Vegetable culture in North Louisiana

Eugene J. Watson

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Agricultural Experiment Station

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LOUISIANA STATE UNIVERSITY AND
A. & M. COLLEGE

Vegetable Culture in North Louisiana

BY

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North Louisiana Experiment Station, Calhoun

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VEGETABLE CULTURE IN NORTH LOUISIANA.

By E. J. Watson, Horticulturist,
North Louisiana Experiment Station, Calhoun.

To meet the steadily increasing demand for information regarding the culture of staple vegetables in North Louisiana, the following pages have been prepared, based on a long experience at the Experiment Station at Calhoun.

In order to be successful in the growing of vegetables for home consumption or for the market, four requirements must be met. First, we must have a relatively rich soil. Second, the soil must be well drained and kept free from noxious weeds. Third, the crops must be properly rotated. Fourth, vegetables must be grown in accordance with the season to which they are naturally adapted, grouping staple crops according to their seasonal requirements. We might, for convenience, divide them into two classes. First, cool weather crops, having a season from September to May. Second, warm weather or summer crops, covering the season from May to October.

FALL AND WINTER CROPS.

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<tr>
<th>Cabbage</th>
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<td>Onions</td>
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<td>Radishes</td>
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<td>Turnips</td>
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SPRING AND SUMMER CROPS.

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<th>Beans</th>
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<td>Cucumbers</td>
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The two periods would, of course, overlap, and a continuous supply of vegetables may be had. Such vegetables as cabbage, lettuce, peas, radishes, etc., might be made to grow during the heat of summer, but the quality would be very poor.
We have called attention to these simple facts because we know that many inexperienced gardeners do not plant their cabbage, lettuce, peas, etc., until March or April, when such crops should be nearing maturity, with the result that they fail almost completely.

HOTBEDS AND COLD FRAMES.

It is practically impossible to have early vegetables without starting the plants out of their natural season of growth. For instance, tomato seed would not germinate and grow if planted in the open ground before the first of April, except under extremely favorable conditions; and should we not plant the seed until the soil becomes sufficiently warm to sprout them, we would not have tomatoes before the middle of July, and sometimes later. Likewise with cabbage. We cannot plant cabbage seed in the open ground before the first of March with any hope of success, which would throw our cabbage crops into June and July, when weather conditions would be emphatically unfavorable. Hence it is necessary to resort to the practice of starting and nursing the plants under artificial conditions so that they may be ready for the field as early as it is safe (from frost) to put them out.

However, in this climate no appreciable expense need be incurred in the construction of hotbeds and cold frames, as very simple and inexpensive structures will answer all practical purposes.

The size of hotbeds and cold frames will depend upon the extent of the operations under consideration. For the average family garden a hotbed four by eight feet, and a cold frame four by sixteen will be sufficient. Both beds should be located in a warm, sunny place. For the hotbed the earth should be excavated to a depth of eighteen inches and the space filled with fresh stable manure tamped down tightly, and a covering of four to six inches of rich soil placed over this. The frame should be tightly joined at the corners and placed snugly over the bed. It should slope toward the south, having the lower side six or eight inches above the surface of the soil inside, and the cover or roof should be of glass, although cloth is sometimes successfully used.
The construction of the cold frame differs from that of the hotbed in not having bottom heat, and it is also usually covered with cloth instead of glass and stands a little higher from the ground. The space inside the frame is filled with several inches of rich earth and raked very fine to receive the plants from the hotbed.

GARDEN FERTILIZERS.

The basis of all fertilization for the vegetable garden should to barnyard manure, as it is the best humus forming substance we have on the average farm, and is also rich in plant food. The manure should be hauled directly from the lot and spread broadcast over the garden during the winter or early fall and plowed under. The entire garden should annually receive this dressing of manure, which might be supplemented with a good commercial fertilizer. There is nothing better for this purpose than high grade acid phosphate, applied at the rate of 400 to 600 pounds per acre, when breaking, and nitrate of soda applied as a dressing after the crops are started, at the rate of 200 to 300 pounds per acre. With stable manure as the basis, this kind of fertilization would answer the needs of every crop likely to be grown in a garden or truck patch.

WINTER VEGETABLES.

Cabbage.

Under ordinary conditions we can grow but one crop of cabbage each year, and that should be started so as to reach maturity not later than the 1st of May, at which time they not only bring a good price on the market, but are tender and crisp, and consequently much better to eat.

The seed should be sown in this latitude for the spring crops about the 1st of November, in the cold frame, and the plants given all the light and air possible so as to render them tough and stocky with thick, strong stems, and to permit the develop- of a good root system, which is very essential to the success of the plants after they are set in the field. The plants should not grow rapidly in the frame, but steadily. Such protection from freezing as will be found necessary to a normal growth should be given. By the middle of February the plants should be suffi-
ciently large for setting in the field. If the garden has already been well fertilized, as previously suggested, no fertilization will be required at this time. The rows should be laid out three feet apart, and two furrows thrown together, making a flat ridge on which the plants should be set about every twenty inches. After active growth has begun, nitrate of soda should be sprinkled about the plants and harrowed in.

If planted and treated in this manner, the cultivation and handling of cabbage will be very simple, and the crop will be out of the way by the middle of May or earlier, to be followed by sweet potatoes or some other crop.

There are a great many varieties of cabbage, all of which are useful for some purpose, but, for the spring crop, as we have outlined above, there are none better than Early Jersey Wakefield and Charleston Wakefield, and by being careful to secure good seed of these, you can feel assured of success. These two varieties furnish an ideal succession, one being extra early and the other medium early, and continuing over quite a long period.

Under favorable conditions, especially with some means of irrigation, a late fall crop of cabbage can be grown. The seed should be planted in July, given protection from the hot sun, and kept well watered; but great difficulty will be experienced in getting the plants to grow in the field if the weather should be dry and hot, making artificial watering absolutely necessary. This crop should be heading during December, when cabbage are usually scarce in this territory.

**Lettuce.**

Good lettuce is a delicacy not commonly enjoyed by the average farmer's family. It is frequently planted in the garden about the first of April along with other vegetables, makes little or no development at all before hot weather, and, as a table vegetable, is but little more valuable or attractive than a common weed.

Lettuce seed should be sown in the cold frame about the middle of October, and given protection from freezing weather until the plants attain good size, when they should be transplanted in rows about two feet wide and the plants set ten or
twelve inches in the drill. This can be done during any mild period of January or February. From the middle of March to the middle of April the finest, tender, crisp head lettuce can be had. At this time it also sells for a good price, and is quite a profitable crop. There are no better varieties to plant for general purposes than the Hanson and Big Boston.

**Onions.**

It is not claimed that the territory of North Louisiana is adapted to the production of onions on a large commercial scale, on account of the severity of our winters. We cannot compete with Southern Texas and other places farther south. We should grow them for home consumption and for local markets.

Onions require some protection here during the winter months. We find it best to sow the seed in the cold frame about the first of October, protect them from severe freezes during December and January, and transplant them to the field about the last of January or the first of February, depending on the weather. This method is what is called "the new onion culture," but it is not extensively practiced except with the Bermuda onion growers in the far south. This is the best method of growing the Bermuda onion. Other methods of growing onions are planting the "sets" and planting the seed directly in the field in drills and thinning out later; this latter method being extensively practiced in the Northern States.

Onions grown from sets are hardier than the plants grown from seed, and this method seems to be better adapted generally to this section. It is best to plant the sets early in the fall, as soon as hot weather is past, so they can become well established before winter. In planting sets, the hardier varieties should be used, such as Yellow Globe Danvers, Prize Taker and Red Wethersfield.

If it is preferred to use seed, with the transplanting method, the Bermuda onions should be chosen, as they are better adapted to this method of culture. The Red and White Bermuda and Crystal Wax are the best varieties of the Bermuda seed.

It is well to remember that the onion is a plant that can profitably use large quantities of plant food, and in addition to all the stable manure available it is well to use a special fertilizer,
the following being a very good formula: nitrate of soda, 200 pounds; cotton seed meal, 750 pounds; acid phosphate, 750 pounds; muriate of potash, 300 pounds; using this mixture at the rate of 1000 pounds per acre.

Peas.

The garden pea is another cool-season vegetable that requires a considerable period of time for its proper development and maturity. If planted in March, the hot weather of May and June may cause partial or complete failure. When planted the latter part of January and the first of February, they usually develop by the middle of April to the first of May, and generally produce a good crop. The more hardy varieties of peas are sometimes planted in December, and the plants given light protection with straw when small, but only the more hardy varieties can be planted at that season with any assurance of going through the winter.

Of the hundreds of named varieties, for general purposes we would suggest the Alaska, McLean’s Advancer, and White Marrowfat.

Radishes.

In the far South the radish can be grown from October to May. The soil for radishes should be very rich and finely pulverized, as the crop must be grown quickly for best results. Plantings of the medium hardy kinds, such as Chinese Rose and White Strasburg, should be made early in the fall to furnish a supply during the winter. About the middle of February the Long Scarlet, followed the first of March with Early Scarlet Turnip, should be planted, thus giving a supply up to warm weather.

Turnips.

The turnip is a favorite vegetable from September to May, and in this section they can be had fresh from the garden every day during the winter months. The plantings should be made in the order of the relative hardiness of the different types; the first planting, using the very early kinds like Early White Milan, should be made about the first of August, sowing the seed in drills in finely prepared
soil and giving some culture, as the weeds will grow very rapidly at that season of the year. The large Purple Top Globe, a hardy variety, is sown in September, also in drills, and given slight cultivation. These are followed a little later with the Yellow Aberdeen, an extremely hardy variety that will not mature until near spring, and will furnish excellent spring greens as well as delicious roots. The Yellow Aberdeen should always be sown in drills, thinned out to ten inches in the row, and given some light culture during the early fall.

Rutabagas:

The rutabaga is an excellent winter and spring vegetable for the table, as well as fine stock food. We have also demonstrated that they find a ready sale on the Southern markets during winter and early spring and believe that the rutabaga is a very profitable winter crop for this section, even on poor soils, if well fertilized.

The soil should be finely prepared during August and the seed sown in drills about three feet apart. As soon as a stand is secured, the plants are thinned to about ten inches in the drill, and given light cultivation at frequent intervals until frost. Our experience the past winter thoroughly demonstrated that this crop will stand any degree of freezing we are likely to have in this section. Well rotted lot manure is the best fertilizer to use, but if it cannot be had, cotton seed meal at the rate of 400 pounds per acre, given in two applications, the first at planting and the next about the latter part of October, or say the last working, will answer the purpose.

Mustard.

Mustard is a very common garden vegetable that is easily grown during most any season of the year, but thrives best from November to May. To secure a good development of the plant the seed are drilled in three foot rows and thinned out to six inches between the plants. The first planting can be made about the first of September and the second in January or February. The Giant Curled, or Chinese, and Southern Curled are the best varieties to grow.
Spinach.

Spinach is a vegetable that does best during cool weather and the season best adapted to its growth is from November to May. It is planted in drills three feet apart and later thinned out ten or twelve inches apart. The plants can also be grown in cold frames and transplanted to the garden when of sufficient size. A very rich soil is required to grow good spinach. The variety usually grown is the Curled Savoy.

Garlic, Leek.

These vegetables require, in general, the same treatment as onions, excepting that the former is never grown from seed, but from the sets, whereas leek is propagated from seed only. The leek seed should be planted from November to February, and the garlic is usually set out during the fall.

Asparagus.

Our experience has shown that asparagus can be very successfully grown in this section, but as it is yet rarely found in the gardens of North Louisiana, our farmers are practically unacquainted with its merits as a table vegetable and its cultural requirements.

When once established asparagus is practically permanent, hence more than ordinary care should be exercised in the selection, preparation and fertilization of the soil. A well drained, deep sandy loam is best, with deep and thorough preparation preceding the planting of the crop. Deep furrows are run out five or six feet apart with what is commonly known as a "middle breaker" and then filled with well rotted barnyard manure. The sets, or crowns, are then set in the trenches about two feet apart and covered about six inches deep. Seed may be planted, but it requires a year for the young plants to become established. The planting is usually done in the fall season, and for the first year or two, clean cultivation is given to eradicate weeds and grass. Annual applications of manure are made broadcast and worked into the soil. One of the best varieties is the Conover's Colossal.
Artichoke.

The garden, or burr artichoke is grown with perfect success in North Louisiana, but, like asparagus, is almost unknown to our farmers. It is a strong growing annual plant requiring rich soil and plenty of room for development. It is propagated either from seed or offsets (suckers), the latter method being preferable. The sets should be planted about March the first, in rows four feet wide and three feet in the drill and highly fertilized and well cultivated.

Beets.

Garden beets require a rich soil for the best development, and are planted for the spring crop about the first of February in drills three feet apart and thinned to six inches between the plants. As the seed is slow to germinate, it is usually found best to plant the seed in the cold frame in November or December and transplant to the garden later. Some of the best varieties of garden beets are Extra Early Egyptian, Eclipse and Early Blood Turnip.

Cauliflower.

Cauliflower is one of the finest delicacies that can be produced in any garden. The instructions given for raising spring and fall cabbage can be carried out in a measure with cauliflower, having in mind that cauliflower is not as hardy and will not stand the abuses which cabbage often receives during cultivation. It is very essential that it be produced on rich, well drained, moisture retentive soil, where there is plenty of humus and available plant food.

The very best of seed must be procured. The dwarf early varieties such as the Early Snowball and Dwarf Erfurt are among the most popular.

SPRING AND SUMMER VEGETABLES.

Beans.

It is not advisable to attempt to plant beans too early, as many people do, as the seed will not germinate if the ground is wet and cold. We usually plant them from the 20th of March
to the 5th of April, depending on the weather conditions. The snap beans, somewhat hardier than the pole or running varieties, are usually planted earlier. Unlike most of the leguminous plants, beans require liberal fertilization, and, in fact, do much better when well fertilized with lot manure, especially where it is applied the previous season. Many people do not appreciate the bush beans as they should, chiefly, it seems, because they often plant inferior varieties, or one not adapted to local conditions. There are many very fine varieties of both wax and green-podded bush beans. Some persons prefer round-podded beans and other flat-podded, and it is preferable to plant both kinds. Of the round-podded, there are none better than Burpee's Brittle Wax, and of the flat-podded, the Davis Wax is generally preferred, although Wardwell's Kidney Wax is just as good and more generally planted for market.

None of the flat-podded green beans are esteemed very highly for family use, and we would not recommend any of them, as the round-podded varieties, such as the Early Valentine and Full Measure, are so far superior. Beans should not be cultivated when wet, either from rain or dew, as the pod-spot disease is chiefly scattered in this way.

The pole or running beans usually follow the bush beans, as they withstand the heat of summer much better than the latter, and, in fact, are the "summer bean," as the bush bean will hardly thrive at all after the coming of real hot weather. The chief drawback in the culture of pole beans is that they require stakes or brush on which to grow, affording an irksome job dreaded by most persons. The best way we have yet found to avoid "sticking" beans, and at the same time accomplish the desired result, is to plant a tall-growing corn in rows about four feet apart, and put a hill of beans to each stalk of corn. In this way we have two highly prized vegetables, snap beans and "roasting ears" growing together, and if seasons are favorable, with a fertile garden soil, both will fare well. The best of the running beans is the well known Kentucky Wonder, or Old Homestead of some seedsmen. The White Creaseback is also a good variety. So is the Southern Prolific. The pole or running beans are also better to grow for canning purposes than the bush beans, as the pods are much larger.
Lima or Butter Beans.

The lima or butter bean is a vegetable that should receive more consideration and attention in this section than it now gets. They are not only a wholesome vegetable to use in the fresh or green state, but can be dried and kept through the winter and sold in the local markets, where they should command as good a price as those brought in from distant sections of the country.

The bush type of lima beans should receive more attention; they are easily grown, and if given proper care and attention will continue to bear throughout the season. They should, however, be as liberally fertilized as any other garden vegetable. The bush limas can be planted as early as the bush or snap beans, are quite hardy, and will begin to mature their crop by the first of June under favorable conditions and good culture. They should be grown in rows three feet apart and the plants left about twelve inches in the row. Good cultivation is given throughout the season, and the dry beans are picked off from time to time, or else the vines will cease to bear.

By far the best of the bush limas is the strain known as Woods Prolific, and the next is Hendersons Bush. There is a strain known as Jackson, which is very early and prolific, but has dark colored seeds. The running type of lima beans are best grown in a permanent location on poultry wire. The best strain of this type for this climate is the Carolina or Sewee. Do not plant the large limas of the North in the South. They will not succeed here.

Garden or Sweet Corn.

The garden or sweet corns are not as hardy as the common field corn, and should not be planted until the soil is thoroughly warm and danger of frost is past, which will, as a rule, be about the first of April. Good, well drained soil is required for this class of corn, and liberal fertilization with barnyard manure, such as is recommended elsewhere in this bulletin, will pay. It should be grown in rows about four feet distant and the plants two feet in the drills. Perhaps the best all-around variety is the Stowell Evergreen. There are many very early varieties of northern origin, such as the Golden Bantam, Peep-O-Day, etc.
but they do not succeed well here. The Early Adams, Georgia Roasting Ear, and others, while not sweet corns, are good early varieties for garden purposes.

**Tomatoes.**

The tomato is extensively grown throughout the country, and is perhaps the most universally popular garden vegetable. It has lately come into still greater popularity through the organization of girls' tomato canning clubs, and for these reasons we deem it best to treat the subject quite fully.

The tomato requires more than ordinary care in its cultivation. In general, there are two methods of growing the crop, according to the purpose for which it is grown, namely, for the canning factories, when it is grown on a large scale as a field crop; or for shipment to market, when it is grown under special and intensive methods.

**Soils and Fertilizers.**—The tomato is better able to stand up under drouthy conditions, provided they are not too severe, and will yield better fruit than under conditions of excessive moisture. The soil, of course, must be well drained, open and porous, and well stocked with vegetable matter, although fresh manure from the barnyard is never advisable, owing to its tendency to induce a rank vine growth at the expense of quality in the fruit. Well decomposed manure, however, is very beneficial.

Under field culture, commercial fertilizers of some kind are generally used on the tomato crop, but formulas carrying large amounts of nitrogen are not desirable. A good mixture for our sandy soils, when used in conjunction with thoroughly rotted barnyard manure, as suggested in a preceding paragraph, is 1200 pounds of acid phosphate and 800 pounds of cotton seed meal at the rate of 500 pounds to the acre, applied previous to setting the plants.

**Preparation of the Land.**—The soil for tomatoes should be thoroughly broken early in the winter so as to expose it to the action of frost and other agencies, which will greatly reduce the ravages of insects and other troubles, as well as put the soil in fine condition for early spring work. It is again broken and finely harrowed just previous to setting the plants. The rows are marked off about four feet apart, the furrows run out rather
broad and deep with a suitable plow, the fertilizer drilled in, thoroughly mixed with the soil, and two furrows thrown back with a turning plow, making a flat list on which to set the plants.

**Methods of Cultivation.**—(For Canning Purposes.) This is the simplest method of growing tomatoes and is the only one adapted to general field culture. There is no special hurry in growing tomatoes for canning purposes, and the plants need not be grown until the weather becomes thoroughly warm and settled. The seed should be planted in a cold frame or an old spent hotbed about the first of April and given light protection when there is danger of frost. As soon as the young plants have developed from four to six leaves, they should be shifted to another bed and set in six-inch checks, so as to permit the development of strong, well rooted, stocky plants, before they are transferred to the field. They need not be transplanted to the field before the first of June unless weather conditions are entirely suitable for earlier setting. Cultivation should be rapid, beginning as soon as the plants are set. Some of the one-horse cultivators, covering a middle at each passage through, and set to run shallow, will be found the most satisfactory tools for rapid cultivation. Some soil should be drawn around the base of each plant with hand hoes as the cultivation proceeds. Under this method the plants are not pruned or staked, but allowed to grow at will and, when so large as to interfere with further cultivation, they are “laid by.”

(For Market.) The methods used in growing tomatoes for shipment to the Northern markets differ radically from the above, and, on the whole, require more than ordinary care in looking after details. The great desideratum here is to grow the plants and mature the crop at the earliest possible date, and to be able to accomplish this desired end, the plants must be started and nursed under more or less artificial conditions for a good part of the time. The seed are usually sown in the hotbed the latter part of January and the first part of February.

The most important thing to be remembered about growing the plants in the hotbed is that they should never be overcrowded, or the sunlight kept from them. But from the begin-
ning of growth, the bed should be so handled as to induce a normal development, which will produce a strong, sturdy, well rooted plant, that will be capable of withstanding the hardships to which it is likely to be subjected.

From the hotbed the young plants are transferred to the cold frame, as soon as three or four leaves have developed, where they are set in rows from four to six inches apart and about six inches between the plants. The idea of the cold frame is to give the plants such light protection as may be necessary, and at the same time rush the plants so that they will be considerably developed before the final setting in the field, which will be, in this section, about the last of March or first of April, depending on weather conditions.

After the plants are set in the field they are tied to a stake driven near the plant by a string passing under the leaf stem. Other strings are added as required to support the plant. In the meantime the side shoots that appear are pinched out. This forces the growth to the main stem, inducing earliness and large, regular fruits.

Among the varieties for canning purposes, the large, smooth, solid red types are the best, the Stone, Greater Baltimore and My Maryland are the most popular.

For market purposes, the large, smooth, purplish type is the most extensively grown. There are a great many varieties coming under this type that are now used, but none so extensively, and with such universal satisfaction as the Acme. For local markets and special trade, the Langdon strain of the Earliana is very good, but it has not yet established a reputation in the large consuming markets. It is about ten days earlier than the Acme and is very productive, but the fruit does not make as high an average in size, uniformity and general appearance.

Irish Potatoes.

It is not our purpose at this time to treat this subject from the commercial standpoint, and so far as the growing of potatoes for home consumption is concerned, there is but little to be said, as nearly every farmer and gardener finds no trouble in raising his supply of potatoes, especially with regard to the early or spring crop.
The main trouble, however, is that our farmers do not, as a rule, appreciate the importance of liberal fertilization and thorough preparation of the soil for the potato crop, and as a result we find that the yields are very light in comparison with what the soil is capable of producing.

As a rule, the potato requires special fertilization. The annual application of barnyard manure as recommended for general gardening work does not apply altogether to potatoes, as it is a well recognized fact that manure has a tendency to promote the growth of scab on the tubers, and diseases of the foliage and stems, by inducing a rank, tender growth. The preparation of the land is also very important, especially for the spring crop, as the land must be plowed early, and in case of much winter and spring rain, early preparation would be practically impossible. Therefore it becomes important to see that the land is thoroughly broken in the fall, particularly so if there is a growth of pea vines on the land, which would be all the better.

We recommend the following method of fertilization: let the potatoes follow a crop of corn and peas, and the fall previous to planting scatter on a liberal amount of well rotted manure and turn under deeply along with the pea vines. This will put the land in good condition for early preparation, as the spring crop of potatoes should be put in the first half of February whenever weather conditions permit of the working of the soil. These manures should be supplemented with commercial fertilizer, applied in the drill just previous to planting, at the rate of 600 to 800 pounds per acre, consisting of two parts cotton seed meal and one part high-grade acid phosphate.

For the main crop, both commercial and local, the Triumph is still the standard in this section, although there is another variety, the Irish Cobbler, that is rapidly coming to the front, and bids fair to supplant the Triumph on account of its being a heavier yielder, and equally as good in quality and general appearance, early maturity, etc.

The question of the second, or fall crop of potatoes is also of considerable importance, and a matter concerning which there is not much reliable information obtainable.

Here, again, the question of thorough preparation becomes the most important consideration. It is well to remember that the
Potato is naturally a cool weather plant, and it would be folly to attempt its culture under summer conditions, which accounts for many failures that have come under our notice, in attempts to grow a fall crop of potatoes.

We must prepare the land and plant the seed during the latter part of the summer, so as to permit the potatoes to sprout, grow and mature during the cool period, beginning with September.

About the first of August a crop of half-matured cow-peas should be deeply turned under and the land finely harrowed and reharrowed at intervals until the middle of August or later, when the planting should be done. The seed potatoes should be sprouted before planting. It should be emphasized here that the tubers will not have time to mature a crop if they are planted without first being well sprouted.

The method of sprouting is not difficult. The best one is to spread the potatoes out thinly in a cool, dark place—a cellar preferred—as soon as the spring crop has been harvested. No time should be lost in selecting the amount wanted for the fall crop and putting them safely away to sprout. This permits the tubers to sprout under more or less natural conditions, and the sprouts are short and sturdy.

Medium to small size tubers should be used for the fall crop, planting the whole tuber. If cut the pieces generally rot without producing a plant.

Potatoes for the fall crop should be planted deeper than for the spring crop, so as to get the tubers down into the cool soil, where they will push out and grow with greater vigor than if planted shallow.

From the 10th to the 20th of August is the best time to plant for the fall crop, as a rule, depending, of course, on the condition of the soil and whether or not the tubers have sprouted sufficiently.

In our work we have found that some varieties are better adapted to the fall crop than others. The Triumph, which is our most popular early or spring variety, does not do nearly so well in the fall as the Early Ohio, a variety that we find sprouts readily and vigorously, and for five years in succession it has not failed to make a good crop in the fall, sometimes under extremely
unfavorable conditions. The Triumph and Irish Cobbler are both slow to sprout and are not so satisfactory for fall planting.

**Cucumbers.**

It is sometimes very difficult to start cucumbers in the open field sufficiently early to be able to utilize them as a market crop, on account of cold rains, striped cucumber beetle, and other drawbacks. Hence, it is best to start the plants in the hotbed, using soil-bands, or berry boxes without bottoms. The bands are placed on boards and filled with earth, in which the seed are planted. After germination has taken place, and the plants are well started, they are shifted to the cold frame and hardened off for the field, where they are set, box and all (the box being removed after setting in the ground), after all danger of frost is past. This practice, however, is not necessary in growing a few cucumbers for home use or for the pickle factories.

The seed can usually be planted in the open ground with safety the latter part of March, and under favorable conditions should be bearing fruit by the middle of May. They should be planted in rows 5 feet apart, and thinned to one plant about every two feet in the row.

The best early variety is the Early Green Cluster, the Klondyke, Davis Perfect, and White Spine are all good ones.

**Eggplant.**

The seed of eggplant are usually sown early in the hotbed along with tomatoes, hardened off in the cold frame and later transferred to the field, but not until the weather is warm and settled, as the plants are very susceptible to cold, and when once stunted from any cause, are slow to recover. They should not, however, be forced rapidly, but a strong, sturdy growth, permitting the development of a strong root system before transplanting to the field, is the ideal way to handle them. They are set three feet in the drill on ridges 4 feet apart, as they require plenty of room. The best variety is the Large Purple. The Florida High Bush and the Black Beauty are also good varieties.
Peppers.

Peppers should be handled in all essential particulars the same as eggplants and tomatoes, so far as the growing of the plants is concerned, but they do not require as much space. They may be set in the row about 2 feet apart and the rows 3 feet distant. There are several classes of peppers suitable for different purposes: first, the solid varieties, the best of which is the Ruby King (the New Sweet Upright is also very fine and a little earlier than the former, but not yet popular); second, the seasoning varieties, of which the Red Cluster and Long Red Cayenne are the best known and most extensively grown; third, the sauce varieties, of which the Tabasco is the best and most extensively grown.

Muskmelons or Cantaloupes.

The growing of cantaloupes is rapidly assuming commercial importance in North Louisiana. The melons grown here are very good and a large section of North and Central Louisiana is well adapted to their culture, which is not difficult, but requires practical knowledge concerning the requirements of the crop from start to finish, particularly for market purposes.

The selection of a soil for cantaloupes is a very important consideration, as early maturity and good quality cannot be expected unless the soil is in every respect suitable. A deep sandy loam, with thorough drainage is essential to the highest degree of success, the goal for which every grower of this fruit should strive to reach.

Fertilization is also an important factor, and in this connection it will be found that the method and materials recommended under the paragraph entitled "garden fertilizers" are ideal for this crop, especially if the manure is spread and plowed under in the fall, so as to allow time for thorough decomposition, and the land broken deeply and finely harrowed previous to planting the crop.

Many growers of cantaloupes in this section complain that their melons grow too large, and after careful study of the subject, supplemented with practical experience, we are satisfied the trouble lies in giving the vines too much room. The common practice is to grow the melons in rows about six feet wide with
the hills from five to six feet in the drill. It is much better to place the rows five feet apart, and drill the seed in quite thickly, and later thin out to one plant every two feet. This method requires more seed, but it has the advantage of being quickly and easily done, and another advantage is that the work of the striped cucumber beetle is not so destructive when the seed are drilled. When the seed are planted in hills and the beetles appear, they usually destroy every plant in the hill before their presence is discovered, thus necessitating much replanting. The seed beds should be harrowed off smoothly, and the seed put in with one of the hand seed drills now on the market. They do very satisfactory work, and can be regulated to any depth of seeding.

The best time to plant cantaloupes in this section is from the latter half of March to the 10th of April, depending largely upon the character of weather prevailing. If the soil is cold and wet, do not plant, but wait until conditions are favorable, and the result will be much more satisfactory.

The Rocky Ford, or Netted Gem type of melon is now planted and esteemed almost universally, especially for market purposes. Of this type there are many different strains, which have been developed under local conditions to suit special purposes and the peculiar ideas of different individuals as to what should constitute an ideal melon. Another real good, early and prolific melon suitable for home consumption and local markets is the New Fordhook, a deeply ribbed melon with salmon flesh. Its shape is nearly flat, the diameter, cross section, being about double the longitudinal section.

Watermelons.

As the farmers in this section, and the South generally, raise such fine watermelons with so much ease and satisfaction, it would seem that the last word has been said on watermelons, so far as their culture is concerned. They are commonly used as a special crop on the farm, and rarely planted in the garden. For this reason the methods and materials of fertilization recommended for garden crops in general will require some modification for watermelons.
Spreading the manure broadcast is all right, but it is not generally practiced for watermelons. The manure is placed in the hill, varying in amount from one peck to nearly as much again, according to the supply of manure and extent of the planting, and forked in with the soil. Later, cotton seed meal is distributed along the furrows and harrowed in after the vines have begun to push out.

There are numerous varieties, nearly every grower having his preference. The following, however, have become standard varieties and can be relied on: Halbert Honey, Kleckley Sweet, Bradford, Tom Watson, Kolf Gem, Rattlesnake, and Alabama Sweet.

**Squash.**

No special treatment for squash is needed other than what is already given for cucumbers or melons. The early summer squashes, such as the White Bush or Patty Pan, can be planted as early as March 15 under favorable conditions, but the late or winter varieties, such as the Hubbard, are not planted until May or June for best results.

The early or bush varieties are planted in rows five feet distant, and the plants left about three feet in the drill, while the late or winter varieties should have about twice that distance.

**Okra.**

In its seasonal requirements the okra plant corresponds closely to the cotton plant, but in warm, rich garden soil, the seed can be safely planted about the 25th of March. The seed are drilled in rows four feet wide and the plants thinned out to stand two feet distant in the drill. The best all-purpose variety is probably the White Velvet.

**Pumpkins.**

While it is not generally regarded as a garden crop, yet on account of its extensive and varied use as a table vegetable, the pumpkin is of interest to the gardener. One may plant early varieties for immediate consumption after maturity but for storage for winter use the pumpkin should not be planted in this section before the first of June. They are then ripened
late in the fall and the fruit can be kept in good condition throughout the winter months.

The pumpkin requires well drained, fertile soil and ample room is required for the large growing varieties, a distance of ten or twelve feet being about right. Of the small, early varieties, the Connecticut Field and Tennessee are the best, and of the late, large varieties, the Yarge Cheese is probably the best for general uses.

Strawberries.

There is no good reason why every farmer's garden in North Louisiana should not have its strawberry patch, giving an annual yield of this luscious and wholesome fruit; in fact, no garden can be considered complete without it. Our soils and climate are well adapted to berry growing, and in the course of time we expect to see the strawberry become an important commercial crop in this section.

Soil and Preparation.—Perhaps the most important requisite in a soil for strawberries is thorough drainage, yet too little water is unfavorable to the highest development of plant and fruit. Our warm, sandy loams will produce earlier fruit, but are much more subject to drouth than the friable clay loams which produce the best crops of fruit. An abundance of decayed vegetable matter in the soil is also essential to the highest degree of success.

A soil infested with troublesome weeds and grasses, while suitable in other respects, cannot be considered as in the proper condition to receive strawberry plants; hence, the preparation should begin at least one year in advance. We would suggest the following plan of preparation: take land that has been in some clean cultivated crop like cotton; in October, sow it down to crimson clover, applying barnyard manure, rotted and free of weeds and grass seeds, previous to putting in the clover. The following May, turn the clover down and disc in thoroughly, and put in June corn, with cow peas, sown thickly at laying by. The corn will be harvested in October, after which the stalks and ripe pea vines, thoroughly chopped with a disc harrow, are turned under, and the land fitted for the plants. If this
kind of preparation is carried out, the weeds and grasses will be almost entirely subdued.

Time of Planting.—In this section we have invariably found it best to plant during the fall season, any time in October being the best, providing there is plenty of moisture in the soil. If we get rain earlier, we plant earlier, but if the soil is too dry in October, the planting has to be deferred. If only a small patch is to be planted, watering could be resorted to, and the planting be done when the ground is ready.

How to Set the Plants.—There are two systems of growing strawberries generally followed, namely, the “hill” system and the “matted row” system, the former being practiced by those who grow fancy berries in a small way for local trade and exhibition purposes, while the latter is the method generally used in commercial berry growing, and is the most suitable for the beginner to follow; hence, this system only will be described here. The rows should be laid off four feet wide and broad, flat beds thrown up and harrowed down until they stand not over three or four inches above the surface of the ground; then draw a strong garden line down the center of the bed, securely fastened at both ends to a peg driven into the ground. The line should just about touch the surface of the ground along the top of the bed for best results. A dibber is then taken and holes made along one side of the line, about fourteen inches apart. The line is then removed to the next row and the plants set in the holes, taking care not to set the crown of the plant below the surface. Plants set in this manner will be in perfectly straight lines, making cultivation easy and the field will have a trim and orderly appearance.

The first year the crop will be light from October settings and toward the end of the summer the mother plants should be allowed to throw out a moderate number of runners along the top of the row, thus forming a continuous matted row about ten or twelve inches wide, leaving a three-foot lane for cultivation.

Mulching.—With the beginning of winter a moderately heavy mulch of pine straw should be placed, covering the entire row more or less completely, though it is not necessary to cover the space between the rows. In February the plants
will begin to grow up through this mulch, which should not be disturbed by any means until the bearing has ceased. This will afford bright, clean and attractive fruit.

*Fertilization.*—Well rotted barnyard manure is the best fertilizer, so far as furnishing plant food and maintaining the humus supply is concerned, but on account of the fact that it fosters the white grub, which is sometimes quite a serious pest in berry fields, and the danger of introducing weed and grass seed, it is best not to use it unless the land is quite thin, and even then it should not be applied unless thoroughly decomposed.

Previous to setting the plants, and while the land is being prepared, we would advise the application of 1000 pounds per acre of high grade acid phosphate, broadcast, so that it may become thoroughly incorporated with the soil. About the first of February, 300 pounds of cotton seed meal and 200 pounds nitrate of soda per acre, applied broadcast to be washed into the soil by the spring rains, should furnish the nitrogen needed for a good crop. Our soils contain a sufficient supply of available potash.

*Cultivation.*—The cultivation of the berry field should be directed constantly toward the accomplishment of two objects, namely, the maintenance of a fine soil mulch, and the eradication of weeds and grass. Cultivation is never attempted while the berries are bearing, but as soon as the bearing period is over, cultivation should begin with some suitable style of fine tooth implement, and continued as often as needed throughout June, July and August.

*Varieties.*—The variety question is of such great importance in berry growing that it must receive careful consideration. In general the varieties are grouped under two heads, according to the character of the flowers, as follows: "Perfect" or "Pistillate" are those varieties having self-fertile flowers; "Imperfect" or "Staminate" those varieties with flowers bearing only the male reproductive organs. It happens that many otherwise good varieties are staminate, and in order to produce fruit they must be planted near the perfect flowering or pistillate variety. However, many of our best and most popular varieties have perfect flowers, and ordinarily there is no reason for planting any other kind.
There are a very large number of named varieties in cultivation, and many have been thoroughly tested at this Station, but there are only two varieties which we can unhesitatingly recommend for planting in this section, both for home use and for commercial purposes, namely, the Lady Thompson and the Klondyke.

In purchasing plants of either of these varieties, be sure that you are dealing with responsible parties who are known to have the genuine stock of the variety wanted, as we have known of many instances where inferior stock was sold to purchasers. Southern grown plants are best for planting in this section.

Sweet Potatoes.

The sweet potato thrives best in a warm sunny climate with abundant rainfall, and on a thoroughly drained, open sandy soil. In North Louisiana there are thousands of acres of such soils, and our seasons and climatic conditions are ideally adapted to this crop.

Bedding the Tubers.—"Seed" potatoes should be bedded anywhere from the first to the fifteenth of March. A warm, mellow soil should be selected in a thoroughly drained and sunny location, and the bed laid out six feet wide and as long as necessary to accommodate the amount of potatoes one expects to use. About four inches of the top soil should be removed and laid carefully to one side, then well decomposed barnyard manure thrown in until the excavation is about full, and the top soil previously removed, thoroughly mixed with the manure. This will elevate the bed about three or four inches above the surrounding surface, and the edges may be boarded up with 1x6 pieces in order to prevent washing of the soil. After the surface of the bed is leveled and smoothed, the tubers are laid down horizontally, and slightly pushed into the loose soil. The tubers should not touch or be jumbled together, but they may be laid as close as one-half inch apart. About two inches of good mellow soil is then placed over the tubers and well pressed down. In the event of cold weather after bedding, it is advisable to cover the bed quite thoroughly with pine straw or hay, or anything that would serve the purpose, until the cold is past.
Setting in the Field.—The sprouts from the tubers, or "slips" as they are commonly called, are drawn from the bed when about five or six inches long and used for the early crop, from which the "vines" or cuttings for the general planting are taken. It is not advisable to set out the slips before the coming of real warm, settled growing weather, as they will not make any growth if the weather is cold, and will require a great deal of work. The latter part of April is early enough to make the first field planting. The bed usually furnishes from three to four crops of slips.

The Soil and Its Preparation.—Any good soil will produce potatoes under favorable conditions. The preference, however, should be given the deep, friable sandy soils on account of good drainage and freedom from acidity.

The thorough preparation of the land previous to setting the plants is another important consideration, as the trailing habit of the plant does not permit of much cultivation after growth has started without seriously interfering with the growth of the crop. It is sometimes a good practice to follow early Irish potatoes with sweet potatoes, as the soil is clean and in good physical condition.

Fertilization.—Our experiments indicate that moderately fertile soil does not require any additional fertilization for sweet potatoes. It is, however, generally best to work the crop into a system of rotation so as to have it follow some well fertilized truck crop totally unrelated to it, or a leguminous crop like soy beans or cow peas. A small application of acid phosphate at the rate of 200 pounds to the acre will, as a rule, increase the yield on soils of average fertility. On very thin land it would be well to use an equal quantity of cotton seed meal with the acid phosphate.

Excepting where one has a market for early potatoes, it is best not to put out more slips than is necessary for furnishing cuttings or vines, for the main crop, as it has been thoroughly demonstrated that cuttings are better for this purpose than the slips from the beds, as they make uniform, smooth tubers and are more apt to be free from disease infection. The southern farmers are familiar with the practice of cutting vines from
the early set plants, and this can be done with success as late as August the first in this section of the South.

Varieties.—Among the varieties most popular for table and market purposes are the Nancy Hall, Dooley, Sugar Yam, Pumpkin Yam, Bunch Yam and Triumph. For stock feeding the following are among the best, as they are of large size and yield heavily: Hayman, Southern Queen, Early Golden and Southern Red Yam.

The southern people are accustomed to a soft, juicy, sugary yam, such as the Dooley, Pumpkin Yam and Nancy Hall; while in the North, a white, dry, mealy type is universally preferred, such as the Yellow Jersey and Nansemond. This type also does well here, but has not proven popular with our people.

Harvesting.—If the tubers are to be stored for future uses, they should not be harvested until well matured, but if the crop is to be marketed immediately, they can safely be harvested before reaching full maturity.

A simple, but safe and practical method of determining when the tubers are sufficiently mature to harvest for storing is to cut a number of them. If the cut surface dries quickly and turns white, they are mature; but if a milky fluid exudes, and the surface takes on a greenish tinge, they are too green. It is also best to harvest the crop while the soil is dry, and preferably, before a killing frost.

Storing.—Nothing but good, sound, well developed tubers should be stored. Among the various methods for storing there is, perhaps, none better adapted to our mild, open climate and the conditions of the small farmer than banking. With slight modifications according to individual notions and preferences, the practice is about as follows: A high, dry and sheltered location is usually selected; a circular excavation to the depth of 15 or 20 inches is made and well lined with pine straw or other warm, dry material. The potatoes are piled in conical heaps of from ten to twenty bushels each and the heaps completely covered with the same material to a depth of six inches or more and allowed to remain in this manner several days, or until the potatoes have gone through a sweating process, the
moisture being absorbed by the enveloping material. Following this, the straw is covered with about six inches of soil with the exception of a small opening at the top of the heap, which is left for ventilation. This vent should be closed temporarily when the temperature goes down as low as 20 above zero. A substantial but open shed is built over the heaps as soon as they are made.