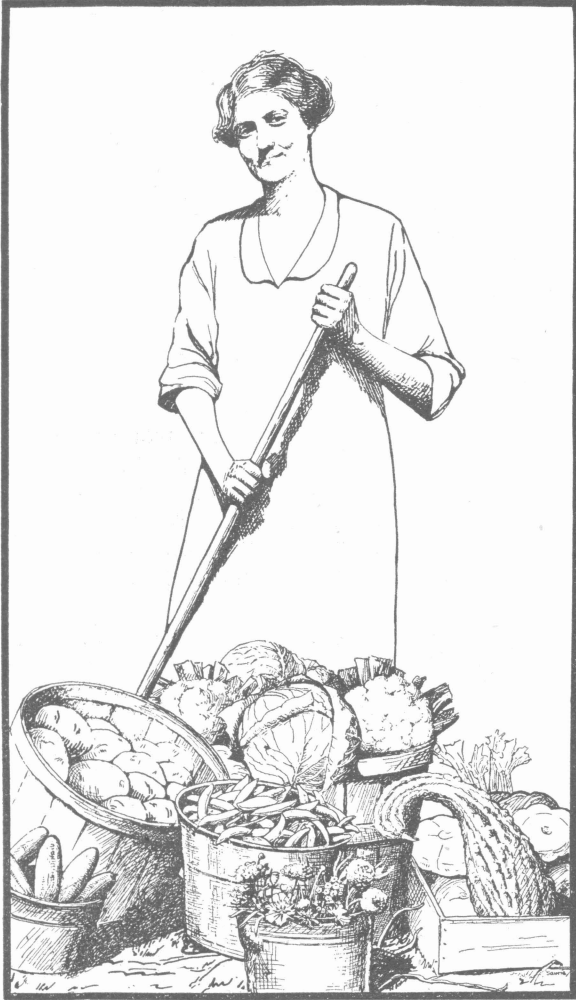




Gardening

Extension Service
Agricultural and Mechanical College of Texas
College Station, Texas



GARDENING

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Gardening

By

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and

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LOVERS 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 perfume of fresh turned soil, need no arguments 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.

He who limits himself to bread, meat, potatoes and sugar is bound to suffer certain bad results. Since a large portion of our earthly ills are due to faulty diet, and since vegetables play such a vital part in correcting ailments, a consideration of the **Essentials of an Adequate Diet** as prepared by the Division of Rural Research, Texas Agricultural Experiment Station may be helpful. "All vegetables contain minerals and for this reason are of great value as foods. They help to build bones, teeth, tissue and blood. Milk and fruit and vegetables furnish the large share of the phosphorous, calcium and iron in our food. When combined with eggs, meats and grains they form a balanced diet."

ESSENTIALS OF AN ADEQUATE DIET

(Daily unless otherwise stated)

Food	Amount	Especially for:
Milk, any kind	1½ pints	Protein Calcium (lime) Phosphorous Vitamine A, B, C
Butter	At least 1 serving...	Vitamine A, B
Whole Cereal	1 serving	Vitamine B Protein Iron Phosphorous
Vegetables		Minerals
Leafy	3 times per week.....	(Potassium, Magnesium, Sodium, Iron, Phosphorous, Chlorine, Sulphur, Iodine).
Others	1 serving each	
Fruits, any kind	2 servings	Bulk Vitamines A, B, C
One must be raw.		
Three times during week		
citrus fruit or tomatoes		
(fresh or canned) must be		
served.		
Protein-rich	1 serving of any 2....	Protein Minerals
Meat or		
Eggs or		
Cheese or		
Legumes or		
Nuts		

Leafy vegetables are lettuce, celery, greens of all kinds, asparagus, cabbage, beet and onion tops, spinach, etc.

"Other" Vegetables are turnips (rutabagas and white), carrots, onions, beets, oyster plant (salsify), okra, squash, cucumbers, cushaws and the like.

Fresh vegetables are much preferred in the adequate diet, but canned or dried vegetables are wholesome and should be eaten when it is impossible to obtain fresh ones.

When planning the garden it is well to keep in mind the adequate diet and make plans to provide fresh fruits and vegetables as well as to can, dry, brine or preserve some for the winter months.

It is then, for family health and for dollars and for sheer love of the job that we garden. That this effort may give the most bountiful return we offer some suggestions.

Don't Walk a Mile for an Onion Locate the garden in the vicinity of the house if possible, that the housewife may not be compelled to walk an unreasonable distance from her kitchen 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.

Choose a Sandy Loam Soil if Possible 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. The heavier clay and black land soil types are usually more fertile, but are harder to work and the crops growing on them do not respond to commercial fertilizer as readily as do sandy soils. The gravelly soil types are usually deficient in organic matter but when supplemented with stable manure or green manure crops to increase fertility and water holding capacity they become satisfactory garden soils.

Plow Deep, and Early 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. It is important to completely cover all weeds and plant refuse so this material will quickly decay 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 ten days before seeds are planted.

Barnyard Manure Is the Best Fertilizer Before breaking garden land make a heavy application of well rotted barnyard manure at the rate of 4 to 10 tons per acre. Fresh manure may be used but should be applied in fall or winter and turned under early to decompose. Since manure is usually lacking in phosphorous add fifty 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 15-5-5 or 12-6-4 at the rate of one to two pounds to each 25 square feet. 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 200 square feet. Serious burning of plants may result if this material is applied to the foliage, especially when the foliage is moist.

To Beat the Neighbors Build a Hot Bed or Cold Frame 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 hot bed such as illustrated by the cross section in Diagram 1 provides an excellent place for this purpose. At least four inches of 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 hot bed except no manure is used. The beds are heated by the sun during the day and this warmth is held in by the sash during the night. See diagram at bottom of page 7.

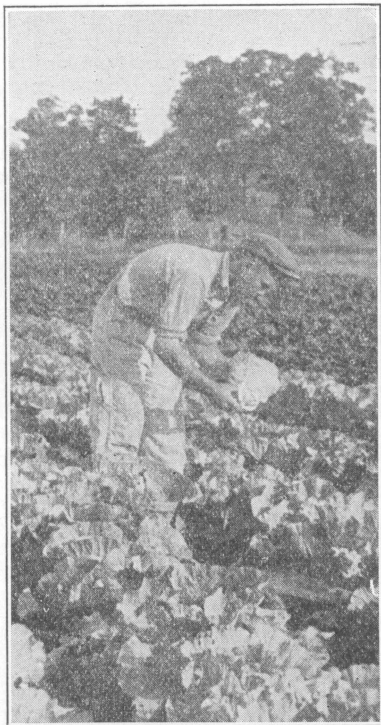
For a real early start the seed may be planted in a shallow box in the house and transplanted to hot bed or cold frame when the first two true leaves have developed. They should be placed two inches apart each way when transplanted. When the plants begin to crowd each other they should be transplanted to give four inches space each way or placed in old tin cans, pots or berry boxes or if danger of frost is over moved directly to the field. Plants should be hardened off before being moved to the field in order that they may better withstand any adverse conditions they may meet in the open. This is done by gradually exposing them in hot bed or cold frame to right temperatures and by withholding water from them. They should always be watered twelve hours before being transplanted, however. 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 the soil firmly about the roots and in warm weather shade the plants with some such covering as newspapers until growth has begun.

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

To secure straight rows in the garden it is necessary to tightly stretch a string 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 a hoe or with the foot. Quickly maturing vegetables such as radishes, beets, lettuce and mustard may be followed by plantings of later maturing crops.

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 of the seed 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 varieties are usually coarse, and not so palatable as some of the less popular ones.



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

You Can't Get By Without Hoeing or the Like

be laid out sufficiently large and the rows spaced far enough apart to enable cultivation with a horse drawn sweep stock for keeping down weeds, and with a one horse adjustable harrow for maintaining a soil mulch.

Dry weather often knocks out an otherwise good garden, particularly late in the season. Sometimes a site can be selected that is well drained and at the same time is naturally terraced to conserve moisture. This is highly desirable. Good cultivation is another substitute for rainfall. Yet in spite of coaxing nature in these ways, artificial watering becomes

In Irrigating, Flood, Don't Sprinkle

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, and 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.

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.

Poison Biting Insects

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 or barrel spray, is 2 pounds of arsenate of lead to 50 gallons of water. Dusting for biting insects is coming into general use and for this purpose arsenate of lead or calcium arsenate, dusted over the surface of the plants may be used without damage to the plants. If either Paris Green or London Purple is applied it should be mixed with equal parts of hydrated lime. Dust may be applied, as shown in the illustration, 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.



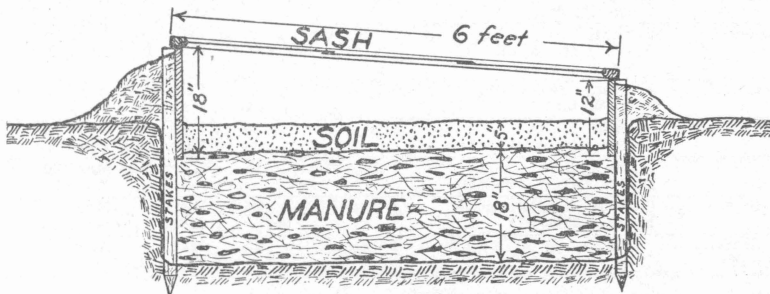
Dusting a Good Insect Control Method

Stomach poisons are of no use whatever against such sucking insects as plant lice and leaf-footed plant hoppers. The body pores must be stopped up with a poison spray such as nicotine sulphate, which may be used either as a liquid spray or as a dust. The latter is recommended because the dust settles to the under sides of the leaves better than does the liquid spray and is therefore more effective. One pound of nicotine sulphate to 20 pounds of hydrated lime, mixed up in an old ice cream freezer, makes an excellent dust. This amount will furnish enough dust for an acre garden in an ordinary year.

Tomatoes, peppers, cabbage and many stemmy plants are frequently cut down over night in early spring by cut worms or grasshoppers. These pests are very effectively controlled by putting out poison bran mash, distributing one-fourth teaspoonful at the base of each plant late in the evening. The mash is made up by mixing together 1 pound of white arsenic or Paris Green, 20 pounds of coarse wheat bran, 6 finely ground lemons and juice, 2 quarts of any kind of molasses, and enough water to make the mixture slightly moist but not sticky.

One of the chief diseases that frequently attacks 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 drying 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 but crop rotation with such fibrous rooted plants as corn or small grains will starve out the disease in 3 to 5 years. The chief recommendation that can be made, then, is to change wilt susceptible crops to new ground. A wilt resistant variety of tomato known as Marglobe has been developed.

If the Irish potatoes that are planted have small corky spots on the surface they have scab and the resulting crop will be scabby too. To avoid danger of harvesting a scabby crop dip the seed potatoes for 2 hours prior to cutting and planting in a solution of 2 ounces bichloride of mercury to 16 gallons of water.



Cross Section, Hot Bed

PLAN
If any 18 of these vegetables
and quant

Vegetables	Varieties	Amount of Seed	Cost of Seed	Time of South Texas	Planting ³ North Texas	Depth of Planting (inches)	Method of Planting
Strawberries	Improved Klondyke Missionary	100 plants	\$1.00	Sept.-Oct.	Oct.-Jan.	First leaf	Hill
Asparagus	Mary Washington Martha Washington	50-75 plants	2.00	Jan.-Feb.	Feb.-Mar.- April	10-12	Drill R
¹ Lettuce	Los Angeles Big Boston	$\frac{1}{2}$ oz.	.10	Jan. 15- Feb. 15	Feb. 15- Mar. 15	$\frac{1}{2}$ -1	Drill R
Endive	Green Curled Escarolle	$\frac{1}{2}$ oz.	.10	Jan. 15- Feb. 15	Feb. 15- Mar. 15	$\frac{1}{2}$ -1	Drill R
² Spinach	Bloomsdale Savoy Long Standing	1 oz.	.15	Oct. 15- Jan. 15	Feb. 15- Mar. 15	$\frac{1}{2}$ -1	Drill R
² Mustard	Giant Southern Curled	1 oz.	.15	Jan. 1- Feb. 15	Feb. 15- Mar. 15	$\frac{1}{2}$ -1	Drill R
² Radish	Scarlet Globe Chartiers	$\frac{1}{2}$ oz.	.10	Jan. 1- Feb. 15	Feb. 15- Mar. 25	$\frac{1}{2}$ -1	Drill R
² Turnip	White Egg Purple Top	$\frac{1}{2}$ oz.	.10	Jan. 1- Feb. 15	Feb. 15- Mar. 20	$\frac{1}{2}$ -1	Drill R or Broa
Kohl-rabi	Early White Vienna	$\frac{1}{2}$ oz.	.15	Jan. 1- Feb. 1	Feb. 15- Mar. 10	$\frac{1}{2}$ -1	Drill R
³ Onion	Bermuda's Australian Brown	$\frac{1}{2}$ oz.	.25	Oct. 15- Nov. 15	Feb. 10- Mar. 10	$\frac{1}{4}$ - $\frac{3}{4}$	Drill R Hotbed
² Beets	Crosby's Egyptian Detroit Dark Red	1 oz.	.20	Jan. 1- Feb. 1	Feb. 15- Mar. 10	1-2	Drill R
² Carrots	Chantenay Danver's Half-Long	$\frac{1}{2}$ oz.	.15	Jan. 1- Feb. 15	Feb. 15- Mar. 15	$\frac{1}{2}$ -1	Drill R
² English Peas	Laxtonian Stratgem	1 pint	.25	Jan. 1- Feb. 1	Jan. 1- Mar. 1	2-4	Drill R
Chard	Lucullus	$\frac{1}{2}$ oz.	.10	Oct. 15- Nov. 15	Feb. 1- Feb. 15	1-2	Drill R
Cauliflower	Early Erfurt Snowball	$\frac{1}{4}$ oz.	.70	² Oct. 1- Nov. 1	Jan. 1- Feb. 1	$\frac{1}{2}$ - $\frac{3}{4}$	Drill R in Hot
² Cabbage	Early Jersey Wakefield Copenhagen Market Glory of Enkhuisen	$\frac{1}{4}$ oz.	.15	² Sept. 15- Nov. 15	Jan. 1- Feb. 1	$\frac{1}{2}$ -1	Drill R in Hot
² Beans, Snap	Bountiful Burbee Stringless	1 pint	.30	Feb. 10- Mar. 10	Mar. 10- April 1	2-4	Drill R
Beans, Lima	Fordhook Bush Henderson Bush	$\frac{1}{2}$ pint	.25	Mar. 1- May 1	April 20- May 20	2-4	Drill R or Hills
² Pepper	Ruby King	1 pkt.	.10	² Dec. 1- Jan. 1	Jan. 1- Feb. 1	$\frac{1}{2}$ -1	Drill R in Hot
² Eggplant	Florida High Bush New York Improved	1 pkt.	.10	Dec. 1- Jan. 1	Jan. 1- Feb. 1	$\frac{1}{2}$ -1	Drill R in Hot
² Tomato	Marglobe Gulf State Market Globe	1 pkt.	.10	Dec. 1- Jan. 1	Jan. 15- Mar. 1	$\frac{1}{2}$ -1	Drill R in Hot
² Cucumbers	Kirby Davis Perfect	1 oz.	.15	Mar. 1- April 1	Mar. 15 April 10	1-3	Drill R or Hills
² Cantaloupes	Perfecto Texas Cannonball Tip-Top	1 oz.	.25	Feb. 15- Mar. 1	Mar. 15- April 10	1-3	Drill R or Hills
Watermelons	Kleckley Sweet Tom Watson	1 oz.	.15	Feb. 15- Mar. 15	April 1- May 1	2-4	Drill R or Hills
² Squash, Pumpkin	Cushaw (fall) Yellow Crookneck	1 oz.	.20	Feb. 15- Mar. 10	Mar. 10- April 15	2-4	Drill R or Hills
² Okra	White Velvet Dwarf Green Prolific	1 oz.	.15	Mar. 1- April 1	Mar. 20- May 1	1-2	Drill R
Corn, Sweet	Country Gentleman Early Adam	$\frac{1}{4}$ pint	.25	Feb. 1- Mar. 1	Mar. 1- Mar. 15	1-2	Drill R or Hills
² New Zealand Spinach		1 oz.	.15	Mar. 1- April 1	April 1- May 1	1-3	Drill R

¹ These vegetables should be included in every home garden.

² Date plants moved to field from hotbed.

³ North and South Texas are divided by a line east and west through Waco, Texas.

GUIDE

There will be sufficient variety
family of six

Distance between Plants	Date of Transplanting	Time of Harvesting ³	Yield	Value	Remarks	
	South Texas	North Texas				
12-20	Feb.-Mar.	Apr.-May	50 qts.	\$10.00	Secure plants from Northern States	
18-24	Feb.-Mar.- Apr.	April-May- June	75-100 lbs.	10.00	Only a small cutting should be made the first year.	
6-12	Mar. 15- May 1	April 10- May 15	25-50 lbs.	3.00	Lettuce and other early maturing crops may be followed by late crops.	
6-10	Mar. 10- April 15	April 10- May 15	30-40 lbs.	1.50		
1- 2	Dec. 10- April 15	April 1- May 1	4 bus.	5.00		
2- 3	Feb. 20- April 1	April 1- May 1	3-4 bus.	3.00		
$\frac{1}{2}$ - $\frac{1}{2}$	Feb. 15- April 1	April 1- May 15	100-125 bun.	4.00	Planting should be spread over a period of two or three weeks.	
3- 5	Mar. 1- April 1	April 1- May 10	1 $\frac{1}{2}$ bus. roots 1 $\frac{1}{2}$ bus. tops	2.00	Planting may be thinned and the plants pulled and used as greens.	
3- 5	Mar. 15- April 15	April 1- May 15	1 bus.	2.00		
2- 6	Mar. 1- May 1	April 1 June 5	200-400 onions	4.00	If seed is sowed thin and young onions are used.	
2- 3	Mar. 15- May 15	April 15- July 1	75 bunches	3.50	Small plants thinned out may be used as greens.	
2- 3	Mar. 1- May 1	April 15- July 1	75-100 bun.	4.00		
2- 3	Mar. 1- April 15	April 15- June 1	2 bus.	4.00		
3- 5	Dec. 15- April 1	April 1- June 1	100 lbs.	2.00		
18-24	4-6 weeks from seedbed	Jan. 1- Mar. 15	May 10- June 1	40-50 heads	5.00	Leaves should be tied up to blanch the head
18-24	4-6 weeks from seedbed	Dec. 1- May 1	May 10- July 1	200 lbs.	5.00	
2- 4		April 15- May 15	April 20- June 15	3 bus.	4.50	Beans should be kept picked
4- 6		May 1- June 1	May 15- June 20	3 bus.	5.00	
24-30	8-10 weeks from seedbed	May 15- Frost	June 1- Frost	3 bus.	4.00	
24-30	3-10 weeks from seedbed	May 15- Frost	June 1- Frost	2 bus.	2.00	
30-40	6-10 weeks from seedbed	Mar. 15- June 15	July 1 May 20-	4 bus.	7.00	
-12 in. Drills -48 in. Hills		May 15- June 15	June 1- July 1	3 bus.	4.00	
-18 in. Drills 48-72 in. Hills		May 20- July 1	June 20- August	100-125 fruits	7.00	
-24 in. Drills 72-144 in. Hills		May 20- July 15	July-Aug.	50 fruits	6.00	
24-36 in. Drills 72-144 in. Hills		May 1- Sept. 1	May 15- Sept.	100 fruits	5.00	
24-36		May 15- Sept. 1	June 15- Sept.	75 lbs.	4.00	
12-24		April 20- May 20	May 10- June 20	5 doz. ears	1.50	
8-12		May 1- Aug. 15	May-June- July	8 bus.	8.00	A hot weather spinach

PLANTING GUIDE

If any 18 of these vegetables are grown there will be sufficient variety
and quantity for a family of six

Vegetables	Varieties	Amount of Seed	Cost of Seed	Time of South Texas	Planting ³ North Texas	Depth of Planting (inches)	Method of Planting	Distance between Rows	Distance between Plants	Date of Transplanting	Time of South Texas	Harvesting ³ North Texas	Yield	Value	Remarks
Strawberries	Improved Klondyke Missionary	100 plants	\$1.00	Sept.-Oct.	Oct.-Jan.	First leaf	Hill	(inches) 36-48	(inches) 12-20		Feb.-Mar.	Apr.-May	50 qts.	\$10.00	Secure plants from Northern States
Asparagus	Mary Washington Martha Washington	50-75 plants	2.00	Jan.-Feb.	Feb.-Mar.-April	10-12	Drill Rows	36-60	18-24		Feb.-Mar.-Apr.	April-May-June	75-100 lbs.	10.00	Only a small cutting should be made the first year.
¹ Lettuce	Los Angeles Big Boston	$\frac{1}{2}$ oz.	.10	Jan. 15-Feb. 15	Feb. 15-Mar. 15	$\frac{1}{2}$ -1	Drill Rows	18-24	6-12		Mar. 15-May 1	April 10-May 15	25-50 lbs.	3.00	Lettuce and other early maturing crops may be followed by late crops.
Endive	Green Curled Escarolle	$\frac{1}{2}$ oz.	.10	Jan. 15-Feb. 15	Feb. 15-Mar. 15	$\frac{1}{2}$ -1	Drill Rows	18-24	6-10		Mar. 10-April 15	April 10-May 15	30-40 lbs.	1.50	
² Spinach	Bloomsdale Savoy Long Standing	1 oz.	.15	Oct. 15-Jan. 15	Feb. 15-Mar. 15	$\frac{1}{2}$ -1	Drill Rows	15-24	1-2		Dec. 10-April 15	April 1-May 1	4 bus.	5.00	
² Mustard	Giant Southern Curled	1 oz.	.15	Jan. 1-Feb. 15	Feb. 15-Mar. 15	$\frac{1}{2}$ -1	Drill Rows	18-24	2-3		Feb. 20-April 1	April 1-May 1	3-4 bus.	3.00	
² Radish	Scarlet Globe Chartiers	$\frac{1}{2}$ oz.	.10	Jan. 1-Feb. 15	Feb. 15-Mar. 25	$\frac{1}{2}$ -1	Drill Rows	8-18	$\frac{1}{2}$ - $\frac{1}{2}$		Feb. 15-April 1	April 1-May 15	100-125 bun.	4.00	Planting should be spread over a period of two or three weeks.
² Turnip	White Egg Purple Top	$\frac{1}{2}$ oz.	.10	Jan. 1-Feb. 15	Feb. 15-Mar. 20	$\frac{1}{2}$ -1	Drill Rows or Broadcast	18-24	3-5		Mar. 1-April 1	April 1-May 10	$1\frac{1}{2}$ bus. roots $1\frac{1}{2}$ bus. tops	2.00	Planting may be thinned and the plants pulled and used as greens.
Kohl-rabi	Early White Vienna	$\frac{1}{2}$ oz.	.15	Jan. 1-Feb. 1	Feb. 15-Mar. 10	$\frac{1}{2}$ -1	Drill Rows	18-24	3-5		Mar. 15-April 15	April 1-May 15	1 bus.	2.00	
² Onion	Bermuda's Australian Brown	$\frac{1}{2}$ oz.	.25	Oct. 15-Nov. 15	Feb. 10-Mar. 10	$\frac{1}{2}$ - $\frac{3}{4}$	Drill Rows in Hotbed or Field	18-24	2-6		Mar. 1-May 1	April 1-June 5	200-400 onions	4.00	If seed is sowed thin and young onions are used.
² Beets	Crosby's Egyptian Detroit Dark Red	1 oz.	.20	Jan. 1-Feb. 1	Feb. 15-Mar. 10	1-2	Drill Rows	18-24	2-3		Mar. 15-April 15	April 15-July 1	75 bunches	3.50	Small plants thinned out may be used as greens.
² Carrots	Chantenay Danver's Half-Long	$\frac{1}{2}$ oz.	.15	Jan. 1-Feb. 15	Feb. 15-Mar. 15	$\frac{1}{2}$ -1	Drill Rows	18-24	2-3		Mar. 1-May 1	April 15-July 1	75-100 bun.	4.00	
² English Peas	Laxtonian Stratgem	1 pint	.25	Jan. 1-Feb. 1	Jan. 1-Mar. 1	2-4	Drill Rows	24-36	2-3		Mar. 1-April 15	April 15-June 1	2 bus.	4.00	
Chard	Lucullus	$\frac{1}{2}$ oz.	.10	Oct. 15-Nov. 15	Feb. 15-Feb. 15	1-2	Drill Rows	24-30	3-5		Dec. 15-April 1	April 1-June 1	100 lbs.	2.00	
Cauliflower	Early Erfurt Snowball	$\frac{1}{2}$ oz.	.70	² Oct. 1-Nov. 1	Jan. 1-Feb. 1	$\frac{1}{2}$ - $\frac{3}{4}$	Drill Rows in Hotbed	30-40	18-24	4-6 weeks from seedbed	Jan. 1-Mar. 15	May 10-June 1	40-50 heads	5.00	Leaves should be tied up to blanch the head
² Cabbage	Early Jersey Wakefield Copenhagen Market Glory of Enkhuisen	$\frac{1}{2}$ oz.	.15	² Sept. 15-Nov. 15	Jan. 1-Feb. 1	$\frac{1}{2}$ -1	Drill Rows in Hotbed	30-40	18-24	4-6 weeks from seedbed	Dec. 1-May 1	May 10-July 1	200 lbs.	5.00	
² Beans, Snap	Bountiful Burbee Stringless	1 pint	.30	Feb. 10-Mar. 10	Mar. 10-April 1	2-4	Drill Rows	24-30	2-4		April 15-May 15	April 20-June 15	3 bus.	4.50	Beans should be kept picked
Beans, Lima	Fordhook Bush Henderson Bush	$\frac{1}{2}$ pint	.25	Mar. 1-May 1	April 20-May 20	2-4	Drill Rows or Hills	24-30	4-6		May 1-June 1	May 15-June 20	3 bus.	5.00	
² Pepper	Ruby King	1 pkt.	.10	² Dec. 1-Jan. 1	Jan. 1-Feb. 1	$\frac{1}{2}$ -1	Drill Rows in Hotbed	30-40	24-30	8-10 weeks from seedbed	May 15-Frost	June 1-Frost	3 bus.	4.00	
² Eggplant	Florida High Bush New York Improved	1 pkt.	.10	Dec. 1-Jan. 1	Jan. 1-Feb. 1	$\frac{1}{2}$ -1	Drill Rows in Hotbed	30-40	24-30	3-10 weeks from seedbed	May 15-Frost	June 1-Frost	2 bus.	2.00	
² Tomato	Marglobe Gulf State Market Globe	1 pkt.	.10	Dec. 1-Jan. 1	Jan. 15-Mar. 1	$\frac{1}{2}$ -1	Drill Rows in Hotbed	40-60	30-40	5-10 weeks from seedbed	Mar. 15-June 15	July 1-May 20-	4 bus.	7.00	
² Cucumbers	Kirby Davis Perfect	1 oz.	.15	Mar. 1-April 1	Mar. 15-April 10	1-3	Drill Rows or Hills	60-72	-12 in. Drills -48 in. Hills		May 15-June 15	June 1-July 1	3 bus.	4.00	
² Cantaloupes	Perfecto Texas Cannonball Tip-Top	1 oz.	.25	Feb. 15-Mar. 1	Mar. 15-April 10	1-3	Drill Rows or Hills	60-72	-18 in. Drills 48-72 in. Hills		May 20-July 1	June 20-August	100-125 fruits	7.00	
Watermelons	Kleckley Sweet Tom Watson	1 oz.	.15	Feb. 15-Mar. 15	April 1-May 1	2-4	Drill Rows or Hills	72-144	-24 in. Drills 72-144 in. Hills		May 20-July 15	July-Aug.	50 fruits	6.00	
² Squash, Pumpkin	Cushaw (fall) Yellow Crookneck	1 oz.	.20	Feb. 15-Mar. 10	Mar. 10-April 15	2-4	Drill Rows or Hills	72-144	24-36 in. Drills 72-144 in. Hills		May 1-Sept. 1	May 15-Sept.	100 fruits	5.00	
² Okra	White Velvet Dwarf Green Prolific	1 oz.	.15	Mar. 1-April 1	Mar. 20-May 1	1-2	Drill Rows	36-72	24-36		May 15-Sept. 1	June 15-Sept.	75 lbs.	4.00	
Corn, Sweet	Country Gentleman Early Adam	$\frac{1}{2}$ pint	.25	Feb. 1-Mar. 1	Mar. 15-Mar. 15	1-2	Drill Rows or Hills	36-48	12-24		April 20-May 20	May 10-June 20	5 doz. ears	1.50	
² New Zealand Spinach		1 oz.	.15	Mar. 1-April 1	April 1-May 1	1-3	Drill Rows	36-48	8-12		May 1-Aug. 15	May-June-July	8 bus.	8.00	A hot weather spinach

¹ These vegetables should be included in every home garden.

² Date plants moved to field from hotbed.

³ North and South Texas are divided by a line east and west through Waco, Texas.



New Zealand Spinach

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 so also are asparagus, New Zealand spinach and endive. For little intimate sketches of old and new members of the garden family glance through the next few pages.

ASPARAGUS is easy to grow and care for yet few home gardeners ever attempt to grow it. In either late fall or early spring place one year old roots 15 to 24 inches apart in rows that are 3 feet apart. The roots are put in a trench one foot deep and as the plants start to grow soil is pulled in 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 (2 to 4 pounds per 25 feet of row) of a 15-5-5 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 disced 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.

BEETS are usually planted just 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 2 inches apart in the row. Crosby Egyptian and Detroit Dark Red are good varieties of which the former is the earlier.

BEANS should not be planted until the soil has warmed up and all danger of frost is passed for they will not do well until the arrival of warm weather. Snap beans are drilled in rows 2 feet apart with the seed about 2 inches apart in the row. Good varieties of bush snap beans are Burpee Stringless, Greenpod, Refugee, Wax and Bountiful.

CABBAGE may be had from the home garden fully ten 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 hot weather and will grow on any kind of soil. Plenty of manure will make a good cabbage crop.

The seed is transplanted 4 to 6 weeks before the time the plants are needed, often being transplanted twice in protected places before final planting in the garden. The seed are planted in the hot bed in rows 4 inches apart with 4 to 6 seed per inch in the row. Seedlings are given their first transplanting when the second pair of leaves appear, being put 2 inches apart then to await the time of transplanting to the garden. This is done when all danger of a hard freeze is over. Plants are set out in rows 2 to 3 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, and Copenhagen for earliness; and Flat Dutch and Glory of Enkhuizen for the main season.

CARROTS require little attention once they are above 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, Oxheart, and Danver's Half-Long are the best varieties.

CAULIFLOWER is very 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. The leaves should be tied when the foliage is dry. Dry Weather, Early Erfurt and Snowball are good varieties.

COLLARDS will withstand more heat and cold than will cabbage and their cultivation is the same as for cabbage. They do well in the poorest of soil.

EGGPLANTS will produce fruit all summer long, being one of our few crops that will stand hot weather and do well. Seed of eggplants should be sown in a protected place 8 or 10 weeks before time for transplanting to the field. Two transplantings before taking them to the field makes strong plants. At the second of these transplantings 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 2 feet apart with the rows 3 feet apart. Black Beauty, New York Improved and Florida High Bush are worth growing.

ENGLISH 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 and Telephone germinate better when the soil is warm. Peas are drilled in rows 2 inches apart with the rows 2 feet apart from the dwarf and 3 feet for the ones which need support. Peas should be planted 3 to 4 inches deep. Recommended varieties are Alaska, Gardus and Little Marvel.

IRISH POTATOES may be planted as a spring or fall crop. The spring plantings are usually more prolific and more profitable because of favorable weather conditions existing in this state during the spring months. The seed bed for Irish potatoes must be deep and thoroughly prepared. The rows should be 36 to 40 inches apart and the seed pieces planted 12 inches apart in the drill. The seed pieces for the spring planting should be covered 2 to 3 inches deep. The fall planting should be covered 2 to 5 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 1½ to 2 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 super phosphate and muriate of potash applied at the rate of 4 to 10 tons per acre is satisfactory. A 10-6-7 commercial fertilizer mixture used at the rate of 1000-1200 lbs. per acre and applied two weeks before planting is good.

KALE, while seldom grown in the home garden, is an excellent green. It will withstand rather severe cold and thrive in almost any soil but it can't stand or even do well in warm weather. Kale should be planted in rows at least 18 inches apart and the plants thinned to stand 6 inches apart in the row. Dwarf Green Curled and Early Curled Siberian are two good varieties for Texas plantings.

LETTUCE 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 6 inches should be allowed between plants for leaf lettuce and 8 or 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 10-4-2 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.

LIMA BEANS of either the bush or pole varieties may be satisfactorily grown but the bush type seems to have the edge in popularity. Lima beans must have even warmer weather than the snap bean to do well. The crop is planted in rows 2 feet apart with the plants 4 inches apart in the rows. Fordhook and Henderson Bush are popular varieties.

MUSTARD is grown much the same way as spinach, being a cool weather crop that could 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.

NEW ZEALAND SPINACH is an excellent hot weather green growing 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 3 feet apart and the plants thinned to stand 12 inches apart. It is one of the very few greens that will thrive in hot weather.

OKRA does its best in hot weather and so the seed should not be sown until all danger of frost is passed and the ground is warm. Dwarf varieties are placed in rows 3 or 4 feet apart but the tall varieties are kept 5 or 6 feet distance. Seed drilled in the row should be thinned so that plants stand 2 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 the home garden.

ONION sets are usually used for growing early bunch onions, planting sets as early in the spring as possible. Where winters are not severe sets may be planted anytime in the winter, spacing them 2 or 3 inches apart in the rows and allowing 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 4 inches apart in the rows.

Bermuda onions are transplanted to the field from protected hot beds. Since onion seed germinate slowly, hot bed seed should be sown at least 8 weeks before plants are needed.

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

PARSLEY is used largely for decorative purposes on table dishes. Poor stands of this crop are frequent. Seed covered with chipped ice for 24 hours and then soaked in warm water for 24 hours will usually germinate to a good stand. Hamburg Rooted is a good variety.

PEPPERS stand a good deal of heat and are grown quite similarly to eggplants. Harris Early Giant, Ruby King and World Beater are good varieties.

RADISHES must be grown rapidly or they will become tough, bitter and pithy. Seed may be sowed as soon as the last hard freeze is over in rows only 6 or 8 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.

RHUBARB is a hardy perennial plant of acid flavor used largely in pies. In planting this crop the roots should be planted deep (6 to 10 inches), but the crowns should not be covered more than 2 to 3 inches deep. The rows should be 4 to 5 feet apart, setting the plants 2 to 3 feet apart in the drill. It is hard to make soil too rich for rhubarb.

SPINACH, or green gold, is our most important green and is easily grown in practically all sections of the state. 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 and should therefore be grown in late fall, winter and early spring. A light freeze does not seriously hurt this 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 depending on one big planting. Bloomsdale Savoy is the favorite variety in Texas but Long Standing is also a good variety.

STRAWBERRY plants are set in October or November, and in some instances in the early spring. The fall planting is more desirable. Strong, vigorous plants are important in securing high yields. The plants are set in a thoroughly prepared soil either on a bed or flat. If the drainage is poor a bed should be used for planting, otherwise a low bed or setting the plants flat is satisfactory. The plants are set 10 to 12 inches apart in rows 26 to 36 inches apart. Plants set in October and fertilized will usually bear some berries the first season. Usually after the third or fourth season new planting becomes necessary. When the plants begin to bloom place a straw mulch around them to keep the fruit from developing on the soil surface and becoming gritty and unpalatable. Good varieties are Improved Klondike and Missionary.

SWISS CHARD belongs to the beet family and the 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 2 feet apart using 2 ounces of seed per 100 feet of row. After the plants become well established they should be thinned to a stand of 8 inches apart in the row. To secure a product of the highest quality the outer leaf stalks should be removed at frequent intervals, but in doing this care should be taken not to injure the crown of the plant. Large Ribbed White is a standard variety.

TOMATO seed should be sown in a hot bed or shallow indoor box 8 to 10 weeks before transplanting to the garden to get an early crop. When the first pair of true leaves appear they may be transplanted about 2 inches apart each way and allowed to grow until they begin to crowd. They are then transplanted 4 inches apart or put in tin cans with bottoms removed or berry boxes and left to grow until ready for the field.

Main crop tomato plants may be grown in an outdoor seed bed and transplanted but once, never removing to the field until all danger of frost is over. Plant in rows 3 feet apart with the plants 3 feet apart in the row. Within a week after transplanting they should be staked by driving 4 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.

Varieties recommended are Marglobe, Early Detroit, Acme, Globe and Gulf State Market. Marglobe is resistant to wilt and certain of the rusts and is an excellent variety otherwise.

TURNIPS are grown both for roots and tops and both kinds of food may be secured from the same planting providing 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 3 to 5 inches apart in row. Early Flat Dutch and Purple Tops are standard varieties.

VINE CROPS such as cucumbers, watermelons, cantaloupes, pumpkins and squashes 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 and cantaloupes should be planted in hills 4 to 6 feet apart each way.

Watermelons, pumpkins and squashes are planted in hills 6 to 12 feet apart with the plants thinned to 1 to 3 in the hill.

If manure is not available a 15-5-5 commercial fertilizer applied at the rate of 400 to 800 pounds per acre will give good results.

Leading cucumber varieties are Kirby, Klondyke, Davis Perfect and Early Fortune for slicing, and Chicago Pickling for pickle purposes. For cantaloupes, Tip-Top, Rocky Ford, Texas Cannon Ball and Perfecto are recommended, and for watermelons Tom Watson and Kleckley Sweet. Kentucky Pie or King of the Mammoth are good winter varieties of pumpkins. Cushaw and Hubbard are two good winter squashes while Yellow Crookneck and Patty Anne are excellent summer varieties.

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ECONOMICS

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