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# Gardening

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**L**OVERS OF THE SOIL to whom the first breath of spring brings an irresistible impulse to dig in the dirt, to feel the rich loam beneath plow or hoe or hand and to drink in the fresh turned soil, need no argument as to the value of a garden. Such persons, whether they live on farms or in towns, are natural farmers and are bound to have gardens.

To that larger group of persons of the more calculating sort we would offer two solid reasons why gardens should be made even if it be at the expense of considerable manual toil and mental anguish. Gardens cut living expenses amazingly, either in town or in the country, and garden produce furnishes many of the essentials for a healthful diet. Indeed it is doubtful if most housewives, even though they appreciate the importance of vegetables in the diet, can find means without a garden to provide the great abundance of green stuff demanded by Nature as the price of health.

Vegetables and fruits in the proper quantity and variety together with milk and eggs, furnish important substances which are sure to be lacking in a diet which contains largely meats, bread-stuffs, sweets and fat. Children grow better and have more resistance to infection, and adults keep in better health when the diet contains an abundance of vegetables, fruit and milk. A consideration of the essentials of an adequate diet as prepared by the Division of Rural Research, Texas Agricultural Experiment Station may be helpful in deciding on the variety and quantity.

Try Garden Stuff  
For that Tired  
Feeling.

## Eat Vegetables for Health

Leafy, green and yellow vegetables are among the most highly valued of all vegetables for their Vitamin A (the anti-infection vitamin) and iron especially, but also for Vitamin G, essential to growth. The greener the color, the more Vitamin A there is present.

Tomatoes, fresh or canned, provide an excellent source of Vitamin C. Raw cabbage, raw turnips and onions are valuable sources of Vitamin C also. Dried beans help to bring up the iron and protein content of the diet, if supplemented with milk, meat, or eggs.

Vegetables are one of the best base forming foods and the health of the tissues depends on maintaining a slight excess of bases over acids in the body—often spoken of as the “alkali reserve.” Potatoes are one of the best alkaline or base-forming foods.

In order to have a garden which will furnish a well balanced diet for the family, these facts should be kept in mind when planting the garden: Vitamin A helps to keep us in good condition. It increases resistance to disease, especially of the respiratory tract. Vitamin B, sometimes called the “appetite vitamin” keeps up interest in food and promotes good digestion.

Vitamin C helps to build strong teeth and bones. It is required in large amounts to keep them in good condition. Vitamin D is the ricket preventing vitamin. It is essential to good bone formation. Vitamin G helps to keep us well at all ages and is a factor in preventing too early signs of old age.

Locate the garden in the vicinity of the house if possible, so that the housewife may not be compelled to walk an unreasonable distance to secure her vegetables. Choose a place that has slope enough to be well drained, and where there is sufficient air drainage to prevent a possible pocketing of frost.

Don't Walk A  
Mile For An  
Onion

Practically any type of soil can be used for a home garden, if properly fertilized, but a sandy one is preferred. Sandy loam soils are more easily worked, warm up more quickly in the spring, respond more readily to fertilizers, and are not injured by tramping when wet. Heavier clay and black land soil types are usually more fertile but are harder to work, and crops growing on them do not respond to commercial fertilizer as readily as on sandy soils. Gravelly soil types are usually deficient in organic matter but when supplemented with stable

Choose A Sandy  
Loam Soil If  
Possible

manure or green manure crops to increase fertility and water holding capacity become satisfactory garden soils.

Heavier soils that do not wash badly should be broken in the fall not less than eight inches deep, and lighter ones that are subject to washing should be plowed to the same depth as soon after January first as possible.

**Plow Deep And  
Early**

It is important to cover all weeds and plant refuse completely so this material will decay quickly and not interfere with planting or cultivation. The garden soil should be harrowed until thoroughly pulverized and level for planting. Freshly broken and harrowed soil should be allowed to settle for at least five to 10 days before seeds are planted.

Before breaking garden land make a heavy application of well rotted barn yard manure at the rate of five tons for one-fourth acre. Fresh manure may be used but should be applied

**Barnyard Manure  
Is The Best Fer-  
tilizer**

in fall or winter and turned under early to decompose. Since manure is usually lacking in phosphorous, add 50 pounds of super phosphate per ton of manure. As a substitute for stable manure or in combination with it use such high grade fertilizers as 6-12-6 or 6-10-7 at the rate of five or six pounds per 100 feet of row. Work this thoroughly into the soil before planting. For early and leafy crops nitrate of soda or ammonium sulphate may be applied as a side dressing at the rate of one pound to 150 feet of row. Serious burning of plants may result if this material is applied when the foliage is covered with dew or moisture.

To grow an early garden it is necessary to start such crops as cabbage, cauliflower, tomatoes, egg plant, and peppers in a protected place and then transplant to the open garden. A hotbed is excellent for this purpose. At least 18 inches of

**To Beat the  
Neighbors, Build A  
Hot Bed or Cold  
Frame**

manure should be used in this bed and another inch added for every week beyond four weeks that there is frost danger. For hardening the plants, cold frames are used and are constructed exactly the same as the hotbeds except that no manure is used. The beds are heated by the sun during the day and this warmth is held in by the covering during the night.

For a very early start, seed may be planted in a shallow box in the house or a hotbed. When the first two true leaves have developed and the plants begin to crowd they should be

transplanted to a cold frame and spaced four inches each way. Or they may be placed in old tin cans, pots or berry boxes until danger of frost is over when they will be planted in the garden. Plants should be hardened off before being moved to the field in order to withstand better any adverse conditions they may meet. This is done by gradually exposing them in hotbed or cold frame to day temperature and by withholding water from them. They should always be watered 12 hours before being transplanted. Keep as much soil about the roots as possible when transplanting them, and set them out in the garden to the depth of the first leaf. Press soil firmly about the roots and in warm weather shade the plants with a covering such as newspapers until growth has begun.

Cabbage and cauliflower plants may be started six weeks before transplanting to the garden. For tomatoes, peppers and egg plants this period may be lengthened to eight or 10 weeks.

To secure straight rows in the garden and conserve space, stretch a string tightly along the line of the row. Planting seed by hand is practical and satisfactory in the small garden if the work is carefully done, using a small hoe to open the furrows. Proper spacing and number of plants per linear yard should be watched and care taken not to sow too thickly. To insure rapid germination the soil should be pressed firmly over the seed with the back of the hoe or with the foot. Quickly maturing vegetables such as radishes, beets, lettuce and mustard may be followed by planting of later maturing crops. Hotbed preparation is described in Extension publication C-110.

To secure a good stand of vigorous vegetables good seed must be used. Old seed carried over from the previous season cannot be relied upon to feed the family. It is safest to purchase seed from a reliable seed house and give enough time and thought to the purchasing to be sure that the varieties selected are adapted to the locality and that the resulting vegetables are varieties that are tender and of high quality. The popular commercial varieties are usually coarse, and not so palatable as some of the less popular home garden sorts.

Thorough cultivation is necessary to get vegetables of highest quality. More than that, cultivation should be regular in order to maintain a good physical condition of the soil, to

save soil moisture, to furnish a loose area that can easily be penetrated by the roots, and to keep down weeds. A good garden is no place for weeds as all good gardeners know. On farms, where gardens often grow up in weeds because of the rush of farm work, the garden may be laid out sufficiently large and the rows spaced far enough apart to allow cultivation with a horse drawn sweep stock for keeping down weeds, and with a one-horse adjustable harrow.

**You Can't Get By  
Without Hoeing Or  
The Like**

Dry weather often knocks out an otherwise good garden, particularly late in the season. Often times a site can be selected where the garden can be given extra water by terracing. In West Texas, water caught by terraces from surrounding hillsides can be emptied on a garden spot giving additional moisture with each rain. Good cultivation is another substitute for rainfall. Yet in spite of coaxing nature in these ways, artificial watering becomes advisable nearly every year at some time or other. A lath or concrete subirrigation system is good insurance against dry weather. Water the garden few times but thoroughly each time for it is the root system and not the tops of the plants that need water. Constant sprinkling of the soil in hot weather may cause the plant rootlets to be shallow. A thorough irrigation is more permanent and induces the roots to follow the moisture to a depth that insures greater feeding capacity for the plants. Garden subirrigation with tile is described in Extension publication B-92.

**In Irrigating, Flood,  
Don't Sprinkle**

Insects must be reckoned with in growing a garden. They are not very difficult to keep in check as a general thing if one understands their habits and is prepared to control them. There are two classes of damaging insects, the kind that bite into the fruit or foliage and chew it up, and those that suck out the juice. For the first kind it is important to place stomach poisons in dust or spray form on the surface of the plants where the insects are feeding. A good spray mixture which may be applied in small gardens with a pump sprayer and in large ones with knapsack and barrel spray is a tablespoonful (one ounce) of lead arsenate to one and one-half gallons of water. Dusting for biting insects is coming into general use. For this purpose arsenate of lead or calcium arsenate dusted over the surface of the plant may be used without damage to the plant or danger to consumer. If either Paris Green or London Purple is applied

**Poison Biting  
Insects**



it should be mixed with equal parts of hydrated lime. Dust may be applied by putting the dust in a sugar sack and shaking it over the plant. Common biting garden insects are Colorado potato beetle, cabbage worm and tomato worm.

Stomach poisons are of no use against sucking insects, such as plant lice and stink bugs. These insects breathe through small pores in the body and must be killed by applying a poison that will stop up these breathing pores. To control plant lice spray the plants thoroughly with  $1\frac{1}{2}$  teaspoons nicotine sulphate mixed into 1 gal. water. In mixing, the spray should always be poured into the container of water and stirred thoroughly before it is applied. A fan type nozzle is more satisfactory than any other in controlling lice. This type spreads the spray over the leaf surface causing more effective control than the cone type of spray nozzle. If the temperature is above 75° F. nicotine sulphate dust may be used. Prepare this material by mixing 1 lb. of nicotine sulphate in 20 lbs. hydrated lime.

**Plug Up Sucking  
Insects With a Con-  
tact Spray or Dust**

Tomatoes, peppers, cabbage, and many stemmy plants are frequently cut down over night in early spring by cut worms or grass hoppers. These pests are very effectively controlled by putting out poison bran mash, distributing one-fourth teaspoonful at the base of each plant in the evening. The mash is made by mixing together one pound of white arsenic or Paris Green, 20 pounds of coarse wheat bran, six finely ground lemons and juice, two quarts of any kind of molasses, and enough water to make the mixture slightly moist but not sticky.

**Poison Bran Mash  
For Cut Worms and  
Grasshoppers**

One of the chief diseases attacking garden crops in Texas is wilt of cowpeas, Irish potatoes, tomatoes and many of the vine crops such as watermelons, cucumbers and cantaloupes. This disease is characterized by the sudden dying out or wilting of the leaves and branches. A cross section of the plant stem will reveal spots scattered through the vascular tissue if the trouble is due to wilt disease. There is no fungicide that will control this ailment. The chief recommendation that can be made is to change wilt susceptible crops to new ground. Wilt resistant varieties of tomatoes are: Break O'Day, Marglobe and Norton. Iron and Brabham field peas are also wilt resistant.

**To Avoid Wilt Dis-  
ease Change Ground**

If Irish potatoes having small corky or scabby spots on the surface are planted, the resulting crops will be scabby, too. To avoid danger of harvesting a scabby crop, dip the seed potatoes for two hours prior to cutting and planting, in a solution of two ounces of bichloride of mercury to 16 gallons of water.

### Make the Garden Plan Fit the Family

To supply a family of five persons for one year with fresh and canned vegetables, the garden must produce 3,207 pounds of vegetables. To produce this quantity of vegetables, plant an area 150 feet by 100 feet (15,000 square feet) which is equivalent to 600 feet of row for each member of the family. Pounds needed per person are: potatoes 200 pounds, tomatoes 100 pounds, leafy green and yellow vegetables 100 pounds, other vegetables 175 pounds, and dry peas and beans 25 pounds.

**Table No. I**

Seed Required to Plant 100 ft. of Row

Bush Beans—1 qt.	Okra—1 oz.
Butter Beans—1 qt.	Onion (seed)— $\frac{1}{2}$ oz.
Beets—2 oz.	Onion (sets)—2 qts.
Carrots—2 oz.	Irish Potatoes— $1\frac{1}{2}$ gal.
Sweet Corn— $\frac{1}{2}$ pt.	English Peas—1 pt.
Cucumber—1 oz.	Cream Peas— $\frac{1}{2}$ pt.
Cantaloupe—1 oz.	Radish—1 oz.
Lettuce— $\frac{1}{4}$ oz.	Spinach—1 oz.
Mustard—1 oz.	New Zealand Spinach— $1\frac{1}{2}$ oz.
Squash—1 oz.	Turnip—1 oz.

**Table No. II**

Seed Required for Given No. Plants

Asparagus—1 oz. for 500 to 800 plants
Cabbage—1 oz. for 1500 plants
Cauliflower—1 oz. for 1500 to 1800 plants
Egg Plant—1 oz. for 800 to 1000 plants
Lettuce—1 oz. for 2500 plants
Peppers (green)—1 oz. for 1000 to 1200 plants
Tomatoes—1 oz. for 1500 to 1600 plants



## A Suggested Spring Garden

(This should give 2,912 lbs. of Vegetables)

DISTANCE APART OF ROWS	VEGETABLES PLANTED	HOT BED 6' x 12'
	150 FT.	
6 FT.	ASPARAGUS 100 FT.      RHUBARB 50 FT.	
3 FT.	SHALLOTS 50 FT.      MUSTARD 50 FT.      NEW ZEALAND SPINACH 50 FT.	
3 FT.	RADISHES 50 FT.      LETTUCE 50 FT.      SWISS CHARD 50 FT.	
3 FT.	ONIONS (SETS OR PLANTS)	
3 FT.	GARLIC 50 FT.      DILL 50 FT.      CHILI PEPPER 50 FT.	
3 FT.	ENGLISH PEAS (2 PLANTINGS ON SAME BED 2 WEEKS APART.)	
3 FT.	BEETS 100 FT.      TURNIPS 50 FT.	
3 FT.	CARROTS	
3 FT.	SPINACH	
3 FT.	BUSH BEANS	
3 FT.	" "	
3 FT.	LIMA "	
3 FT.	FIELD PEAS (CREAM OR BLACK EYE)	
3 FT.	" "	
3 FT.	EARLY CABBAGE	
3 FT.	EGG PLANT 75 FT.      BELL PEPPER 75 FT.	
3 FT.	OKRA	
3 FT.	IRISH POTATOES - FOLLOWED BY CREAM OR BLACK-EYED PEAS	
3 FT.	" " " " " " " " " "	
3 FT.	" " " " " " " " " "	
3 FT.	" " " " " " " " " "	
4 FT.	TOMATOES	
4 FT.	" "	
4 FT.	" "	
4 FT.	SQUASH 75 FT.      CUCUMBERS 75 FT.	
4 FT.	SWEET CORN	
4 FT.	" "	
6 FT.	CANTALOUPE	
	150 FT.	

## A Suggested Fall Garden

DISTANCE APART OF ROWS	VEGETABLES PLANTED	HOT BED 6' x 12'
	150 FT.	
6 FT.	ASPARAGUS	
3 FT.	RHUBARB 50 FT.      SHALLOTS 50 FT.      ENDIVE 50 FT.	
3 FT.	RADISH 50 FT.      LETTUCE 50 FT.      SWISS CHARD 50 FT.	
3 FT.	BROCCOLI	
3 FT.	FALL CABBAGE	
3 FT.	COLLARDS	
3 FT.	RAPE	
3 FT.	SWISS CHARD	
3 FT.	SPINACH	
3 FT.	TURNIPS	
3 FT.	MUSTARD	
3 FT.	BEETS	
3 FT.	PARSNIP	
3 FT.	CARROTS	
3 FT.	ONIONS	
3 FT.	FALL IRISH POTATOES (SPROUT BEFORE PLANTING.)	
3 FT.	" " " " " " " " " "	
3 FT.	" " " " " " " " " "	
	150 FT.	

APPLY MANURE, PLOW AND LEAVE FOR  
PLANTING EARLY SPRING VEGETABLES.

## Don't Limit A Garden To Mustard Greens And Beans

—but include such a variety of good garden crops as to make the job interesting and afford the family the greatest measure of health. Onions, lettuce, corn, radishes, beets and turnips are good but asparagus, New Zealand spinach and broccoli also are. For little intimate sketches of old and new members of the garden family scan the next few pages. Varieties in black type are especially recommended for canning.

**A**SPARAGUS is easy to grow and care for, yet few home gardeners ever attempt it. In either late fall or early spring place the one-year-old roots 15 to 24 inches apart in rows that are three feet apart. The roots are put in a trench one foot deep and as the plants start to grow soil is pulled around the young shoots until the furrow is completely levelled off.

Asparagus needs lots of plant food which can be furnished by plowing manure into the furrows and by a heavy application (two to four pounds per 25 feet row) of a 6-12-6 fertilizer. Applications should be repeated every year.

Shoots should not be cut at all during the first growing season and for only three or four weeks the second year, but in the third season they may be cut for a period of 10 weeks or more. Cut shoots just below the surface of the ground, cutting off all the shoots every day or every other day during the harvest season to force out new ones. At the end of the season the tops should not be cut off until they have died in the fall and then all tops should be cut and diced under, using them as green manure.

Of the many varieties the Washington strains, Mary and Martha, are considered superior. They are high yielding and resistant to asparagus rust.

**B**EETS are usually planted as soon as the ground is dry and warm enough in the spring, in rows spaced 18 to 24 inches apart. Care should be taken not to plant seed too thick as what looks like one seed is usually two or three sticking together. To get even shaped beets it is best to thin the young plants to stand two inches apart in the row. Crosby Egyptian and Detroit Dark Red are good varieties of which the former is the earlier. The **Detroit Dark Red** is best for canning as it is not subject to light rings in the flesh.

**B**EANS should not be planted until the soil has warmed up and danger of frost is passed. Snap beans are drilled in rows two feet apart, with the seed about two inches apart in the row. Good varieties of bush snap beans are Burpee Stringless Greenpod, Refugee, Golden Wax, and Bountiful.

**C**ABBAGE may be had from the home garden fully 10 months of the year for in those sections where winter cabbage won't grow it is easy to store. This crop likes a cool growing season but will stand some hot weather and will grow on any kind of soil. Plenty of manure will make a good cabbage crop.

Seed are planted in the hotbed four to six weeks before the plants are needed and are planted in rows four inches apart with four to six seed per inch in the row. Seedlings are given their first transplanting when the second pair of leaves appears, being put two inches apart to await transplanting to the garden when all danger of a hard freeze is over. Plants are set out in rows two feet to three feet apart with the plants 18 to 20 inches apart in the rows.

Varieties should be carefully selected especially as to time of maturity. The following varieties are important: Early Jersey Wakefield for earliness; Copenhagen for midseason; and Flat Dutch for the late crop.

**C**ARROTS require little attention once they are above the ground. The seed bed should be made very fine to allow the small plants to push through the soil. Since they will withstand light frosts and freezes carrots may be planted early in rows 18 to 24 inches apart with the plants about one-half inch apart in the row. Chantenay and Danver's Half-Long are the best varieties.

**C**AULIFLOWER is much like cabbage in its requirements. It will stand almost as much cold weather but is easily injured by hot weather. Planting time and distances are the same as for cabbage. If the leaves are tied together over the center of the plant when the young head is the size of a silver dollar the head will be well blanched and of excellent quality when mature. Leaves should be tied when the foliage is dry. Dry weather, Early Erfurt and Snowball are good varieties.

**C**OLLARDS withstand more heat and cold than cabbage and cultivation is the same as for cabbage. They do well in the poorest of soil. Georgia or Southern are good varieties.

**E**GGPLANTS will produce fruit all summer long, being one of our few crops that will stand hot weather and do well. Egg-plant seed should be sown in a protected place 8 to 10 weeks before time for transplanting to the field. Two transplantings before setting in the field make strong plants. At the second transplanting they may be placed in old tin cans, berry boxes or pieces of sod turned upside down. They should not be put in the garden until the soil has warmed up as they are seriously hurt by even a light frost and will not do well in cool cloudy weather even though it be far from freezing. Plants are set in the field two feet apart with the rows three feet apart. Black Beauty, New York Improved and Florida High Bush are worth growing.

**E**NGLISH PEAS are a cool weather crop and should be planted as early as possible in the spring, as frost and light freezes will not hurt them unless they are in blossom. The smooth round type such as Alaska should be planted first, as the wrinkled type such as Little Marvel germinates better when the soil is warm. Peas are drilled in rows two inches apart with the rows two feet apart for the dwarf and three feet for the ones which need support. Peas should be planted three to four inches deep. Recommended varieties are Marvel, Alaska, and **Thomas Laxton**.

**I**RISH POTATOES may be planted as a spring or fall crop. Spring plantings are usually more prolific and more profitable because favorable weather conditions exist in Texas during the spring months. The seed bed for Irish potatoes must be deep and thoroughly prepared. Rows should be 36 to 40 inches apart and the seed pieces planted 12 inches apart in the drill. The seed pieces for spring planting should be covered two to three inches deep. The fall planting should be covered two to five inches deep. Certified seed that have been subject to rigid inspection will give high yields, and will repay the grower for the small additional cost. Large seed pieces ranging from one and one-half to two ounces are desirable, because they will produce stronger plants. Irish potatoes are not a poor soil crop. This plant must have an abundance of plant food for heavy yields. Well rotted manure, supplemented with superphosphate and muriate of potash applied at the rate of four to 10 tons per acre is satisfactory. A 6-10-7 commercial mixture used at the rate of 500-1000 lbs. per acre and applied two weeks before planting is good.

**L**ETTUCE is a familiar crop to every gardener yet it is surprising how few grow good lettuce. It needs cool weather, very fertile soil and plenty of moisture. Of the two distinct types the leaf kind is the easier to grow but a good crop of head lettuce gives the gardener the greater thrill of pride. Seed may be sowed exactly where the crop is to mature or it may be planted in a seed bed and transplanted. In either case the soil should be in a fine, mellow condition. Rows should not be closer than 18 inches and at least six inches should be allowed between plants for leaf lettuce and eight to 10 inches for head lettuce. If planted first in a seed bed transplantings should be made when the first four leaves are half grown. Land to be planted in lettuce should receive a heavy application of manure or 6-10-7 commercial fertilizer.

Since this is a cool season crop and light frosts do not damage it lettuce should be planted either in late fall or early spring. Big Boston and Iseberg are good heading varieties.

**L**IMA BEANS of either the bush or pole variety may be satisfactorily grown but the bush type seems more popular. Lima beans must have even warmer weather than snap beans to do well. The crop is planted in rows two feet apart with the plants four inches apart in the rows. Fordhook and **Henderson Bush** are popular varieties.

**M**USTARD is grown much the same way as spinach, being a cool weather crop that should not be attempted after the season gets very warm. It is drilled in rows 18 to 20 inches apart. **Giant Southern Curled** is a standard variety that makes an excellent green. Florida is late, hardy and slow to go to seed stalks.

**N**EW ZEALAND SPINACH is an excellent hot weather green grown quite differently from ordinary spinach. It is a viney plant from which are pinched off the young, tender tips thus allowing the plant to grow another crop of greens. It can be cut repeatedly during the growing season. The seed are slow to germinate and where there are many weeds it may pay to transplant the young plants. It is usually drilled in rows about three feet apart and plants are thinned to 12 inches apart. It is one of the very few greens that will thrive in hot weather.

**O**KRA does its best in hot weather and so the seed should not be sown until all the danger of frost is passed and the ground is warm. Dwarf varieties are placed in rows three to

four feet apart but the tall varieties are kept five to six feet apart. Seed drilled in the row should be thinned so that plants stand two feet apart. Care should be taken to keep the pods picked before they become tough. **White Velvet**, Dwarf Green Prolific and Long-Podded are recommended for home gardens.

**O**NION sets are usually planted as early in spring as possible for growing early bunch onions. Where winters are not severe, sets may be planted any time in winter, spacing them two or three inches apart in the rows with 20 inches between rows.

Dry onion seed is sowed as soon as hard frosts are over in rows far enough apart to allow cultivation and with plants four inches apart in the rows.

Bermuda onions are transplanted to the field from protected hotbeds. Since onion seed germinate slowly, hot bed seed should be sown at least eight weeks before plants are needed.

Varieties recommended for bunching are Southport White Globe and Southport Yellow Globe; for dry onions Australian Brown and Prizetaker; and for Bermudas the Crystal Wax and White.

A row of shallot onions should be in every garden. The planting may be made from seed or from plants. Allow 10 inches for each plant in the row.

**P**EPPEERS stand a good deal of heat and are grown quite similarly to eggplants. California Wonder and World Beater are good varieties. Hot pepper should not be planted next to sweet pepper as the desired quality of both are impaired by crossing.

**R**ADISHES must be grown rapidly or they will become tough, bitter and pithy. Seed may be sown as soon as the last hard freeze is over in rows only six to eight inches apart as the crop matures before there is need for cultivation. Three or four seed per inch is enough in the row. The button variety matures much sooner than the long type. Scarlet Globe is a favorite variety of the former while Chartiers is an excellent long red type.



**S**PINACH is our most important green and is easily grown in practically all sections of Texas. Seed may either be broadcast in beds or drilled in rows, the latter being preferred in the home garden. Rows should be at least 15 inches apart for hand cultivation and 20 inches for horse cultivation. Seed an inch apart in the row is the correct spacing.

Spinach is a cool weather plant that will not do well in hot weather. It should therefore be grown in late fall, winter and early spring. A light freeze does not seriously injure the crop. It needs lots of nitrogen which may be obtained by spreading manure the previous season or applying nitrate of soda two or three times during the growing season.

Spinach will run to seed and so small plantings should be made repeatedly rather than one big planting. **Bloomsdale Savoy** is the favorite variety in Texas but **Long Standing** is also a good variety.

**S**WISS CHARD belongs to the beet family and cultural methods of the two plants are about the same. It may be planted in early spring or grown as a fall vegetable. It is hardy to cold and will withstand frosty weather. Seed should be sown in rows two feet apart using two ounces of seed per 100-foot rows. After plants become well established they should be thinned to eight inches apart in the row. To secure a product of the highest quality the outer leaf stalk should be removed at frequent intervals, but care should be taken not to injure the crown of the plant. **Large Ribbed White** and **Lucullus** are standard varieties.

**T**OMATO seed should be sown in a hot bed or shallow indoor box eight to 10 weeks before transplanting to the garden to get an early crop. When the first pair of true leaves appears they may be transplanted about two inches apart each way and allowed to grow until they begin to crowd. They are then transplanted four inches apart or put in tin cans with bottoms removed or berry boxes and left to grow until ready for the garden.

Main crop tomato plants may be grown in an outer seed bed and transplanted but once, never removing to the field until all danger of frost is over. Plant in rows three feet apart with the plants three feet apart in the row. Within a week after transplanting they should be staked by driving four foot

stakes firmly into the ground close to the plants. Plants should not be tied too close to the stakes. Pruning should begin immediately, removing all suckers and allowing only one stem to grow.

For East Texas, the Gulf State Market and **Marglobe** varieties are best. In the Rio Grande Valley and Winter Garden area, **Bonny Best** and John Baer are leaders, while in West Texas, **Earliana** and June Pink varieties are preferable.

**T**URNIPS are grown both for roots and tops and both may be secured from the same planting if the crop is properly handled. This is another cool weather crop. Turnips may be broadcast but do better when drilled thickly in rows 20 inches apart. When the tops are large enough for greens the plants should be thinned to stand three to five inches apart in rows. **Shogoin** and Purple Tops are standard varieties.

**V**INE CROPS such as cucumbers, watermelons, cantaloupes, pumpkins and squash are so closely related as far as cultural requirements go that they are here grouped together. All these crops require warm weather, plenty of room and lots of food. They are killed by even a light touch of frost and should not be planted until all frost danger is gone and the ground is thoroughly warm. Cucumbers, squash, and cantaloupes should be planted in hills four to six feet apart each way.

Watermelons and pumpkins are planted in hills six to 12 feet apart with the plants thinned to one to three in the hill.

If manure is not available a 6-12-6 commercial fertilizer applied at the rate of 400 to 800 pounds per acre will give good results.

Leading cucumber varieties are Kirby and Davis Perfect for slicing, and **Chicago Pickling** for pickle purposes. For cantaloupes, Hale's Best and Perfecto are recommended, and for watermelons Tom Watson and Halbert Honey. Kentucky Pie or King of the Mammoth are good winter varieties of pumpkins. Cushaw and Hubbard are good winter squashes while Yellow Crookneck and Patty Anne are excellent summer varieties.

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