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TIMELY HINTS FOR FARMERS

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THE HOME VEGETABLE GARDEN

The well tended vegetable garden gives large returns for its outlay, and may lower the cost of family living from one-third to one-half. It should be a feature of every Arizona farm. Even in dry farming communities, where only limited irrigation is possible, the garden will supply a large number of table requirements. In the suburban home, also, a small garden will provide choice, early vegetables in addition to most healthful exercise. Home grown vegetables are more wholesome and of superior quality to those ordinarily purchased on the market. In California epidemics of typhoid fever have been traced to commercial vegetable gardens irrigated, in part, with city sewage.

Unfortunately, gardening has been sadly neglected in our plan of farming, and too often has been left to the Chinese market gardener who does a thriving business even in agricultural communities in Arizona. California grown vegetables, also, and canned goods, that are still more expensive, are used in large quantities by our farmers. With our climate and soil we should be sellers rather than buyers of garden produce. The "tin-can-dump" should be a thing of the past. It is not a good advertisement for a new State that boasts of its agricultural possibilities. Instead of *intensive* farming, ours is too often *expensive* farming. The beginning farmer should first establish a garden, and thereby cut down his living expense; and after that look to his fields. In our present plan we too often reverse this order and plant the garden last, if at all.

SOIL AND CULTURE

Where possible, land selected for the garden should have a southern exposure and be of fine sandy loam, as soil of this type is warmer in the fall, winter and spring months. Sandy soils are not alone

earlier but they are more easily cultivated than clay or adobe. For best results the garden should be located near one's house. Earliness is essential to the success of the garden. It is laudable now as heretofore, to excell in growing early potatoes and green peas, to produce the largest watermelons and sweet potatoes, and to have the best garden. The garden area should be rectangular or square in form, and for the needs of an ordinary family, may comprise an acre or less in extent. Intensive cultivation is the rule in gardens, and under our conditions from two to several crops may be produced during the long growing season. In many parts of our State, garden vegetables are grown twelve months of the year, and we have in reality a winter garden and a summer garden. The vegetables of the two seasons differ entirely, yet are equally valuable. At higher altitudes with rather severe frosts, there is but one gardening season—the summer, though even here hardy vegetables such as onion sets, lettuce and spinach can be planted in the late fall for spring growing.

The successful garden requires thorough cultivation, irrigation and fertilization, and if planned properly requires but a small outlay of time. More than one well cultivated garden plot has pointed to the farmer the way to successful crop growing. If possible the land for a garden should be given a heavy application of well-rotted barnyard manure and then plowed deeply and dragged. Thereafter, it should receive lighter applications of manure each year, at one's convenience. Sour or bur clover also can be grown on unused areas in winter and turned under in the spring for green manuring. Planting should be done in rows—never broadcast—as this facilitates clean and rapid cultivation. For cultivating smaller garden crops that grow in rows 12 to 15 inches apart a Planet Jr. cultivator should be used in preference to a backbreaking hoe, as it is more convenient and economical. A one-horse cultivator is most satisfactory for larger garden crops such as cabbage, potatoes, corn, tomatoes, and melons, or those plants that require greater distance between rows. Weed and grass should be eradicated, although some of these such as Lamb's Quarter and Bleda or Careless weed are valuable as greens for poultry.

Cultural methods required with irrigation are quite different from those used in the garden where rainfall is depended upon. In the latter instance, flat culture, such as is practiced in the central and northern states is best. With irrigation, however, the soil should be more or less ridged, and the plants grown on top of the ridge or part way down on both sides. This insures drainage and aeration

and prevents the soil from becoming water soaked and ultimately baked. For larger crops, the ridge is made most conveniently with a small plow, two furrows being thrown together from opposite directions This will bring the ridges about three feet apart from center to center. For smaller crops, a single furrow will suffice. Sweet potatoes require a rather high ridge, while ridges of medium height are better for cabbage and cauliflower. For very early planting, ridges may be made with a hoe. With small seeds it is best to irrigate immediately after planting, or give two irrigations close together. This insures sufficient moisture in the soil to bring the seedlings up. Any hard crust forming on the surface may then be broken with a rake. Plants having rather large seeds that germinate quickly, are usually planted along ridges in well moistened soil, that is not irrigated again until after the plants are up. This applies especially to squashes, melons and corn. Irrigation should follow transplanting as soon as convenient, even though the soil is already in good condition. In growing onions, flat culture is practiced, the land being flooded at each irrigation and cultivated soon after.

The garden should be watched carefully for insect pests and plant diseases. A little experience will demonstrate the economy of this, and a reliable bucket spray pump costing $3 to $5 will be purchased. Old or discarded vegetable growth should be burned to prevent insects and plant diseases from "holding over" to prey an next year's crops. This applies in particular to cabbage, cauliflower, squash, melons and similar vegetables.

Careful rotation of crops is essential to profitable gardening. Tomatoes, cabbage, cauliflower, melons and similar crops should not be grown on the same plot year after year. Purchase the best seeds from reliable houses, but not necessarily novelties. Cheap seeds are most expensive in the long run; they are an abomination to the planter, and are forerunners of certain failure. It is better economy to pay 25 cents a package for good cauliflower or Brussels sprout seed, than 5 cents for common seed. This also applies to cabbage, turnip, tomato, onion, celery, melon and radish seed* Where one has a thoroughly satisfactory variety, it is well to save seeds, the best plants or fruits being selected for this purpose.

WINTER VEGETABLES

Following is a list of the commoner hardy vegetables, with standard varieties, that can be grown in the winter garden. At altitudes of 3,500 feet and above, where the winter season is too cold

to permit of successful growth, these vegetables may be planted in the early spring, even before all danger of frost is past.

LETTUCE New York Market; Denver Market; California Butter
SPINACH: Prickly Winter; Bloomsdale, Summer
ENDIVE: Moss Curled, Batavian
RADISH: Chinese Winter; Black Spanish, Early Scarlet Turnip.
TURNIP Purple-top Strap-leaf; White Flat Dutch; White Egg.
BEETS: Early Egyptian, Crosby's Egyptian, Early Eclipse.
CARROTS: Danver's Half-long; Early Chatenay.
ONIONS (Sets) Yellow Bottom; White Bottom
ONIONS (Seed) Australian Brown; Prize-taker; Bermudas
PEAS (Smooth) Alaska; Blue Prussian
CABBAGE· Early Jersey Wakefield, Allseasons; White Flat Dutch.
CAULIFLOWER Dry Weather; Early Snowball, Autumn Giant.
BRUSSELS SPROUTS Improved Half-dwarf, Long Island Half-dwarf.
KOHL-RABI: White Vienna; Purple Vienna.

The seeds of cabbage, cauliflower, Brussels sprouts, kohl-rabi and onions should be sown in prepared beds by the middle of August, so that the plants may be set out in the field during October and November. Extra care should be given the seed beds to develop large vigorous plants for transplanting. Plants of kohl-rabi may be set 12 inches apart in the row, and those of Brussels sprouts, cabbage and cauliflower 18 inches apart, excepting plants of late cabbage which should be 24 inches apart. The rows, for convenience in cultivation, in each instance, should be three feet apart. The field soil should be moist and in good condition for planting, but where this is not possible, a little water should be used with each plant. Cauliflower and Brussels sprouts are superior to cabbage as vegetables, and usually they find a ready market at good prices. They are about as easy to grow as cabbage but Brussels sprouts, in particular, are somewhat hardier.

Onion seedlings are set 3 or 4 inches apart in the row, with about 12 or 14 inches between rows, and are best transplanted when 6 to 3 inches tall. The tips of the roots and leaves should be clipped off at the time of setting. Early onion sets should be planted in September, a single quart or pound being sufficient to supply green onions during the fall, winter and spring. The practical farmer should have an abundance of green onions in the spring to feed young turkeys during their first six weeks growth. With the ordinary winter season, smooth peas planted in Spetember will supply green peas for Thanksgiving, Christmas and New Years, and with irrigation, will continue bearing until April or May. The Blue Prussian pea is 6ne of the hardiest varieties and is not susceptible to cold winters.

Lettuce, spinach, endive, radishes, turnips, beets and carrots should also be sown in September in rows 12 to 14 inches apart, the land having been previouslay ridged as already described. It is often desirable to scatter twigs or other trash over the rows to protect the tender seedlings from drying out during hot September days, and at this stage of growth they require frequent irrigation. After sowing, the and hould not be given further irrigation, unless necessary, until the seedling plants are up in the row As soon as the plants attain some size they may be thinned out, the spinach and beet s being palatable for table greens. In thinning lettuce, the larger plants can be used for the table or transplanted, like cabbage, into ot er rows to grow into head lettuce W.th good culture radishes and turnips are easily grown and succeed well under our conditions. It is not difficult to keep a good supply of these in the garden during most of the fall, winter and spring months. Fresh plantings of lettuce, radishes and spinach should be made every two or three weeks during the fall and early spring to provide a continuous supply. A second sowing of turnips may be made early in the spring, but after May these are often pithy. Carrots, also, should be sown in the spring for summer and fall use.

SUMMER VEGETABLES

The following list includes vegetables with suggested varieties that may be grown successfully in the summer garden. These can be planted in the spring after danger from frost is over, with the exception of asparagus, potatoes, and wrinkled peas, which, of course, may be planted earlier.

ASPARAGUS· Palmetto; Columbian Mammoth, Conover's Colossal.
PARSNIPS: Hollow Crown; Improved Guernsey.
SALSIFY: Sandwich Island
STRING BEANS: Early Refugee; Black Wax; Davis White Wax.
PEAS (Wrinkled)· American Wonder; Stratagem, Yorkshire Hero.
CELERY: White Plume; Golden Self-blanching.
POTATO: Early Ohio; Irish Cobbler; Pink-eye; Triumph.
SWEET POTATO: Yellow Jersey; Yellow Nansemond.
SUGAR CORN: Stowell's Evergreen; Papago.
TOMATO: Dwarf Stone; Dwarf Champion.
EGG PLANT: New York Purple; Black Beauty.
CHILI: Ruby King; Giant Bullnose.
CUCUMBERS. Long Green; White Spine, Boston Pickling.
CANTALOUPE: Rockyford; Netted Gem, Hackensack
CASSABA: Improved Hybrid; Golden Beauty; Pineapple
WATERMELON: Chilean; Tom Watson; Kleckley Sweet.
SQUASH· Bush Scallop or Summer Crookneck; Cashaw; Hubbard.
PUMPKIN. Small Sugar; Tennessee Sweet Potato; Field.

There should be a row of asparagus in every garden, which when well planted and cared for, will last many years The plants may be set about 15 inches apart along the outer edge of the garden where they will not interfere with the more intensely cultivated crops. One hundred two-year-old plants set out according to Timely Hint No. 101 recently published by this Station, will be a splendid beginning Asparagus thrives in deep, rich soil and is not offended by some alkali It also withstands considerable drought, and is so well adapted to our conditions that it commonly spreads to the roadside or ditchbank. It is one of the commercial crops of California and yields equally well here, all standard varieties thriving under our conditions. Parsnips and salsify, or oyster plant, are root crops for late fall and winter use, and need not be dug until wanted for the table Both succeed with the most ordinary care, the latter, at times, being inclined to spread like a weed. Parsnips fried brown in butter are capital in winter, while salsify served in milk is a good early spring dish. String beans and peas have a place in every garden With successive sowings, the former can be grown practically throughout the entire season, while the latter do best in spring. Wrinkled peas are the kind to plant at this season, and are superior to the smooth ones both in yield and flavor.

Celery seed should be sown in spring in a well prepared seed bed, so that the plants may be large enough to set out in June or July. The seed is slow to begin growth, and being small, should be planted shallow. In transplanting, celery plants are set 6 to 8 inches apart in a trench dug 10 to 12 inches deep and half filled with rich soil. With their continued growth, the soil is drawn against the plants and finally a ridge is built up, though the heart leaves must never be covered. The thick, fleshy leaf stalks are blanched with the soil and kept tender and brittle. Celery requires rich soil, preferably black loam, and rather heavy irrigation. While eaten as a relish for the most part, it is also excellent when cooked and served ia milk, even the fleshy crown being used in this way.

Early potatoes may be planted late in December or January at altitudes of 2400 feet or lower. For six weeks or a month before planting, it is well to have them spread out on the floor of a room or building free from danger of frost, to encourage the growth of short green sprouts. When planted, they are cut lengthwise once or twice according to size. The land should be thoroughly irrigated and furrowed, and the potatoes covered to a depth of 2 or S inches in the furrow. As the young stems begin to show through the ground,

they are again covered with soil to prevent freezing until the furrow is filled. After this, they are cultivated in order to throw soil towards the rows, thus forming ridges, and are irrigated regularly in the furrows between the rows. This method gives the plant the advantage of warm soil for winter growing, and of deep planting for the hot weather. In the spring the soil should never be allowed to dry out, otherwise second growth will result after irrigation. The potatoes may be dug any time after the first of June, as their growth has then ceased. At higher altitudes, potatoes will be planted later, and their growth will also continue later in the season. A second crop of potatoes may be had in the fall by skillful planting, but this is seldom a good crop.

For the small garden, sweet potato plants are more easily purchased than grown, although in a field of considerable size one will grow his own plants. Sweet potatoes thrive in light sandy soils with moderate irrigation. The plants are set about 15 inches apart in rows, on ridges made by throwing two furrows together. June is a good time to plant, though it may be done as late as July. Unless the ground is wanted for other purposes, they can remain where grown until dug for use. Sweet potatoes are well adapted to our climate, and the ones grown here are of excellent quality.

Sugar corn is not ordinarily a successful crop here, the ears being subject to damage from cutworms and often filling out poorly. The best results have come from late planting. Stowell's Evergreen, of which the writer has seen especially fine yields, and the Papago are successful, the latter, however, not so sweet.

Tomatoes, egg plant and chili belong to the nightshade family and are for the most part handled in the same way. The young plants are started in seed beds, but for very early plants the seeds should be sown in cold frames covered with glass or canvas. For transplanting, the plants should be vigorous and of good size. Tomatoes, in particular, may be 15 inches tall and in bloom, in which case they are set in a slanting position and one-half or more of the stem covered with soil. It is desirable to protect newly set plants at this season with two thicknesses of newspaper held in place with clods of loose soil, for two or three days. All the above plants should be set in rows 3 feet apart, the chili and egg plant being 18 inches in the row and the tomatoes about 2 feet. One must watch tomato plants carefully for destructive green worms. Seeds of chili are often difficult to start, and it may be desirable to mix them with a little warm, wet soil to assist in sprouting. Two dozen plants each of tomatoes and egg plants and a few of chill will supply the wants of an ordinary

table, throughout the summer season. There is no occasion for paying 10 cents a pound for California tomatoes Dwarf Champion and Dwarf Stone tomatoes are recommended because of their upright, tree-like growth and dense foliage, both fruit-rot and sunscald being greatly reduced.

Cucumbers, cantaloupes, cassabas, watermelons, pumpkins and squashes are all members of the *cucurbit* family and require similar culture. All these, with the exception of cassabas, which may be planted in the latter part of June or July, can be planted in the spring as soon as danger from frost is over. For very early use a few hills each of cantaloupes and watermelons could be planted in March and protected with small glass covered frames. All the cucurbits thrive in well enriched sandy loam soils. Three or four hills each of cucumbers, squash and pumpkins and eight or ten hills of cantaloupes, cassabas and watermelons will amply supply an average family, so productive are they. Cassabas are especially desirable as a dessert for the fall season and with care may be kept until the holidays. The Hubbard squash, also, should not be overlooked. Not only does it yield abundantly in our gardens, but it is an excellent keeper and readily finds a market. The Hubbard squash may be planted after the middle of May or in June.

STRAWBERRIES

Though this Timely Hint is not intended to include the planting of fruits, the writer cannot refrain from recommending a strawberry patch, no garden being complete without one. Strawberries may be planted during the rainy season in August, with care, but ordinarily November or December is early enough to insure a fair crop the following spring. They require a light sandy soil with moderate irrigation. The soil should be ridged so that in irrigation the water will not touch the plants or the fruits, and the plants are set about 12 inches apart in the row. The land should be well mulched and kept free from weeds and grass. Good care will insure strawberries from March until June or July. The Arizona Everbearing, A-1, and Brandywine are all good varieties, the first mentioned being especially desirable for our climate.

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