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Potatoes, Sweet and Irish

D.J. Young

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Introduction

Potatoes are among the most productive, in terms of food value per unit of space, of the many vegetables in the home garden. And when we say “potatoes” we are referring to two separate species, Irish and sweet, seemingly with little in common except the name, yet with much in common when added to the garden and family food fare.

Both have become as American as the beef steak, which is best with a baked Irish potato; or the highly spiced southern smoked sausage that demands a baked sweet potato as its companion on the breakfast table. The Irish potato’s food value is next to rice among the world’s food staples. The sweet potato has its roots set deeper in the South, and is grown commercially from New Jersey southward and westward to Southern California. It ranks high in nutritional values.

Add to those food and gastronomic values the small amount of work necessary to grow these two gems, and what gardener could resist adding them to his garden calendar? So, let’s discuss Irish potatoes first, then the sweet.

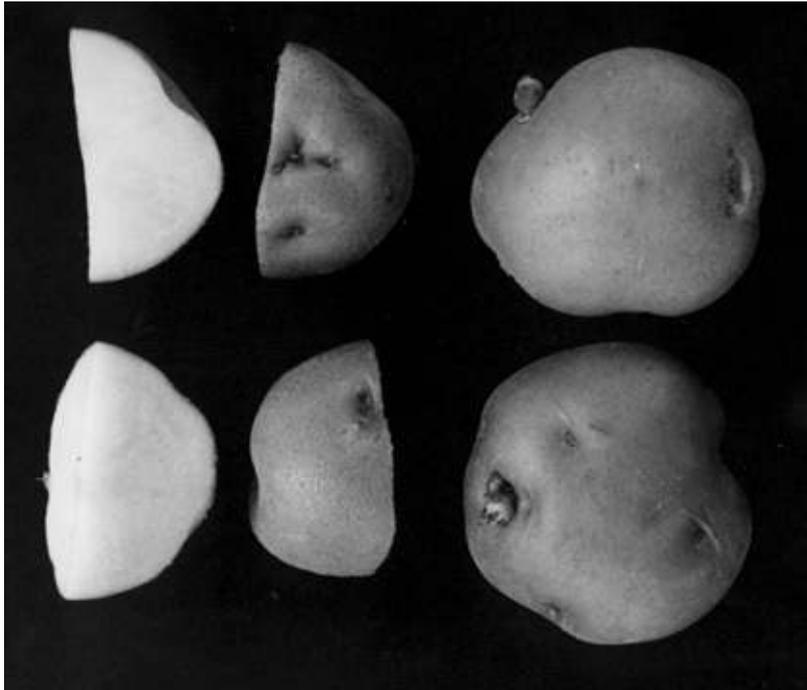
The Irish Potato

Best Soil Types

A silt or sandy loam, high in organic matter, with good drainage, is the ideal soil for growing Irish potatoes. But if you are not blessed with the ideal, it is not a sign that you should deprive yourself of some good home-grown spuds. Soils can be built up or reclaimed.

Plenty of organic matter — leaf mold, manures — will do much for a clay soil. A few cubic feet of sand will help lighten an otherwise heavy soil. Soils that are too sandy can be improved with organic matter.

Be sure you have good drainage. Poor drainage will promote rot in the seed before it sprouts, and possibly in the forming of young tubers.



The ideal size potatoes (6–8 oz.) cut in four equal wedges. Each piece is used as a seed. (potatoes shown: Red La Soda)

Fertilization and Soil pH

Different types of plant life require different diets of nutrients. What the particular plant produces determines the diet. There are many plant food requirements, but the major ones are nitrogen, phosphorus, and potash.

The nutrient requirements of your soil must be established, but it is not enough to pick up a USDA bulletin and read that a 6-12-6 (six percent nitrogen, twelve percent phosphorus and six percent potash) fertilizer at the rate of eight pounds per 100 feet of row is recommended for Irish potatoes. This recommendation is given as an average requirement. It may be too little or too much for your particular soil's existing nutrition level.

That level must be established before determining an effective fertilization program. It can be learned through a soil test which you can have done by your local Extension Service agent, whose office is generally at the county seat. Soil tests are usually free.

The soil test result given to you will be accompanied by a recommended fertilization program.

Follow it strictly. If recommendations are for eight pounds of 6-12-6 per 100 feet of row, get out the bathroom scale, figure out your needs and weigh out the proper amount. Don't guess. Too much can be worse than not enough.

The soil test report will also include the pH level, indicating the acidity or alkalinity of your soil. The pH reading is from 0 to 14. A low reading, from 0 to 7, indicates an acid soil, 7.0 is neutral, and any reading above that indicates an alkaline soil. Most common vegetables do best on a soil with a pH reading of 6.5, but authorities recommend a pH no higher than 6.5 for Irish potatoes. My best potato harvest was made from a soil that tested 4.8 after harvest.

The higher soil pH reading may promote potato scab, while a pH lower than 5.0 will halt the speed of this fungus disease. Your potatoes will tolerate a low pH better than a high pH, so avoid any use of lime.

The organic gardener will find nutrients in manure and composts, plus ground rock phosphate as one source of phosphorus, and greensand or granite dust as possible sources of potash. While wood ashes are a source of potash, needed by potatoes, they shouldn't be used for potatoes because of the high lime content in them.

If the soil test shows a marked deficiency in phosphorus and potash, an application of 10 to 15 pounds of the rock phosphate and an equal amount of the greensand or granite dust per 100 feet of row is recommended. The nitrogen needed will come from the manure, or from compost, made without the addition of lime.

Avoid spreading fresh manure on land to be used for potatoes. An ideal way to prepare the land is to grow soybeans or some other legume on the site the previous year, then rototill this crop under in the fall and add compost or rotted manure, spreading as much as 10 wheelbarrow loads per 100-foot row.

The rock fertilizers can be applied in the previous summer or fall, but if applied the year you grow potatoes, they should be spread several weeks before planting time to give the ingredients time to be broken down in a form the plants can use.

Choosing a Variety

There are many varieties of Irish potatoes. Look for the varieties best adapted to your region and climate. That choice can best be made after talking with your Extension Service agent, the seedman and growers in your area. The seedman usually stocks varieties that are in greatest demand and most suitable to your region, so you can't go very wrong in following his advice.

Most regions have a choice of two or more varieties. It then becomes a matter of taste or purpose, choice between a white variety which bakes best, or a red, some of which are good all-purpose varieties, or a variety for winter storage, such as the Katahdin or Russet Burbank.

For example, sections of the North plant Irish Cobbler, Early Gem, Norland, Norgold Russett, and Superior for early crops; Katahdin, Kennebec, Chippewa, Russet Burbank, Sebago, and Wanseon for late crops.

In the Great Plains states, Pontiac and Red La Soda are planted in early spring for summer use; Katahdin and Russet Burbank for winter storage.

In the Pacific Northwest, where a fall crop may not always be possible, Early Gem, White Rose, Russet Burbank, and Kennebec are favorites.

In the South, the Irish Cobbler, Red Pontiac, Red La Soda, and Pungo offer a choice.

Where there is a choice, a reasonable program to follow is to include one of the storage varieties a

a second crop.

If diseases are a problem in your area, look for potatoes resistant to them. For example, Irish Cobbler is resistant to mild mosaic, Early Gem is scab resistant, and Sebago is resistant to both blight and scab. Get recommendations from your seedman.

Use Certified Seed

Regardless of your choice of variety, use of certified seed is advised. You are safe when purchasing your seed from a reputable seed dealer, as he is not likely to put a seed potato on the market that is not certified. But if you want to be certain, ask the dealer to let you see the tag on the container. Each container (usually a sack) of seed potatoes must carry certification by the shipper that his potatoes meet certain standards if they are to be offered as certified. These standards are: True strains of the variety stated, free of diseases.

Don't use Irish potatoes bought at the supermarket as seed. Their use, besides resulting in possible crop failure because of impure strain, may introduce diseases in the garden soil that will carry over to future crops. In addition, these potatoes may have been treated with chemicals to slow their rate of sprouting, and so will be unsatisfactory for planting.



Gardener planting Irish potatoes under straw in early February. Seed pieces have been pressed firmly to ground level; a six-inch layer of rice straw is being placed on top.



A completed lazy bed. Soil is placed on top of the straw to hold it down until the potato sprouts emerge through it. The potatoes will form on or near the surface of the ground. When mature, they can be selectively harvested on an as-needed basis.

Preparing the Seed

The ideal potato seed is in a 1½ to 2 ounce block with two or more eyes, obtained by cutting a six to eight ounce potato into four equal quarters. Any block from this cutting with less than two eyes should be discarded. A large seed piece will withstand injury better than a smaller piece; and the multiple eyes will generate several sprouts, increasing the production per hill.

After the seed potatoes have been cut, the seed pieces should be left at room temperature for about twenty-four hours before planting. Exposing the cut sides of the potato pieces to air causes them to firm up, reducing the chances of rotting in the ground before sprouting.

Some potato growers follow a long tradition of gouging the eyes out of the seed potato, using the plug with one eye as a seed. Apparently done in the name of economy (getting more than four seeds per seed potato), it is a false economy procedure that invites crop failure. Because only one small sprout will result, it may be too weak to withstand injury or may not sprout at all.

You will need seven to ten pounds of potatoes per 100 foot row and should harvest at least three bushels of mature potatoes. A good gardener will get five to six bushels.

When to Plant

The Irish potato, like other annual vegetables, will be best during certain seasons. Being primarily a cool weather crop, it does best when planted in early spring or in the fall. (Fall sowing will be covered later.)

To determine your sowing date, establish the last killing-frost date in your area, then back up about 20 days. Since the potato takes about 20 days to sprout, danger of frost should have passed by sprouting time. If frost is predicted after the potatoes have sprouted, cover the young sprouts with soil to prevent damage in the event the frost is severe. A light frost may burn the top leaves, but will not damage the entire plant.

Sowing the Seed (Two Methods)

You're ready now to sow your spring potato crop. You have a choice of two methods. One is the conventional row method commonly used on the farm. The other may be new to you. Both have their merits, so experiment with them and make your choice.

Planting Irish potatoes under straw, hay, leaves or mulch of some other material, called the "lazy bed method" in some gardening circles, offers definite advantages to the small gardener. It eliminates practically all cultivation after sowing, permits a significant increase in space utilization, is safer in soils where scab may be a threat, and permits easy harvesting on an as-needed basis.

The lazy bed is set up on a rectangle not more than six feet wide (less if your reach is short) to allow you to reach the middle from the sides without stepping on the bed. The length is determined by the amount of potatoes you wish to plant, or the available space. Some plant an even wider bed, planning not to move across it once the potatoes have been planted, but it is convenient to have it narrow enough to reach into, for harvesting a few early potatoes, or to pull the occasional weed that may find its way up through the mulch.

When preparing the bed, cultivate the soil deeply and, if heavy rains are a problem in your area, give the final bed a slightly rounded contour or a slight slope to permit drainage. Place the potato chunks, cut side down, twelve inches from the sides and ends, spacing them twelve inches apart in each direction. Thus, for example, on a 6 x 12 foot bed, you can place four chunks across and ten on the length, or forty plants.

After the chunks are in place and pressed down firmly in the soil — no need to bury them — spread a layer of straw, hay or shredded leaves on top of them. If you use baled hay, six-inch pads will do the job. If you use loose hay, spread it 12 to 18 inches thick. That loose hay will pack down and disintegrate gradually, and if it isn't deep enough, there's a danger of potatoes showing through, greening and thus becoming inedible. And, once the plants have come up and spread, it's difficult to add additional mulch.

If there's a chance the mulch will blow away, weight it down with wire, wooden slates or a sprinkling of soil. The first rain will usually mat down this layer and hold it in place.

After that chore is completed, forget about cultivation and weeding. (That's why some call this the "lazy bed" method.) Calculate how few potatoes you could have planted in rows in that 6 × 12 foot space: Two good rows with 10 plants each, or 20 plants.

The lazy bed method may not have its advantages in large scale growing because of the need for large quantities of mulch, but its advantages in the home garden will become apparent once tried. The mulch requirement is not on a scale that the gardener can't meet. If it is necessary to buy the hay, one or two bales will be sufficient for the average small garden.

Row Planting: One method of row planting is to hoe or dig a trench about a foot wide and six inches deep. If there's a question about the richness of the soil, put a two-inch layer of compost in the trench and work it into the top layer of soil. Plant potato chunks, cut side down, a foot apart and three inches deep. As plants emerge, hoe soil up to them, gradually filling the trench and building a row-long hill about eight inches high. If you desire, you can mulch at this time, to keep soil cool and to discourage the weeds. By hilling the potatoes, you give them an ample area of loose soil in which to spread out and grow. The rows in this method should be about twenty-eight inches apart.

If heavy rains are a problem in your area, make certain that standing rain does not remain between rows after these rains. Hoeing the mounds higher will help with this problem, and protect the potatoes from rotting underground due to the standing water.

Growing Irish Potatoes in the Fall

Irish potatoes can be planted as a fall crop in any section of the country where there is a 90-day period relatively free from extreme heat just prior to the first killing frost, and thus fall growing is popular in many southern areas. The Irish potato, being a cool weather crop, needs a fairly cool period to mature, but it can withstand short periods of heat rather well. And since a severe frost will kill the plant, it must be given time to mature before the first fall killing frost.

A gardener should determine the first average killing-frost date in his area, then count back about 90 days to establish his sowing date. The gardener may find the first-frost date for his garden different from published average frost dates for his region. The most reliable source for information is the local Extension Service office.

The same planting methods that were used in the spring can be used in the fall. If you are in a long growing season area and thus could grow consecutive crops, avoid using the same bed that was used for the spring crop. Introduction of another potato crop shortly after harvesting one will give the fungus a chance to progress, possibly out of control.

If you choose the row method of planting, but are limited in space, use the following method of setting up rows in a small area. It is ideal for the gardener with limited space.



A second sowing is being done near the first. Second sowing is taking



place about 30 days after the first one; note potato plants from the first sowing coming through the straw.

Selective harvesting being done. By careful probing and feel, the gardener can harvest the exact size desired, leaving the others to grow a little more.

More in Less Space

Using a 5 x 9 foot space, for example, would limit you to two rows using the farming technique of building rows. But it is possible to construct three rows in this space, if rows or mounds are constructed on top of the potato chunks.

Mark off rows eighteen inches apart, and cut furrows two inches deep and twelve inches broad along these lines. Place the potato chunks in these furrows, spacing them eight inches apart. Hoe up the mound on the top of the seed and top off with mulch.

This row-building scheme will give more than 30 percent increased production over the farm method of row building, and will furnish rows substantial enough to house the developing tubers, if the mounds are maintained during the potato's developing period. Keeping the rows mulched is a good way to avoid erosion during heavy rains.

The illustration shows small egg-sized potatoes being used as seeds. Since fall seed potatoes are not available in my region in the South, I save the small potatoes from spring harvest for use as seed. store them at about 80°F. The warmth caused them to begin sprouting by fall-sowing time.

In the North, many gardeners plant a small crop of early potatoes, getting them into the ground as soon as there is some reasonable chance they will survive the late frosts of the spring. These are for summer eating, and include those that will be harvested very early, when the potatoes are tiny and delicious, and eaten with many of the early garden crops.

The potatoes for storage and winter use are planted later, with gardeners planting so that the crop will be ready at about the time of the first fall frost. These are allowed to mature, since they store better if mature, and even may be left in the ground a few weeks after that frost, if other garden tasks take priority.

While the Irish potato attracts many insects, viruses and fungi, all are not likely to attack at the same time. Besides, many of these Irish potato enemies appear in certain regions and not in others.

The Colorado potato beetle, yellow, black-striped, with its brick-red, hump back larvae, might appear in all states except California and Nevada, but its principal appearance is in the Eastern States. Wherever it appears it is always hungry, eating all the foliage it can sink its teeth into.



Seed potatoes for fall planting. Where seed potatoes are not available for fall planting, egg-size potatoes are culled from the spring harvest and stored at 85°F until needed. They are used whole.

The alert gardener will watch the potato foliage as soon as it appears, and if these beetles are seen he will remove them, crushing them under foot. He will keep a close eye on the underside of leaves, and crush any of those orange clusters of eggs these beetles lay. Handpicking beetles and crushing egg masses is not an exhausting or time-consuming task in the family garden, and is effective if done often enough. The non-organic gardener may dust or spray with Sevin, or any spray or dust containing carbaryl or endosulfan.

Flea beetles, which leave tiny holes in the potato leaves, are distributed throughout the United States. They are best controlled with sprays or dusts containing carbaryl or endosulfan. The small, green and lively potato leafhoppers often associated with leaves that curl and die, are found in the Eastern United States and parts of the Southwest. They are best controlled with Malathion, as are aphids, found throughout the United States.

Organic gardeners will try other methods, such as hosing off the aphids. They will turn to a natural insecticide such as rotenone only when these pests reach damaging numbers.

In the South, the most damaging diseases to the Irish potato are early and late blight. Since humidity seems to promote blight infestations, it appears in other humid sections of the United States as well. Prevention is the best control. Always plant clean tubers. Wait until plant tops are dead and dry before harvesting, then rake and burn all plant residue.



Row building scheme for the gardener with limited space. The potato seed is placed in a two-inch deep furrow, and row built on top of the seed. This method allows rows to be spaced closer than when the row is built first, then opened and closed for the seeds.

Since this is a fungus that lives in the soil, rotating the area each year where potatoes are planted is an aid in controlling it. If chemical control becomes necessary to save complete destruction of the crop, use a dust or spray containing captan or maneb.

The diseases that may strike potatoes are many. The prime defense against them is to buy certified seed stock, which is inspected by government officials both while growing and when harvested. This stock is thus certified free of such diseases as rot, blackleg, ring rot, early and late blight. Resistant varieties can be selected to avoid mosaic and other virus diseases. This certified seed stock is more expensive than potatoes for eating, but freedom from diseases makes them worth the price.

Harvesting and Storage

Pick a relatively dry period for your final harvest. Wait until the vines are dead and dry. This is a sign that your potatoes are fully matured.

Use a potato hook or fork on plants in a row, and work carefully, trying to avoid puncturing or otherwise damaging the potato skins. If you used the lazy bed method, pull or rake back the layer of mulch and pick up your crop. Dig under the top several inches of soil occasionally, to see whether any have hidden there.

Let the potatoes dry for one or two hours, then move them into storage. If the potatoes are to be used in the next month or six weeks, they can be stored in a dark area with temperatures as high as 70°F. For winter storage, fully mature potatoes should be stored in the dark, at temperatures of 38–40°F, and with a relative humidity of 85–90 percent. They will keep this way for at least five or six months. Darkness is essential for these potatoes. Light will promote greening, making them inedible. Higher temperatures cause early sprouting and shriveling.

The storage area should have some air circulation. I get good results with a home-made storage box

with one-inch holes in the sides and ends. My potatoes are placed inside between layers of straw, so air can circulate around them. This box is neat and handy.

Cooking Potatoes

In general, potatoes can be classed as long or round and white, red, or russet. It would also be desirable to classify potatoes for use, as boiling, baking, or frying. Unfortunately, this is not possible because of the wide range of growing and storage conditions as well as personal preferences.

New potatoes are freshly harvested and not fully mature. They often have skinned areas. Late crop potatoes are harvested at a more mature stage and put into storage for winter and spring shipment. They are generally considered more suitable for baking than new potatoes.

Look for reasonably smooth, well-shaped, firm potatoes that are free from blemishes. In new potatoes, some amount of skinned surface is normal, but large skinned and discolored areas are undesirable.

Avoid potatoes with gouges or bruises (they'll mean waste in peeling), those with a green color, or those that are sprouted or shriveled.

The ways to prepare potatoes are endless. They may be used frequently in meals because of their bland flavor and of the variety of ways to serve them — roasted, baked, boiled, mashed, fried, creamed, browned, in salads, stews, and soups.

The baked potato is almost an institution in America and other countries as well. Potatoes can be baked either at 350°F (along with other foods) for 1 hour 10 minutes or in a very hot oven (450°F) for 40 minutes.

Butter and dairy sour cream are well-liked accompaniments. Other interesting garnitures are chopped green onions and chives, minced parsley, caraway seeds, chopped dill, minced red peppers, sliced stuffed olives, toasted sesame seeds, or crumbled fried bacon or salt pork.

Potato salad, one more American favorite, can be varied in dozens of ways by adding ingredients such as diced cheese or diced ham or other cooked meat. In Finland, they add diced carrots, diced beets, and salted herring. In Sweden, additional ingredients may include chopped apple and diced cucumbers, with sliced egg for decoration.

Food for Us All
The Yearbook of Agriculture 1969

Effort spent at providing a good storage facility is effort well spent. You have exerted effort, time and some cash growing and harvesting a crop of your favorite variety. Now you are looking forward to enjoying them for weeks or months. Store them well.

Growing Sweet Potatoes

Introducing that delicious, nutritious product of warm-belt gardens, the sweet potato. Eaten and beloved throughout the United States, it is a major commercial product in Louisiana, North Carolina, Texas, and Virginia. Gradually, the growing area has spread, particularly for home growing, and this spread has been aided by the development of more hardy varieties, and the use of such aids as black plastic to raise the soil temperature, and cloches to protect the emerging plants. Northerners may find it a challenge to grow them in their gardens.

Ideally the crop should have 130 to 150 frost-free days, with most of them up to 80–85°F and with moderate to high humidity. Planting should be well after the last frost, when the soil has warmed to about 70°F.

Sweet and Irish potatoes are alike only in name and the ways they are prepared by the cook.

Growing conditions are widely different. So is the method of propagating. The Irish potatoes are started by using small potatoes or chunks of larger ones as seed. The sweet potatoes are started by using the whole potato to grow plants, and these plants are transplanted to the potato bed.



Seed potatoes should be selected from hills producing from 4 to 5 medium sized tubers, such as shown here.

Select from good producing hills medium size potatoes as shown here. Store for next year's seed stock away from those potatoes stored for consumption.

The initial source of these plants is the potato designated as *foundation seed stock*. Foundation stock is exactly what the term “foundation” means: a base upon which anything is started. It may be compared to the certified Irish potato seed.

The plants are produced by planting the foundation seed stock potato in specially constructed hotbeds. When the plants are six to seven inches long, they are pulled with the roots from the foundation seed potato and transplanted to the potato bed. When they are used in that manner, they are called *draws*. The draws are sometimes cut about one inch above ground in the hotbed. When used that way, they are called *cuttings*. They are allowed to grow a little taller to compensate for the part left in the hotbed below the cut. When cuttings are taken, the original sprout will continue growing, creating another plant.

Draws or cuttings supply the initial plants for the *first* potato crop. From this crop a grower selects hills producing the best quality and largest quantity of potatoes, and from these hills selects potatoes to produce draws and cuttings for his next year’s crop. These potatoes are called *seed stock*. They are different from the foundation seed stock only in the sense that they are derived from the foundation seed stock.

A grower can produce his own seed stock for four or five years without losing the desirable characteristics of any particular variety. Periodically, new foundation seed stock should be used to renew those characteristics.

The foundation seed stock, or the seed stock, when placed in a hotbed to produce draws or cuttings is called the *mother potato*.

How to Start

A beginning grower of sweet potatoes has a choice of several methods to get started. He can purchase draws or cuttings, if he has a source nearby. He can obtain seed stock from a reliable grower and produce his own draws and cuttings in his home hotbed. If these options are not open to him, he should contact the Extension Service to obtain a supply of foundation seed stock.

To avoid the many diseases infesting sweet potatoes, I recommend a start with foundation seed stock, with the grower producing his own seed stock from year to year. This will assure him that diseases will not be introduced in his soil by infested seeds or plants, and that he has a pure variety for maximum production.

Soil Types

The type of soil affects the yield and quality of the sweet potato in as many ways as there are soil types. An extremely rich, heavy soil will produce a high yield, but the potato will be low quality. A light, sandy soil of poor fertility will produce a high quality potato, but the yield will be low. These are the opposite of what one might expect.

However, reference to quality tends more toward the formation and appearance of the root than its qualities for eating. A short, well-formed potato that will grade U.S. No. 1 looks better than a slightly elongated tuber graded U.S. No. 2. The taste is the same. Only in extreme cases where the root is six to eight inches long and two inches or less in diameter, a condition found where potatoes are grown in extremely heavy clay soils, will the texture tend to become stringy.

The ideal soil is a light, sandy or silt loam, with a firm clay subsoil, with good drainage and moderate fertility. The moderately fertile soil is a compromise to get a good potato and still harvest a fair crop. The clay sub-soil forms a foundation below the sandy or silt loam; it contributes forming a

tuber of good appearance.

You can't do much to change such things as that clay sub-soil. But as time goes by soils can be built up to a satisfactory condition. Use of organic matter and winter cover legumes go a long way in soil improvement program. Due to their remarkable ability to condition the soil, legumes are highly recommended as a soil conditioner, regardless of the primary soil base.

Fertility and Soil pH

Because soil fertility affects both the yield and the quality, an accurate fertilization program is essential for best results in growing sweet potatoes in the home garden.

Recommended commercial fertilizers include 4-12-8, 5-10-0, or 6-12-6. A gardener reading this information may be confused. The type and amount of fertilizer required can be determined only by testing to learn the existing fertility level of the soil, then working out a fertilizer program based on the results of that test. As recommended in the Irish potato growing section of this bulletin, this can be done with the help of the Extension Service agent. Generally speaking, the sweet potato requires essentially the same type but less nutrients than the Irish potato.

The organic gardener, who will have his own plan of fertilization, should avoid use of fresh stable manures. The sweet potato is an excellent host for many rot bacteria, and some authorities claim stable manures promote their growth.

The sweet potato does best with a pH of 5.0. Agricultural soil sulfur (to lower pH) or lime (to raise it) can be applied from October to December to stabilize the pH at the desired level.

Soil sulfur is also helpful in the control of soil rot, a fungus that infests sweet potatoes, but it should not be applied for that purpose arbitrarily, as too much is harmful to the plants, as well as upsetting the pH balance of the soil.

Choosing a Variety

Many varieties of sweet potatoes are grown in the United States. Several factors will influence a choice of variety. Some varieties are better for shipping purposes, some are favored by home gardeners. The choice may be limited to the variety that grows best in a particular region, or the availability of foundation seed stock, seed stock or plants. Because of the many factors that may influence your choice, we will limit our discussion to three varieties which we believe fall within specific categories.

The Unit 1 Porto Rico, slowly being replaced by new varieties, is still regarded by many as one of the best for fresh market and storage. Since it cures well, it is a favorite choice of the gardener who can get foundation seed stock or plants. I grow this variety; I recommend it.

A relatively new variety is the Heartogold. It has white skin with bright orange flesh. For unexplained reasons, it does not market very well. Some say it is because of the white skin, an unnatural color for a sweet potato skin. But it is high in quality and can be eaten immediately after harvest without a curing period. These qualities make it very desirable for the home gardener.

Some may find the Heartogold's disadvantages outweigh the advantages. It bruises easily when harvesting, therefore does not store well. Also, foundation seed stock or plants may be hard to get, since it is not in great demand by commercial growers.

Centennial is favored by many commercial growers, especially in Louisiana, where it is recommended for all regions. It outyields all other commercial varieties, and stores and ships very well. Foundation seed stock, seed stock or plants are widely available.

Disadvantages are that in cool climates the Centennial plants may emerge later than others, and it requires more heat to sprout. The latter disadvantage is nullified where hothouses are used to grow plants.

The Foundation Seed Stock

The sweet potato production cycle begins with the foundation seed potato. It is the base upon which future propagations are derived. It is grown by the Extension Service, or under its direct supervision. It is available only through the county agent; it cannot be purchased through normal seed outlets.

In the South, growers place their orders for foundation seed stock with the county agent in early January. The foundation seed stock is distributed by the county agent, rather than being shipped direct to growers. (Since this procedure may vary in different areas, it is advisable to contact the area county agent during late fall to determine his procedure in obtaining foundation seed stock.)

After receiving the foundation seed stock, the grower will bed it to get plants for sowing the first year's crop.

Besides being the source of plants for the first year's crop, the foundation seed stock is also the source of seed stock for several years. As explained earlier, the seed stock is different from the foundation seed stock only that it is derived from the foundation seed stock. It serves the same purpose — to produce plants for sowing.



Rows should be built sufficiently high and wide to accommodate the developing tubers, such as shown here. Vine cuttings are shown in place, ready for setting.

Foundation seed stock can't be bought in less than one-bushel quantities. That's more than most gardeners need, since one bushel will produce about 1,000 plants at the first cutting, and more than 2,500 in several cuttings. Friends often combine their orders and purchase the minimum one bushel.

The Cold Frame or Hotbed

We strongly recommend that a gardener grow his own seed stock each year, unless he is in an area where sweet potatoes are grown commercially and disease-free cuttings or draws are available each year.

To do this, he will need a cold frame or hotbed, which is a cold frame equipped with some means

artificial heat. Since soil temperatures between 70° and 80°F are needed to promote sprouting, this is the best means of controlling the temperature at that level. Further, a sterile soil is needed in the bedding area to avoid diseases, and use of this method furnishes an isolated environment that can be sterilized.

A cold frame or hotbed for producing plants need not be elaborate or expensive, and can be built quickly with wooden sides and a glass or plastic removable top. In cool climates, sunlight alone may not maintain the required temperatures, and electrical heating units, with pre-set thermostats, or more expensive hot water pipes may be needed.



Vine cuttings such as shown here are ideal for use as plants. They can be taken either from the hotbed cut above ground away from the mother potato, or from the vines of the first sowing. When embedded in the soil, each joint in the vine will develop root. One of the cuttings shown here is already developing root.

Many gardeners will have extra room in existing units for the few potatoes required. A two-foot square area is large enough.

A first step in having a disease-free cold frame or hotbed is to change the soil each year, getting new soil from an area that hasn't been under cultivation for several years. A good place to get this soil is on a high point in a wooded area. Although the pH of the soil may be low, this will not adversely affect the production of plants.

Before adding the new soil, remove the first six inches of soil, where the germs and insects that could affect the seed potato will probably be found. Then add twelve inches of new soil. This raises your soil level six inches, affording good drainage.

Soil can be sterilized with chemicals or steam. Since steam is not practical for the small gardener, the chemical Vampam can be used effectively by following the manufacturer's directions on the container. Plan ahead, if Vampam is used, since a waiting period of about 30 days between treatment and planting is recommended.

The organic gardener who avoids use of chemicals might try my method. I use boiling water. I get sterile soil.

Follow this procedure for effective results: Prepare about five gallons of water for an area measuring three feet square. Install a three-inch layer of soil, then pour boiling water over it. Continue this until twelve inches of soil have been added, then pour boiling water over that and cover the surface with plastic for forty-eight hours to keep the heat in the soil as long as possible.

Wait a few days to let the soil dry — but not too dry — before using the area. Bed the mother potatoes by covering them with two inches of the sterile sandy soil in the hotbed. Dampen the soil and cover with a black polyethylene plastic. This will absorb and hold the heat from the sun. If the

transparent top of your bed is removed, you do not have to worry about excessive heat. This material is used successfully throughout the deep South, where it is very hot.

After the sprouts begin pushing up the plastic, remove it to let them harden. Continue maintaining the temperature level until the sprouts are about nine to ten inches tall. At that height, they are ready to cut and transplant.

Bedding time will depend on the climate. In my area of the South, we bed in February to have plants for early sowing in April. This is about sixty days from bedding the potatoes to planting. Determine when you will be able to plant by learning the last spring frost date, then count back at least sixty days to determine your bedding date.

Producing Seed Stock

While many gardeners purchase cuttings or draws each year, the gardener who produces his own seed stock usually has best results, since he has control over the selection of that seed stock, and can achieve better production in this way.

Here's how to grow seed stock: From the mother (seed) potatoes in your hotbed, take cuttings instead of pulling them with the roots as draws. This means that you will cut the draws about one inch above the ground. This reduces the chances of transmitting diseases from the hotbed to the planting bed.

Better stock will result if you plant late, but still early enough to harvest before frost. In the deep South the sowing time for seed potatoes is June. In cooler regions, only one sowing may be possible, so that the single sowing can be all-purpose for seed stock and consumption.

Plant in soil that has not had sweet potatoes planted in it for at least three years. This will help discourage diseases in your seed stock.

When harvesting, select the best roots from the most prolific hills, hills that produce four or five roots of medium size, free of any signs of insects or fungus injury. Store at 85°F, away from any stored for consumption.

The small gardener who needs to plant only thirty or forty hills for his own consumption may plant with the aim of producing seed stock quality roots in that one sowing. That is what I do, and it works well. I aim for seed stock quality in my forty hills. Thus I have a wider selection of quality roots than if I plant only a few hills for seed stock purposes only.

Forty hills should produce about 150 potatoes, enough to offer a good selection of seed potatoes and a good supply for consumption. When harvesting, I pick the plants that have produced the most, and select the best roots from these plants. I usually save about twelve for seed, but rarely use more than six or eight in the hotbed. They produce more than the forty cuttings I need.

Since the sweet potatoes of today are all improved varieties, the seed stock must be renewed every few years, or it will gradually deteriorate in quality. For commercial growers, this seed stock renewal must take place every four or five years. The Extension Service advises home gardeners not to be concerned about renewing seed stock for about 10 years if they start with foundation stock, or five years if they start with seed stock. I grow from seed stock and renew every four or five years, just to be safe. I am never sure how far removed the seed stock is from the foundation stock. If it is too many generations removed, I will reap an inferior potato.



When planting, place vine tip about 5 inches deep in the row. If soil is dry, pour water in the hole before firming-up the soil around the cutting. When using vine cuttings from the first bedding, cut about 10 or 12 inches long, and fold the cut tip when bedding. This will permit more vine to be in the ground, developing a better root system.

When to Plant

For an early crop, plant in the spring as soon as cuttings are available from the hotbed and soil temperature in the garden is about 70°F. Sweet potato cuttings do not grow very well when the soil is colder than that.

Successive sowings can be made thereafter, if desired, as soon as there are new growths from the hotbed; or, as will be explained, when vine cuttings are available from the initial sowing. In making successive sowings, remember that potatoes take from 130 to 150 days to mature (early plantings in the deep South, where it is hot early in the year, will produce a good potato in about 130 days), therefore, the maturing date of the last sowing must be before the first frost. Potatoes damaged by frost will not store well.

Successive sowings work well where a continuous and large supply is wanted and the climate will allow it. The first sowing furnishes early potatoes for consumption; the late sowing furnishes storage potatoes and seed stock for the following year.



Small row of 10 hills in a small home garden. This small row should produce 40 to 50 potatoes, above

average food value for the unit of space used when compared with the other vegetables.

How to Plant

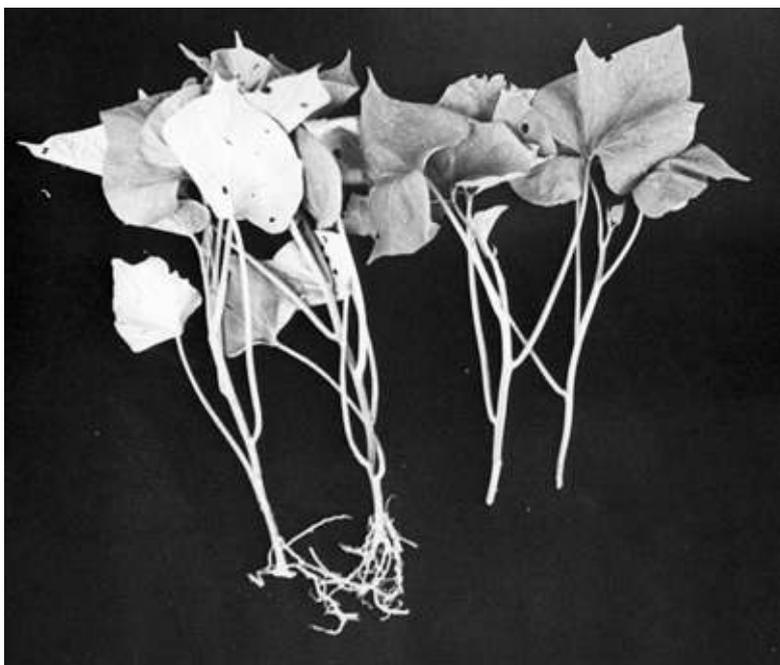
Build rows about three feet wide and one foot high to accommodate the potatoes that will develop and space the rows about three feet apart. The rows should be prepared about ten days ahead of planting, and the recommended fertilizer should be mixed into the top six inches of topsoil.

When taking plants from the hotbed to transplant into the row, cut the sprout (now referred to as a cutting) about one inch above ground. The sprout should be about nine or ten inches tall in the hotbed so that the cutting is at least eight inches long.

Cutting the sprout is recommended over the old practice of pulling the sprout — referred to as a *draw* when used in this manner — to transplant, as it reduces the possibility of transmitting diseases from the mother plant to the planting row. It also allows the sprout to continue growing, producing another cutting.

Plant them four inches deep, spaced twelve inches apart. Firm soil around them, and if soil is dry, water them.

If you wish to make a second sowing shortly after the first, but don't have enough sprouts for cutting, you may take ten or twelve-inch tips of vines from the first sowing, after they have started running. This practice is favored by many as an excellent way to propagate a second or third sowing.



Sweet potato sprouts, when pulled out of the hotbed with the roots, as illustrated with the two on the left in this photo, are called draws; when cut above ground as shown on the right, and used as plants in that manner, they become known as cuttings. The latter procedure is recommended over the use of the entire draw as a plant. It reduces considerably the transfer of diseases from the hotbed to the planting row.

Cuttings obtained from a distant source can be stored without worry. If they are kept damp and cool by wrapping the cut tips in damp newspapers, they will remain viable for several days, even if they appear withered. They are very sturdy.

Pests and Diseases

Twenty diseases infest sweet potatoes in the United States, and ten insects are attracted to this plant, feeding either on the roots or the foliage.

Should this discourage the home gardener? It certainly shouldn't, for if the gardener uses proper control methods, none of these should bother his small crop.

The steps to avoid damage from pests and insects include:

Be sure foundation stock, seed stock or plants are disease-free.

Sterilize soil used in the cold frame or hotbed.

If soil rot is an area problem, maintain the pH between 5.5 and 6.0.

And, important to avoid many diseases, rotate crops so that you do not grow sweet potatoes in the same location more than once every four years.

Cultivation

A minimum of cultivation is necessary or advisable because of shallow roots. After the vines start running, pulling by hand weeds that come through the vines will suffice.

Harvesting

Your potatoes should be ready to harvest about 130 to 150 days after planting. This may vary somewhat due to climate and soil. Potatoes planted early in rich soil in a warm climate may mature earlier, so after 130 days dig one hill to see if they are mature. If the root is not fully developed (approximately two and one-half inches in diameter), or the skin is tender, wait another 20 days before harvesting.

Harvest before frost, using a spading fork and digging deeply. The roots are way down, the tip of some as much as one foot. Separate the bruised potatoes, which you will want to use first as food, from the ones you will want to store for later consumption, or for seed stock.

Store initially in a well ventilated area at 85°F for 15 to 20 days. This is a curing period that will help your potatoes keep better for longer periods. After the curing period, store at a temperature of 60°F, but not below 50°F at any time. For short periods of time (30 to 60 days over the curing period) they will keep well at 80°F.

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