broad leaved, with rather short but very thick stems. **Packet, 5c; ounce, 25c.**

**Large Rouen.** A very hardy variety, with short, thick, well-blanching stems and dark green leaves. **Packet, 5c; ounce, 25c.**



NEW YORK HEAD LETTUCE

## LETTUCE

Crisp, tender lettuce, the most desirable of all salad plants.

Can best be grown with the strictest attention to its moisture, soil and climatic requirements. There are many varieties and types of lettuce, however for the home gardener we can segregate them into two varieties, namely, head variety and looseleaf variety. The first is by far the most desirable but the most difficult to grow. The second is less desirable but so much easier to grow that most beginners will do well to select one of its varieties.

Lettuce can easily endure several degrees of frost especially in the seedling stage which greatly facilitates the handling in the early spring. However, this popular vegetable cannot be grown in extreme heat.

Any good garden soil will grow lettuce of a sort but the most favorable soils are rich sandy loam. Some varieties like Grand Rapids do best on good heavy soils with considerable clay in them. Lettuce soils should not be acid, if they are in this condition they should be limed. However, more important than the texture of the soil is the problem of moisture. If this is not available do not attempt to grow this vegetable.

### HEADING VARIETIES

Packet, 5c; ½ ounce, 15c

**Portland Seed Co.'s Crispette.** Heads are large, firm, crisp and tender. Bright green, curly leaves cover the outside. Solidity of the heads is insured by the large, white main ribs of leaves which curve toward the center. Withstands hot weather far better than most varieties and exceedingly tasty.

**New York or Wonderful.** The best head lettuce market gardeners. It is large, very solid, tender, crisp and sweet. Beautifully blanched to a creamy white with bright green outer leaves. A very hardy and rapid grower, also deep rooted.

**Hanson** (Improved Hard Heading Stock). One of the very best. The heads are green on the outside and cream colored on the inside. It withstands the hot sun very well and stays crisp for quite some time.

Other Varieties—**Brown Dutch, New York 12, Big Boston.**

### LOOSE-LEAF VARIETIES

Packet, 5c; ½ ounce, 10c

**Grand Rapids.** This variety is the standard hot-house lettuce for forcing. It also does exceedingly well in the open ground. The leaves are light yellowish green, slightly crimped, crisp and tender.

**Simpson's Early Curled.** Very fine for early planting and forcing. The leaves are finely curled and wrinkled. It is very tasty and crisp and does not wilt readily.

Other Varieties—**Chicken Lettuce, Prizehead.**

## KALE OR BORECOLE

This plant is widely grown for greens. Most varieties have heavy, densely curled foliage of tasty greens, and the dwarf variety is desirable for ornamental garden use. The culture is practically the same as that of late cabbage, but as the plants will withstand several degrees of frost, they grow late into the fall. They are more tasty after the first light frost.

**Emerald Isle.** Grows to medium height and is exceedingly hardy. Best for greens because of their very fine flavor. Produces new shoots as fast as leaves are used. The leaves are closely curled. Packet, 5c; ounce, 15c; ¼ pound, 45c; 1 pound, \$1.25.

**Tall Green Curled Scotch.** This variety grows about 2 feet high and has splendid dark green, curled and wrinkled leaves. It is very hardy and vigorous grower. Improved greatly after first slight frost. Packet, 5c; ounce, 15c; ¼ pound, 45c; 1 pound, \$1.25.

**Dwarf Green Curled.** Exceptionally fine for ornamental garden use, also good for greens. The leaves are beautifully curled and a brilliant green. Packet, 5c; ounce, 15c; ¼ pound, 45c; 1 pound, \$1.00.

**Cow Kale or Thousand Headed.** The most valuable green feed for Pacific Coast dairymen. It is grown the same as stock cabbage.

# MELONS

The term melon, as commonly used, includes the fruits of two distinct types, namely the Muskmelon or Cantaloupe and the Watermelon. Both of these types require hot weather during the day and warm evenings in order to fully ripen the fruit. We do not recommend growing melons in the Western section of the Northwest, however, there are certain types that do fairly well in this section.

Melons thrive on a well-drained fertile soil; for early crops a light, sandy loam is preferred. Excessive alkali should be avoided. Manures or fertilizers are not generally used in the principal producing regions, the fertility being maintained by rotation and the use of green manure crops. However, where this is not available, it is advisable to use a good commercial fertilizer in a mild manner.

In growing melons it is necessary to allow a great deal of room for spreading vines. The seed may be planted as soon as the ground is warm and weather conditions permit. The hills should be approximately 6 feet apart.

## WATERMELONS

**All Watermelons—Packet, 5c; ounce, 15c, postpaid**

**Klondike.** Rind is a beautiful dark green and exceptionally thin. The interior of the melon is a distinctive flesh color. Grow uniform in shape and size and ship very well.

**Sweetheart.** The vines are vigorous and productive. Fruits are large, oval, heavily mottled, dark and bright green, rind thin, flesh bright red, firm, sweet and tender.

**Kleckley's Sweet or Monte Cristo.** Distinctly a home garden melon as the dark bluish-green rind is so crisp that it breaks easily. The long, oval fruits are slightly larger near the blossom end. They weigh from 25 to 30 pounds and ripen in a little over one hundred days. For home gardeners we highly recommend this variety.

**Black-Seeded Ice Cream.** The melon is almost round, with a thin rind of medium green. The inside flesh is pink and exceptionally sweet and fine flavored. This variety matures early and is a fine keeper.

Other Varieties—**Rattlesnake, Stone Mountain, Tom Watson, Irish Grey, Cole's Early, Black-Seeded Chilean, Striped Klondike.**



BLACK-SEEDED ICE CREAM MELON

## MUSKMELONS

**All Muskmelons—Packet, 5c; ounce, 15c, postpaid.**

**Sugar Rock.** The fruits are oval, large size, without ribbing and netted in the manner characteristic of these melons and from which they take their names. Matures in about 85 days from sowing seed, in ordinary weather conditions. The flesh is deep and thick, a beautiful orange color, with a sugary delicious flavor that is unexcelled.

**Hearts of Gold.** The rind is firm and densely netted. Rich, fine-grained, orange colored flesh is excellent in flavor. The seed cavity is small and in all the melon is a very fine shipper.

**Rocky Ford Pollock 10-25.** The fruits are uniform and heavily netted. The flesh is very sweet and tasty with a salmon-orange tint.

Other Varieties—**Burrel Gem, Large Yellow Cantaloupe, Small Green Nutmeg, Osage or Miller's Cream, Early Hackensack, Hale's Best, Honey Dew Pink Flesh, Honey Dew Green Flesh, Perfecto, Speer, Banana, Persian.**

## CASABA MELONS

**Golden Beauty.** A beautiful bright golden yellow, wrinkled skin. The fruits are globular shaped and mature very early. The flesh is white and very thick. Exceedingly tender, rich, juicy and "honey sweet." **Packet, 5c; ounce, 15c, postpaid.**



RIVERSIDE SWEET SPANISH

## ONIONS

There are two types of onions that are most commonly grown by home gardeners—the young green or bunching onions and the mature bulb or dry onion. Green, or bunching onions, may be produced from seed, sets or multiplier bulbs. The set method is generally used among most home gardeners for the earliest green onions. However, the seed method produces a much better quality of onion and is the common method among the market gardener trade.

Onions require a rich, well drained soil, but any good garden soil will be satisfactory so long as it is not too stony. To be sure that the soil is rich enough, use a pound of well rotted manure to each square foot, and in addition use four or five pounds of commercial fertilizer to each 100 square feet.

The soil must be moist, as the plants will not thrive in dry sites. Onions are grown successfully in nearly all but the desert states, but they thrive best in the comparatively cool sites.

**Oregon Yellow Danvers.** Bulbs large, half globe, small neck, with thin brownish skin. Flesh firm, white and fine grained. Ripens early and a good keeper.

Packet, 10c; 1/4 ounce, 20c, postpaid.

**White Bunching.** Outstanding for green onions. The young sprouts are crisp and mild, attaining a good size before the bulb forms.

**Riverside Sweet Spanish.** A large globe-shaped brown onion, weighing one to three pounds. Flesh mild and sweet.

**Crystal Wax Bermuda.** Medium size, pure waxy white. One of the mildest sorts grown.

Other Varieties—**Australian Brown, Prize-taker, Yellow Globe Danvers, Large Red Weathersfield, White Portugal, Yellow Bermuda,** and **Bottom Onion** sets.

**OKRA OR GUMBO** Grown for its green pods, which are used in soups, stews, etc., for their rich flavor and substance.

**Improved Dwarf Green.** Very early, with long, green, slender pods. Packet, 5c; ounce, 15c; 1/4 pound, 35c, postpaid.

**White Velvet.** Large pods, smooth or very slightly ribbed. Remains tender a long time. Packet, 5c; ounce, 15c; 1/4 pound, 35c, postpaid.

## PARSNIPS

Culture same as for carrots. May planting considered best. **Hollow Crown or Long White.** Long, white, smooth, tender, sugary, excellent flavor. Very hardy. Will keep through the winter without protection. Packet, 5c; ounce, 20c, postpaid.

## PARSLEY

**Plain.** Plain leaves, flat, dark green. Used for flavoring and drying. Packet, 5c; ounce, 20c, postpaid.

**Turnip Rooted or Hamburg.** Roots used for flavoring soups, stews, etc.

**Extra Double Curled.** Dark green, moss-like leaves, finely curled.

## PUMPKINS

Pumpkins are grown much the same as melons, but are less sensitive to cold weather. They are best after the first light frosts, usually during the months of October and November. Seed should be planted during the early part of May, in hills 6 to 8 feet apart in all directions. Every garden should have a few hills of this truly American vegetable.

**All varieties of pumpkins:** Packet, 5c; 1 ounce, 15c, postpaid.

**Large Yellow or Connecticut Field.** Large, round. Deep, glossy yellow. Very productive. Good keeper. Grown extensively for stock feeding.

**Giant of All** ("King of Mammoths"). Almost a globe in shape. Skin a rich golden yellow, flesh firm, fine grained and deep yellow, sweet flavored, very thick. Excellent quality.

**Winter Luxury.** The best flavored pie pumpkin grown. Excellent keeper. Medium size. Color golden russet, finely netted. Flesh deep golden, sweet, tender and very thick.

**Sweet or Sugar.** A productive small pumpkin. Skin orange, flesh deep yellow, fine grained. Very sweet. The famous "New England Pi Pumpkin."



# PEAS

The garden pea combines two features of great value. It is not only very nutritious and rich in Vitamins A, B and C but provides many advantages of clean vegetable, hence, its first great importance as a garden crop. For best results this crop is grown in a cool mild climate.

Peas do well on practically all types of garden soil. Best results may be obtained by using a good commercial fertilizer at the rate of 4 pounds per 100 foot row. Also for a better crop it is advisable to inoculate with Nitragin.

Almost no garden crop is so easy to start as peas. Peas of the low sort should be planted just as early as the ground can be worked. You need not wait for the last erratic late frost. Sowing pea seeds should be practically the first spring activity in the vegetable garden. Tall varieties are better planted about ten or fifteen days later than the lower sorts.

For the first planting of the low varieties make the drills about two inches deep, or 1 inch deep if the soil is heavy and has much clay in it. Later planting should be in drills about twice this depth but only half filled at first. As the plants grow the trench is gradually filled up. The object of this deeper drill for the later planting is to secure greater coolness and moisture for the roots and plants that will have to face greater heat.

Peas need only sufficient cultivation to keep down weeds.



ALDERMAN PEAS

## EARLY VARIETIES

**Alaska.** Height of vine 30 inches. Pods 3 inches long, blunt, straight, light green, containing 6 to 8 peas, good quality—used extensively for canning.

**Gradus.** Height of vine 36 inches. Pods 4 inches long, broad, plump, pointed, medium green, containing 8 to 10 sweet delicious peas.

**Laxtonian.** Height of vine 18 to 20 inches. Pods  $4\frac{1}{2}$  inches long, broad, slightly curved, pointed, deep green containing 7 to 8 large succulent peas.

**American Wonder.** Height of vine 14 to 16 inches. Pods  $2\frac{1}{2}$  to 3 inches long, blunt, straight, light green containing 6 to 7 peas.

**Dwarf Gradus.** Height of vine 28 inches. Pods  $3\frac{1}{2}$  to 4 inches long, broad, plump, pointed, medium green containing 7 to 8 large tender peas.

**Little Marvel.** Height of vine 18 inches. Pods 3 inches long, blunt, plump, dark green containing 7 to 8 tender peas.

**Laxton Progress.** Height of vine 18 to 20 inches. Pods  $4\frac{1}{2}$  to 5 inches long, broad, some with curved, pointed, medium dark green containing 7 to 9 large tender peas.

## LATE VARIETIES

**Tall Telephone.** Height of vine 40 inches. Pods  $4\frac{1}{2}$  to 5 inches long, broad, plump, straight, pointed, dark green containing 8 to 10 peas of highest quality.

**Alderman.** Height of vine, pods and color same as Tall Telephone.

**Stratagem.** Height of vine 26 inches. Pods  $4\frac{1}{2}$  inches long,  $\frac{7}{8}$ -inch wide, nearly round, straight, pointed, dark green containing 8 to 10 tender, succulent peas.

**Dwarf Telephone.** Height of vine 22 inches. Pods  $4\frac{1}{2}$  inches long, broad, slightly curved, pointed, containing 8 to 10 peas.

## OTHER VARIETIES OF PEAS

**Blue Bantam, Hundredfold, Duke's Delight.**

# PEPPERS

Continuous warm weather for best results. Seed should be started in hot beds as it is slow in germinating. Set plants in ground when about  $2\frac{1}{2}$  inches tall. A moderate dressing of guano, or commercial fertilizer, hoed into the soil after plants are well established, will give better results. **All varieties of Peppers: Packet, 5c; 1 ounce, 60c, postpaid.**

## OTHER VARIETIES

**Perfection Pimento.** Ruby King.  
**Large Bell or Bull Nose.** Chili.  
**Cayenne.** California Wonder.  
**Chinese Giant.**



EARLY SCARLET GLOBE

## RADISH

**All Radishes — Packet, 5c; ounce, 15c.** The common Radish will germinate in four to five days and if grown properly will have useful roots ready to harvest in twenty-eight to thirty days. If it takes longer than this the roots will be spongy, acid or woody, hence useless. The secret of getting crisp, delicious radishes is quick growth; for this they need a rich mellow soil. Sow the seed about one-third of an inch deep in drills not over 8 to 12 inches apart.

All through the spring a succession should be sown every ten days. Keep in mind that an old radish is a worthless one and being harvested as soon as possible, they must be quickly grown and of course kept thoroughly cultivated. It is advisable to use crude Naphthalene flakes in the soil at the time of sowing seed. This will protect the crop from soil insects such as maggots and worms.

**Early Scarlet Turnip.** White Tipped. Turnip-shaped roots tipped with white. Flesh white, crisp, tender and sweet. Tops small. Matures very early.

**French Breakfast or Half Long.** Excellent for both home and market gardening. Tops small, roots oblong and blunt. Scarlet with white bottoms; flesh white, crisp and sweet. Splendid quality.

**Early Scarlet Globe.** Matures very early. A bright carmine-red color. Perfect oval shape and ideal size makes this an excellent radish for market. They reach this size in about 25 or 30 days and are best when not quite full grown.

**White Icicle.** A popular white radish. Roots long, clear, white, especially mild.

Other Varieties—**Early Scarlet Turnip, Long Black Spanish, China Rose Winter.**

## SPINACH

**All Spinach—Packet, 5c; ounce, 15c.** Spinach is a cool season annual, grown for greens. No spinach will stand extreme summer heat without "shooting" seed stalks. For this reason the seed must be sown early in the spring or late in the summer to avoid the danger of the crop maturing in July or August. For spring and summer use sow as early as the ground can be worked and make successive plantings every two weeks until May 15th. The leaves will be ready for use four or five weeks after sowing. For Autumn use, sow seed about August 1st. Spinach will grow very large and can be cut from the first of September until the ground freezes.

**Improved Thick Leaf.** Believed by many as the finest spinach on the American market today. It is the largest-leaved spinach grown and is exceedingly crisp, tender and tasty. It grows rapidly and remains in good condition a long time, making it fine for market. The medium-green leaves are large, rounded, slightly crumpled, succulent, and tender.

**New Zealand.** Thrives in hot weather in any soil. Leaves comparatively broad and pointed. Will grow through the summer.

**Prickly Winter.** Hardest variety. Must be sown in the fall. Seeds prickly. Leaves long, pointed, thick and succulent.

Other Varieties—**Nobel Giant Leaved, King of Denmark Long Standing.**

## KOHL-RABI

**Early White Vienna.** This is the best table variety and matures very early. If used for table it is the tastiest when the bulbs are 2 inches in diameter. The plants are light green with white flesh of excellent quality.

**Packet, 5c; ounce, 20c.**

**Early Purple Vienna.** Standard early sort. The plants are small, with dark green leaves spotted with purple. The exterior is purple, but flesh is white. **Packet, 5c; ounce, 20c.**

## RUTABAGA OR SWEDE

**Improved American Purple Top.** The leading variety. Large, immense yielder. Superior in every way. **Packet, 5c; ounce, 15c.**

## SALSIFY

**Mammoth Sandwich Island.** Roots large, smooth, very hardy. May remain in ground during winter or be stored in dry earth or sand. **Packet, 5c; ounce, 20c.**

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**PROTECT ROOT CROPS WITH  
DIAMOND NAPHTHALENE FLAKES**  
1½ lb. package, 25c. 4 lb. package, 50c.

# SQUASH

If you have space and prefer to grow the vine-like forms, the hills should be at least 8x8 feet apart, but if space requirements make the bush forms imperative, and they are far easier to grow, cultivate and harvest, the hills can be about 30 inches apart each way.

It is useless to put squashes in a heavy, wet soil, for they grow too slowly in such places. It is better to select a warm sandy loam, upon which they thrive if it can be made rich enough. Being spaced so far apart, there is no use in a program of general soil enrichment for squashes, but every reason for concentrating the fertilizer under the hills. A good plan is to dig out about 2 feet of indifferent soil and fill in with a half-and-half mixture of sandy loam and well-rotted manure. Or if this is lacking, mix about 1 pound of a good complete commercial fertilizer with the soil.

For the summer squashes, unless your soil warms up very slowly, the seed should be planted directly in the hills, 4 to 5 seed to a hill, which should ultimately be thinned to 2 or 3 plants, depending upon their vigor and ravages of cut worms. It will help greatly if Naphthalene Flakes are used at the time of planting.

For the winter squashes or for any that have long, sprawling vines, it is better to start them in the hotbed, as outlined above, if you live in a region with a short growing season. Otherwise, some of the late fruits will be caught by frost before maturity. In any case, the vine-like ones should be watched to see that all the growth does not run to vine and leaf at the expense of fruit. This is especially likely in rich soils or in one that gets extra top-dressing of fertilizer. By keeping vines well pinched back it will develop better fruits.

**All Varieties Squash—Packet, 5c; ounce, 15c; ¼ pound, 45c, postpaid.**

## WINTER VARIETIES

**Improved Hubbard Squash.** Large and of warty Hubbard type. Shell dark green, hard, moderately warted. Flesh light orange, very dry and richly flavored. One of the best winter squashes.

**Banana Squash.** One to two feet long. Flesh firm, orange yellow. Rind smooth, greyish green color. Excellent flavor and splendid keeping qualities.

**Golden Hubbard Squash.** Same in size, shape and quality as the green Hubbard, except that it is bright red or golden color and somewhat earlier. Excellent keeper.

**Table Queen Squash.** Small, dark green, acorn shape. Flesh rich yellow, dry, richly flavored. Medium early. A good keeper.

Other Varieties of Winter Squashes: **Boston Marrow, Mammoth Chili, Sibley or Pike's Peak and Warty Hubbard.**

## SUMMER VARIETIES

**Cocozelel or Italian Marrow.** Skin dark green, becoming marbled with yellow at maturity. Flesh pale green, thick, firm and tender. Best when 5 to 6 inches long.

**Early Summer Crookneck.** Earlier and larger than ordinary crookneck. Skin yellow, thin, hard and warty. Flesh tender and of good quality.

**White Bush Scallop.** Early, medium size, somewhat flattened with creamy white skin. Flesh milk white, firm and richly flavored.



*Sprayed on your lawn in a diluted form LAWN SINOX destroys weeds!*

To you who are trying to save your lawn from being over-run by weeds and who have spent countless hours hand-weeding, we recommend LAWN SINOX. The simplicity of application saves many hours of back-bending labor.

Tested and used by many leading agricultural colleges throughout the country. LAWN SINOX rids your lawn of dandelions, crab grass, chickweed, plantains, yarrow, ox-eye daisy, creeping buttercup, sheep sorrel, moss and many other weeds.

### ECONOMICAL To Use

1 pt (covers 1,000 sq. ft.)	\$1.25
1 qt. (covers 2,000 sq. ft.)	2.00
1 gal. (covers 8,000 sq. ft.)	5.50





# TOMATOES

**All Varieties Tomatoes—**  
**Packet, 5c; oz., 35c; ¼**  
**lb., \$1.00.** The tomato is

perhaps more tender than any other garden plant in such general culture. It is blackened by the least touch of frost, and will grow well only where there is sufficient heat. However, while many home gardeners will prefer to buy potted plants at the time they should be planted out, there is little need to do this, for tomatoes are among the easiest of vegetables to raise from seed. In your calculations for the early varieties allow 7 to 8 weeks from the time of sowing seed to the proper date in your locality for setting the plants in the garden.

The seed should be sown in fine, not too rich soil, about ¼-inch deep, either in tiny drills or broadcast as you prefer. Keep the soil moist but not wet. When the seedlings are about 2½ inches high, brick them out and replant on 2x2 inch intervals and allow them to grow until they are 4 or 5 inches high. By this time they are ready for transplanting into the open ground.

Tomatoes need constant cultivation to keep down weeds and conserve soil moisture, upon which they draw heavily. This is especially true in the early stages of the plants allowed to sprawl. Later these cannot be cultivated without injury to the tender, rather brittle stems.

Any good garden soil will grow tomatoes. Experience has shown that too much (especially nitrogenous) fertilizer or manure close to the plants makes them more likely to produce leafage than fruit. If you are prepared to pinch off the excess leaves, they may be fertilized as for any other rich feeding crop.

**Bonny Best.** Early, hardy and a scarlet fruit variety. Medium sized, solid, smooth and quite round. Very productive with excellent quality.

**Packet, 5c.**

**Chalk's Early Jewel.** Fruits large, bright red, round, smooth, solid and almost seedless. Recommended for market and home gardeners.

**Packet, 5c.**

**Break O' Day.** Wilt resistant. Vines vigorous open growth and very productive. Fruits scarlet medium to large size true globe shape. Slightly earlier than Mariglobe, an excellent variety for the home and market garden. **Packet, 5c; oz., 40c; ¼ lb., \$1.40.** Prices postpaid.

**John Baer.** Brilliant round fruits, high crown, smooth and delicious flavor that is easily peeled. Excellent keeper, yields well and a good shipper.

**Packet, 5c.**

**Mariglobe.** Very resistant to disease. Fruits are large, globe shaped and deep red. Excellent for slicing and canning. **Packet, 5c.**

**Prichard.** Newest to be introduced by U. S. Department of Agriculture. Strongest disease resisting tomato yet offered. No core, small seed pockets and evenly colored throughout.

**Packet, 5c.**

**Other Varieties:** Dwarf Champion, Burbank, Stone, Golden Queen, Yellow Pear, Yellow Plum and Ground Cherry. **Packet, 5c.**

# TURNIPS

**All Varieties Turnips—Pkt.,**  
**5c; oz., 15c; ¼ lb., 45c.**

Turnip seed sown about the last week in July or early in August will provide a crop when they are most wanted in the late fall and winter. The plant is a biennial and if left in the ground all winter will bloom and set seed the following spring. However, we do not recommend this as the second growth plants are not hardy and many times register a crop failure.

The seeds should be sown in drills about ¾-inch deep and thickly enough so that the plants can be thinned to 5 or 6 inches apart. For hoeing or a wheel cultivator, keep the rows about 15 inches apart.

The plant does best in the loose open loam, and the product is much better if quickly grown. While it is primarily a late fall and winter vegetable, very early varieties have been developed which may be sown as soon as the ground can be worked in the spring. Such can be harvested in the early summer, and should be, because if left in the ground they will go to flower and the roots are then soon useless.

Cultivate as for any other root crop, being careful not to injure young roots with tools. The plant responds to rich soil, but top-dressing with nitrate of soda should be avoided. If necessary, use any well-balanced commercial fertilizer, working it in between the rows about 5 weeks after the seed is planted. The turnip is a cool season crop and does not like hot dry regions.

**Purple Top White Globe.** Large, globe shaped. Purple on top, white below. Excellent quality and highly recommended for home use as well as field crop. **Packet, 5c.**

**Purple Top Strap Leaf.** An early variety. Roots medium size, flat. Purple above the ground, white below. Flesh white, firm but tender and may be used for table or stock feeding. **Pkt., 5c.**

**Golden Ball.** Medium size, round and yellow. Flesh firm, hard and most excellent flavor. Keeps well and a fine table variety. **Packet, 5c.**

**Other Varieties:** Early Flat White Dutch, Early White Milan, Early Snowball, Early Purple Top Milan, Pomeranian White Globe, White Egg, Yellow Aberdeen, Cow Horn, Bortfield. **Pkt., 5c.**

# WESTERN LAWNS

ENJOY THE PLEASURE OF A THICK VELVETY TURF

EVERYONE desires a thick, velvety lawn and while many do not succeed in getting just this, it is not a difficult task if thoroughness is the keynote in early preparation. In planning and making a lawn keep in mind that it is a long time proposition and that a good foundation (including drainage, soil texture and food supply) is essential in providing an adequate foundation for grass plants. Many times this calls for artificial drainage, thorough preparation of the soil and ample supply of organic matter, grading which is artistically effective as well as practical from the point of view of upkeep and the use of a good seed mixture and plenty of it.

## SOIL PREPARATION

When the soil is already good and drainage conditions are satisfactory, preparation need not be deeper than six inches. If the soil is heavy and inclined to stay wet, it may be necessary to lay 4-inch drain tile or cinder and sand base about 18 to 24 inches below the finished surface. Heavy soils may be lightened by incorporating sand or some form of humus such as peat moss (a bale to 600 square feet worked into the upper 4 inches of soil). On the other hand, a light sandy soil is also improved and given more body by the addition of humus at the same rate.

Natural manures are not desirable in making a new lawn because they are likely to contain many weed seeds which may continue to germinate over several years. A "balanced" commercial fertilizer, such as 4-12-4 formula (that means, containing 4% Nitrogen, 12% Phosphates, 4% Potash) worked into the upper two or three inches of soil at the rate of 4 pounds to 100 square feet will supply available nourishment for the new grass as well as a supply of food later on.

## SEED MIXTURES

The selection of seed is vitally important, as good preparation will be of little benefit unless a proper mixture is selected for your particular locality. It is far better economy to spend a few extra pennies on a high quality seed and have a satisfactory lawn for many years than to sacrifice quality for temporary savings offered by inferior mixtures containing "filler seed". It is recommended to use a complete mixture as the various types of grasses blended in such a mixture are incorporated for specific purposes.

A mixture containing two or more "base grasses" and one "nurse grass" is most ideal for Northwest soil and climatic conditions. We are listing below the three main groups in lawn seed. Your mixture should contain grasses from group one and two.

**Group 1**—Base Grasses—Those which will live for many years and will of themselves occupy the whole area on the existing type of soil if properly maintained. This class is almost invariably slow to mature. This group includes Kentucky Blue Grass, Chewings Fescue, Creeping Bent.

**Group 2**—Nurse Grasses—Its life is short but it plays an important part in grass seed mixtures in that it grows fast and occupies the soil until the slower and more permanent varieties are far enough along to cover the ground. By its nature nurse grass seldom lives over three years and should not compose over 30% of the entire mixture. In this group we list Red Top.

**Group 3**—Filler Grasses—Are varieties not adapted to lawn and turf purposes but used to increase bulk in a mixture or lessen the price per pound. These grasses should not be used if a top quality lawn is desired. This group includes Rye Grasses, Crested Dogs Tail, Timothy and Mesquite.

Here in the Northwest lawns can be planted almost any time of year (except November, December, January and February) if the soil and seed are kept moist throughout the early growing stages. Because of the importance of keeping the soil moist during this period of growing it is most desirable to sow the seed either in early spring or early fall. Whatever the season, loosen the soil with a steel rake to a depth of one inch just before sowing, then divide the seed into equal parts, half to be sown as the sower walks back and forth in one direction (north and south) and the rest as he walks back and forth at right angles over the same area. A calm day permits more even distribution and a cloudy one assures more moisture in the soil.

As soon as the seed is sown the surface can be raked lightly with a fine tooth rake or covered with not more than  $\frac{1}{4}$  inch of top dressing. In either case the ground should be rolled (not too heavily) to firm the earth around the seed and promote quick germination.



## WATERING

Watering should be done first gently and with a fine sprinkler to prevent washing. It should be done often enough and generously enough to **keep the soil and seed from drying out.** After the grass is well started the watering should be more thorough and less frequent. **Deep watering encourages the development of deep roots upon which the future success of the lawn largely depends.** Shallow watering or sprinkling tends to bring the roots near the surface where they are quickly affected by severe heat.

## MOWING

In mowing a new lawn set the blades to cut not less than 2 to 3 inches above the ground. As the turf becomes thick it can be mowed closer although the longer the grass can be left, consistent with good appearance, the better for the grass. Shortly clipped lawns dry out fast during hot summer months and when this condition once starts it is very hard to check.

It is best to catch and remove all grass clippings each time the lawn is mowed. If this is not done they will form a soggy mat at the soil surface robbing the soil of Nitrogen (needed to decompose vegetation) and cause a sour condition not beneficial to growing plants.

## ESTABLISHED LAWN

To properly care for an established lawn a few simple rules should be followed each growing season. Early in the spring the turf should be well raked with a steel or moss rake removing all leaves and other material accumulated during the winter. An application of a complete plant food (4-12-4 formula) at the rate of four pounds to every one hundred square feet should be applied early in the spring to afford the lawn plenty of food right from the start. As dry weather comes on watering should be **consistent and deep.** The second application of fertilizer should be made about the first of July at the rate of two pounds per hundred square feet. This should be repeated again near the end of August. After the first rains in the fall a top dressing of one-third peat moss, one-third sand and one-third raw bone meal should be applied over the entire area at a thickness of one-fourth to one-half inch. If these steps are followed each year you will have a lawn that will be the envy of every home owner.

## LAWN WEEDS

Weeds are without doubt the greatest enemy of all cultivated vegetation, be it lawn, vegetable, flower garden or field crop. Invariably they thrive anywhere, particularly on soils so sterile that the crop intended for that area can not thrive.

Unfortunately, many weed seeds have the ability to retain their viability for many years, even when buried deeply in the soil. When supposedly "weed free" ground is turned over

and worked for planting, weeds will start growing. Weed seed that has been dormant deep in the ground for many years will start to grow when worked up to soil surface. Nature has provided hundreds of ways of distributing these seeds. Some are carried through the air by the wind; others by run-off water after a heavy rain. Still others become mucilaginous and adhere to vehicles, the feet and fur of animals and the clothes of people.

## ERADICATING WEEDS

Many methods of eradication, practical and theoretical, have been offered to the home gardener. Many good ways and many not so good. The facts we set down here are based upon our own knowledge and experiences. No doubt there are other methods equally as good but space does not allow detailed report.

Contrary to many beliefs, Sulphate of Ammonia is not a very successful way to kill weeds as it is a highly concentrated nitrogen fertilizer and in many cases will actually increase the growth of weeds. A good complete fertilizer is good assurance against weeds as a thick healthy turf will crowd out many.

## SELECTIVE WEED KILLER

There are several selective weed killers that can be applied in liquid form and successfully kill weeds without permanent injury to your lawn. The most effective and economical kind is **LAWN SINOX.** It has been thoroughly tested and approved by many leading agricultural colleges in the United States. It has been used considerably here in the Northwest for two years with great results. It will control nearly all types of weeds—but must be used exactly as directed.

The best results are obtained when the weeds are in the early stages of development and growing rapidly. This makes spring or early fall applications most desirable. Do not spray prior to rain or when the temperature is below 50 degrees or above 80. Lawns should be watered thoroughly for two or three days before spraying unless sufficient moisture is present. Lawns should not be mowed a week previous to spraying.

Apply the diluted material with some type of pressure sprayer. Distribute evenly over the area to be treated. Shallow-rooted weeds usually require only one application. Many deep-rooted weeds, such as dandelions and plantain, may require a second application. Repeated applications are made about two weeks apart, depending upon growing conditions and the speed with which the lawn grasses recover. Any old, tough, remaining perennial plants are easily removed by spotting, which is done by using the full strength stock solution and applying directly to the crown with an oil can. The lawn should be watered two days after application provided there has been no rain in the meantime. Either write or come in for more complete information on **LAWN SINOX.**

# AGRICULTURAL and FIELD SEED

One of its outstanding characteristics is its ability to produce a heavy first crop. It is sometimes referred to as one-cut Alfalfa, mainly for the reason, that under certain conditions its comeback is rather slow. It is very well adapted to conditions where only one crop of forage can be secured a year because of lack of moisture and short growing season.

It is extremely winter hardy, and long-lived and is much more resistant to bacterial wilt than Grimm, Common and other varieties closely related to these.

**Grimm Alfalfa.** 15 pounds per acre. The most important member of the variegated group in the United States. Introduced from Germany by Wendelin Grimm.

A very winter hardy, long-lived variety. The tap root shows a tendency to branch and the crowns are low set and spreading. These characteristics contribute much toward its ability to resist extreme cold, alternate freezing, thawing and heaving. Succeeds in most types of soil except those heavily charged with alkali, will not grow in waterlogged soil.

It is very important that all Alfalfa seed be inoculated.

**Cossack Alfalfa.** 15 pounds per acre. An introduction from Russia and a hybrid between common and yellow-flowered Alfalfas.

Growth is generally upright with stems medium size, plants are very leafy with fairly large leaves. Flowers are variegated ranging from white and yellow to dark purple.

Rooting system is large with heavy deep penetrating tap root being the rule. A very winter hardy variety adapted for growing under practically the same conditions as Grimm Alfalfa.

**Common Alfalfa.** There are various strains of common Alfalfa produced in the United States and are usually distinguished by the name of the state in which grown, such as Idaho, Oregon, Northern California, etc. Common Alfalfa from above named sections is adapted to Oregon and Washington climatic conditions. Common Alfalfa differs from the Grimm Alfalfa mainly in the root system. The tap root in common does not show the tendency to branch and the crowns are not as spreading.

**Ladak Alfalfa.** An introduction from Northern India.

The growth in general is quite upright with stems medium size, plants are very leafy, medium size leaves. Flowers are variegated, ranging from whitish and yellow to very dark purple.

The rooting system is extensive, with most plants being tap rooted.

**Alsike Clover** (*Trifolium Hybridum*). 12 pounds per acre. A long-lived Perennial, adapted to a wider range of both climatic and soil conditions than Red Clover. Thrives well on clay, clay loams, sandy loams and muck soils providing abundant moisture is available. Will survive where soil is waterlogged, making it well adapted to growing under irrigation. An excellent pasture plant and when sown for hay is usually mixed with Red Clover, Timothy or Red Top.

**Red Clover** (*Trifolium Pratense*). 15 pounds per acre. Usually classed as a short-lived perennial and is considered the most important of all leguminous forage crops. Requires a well drained soil, does better in clay soils than in loams and better in loams than in sandy soils. Is especially intolerant to waterlogged soils.

**White Dutch Clover** (*Trifolium Repens*). 8 pounds per acre. A long-lived but shallow-rooted perennial. The stems creep on the surface of the ground and root abundantly. On this account the growing point is seldom injured by mowing or grazing. Grows in practically all types of soil provided moisture is abundant, thriving best in loams and clay soils. White Clover is considered to be one of the most important pasture plants, generally used in pasture mixtures and is also used to a large extent in lawn grass mixtures.



**Ladino Clover** (*Trifolium Repens latum*). 5 pounds per acre. Also known as Giant White Clover, growing about twice the size of White Dutch Clover. It is a Perennial of medium long life, having a short tap root. The surface stems lie flat on the ground and commonly produce fibrous roots at the joints. Ladino Clover usually makes a growth of 8 to 12 inches in height. Can be grown on rather shallow soils where well supplied with lime, phosphate, humus and moisture. Ladino is not a deep-rooted plant and thrives best on medium heavy type soils where there is constant but not excessive moisture. This is primarily a pasture plant and may be sown alone or with a combination of other grasses.

**Mammoth Red Clover** (*Trifolium Pratense Perenne*). 15 pounds per acre. A large variety of red clover more decidedly Perennial than common Red Clover requiring the same climatic and soil conditions. The stems are long, coarse and generally spreading. Mammoth red blooms about 10 days later than common red and grows more slowly after mowing. Its coarse growth makes the hay less relished by stock, however its heavy growth makes it an excellent soiling crop.

**White Sweet or Bokhara Clover** (*Melilotus Alba*). 20 pounds per acre. A Biennial having a strong tap root, produces numerous leafy stems, growing from 4 to 6 feet in height when firmly established. Grows readily on practically all types of soils. Endures poorly drained soils better than Alsike, used mainly as a pasture plant and for green manure.

**Crimson Clover** (*Trifolium Incarnatum*). 15 pounds per acre. An annual plant having a strong tap root, shows no very marked soil preferences, succeeding on both sandy and clayey soils as long as they are well drained. From the crown of the root numerous upright stems develop which reach an average height of one or two feet. Has a high nutritive value and can be used for either hay or pasture, valuable for soiling purposes in short rotations, as the green matter produced is heavy, and the roots penetrate deep into the ground.

**Yellow Sweet Clover** (*Melilotus Officinalis*). 20 pounds per acre. A biennial having the same habits of growth as the White Sweet, requiring the same soil and climatic conditions. Stems are less leafy and smaller in size. The plant does not grow quite as tall and is about two weeks earlier.

**Yellow Sweet Clover Annual** (*Melilotus Indica*). 20 pounds per acre. Known as Yellow Blossom sour clover. Not recommended for forage or hay, used most entirely for cover crop. Soil requirements same as other sweet clovers.

**Brome Grass** (*Bromus Inermis*). 20 pounds per acre. A long-lived Perennial with a creeping root-stock. These are much branched, roots at the joints and produces numerous upright stems. The stems are rather stout from 1 to 4 feet high, and carry many spreading, broad smooth leaves varying from light to dark green. The upright stems produced are scattered, therefore, the plants are not tufted but form loose mats. Brome Grass is adapted to regions of rather low rainfall, endures winter cold remarkably well and no other cultivated Perennial grass has shown a higher degree of drouth resistance. Prefers rich loams and clay loams and has succeeded well in sandy soils.

**Buckwheat**. 25 pounds per acre. An erect growing Annual which under ordinary conditions attains a height of about 3 feet. Is not exacting as to soils. The rather light, well drained sandy loams seem best suited, however, good crops are produced on infertile, poorly tiled land.

Buckwheat is very sensitive to frost, however, the crop may be grown far toward the north. This is due to the short growing season of the plant amounting from 10 to 12 weeks. Japanese and Silverhull are the most commonly grown in the United States.

**Cheat or Chess** (*Bromus Secalinus*). A smooth annual grass from 1 to 3 feet tall with flat blades and open drooping panicles, sometimes grown as an annual hay crop, and should be cut when the seed is in the dough stage. Adapted to the same soil conditions as wheat. The plants are similar to those of wheat and formerly the idea was held that cheat was a degenerative or changed form of wheat whence its name.

**Crested Wheat Grass** (*Agropyron Cristatum*). 15 pounds per acre. A hardy drouth-resistant Perennial bunch grass having an extensive root system, especially adapted to regions where the temperatures are severe and the moisture supply is limited. The plants have a dense, dark green foliage during the early part of the season, after seeding the plants appear less leafy but the stems are fine and when harvested early makes hay of excellent quality, does well on practically all soils ranging from light sandy loam to heavy clay.

**Dwarf Essex Rape**. 8 pounds per acre. There are several varieties of rape, however, Dwarf Essex is considered to be the best, in fact is the only one used for pasture and forage crop purposes. Rape is termed as a cool weather plant, therefore is adapted to our cool moist climate here in the Northwest and is not very exacting as to soil requirements.

Rape is used extensively as a pasture plant for sheep, cattle and hogs and is generally sown in the spring when used for such purposes. It may also be used as a catch crop occupying the land for short periods or at times when it is desired to have a crop on the land between two regular season crops.



**Lespedeza.** 15 pounds per acre. Classed as a summer annual, however, in sections where adapted will usually reseed itself and will thus occupy the land for two or more years. The plants are usually much branched, stems wiry, bearing numerous small leaves, under favorable soil and climatic conditions the plants commonly grow about 12 inches high. Adapted to practically all types of soil if well drained near the surface. Requires a warm growing season and will not withstand frost. Used mainly as a pasture plant.

**Meadow Fescue** (*Festuca Elatior*). 20 pounds per acre. A deep-rooted, long-lived Perennial. The stems are 18 to 24 inches high, smooth, rather slender. Most of the leaves are produced by numerous sterile shoots from the root stock. The leaves are dark green, long and broad. Prefers rich moist or even wet soils, does not succeed well in sandy soils. Thrives as well as Orchard grass in shady places. It is better adapted for pastures than for meadows but may be used for both purposes.

**Millet.** 25 pounds per acre. The millets are rapid-growing annuals used primarily for forage production purposes. Requiring in general the same climatic and soil conditions as Sudan grass. The plants usually attain a height of 3 to 4 feet. The stems are erect, rather stiff and the leaves are long and broad.

The seed should not be sown until the ground is warm, usually about corn planting time.

Several varieties are used here in the Northwest, the most popular being German or Golden, Early Fortune or Hershey and Japanese, also known as Billion Dollar Grass.

**Mesquite** (*Holcus Lanatus*). 20 pounds per acre. This plant is primarily adapted to most cool climates and under such conditions is not particular as to soil.

The plants form thick, rather high tussocks. The stems are erect, growing from 2 to 3 feet high. The whole plant has a velvety appearance hence the name Velvet Grass is sometimes used. Mesquite should be sown with a mixture of other grasses, as stock does not take to it readily when grown alone.

**Orchard Grass** (*Dactylis Glomerata*). 25 pounds per acre. A long-lived Perennial forming dense circular tufts, a typical bunch grass producing no stolons and hence never forms a complete sod. The stems are 2 to 3 feet high and are crowned and surrounded at the base by numerous heavy shoots. The leaves are long, broad and flat, rather soft in texture. Grows in practically all types of soils, being best adapted to clays or clay loams. Succeeds well in shady places and also does quite well where rainfall is rather scanty, starts growth early in the spring.

**Pasture Mixtures.** 35 pounds per acre. Owing to the fact that so many types of Pasture Mixtures are used, we realize that it would be impossible for us to prepare in advance mixtures that would conform with the requirements of each formula recommended.

Therefore we have confined our efforts to two Pasture Mixtures only, namely UP-LAND and LOW-LAND. In these two mixtures we use only the very best grades of seed carrying a high percentage of Purity and Germination and only those seeds that are adapted to the general soil and climatic conditions throughout the Pacific Northwest and for this reason we feel that either of these two mixtures will meet with the average general requirements.

**Reed Canary Grass** (*Phalaris Arundinacea*). 8 pounds per acre. A long-lived rather coarse Perennial grass. The plants are resistant to cold both as seedlings and mature plants. The rapidly spreading short underground stems soon form a dense sod growth, starts early in the spring and continues until late fall. The plants grow from 4 to 6 feet in height. The stems are stout, smooth and seldom lodge. The leaves are broad and nearly 1 foot long.

Reed Canary is especially adapted to swampy or overflow lands of sandy, mucky or peaty nature, makes an excellent pasture plant and may also be used for hay.

**Italian Rye Grass** (*Lolium Multiflorum* Lam). 25 pounds per acre. A hardy short-lived grass, usually an annual. When seeded in spring, late summer or early fall, it makes rapid growth, furnishing grazing in remarkably short time. It is tender, very palatable to livestock and has excellent carrying capacity. The plants grow from 2 to 4 feet in height. Since Italian Rye Grass is a heavy seeder, if not kept closely grazed or mowed, many new plants appear from volunteer seeding. Adapted to the same soil and climatic conditions as other rye grasses.

**Sudan Grass** (*Andropogon Sorghum*). 25 pounds per acre. A tall annual, growing under favorable conditions to height of 4 to 6 feet. The stems are fine, leafy, perfectly erect, seldom lodging.

The plants stool abundantly and owing to the lack of root stocks never become troublesome as a weed. Sudan is grown primarily for forage production purposes and should not be sown until the soil is warm, usually about corn planting time. Many failures are traced direct to seeding in a cold soil. In general climatic and soil adaptations for Sudan are nearly identical with those of corn.

**Tall Meadow Oat Grass** (*Arrhenatherum Elatius*). 30 pounds per acre. A long-lived, deep-rooted Perennial. Strictly a bunch grass growing to a height of 4 to 5 feet. The stems are generally dark green, leafy above the middle. The leaves are long, broad and rather soft in texture, usually a bright green almost yellowish.

Can be grown on practically any kind of soil provided it is fairly moist, will not endure wet soils. It is one of the most drouth resistant of the cultivated grasses. Makes a quick start after pasturing and stands pasturing well. One of the first grasses to start in the spring and the last to die in the fall.

**Timothy** (*Phileum Pratense*). 15 pounds per acre. A Perennial grass having a very short root stock and therefore grows in more or less compact tufts. The stems which usually reach a height of from 1 to 4 feet or more are smooth and generally erect. The leaves are generally short compared with the height of the plant. Timothy is adapted to cold, moist or wet lands also heavy clay soils. However, does not thrive on sour soils or impoverished sandy or shallow soils. Although root system is shallow it stands drouth fairly well. It is very resistant to cold.

**Soy Beans.** 50 pounds per acre. The Soy Bean is a leguminous Annual growing to a height of 10 inches or more depending on soil conditions. The plant is erect and branching, quite leafy and producing numerous pods. The leaves vary in size and color depending on the variety. Soy Beans are a promising emergency leguminous hay crop for various places here in the Northwest.

Soy Beans grow on rather a wide range of soils, are quite drouth resistant, and will stand excess moisture providing the water does not stand for any considerable length of time.

Should be sown about corn planting time, rows about three feet apart and the seed about 3 or 4 inches apart in the row.

**Vetches** make excellent feed, either green or as hay, and are also exceedingly useful as cover and green manure crops. They are usually seeded with grain, oats being the favorite for the reason separation is easily made when harvesting vetch for a seed crop.

**Common Vetch.** The most important annual legume grown in Oregon, used extensively as a green feed crop for spring and summer, also makes an excellent green manure and cover crop. Vetch is best suited to a moist cool climate free from extremes of heat or cold during the growing season. Is adapted to heavy well drained soils. The stems are slender growing from 3 to 5 feet or more in length, semi-erect. The leaves are pinnate, with about seven pairs of leaflets and a terminal tendrill. The flowers are violet purple rarely white and are borne in pairs on a very short stalk.

**Hungarian Vetch.** A fine stemmed annual making a semi-erect growth 2½ to 4 feet in length and somewhat hairy overall. The flowers are brownish white in color and are borne in groups of from two to eight. Hungarian Vetch is quite winter hardy and is adapted to a wide range of soils, lands with poor drainage and lands that are heavy, sour and white will often produce crops of Hungarian Vetch while other crops have failed.

**Hairy Vetch,** also known as Sand Vetch. The stems are slender, usually growing to an average length of 6 to 8 feet. The leaves are narrow, violet blue borne on long stems in dense one-sided clusters of about 30. Hairy vetch is quite winter hardy rarely winter killing if well established in the fall, adapted to a wide range of soils doing best on sandy or sandy loams but does not succeed in very wet soils.

**Austrian Winter Field Peas.** A true winter variety. Plants resulting from fall seedings pass through a definite period of winter dormancy before growth begins in the spring. The plants are viny, generally similar to other varieties of field peas under average conditions attain a length of 3 to 4 feet. The blooms are purple. The peas are very hardy, zero temperatures do little damage unless freezing and thawing periods are severe. They are adapted to well drained clay and sandy loams. The Austrian pea is used for all types of forage such as hay, silage, soiling and pasture.

**Canadian Field Peas.** Quite similar to the Austrian Winter Field Pea. The stems and leaves are somewhat larger and the blooms are white. The variety is not winter hardy, being adapted only to moderate temperatures. They do best on loams or clay loams but will succeed on most types of soil if well drained.

The Canadian Field Pea is used for practically the same purposes as the Austrian in general farming. Both varieties are usually sown with a small grain crop.



No.	Group	Size	Inoculates Seed	Retail Price
1	CLOVERS Red, Alsike, Mammoth, White	½ bu.	30 lbs.	.30
		1 bu.	60 lbs.	.50
		2½ bu.	150 lbs.	1.00
2	ALFALFA Sweet Clover, Bur Clover, Hubam	½ bu.	30 lbs.	.30
		1 bu.	60 lbs.	.50
		2½ bu.	150 lbs.	1.00
4	PEAS Garden, Field, and Sweet	1 bu.	60 lbs.	.25
		2 bu.	120 lbs.	.35
		5 bu.	300 lbs.	.65
6	BEANS Navy, Kidney, String, Wax	1 bu.	60 lbs.	.25
		2 bu.	120 lbs.	.35
	AUSTRIAN WINTER PEAS and VETCH	½ bu.	30 lbs.	.25
		1 bu.	60 lbs.	.35
		1½ bu.	100 lbs.	.55
		5 bu.	300 lbs.	1.40
		12½ bu.	720 lbs.	2.75
Garden Size			6 lbs. or less	.10

# FARM SEED PLANTING CHART

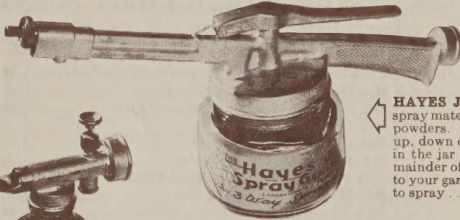
CROP	Pounds per Acre	PREFERRED TIME OF SEEDING		PRINCIPAL USES	Height Inches
		West of Cascades	East of Cascades		
<b>ALFALFA</b> .....	8 to 15	Apr. 1 to June 1 .....	Apr. 15 to June 1 .....	Seed; Hay; Pasture .....	20 to 30
<b>ARTICHOKEs, Jerusalem</b> .....	500 to 800	Mar. 15 to Apr. 15 .....	Apr. 1 to May 15 .....	Winter succulence; Hog Pasture .....	72 to 96
<b>BENT GRASSES:</b>					
ASTORIA .....	7 to 10	Sept. 1 to Nov. 1; Feb. 1 to Apr. 15 .....		Seed; Lawn; Pasture .....	16 to 24
HIGHLAND .....	7 to 10	Sept. 1 to Nov. 1; Feb. 1 to Apr. 15 .....		Seed; Lawn; Pasture .....	10 to 18
SEASIDE .....	7 to 10	Sept. 1 to Nov. 1; Feb. 1 to Apr. 15 .....		Seed; Lawn; Pasture .....	12 to 20
<b>BLUEGRASSES:</b>					
KENTUCKY .....	15 to 25	Sept. 1 to Nov. 1; Feb. 1 to Apr. 15 .....	Mar. 1 to May 1 .....	Seed; Lawn; Pasture .....	18 to 30
SHADY (Rough-Stalked Meadow) .....	15 to 25	Sept. 1 to Nov. 1; Feb. 1 to Apr. 15 .....		Shady Lawns; Shady Pasture .....	18 to 24
<b>BROMEGRASS, Smooth</b> .....	18 to 25		Mar. 15 to May 15 .....	Hay; Pasture .....	20 to 30
<b>BUCKWHEAT</b> .....	40 to 50	May 1 to June 15 .....	May 15 to June 15 .....	Seed; Green Manure .....	24 to 36
<b>CEREALS:</b>					
BARLEY—Winter .....	75 to 100	Sept. 15 to Oct. 15 .....	Sept. 15 to Oct. 15 .....	Seed; Hay .....	30 to 40
BARLEY—Spring .....	75 to 100	Mar. 20 to May 1 .....	Apr. 1 to May 1 .....	Seed; Hay .....	30 to 40
OATS—Winter .....	80 to 100	Sept. 15 to Nov. 1 .....		Seed; Hay; Pasture .....	30 to 60
OATS—Spring .....	80 to 100	Mar. 1 to May 15 .....	Mar. 15 to May 15 .....	Seed; Hay .....	30 to 60
RYE—Winter .....	75 to 100	Sept. 15 to Nov. 1 .....	Sept. 1 to Nov. 15 .....	Seed; Hay; Pasture .....	36 to 72
RYE—Spring .....	75 to 100	Mar. 1 to May 1 .....	Feb. 15 to Apr. 15 .....	Seed; Hay; Pasture .....	36 to 60
WHEAT—Winter .....	80 to 120	Sept. 15 to Nov. 1 .....	Sept. 1 to Nov. 1 .....	Seed; Hay .....	36 to 60
WHEAT—Spring .....	80 to 120	Mar. 15 to May 1 .....	Mar. 15 to May 1 .....	Seed; Hay .....	36 to 60
<b>CHEAT or CHESS</b> .....	60 to 75	Sept. 1 to Nov. 1 .....		Seed; Hay .....	24 to 48
<b>CLOVERS:</b>					
ALSIKE .....	6 to 8	Feb. 1 to June 1 .....	Apr. 15 to June 1 .....	Seed; Hay .....	18 to 30
LADINO .....	6 to 8	Apr. 1 to June 15 .....	Apr. 1 to June 15 .....	Seed; Pasture .....	10 to 14
WHITE .....	6 to 8	Apr. 1 to June 15 .....	Apr. 1 to June 15 .....	Seed; Pasture .....	4 to 8
RED .....	10 to 15	Feb. 1 to June 1 .....	Apr. 15 to June 1 .....	Seed; Hay; Pasture .....	20 to 28
MAMMOTH RED .....	10 to 15	Mar. 1 to June 1 .....	Apr. 15 to June 1 .....	Hay; Pasture .....	24 to 48
SWEET—Yellow .....	12 to 15	Apr. 1 to June 1 .....	Apr. 15 to June 1 .....	Hay; Pasture; Green Manure .....	24 to 48
SWEET—White .....	12 to 15	Apr. 1 to June 1 .....	Apr. 15 to June 1 .....	Seed; Pasture; Green Manure .....	45 to 84
CRIMSON .....	12 to 15	Sept. 10 to Sept. 30 .....		Seed; Green Manure .....	24 to 48
STRAWBERRY .....	6 to 8	Apr. 1 to June 1 .....	Apr. 15 to June 1 .....	Alkali Pastures .....	4 to 8
<b>CORN—Field</b> .....	8 to 12	May 1 to June 1 .....	May 1 to June 1 .....	Silage; Grain; Green Feed .....	72 to 96
<b>CRESTED DOGSTAIL</b> .....	20 to 25	Sept. 1 to Nov. 1; Feb. 1 to Apr. 15 .....		Pasture .....	10 to 18
<b>CRESTED WHEATGRASS</b> .....	10 to 12		Mar. 1 to June 1 .....	Seed; Pasture .....	16 to 30
<b>FESCUES:</b>					
CHEWING'S .....	20 to 25	Sept. 15 to Oct. 15; Feb. 1 to Apr. 15 .....	Mar. 20 to May 15 .....	Seed; Lawn; Pasture .....	12 to 20
MEADOW .....	20 to 25	Sept. 15 to Oct. 15; Feb. 1 to Apr. 15 .....	Mar. 20 to May 15 .....	Hay; Pasture .....	24 to 36
TALL .....	20 to 25	Sept. 15 to Oct. 15; Feb. 1 to Apr. 15 .....	Mar. 20 to May 15 .....	Seed; Hay; Pasture .....	24 to 40
<b>FLAX—Seed</b> .....	30 to 45	Mar. 15 to Apr. 15 .....	Apr. 15 to May 15 .....	Seed .....	18 to 30
<b>KALE—1000 Headed</b> .....	1 to 1½	Mar. 15 to June 15 .....		Winter succulence .....	20 to 30
<b>MEADOW FOXTAIL</b> .....	15 to 18	Sept. 15 to Nov. 1; Feb. 1 to Apr. 15 .....	Apr. 15 to June 1 .....	Seed; Pasture .....	15 to 30
<b>MILLETS:</b>					
FOXTAIL .....	20 to 25	May 15 to June 15 .....		Hay; Seed .....	18 to 24
JAPANESE .....	25 to 35	May 15 to June 15 .....		Pasture; Green Feed .....	30 to 48
PROSO or HOG .....	25 to 40	May 15 to June 15 .....		Seed; Green Feed .....	18 to 36
<b>ORCHARD GRASS</b> .....	20 to 25	Sept. 1 to Nov. 1; Feb. 1 to Apr. 15 .....	Mar. 1 to May 15 .....	Seed; Hay; Pasture .....	30 to 42
<b>PEAS—Field:</b>					
WINTER—Austrian .....	75 to 90	Sept. 15 to Nov. 1 .....	Sept. 10 to Sept. 30; Apr. 1 to May 1 .....	Seed; Hay; Silage .....	36 to 54
SPRING—Canadian .....	75 to 100	Mar. 1 to May 1 .....	Apr. 1 to May 1 .....	Seed; Hay; Pasture; Silage .....	24 to 48
MARROWFAT .....	90 to 120	Oct. 15 to Nov. 15; Feb. 1 to Mar. 15 .....	Apr. 1 to May 1 .....	Seed; Hay; Pasture; Silage .....	30 to 48
<b>RAPE</b> .....	3 to 5	Apr. 15 to May 15 .....		Seed; Pasture .....	6 to 12
<b>REDTOP</b> .....	7 to 10	Sept. 15 to Nov. 1; Feb. 1 to Apr. 15 .....	Mar. 1 to May 20 .....	Hay; Pasture .....	20 to 30
<b>RED CANARY GRASS</b> .....	6 to 8	Sept. 1 to Sept. 15; Apr. 15 to June 1 .....	Apr. 15 to June 1 .....	Seed; Hay; Pasture .....	48 to 80
<b>RYE GRASSES:</b>					
DOMESTIC—OREGON .....	20 to 25	Sept. 15 to Oct. 15 .....		Seed; Hay; Pasture .....	18 to 36
ITALIAN .....	20 to 25	Sept. 15 to Oct. 15 .....		Seed; Hay; Pasture .....	18 to 36
PERCEY'S .....	15 to 20	Sept. 15 to Oct. 15; Feb. 1 to Apr. 1 .....		Lawns; Hay; Pasture .....	15 to 20
PERENNIAL—English .....	20 to 25	Sept. 15 to Oct. 15; Feb. 1 to Apr. 1 .....		Seed; Hay; Pasture .....	15 to 24
<b>SORGHUM</b> .....	4 to 8	May 10 to June 1 .....	Apr. 10 to June 1 .....	Fodder; Green Feed .....	48 to 72
<b>SOYBEANS</b> .....	35 to 60	May 1 to June 1 .....	Apr. 1 to June 1 .....	Seed; Hay; Green Feed .....	12 to 48
<b>SUDAN GRASS</b> .....	8 to 30	May 1 to June 15 .....	Apr. 1 to June 1 .....	Hay; Pasture .....	36 to 80
<b>SUNFLOWER</b> .....	10 to 15	May 1 to June 1 .....	Apr. 1 to June 1 .....	Silage; Green Feed .....	72 to 96
Tall Meadow Oat-Grass .....	20 to 25	Sept. 15 to Nov. 1; Feb. 1 to Apr. 1 .....	Mar. 15 to May 15 .....	Seed; Hay; Pasture .....	36 to 60
<b>TIMOTHY</b> .....	8 to 10	Sept. 15 to Nov. 1; Feb. 1 to Apr. 15 .....	Mar. 15 to May 15 .....	Seed; Hay; Pasture .....	30 to 48
Velvet Grass or Mesquite .....	15 to 20	Sept. 15 to Nov. 1; Feb. 1 to Apr. 1 .....		Seed; Hay; Pasture .....	20 to 36
<b>VETCHES:</b>					
COMMON or GRAY .....	60 to 75	Sept. 15 to Nov. 1; Feb. 15 to Apr. 15 .....	Mar. 15 to May 15 .....	Seed; Silage; Hay; Green Feed .....	36 to 60
HAIRY or WINTER .....	30 to 40	Sept. 15 to Nov. 1 .....	Sept. 1 to Nov. 1 .....	Green Manure; Seed; Pasture .....	36 to 60
HUNGARIAN .....	60 to 75	Sept. 15 to Nov. 1 .....	Mar. 15 to May 15 .....	Green Manure; Hay; Seed .....	30 to 40
PURPLE .....	60 to 80	Sept. 15 to Nov. 1; Mar. 1 to Apr. 15 .....	Mar. 15 to May 15 .....	Seed; Green Manure .....	24 to 48



**HANDY** provides an unusual value in a quart tin hand sprayer. Does a splendid job around the yard on flowers, shrubs and vegetables. Equipped with patented "Nu-Action" pump for better spraying. **45c**



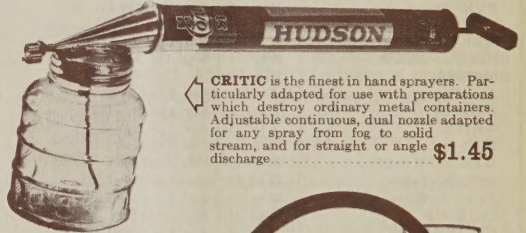
**PATROL DUSTER** is outstanding, with its "whirl-wind" action of the air from the pump, developed by patented features, produces an unusually high degree of efficiency. Can be used with any powder insecticide. **\$1.30**



**HAYES JR.** sprayer makes 3 gallons of mixed spray material. Sprays liquids and most wettable powders. Changeable nozzle permits spraying up, down or sideways. Place enough insecticide in the jar for 3 gallons of diluted spray, fill remainder of jar with water then attach Hayes Jr. to your garden hose and you are ready to spray. **\$5.95**



**HAYES - ETE** sprayer makes 1½ gallons of mixed spray material. It operates the same as Hayes Jr. but requires less water pressure. Sprays only modern, liquid sprays free from soap. **\$2.95**



**CRITIC** is the finest in hand sprayers. Particularly adapted for use with preparations which destroy ordinary metal containers. Adjustable continuous, dual nozzle adapted for any spray from fog to solid stream, and for straight or angle discharge. **\$1.45**



**CAPTAIN DUSTER** with its generous capacity metal tank and big 2½-inch opening is ideal for home garden work. Whirl-wind action of the air currents insures constant agitation and uniform feed. **65c**



**BOOSTER** 3½-gallon sprayer that offers the greatest possible value at a favorable price. Funnel Top tank, Perfection automatic shut-off and the Saf-T-Kam tank lock are features found only on top quality sprayers. **\$5.00**



**THRIFTY** is a 2½-gallon tank sprayer that is the choice of many backyard gardeners. A high pressure sprayer of smaller capacity, light in weight and easy to handle. **\$4.85**



**JUNIOR** 2½-gallon Open Top provides high quality, efficient performance and easy cleaning. Adapted for use with all preparations needing high pressure for proper application. **\$7.00**

THESE ARE JUST A FEW OF THE PUMPS WE STOCK. COME IN AND SEE OUR SELECTION. PRICES SUBJECT TO CHANGE WITHOUT NOTICE.

# PROTECT YOUR GARDEN WITH THESE "ORTHO" PRODUCTS



The most common destructive insects are illustrated below (some greatly enlarged). The numbers indicate the products described on this page that are generally used in their control.

Other pests are mentioned under product names.



Aphis  
3, 8, 11, 17



Leafhopper  
3, 8, 11, 17



Mealybug  
3, 8, 11, 16, 17



Thrips  
3, 8, 11, 17



Corn Earworm  
3, 4, 5



Scale Insects  
8, 11, 13, 16, 17



Red Spiders  
8, 11, 13, 16, 17



Diabrotica  
3, 5, 8, 17



Flea Beetle  
3, 4, 5, 8, 17



Sowbug  
2, 4, 5



Caterpillar  
3, 5, 8, 14, 17



Earwig 2



Snail 2



Slug 2

Weeds 21  
Sod Web Worm 8  
Fleas 3, 8  
Rodents 18

Spittle Bugs 3, 8, 17  
Apple Worm 5, 14  
Ants 1, 3, 8  
Cutworms 2, 4

## PLANT DISEASES

Black Spot on Roses 12, 17  
Leaf Spots 12, 17  
Mildews 9, 12, 17  
Molds 12, 17  
Rose Rust 12+16, 17, 17  
Peach Blight 10, 12, 17  
Peach Leaf Curl 10, 12, 17  
Rose Mildew 11, 12, 17

## INSECTICIDES - FUNGICIDES WEED KILLERS

**1. ANT-B-GON Ant Poison.** For use against Argentine and Sweets-Eating Ants. With patented "wick" feeder for garden use. Keep a supply of filled dispensers in the garden near the house at all times.

**ANT-B-GON Dispenser Sets**  
Four, 1-oz. bottles.....\$ .60 per set  
**ANT-B-GON Ant Control Liquid**  
4 ounce bottle.....\$ .20 each  
16-oz. bot., ea. .50 32-oz. bot., ea. .90  
1-gal. tin, ea. 2.75

**2. BUG-GETA Metaldehyde Bait.** A specially prepared bait that has proved effective for use against Snails, Slugs, Sowbugs, Earwigs, Cutworms and Strawberry Root Weevils.

1-lb. carton .....\$ .25 12-lb. bag .....\$1.75  
2½-lb. carton .50 30-lb. bag .....3.75  
6-lb. carton ..... 1.00

**3. BOTANO Garden Dust.** New, improved multi-purpose dust mixture packed in a convenient self-use duster package. For use on Ornamental plants, flowers and vegetables against 16 different garden pests including certain Ants, Aphids, Beetles, Black Spot Diseases, Caterpillars, Cabbage Worm, Tomato Worm, Fleas, Mildews, Pear Slug, Red Spiders, Rose Mildew, Rose Slug, Sow Bugs, Spittle Bugs, Thrips.

**4. CALCIUM ARSENATE.** A strong stomach poison used in making poisoned baits, and as a dust or spray to control certain Beetles and Worms.

1-lb. carton .....\$ .25 4-lb. bags .....\$ .60  
**5. CALTOX Insecticide-Fungicide.** For dusting or spraying. Has proved remarkably effective for control of Sowbugs, Diabrotica Beetle, Flea Beetle and other Beetles; Corn Earworm; Rose Slug and other worms.

6-oz. ctn. (makes 8 to 16 gal. spray) \$ .35  
1-lb. ctn. .60 3-lb. ctn. 1.25

**6. CONTAX Pruning Paint.** A new, modern plastic priming and grafting composition. "CONTAX" has been developed for use as a general pruning paint, a grafting compound for certain varieties of trees and in connection with tree surgery operations.

1-pint tin, ea. \$ .35 1-gal. tin, ea. \$1.50  
1-quart tin, ea. .60 5-gal. tin, ea. 6.00

**7. DEADLINE Insect Barrier.** For control of climbing insects on certain varieties of mature trees. Apply on an undercoating of shellac. For use on mature trees only and on mature Grapevines.

6-oz. tin.....\$ .35 1-lb. tin.....\$ .70

**8. EXTRAX Insect Spray.** A complete insect spray, with Pyrethrum and Rotenone as the main active ingredients and sufficient wetting agent to give high wetting at normal dilution. Combines with GREENOL Liquid Fungicide to make a simple "2-bottle program" of garden pest control. The low dilution effective strength makes "EXTRAX" an economical spray for general garden use.

1-oz. bot., ea. \$ .35 16-oz. bot., ea. \$2.75  
4-oz. bot., ea. 1.00 ½-gal., ea. 7.95  
1-gal. tin, ea. 15.00

**9. FLOTOX Garden SULFUR.** A fine Powdered Sulfur suitable for use as a Dust or Spray to control Powdery Mildew, Apple Scab, Brown Rot and Red Spider.

26-oz. carton .....\$ .25 4-lb. carton .....\$ .50

**10. GARDEN BORDO (Bordeaux Mixture).** A Copper Fungicide widely used to control plant diseases.

1-lb. carton .....\$ .35 4-lb. bag.....\$ .90

**11. GARDEN VOLCK Spray.** The complete contact Spray used for control of sucking insects, including Aphids, Thrips, Mealybug, Scale, White Fly, Red Spider, Cyclamen Mite, small Worms, certain Beetles, Rose Mildew.

Garden VOLCK Spray is now the best known all-around garden spray used by home gardeners.

4-oz. bottle .....\$ .35 1-gallon tin.....\$3.00  
1-pint bottle .. .85 5-gallon tin.....10.00  
1-quart bottle 1.25

**12. GREENOL Liquid Fungicide.** A low dilution liquid fungicide containing copper and its own wetting agent, so as to give high wetting at normal dilution. Used to prevent and control certain garden diseases as Mildew, Rust, Leaf Curl and Leaf Spot and certain other diseases effectively treated with such copper fungicides, "GREENOL" is compatible with "EXTRAX" to make a convenient 2-bottle program of garden pest control.

1-oz. bot., ea. \$ .35 16-oz. bot., ea. \$1.50  
4-oz. bot., ea. .60 ½-gal. tin, ea. 3.95  
1-gal. tin, ea. 7.50

**13. KLEENUP Dormant Oil Spray Emulsion.** Used on dormant Deciduous Trees and Shrubs to kill San Jose Scale, Lecanium Scale, and other over-wintering insect pests.

1-quart tin (makes 6 gallons), each.....\$ .50  
1-gal. tin, ea.....\$1.00 5-gal. tin.....3.00

**14. LEAD ARSENATE (Basic).** Used as a spray or dust to control chewing insects such as Beetles, Caterpillars and Worms.

1-lb. tin.....\$ .35 5-lb. tin.....\$1.50

**15. LIME-SULFUR (Dry).** A fungicide-Insecticide, used to control certain fungous diseases and certain insects.

1-lb. tin.....\$ .39 5-lb. tin.....\$1.55

**16. Nursery VOLCK Summer Oil Spray.** Long recognized as a superior spray for Mealybug, Red Spider, Scale, White Fly. Also recommended as carrier and spreader for Nicotine, Pyrethrum, Rotenone, Bordeaux, "CALTOX", Lead Arsenate, in combination spray mixtures.

1-pint tin .....\$ .50 1-gallon tin.....\$2.00  
1-quart tin ..... .75 5-gallon tin..... 5.00

**17. "ORTHO" ROSE SPRAY KIT.** A special combination Kit containing a 2-oz. bottle EXTRAX Insect Spray and a 2-oz. bottle GREENOL Liquid Fungicide together with an illustrated circular on Rose Pest Control. Makes 12 gallons combination spray for simplified control of many Rose Insects and Diseases including certain Aphids, Beetles, Caterpillars, Leafhoppers, Red Spiders, Rose Slugs, Rose Chafers, Scale Insects, Thrips, Black Spot on Roses, Rose Mildews and Rose Rust.

Complete Rose Spray Kit.....\$1.00

**18. Rodent Destroyer.** A balanced strychnine-poisoned ration containing Wheat, Barley, Oats, and Fruits. Used to kill Gophers, Squirrels, Rats, Mice and Prairie Dogs. Long lasting, waterproof, more effective.

6-oz. carton .....\$ .30 5-lb. carton.....\$2.00  
1-lb. carton..... .60

**19. SCRAM Dog Repellent.** A powder used around Lawns and Shrubs to repel Dogs.

Special Shaker Package.....\$ .49

**20. "TRANSPLANTONE".** A water soluble powder containing two plant hormones including naphthylacetamide, and three vitamins including vitamins B1 and C. The hormones initiate or form roots, while the vitamins are for their continued growth.

½-oz. can, ea. \$ .25 1-lb. can, ea. \$4.00  
3-oz. can, ea. 1.00

**21. TRIOX Weed Killer.** The improved "ORTHO" Weed Killer, used to kill weeds on paths, roads, curbs, tennis courts, parking lots, athletic fields, etc.

1-pt. tin, ea.....\$ .50 1-gal. tin, ea.....\$2.00  
1-qt. tin, ea..... .75 5-gal. tin, ea..... 6.25

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## HEADQUARTERS FOR...

- FLOWER, GARDEN and FIELD SEED
- POULTRY and DAIRY FEED
- FARM and GARDEN FERTILIZERS
- INSECTICIDES and SPRAYERS
- PET FOODS and SUPPLIES



## BARNES SEED CO.

*"Olympia's Farm, Home and Garden Store"*



*Diamond Quality* SEED