

Eagle Creek Seed Potatoes
Growing Tips

The most interesting part of selling potatoes to gardeners is the feedback they give us. Your phone calls and notes on which varieties worked and those that did not work, are very useful for us. **As I have said in the past, if you are doing something that works in your garden...Keep doing it!**

The following are some principles of potato growing you may find useful in your garden.

Soil Preparation site selection

The soil that you plant your potatoes in should be mellow and free of lumps to a depth of at least 6 inches. This allows the roots to develop freely and the tubers to develop without resistance. Spring tilling should be done after the soil has thawed and dried enough so that it does not stick in a ball when you squeeze it in your hand.

Site Selection

The site for your garden should be well drained, that is to say that it should NOT be in a spot where water from a heavy rainfall will sit for any time. Potato plants submerged in water for more than a day will suffer seriously.

Soil pH

This is a measure of acidity of your soil, pH 7 is neutral, a lower number is called acidic and a higher number is called basic. The recommended range for potatoes is pH5 to pH8. Soils that are outside this range have a significant chance of producing potatoes with scab. Some garden centers carry a kit that you can check you soil pH and recommend strategies for fixing any problems.

Soil Temperature

The soil should be above 15 C at the time of planting. Almost as important as soil temperature is that the seed temperature and the soil temperature are as close to each other as possible. You especially do not want to plant warm seed into cold soil.

Fertility

Potatoes require a lot of feeding. If you use a prepared fertilizer add 4 lbs of 7-7-7 per 25 feet of row at planting. It is very important that your seed potatoes do not come in direct contact with the fertilizer. You can use compost for fertilizing potatoes BUT it must be VERY WELL composted, make sure that none of the original materials are recognizable. The nutrient value of compost is variable, but 20 pounds of well composted material per 25 feet of row, well mixed in with the garden soil should be adequate. Another strategy for compost would be to put it on the part of your garden that you plan on growing potatoes Next year.

Green Sprouting (Chitting)

This is the practice of "germinating" the potato seed before planting. It can be done in cool 10 C- 15C with good light for 2 to 3 weeks. The sprout (Chit) will grow short and strong. Chitted seed will begin producing roots and sprouts out quickly after planting. This will get the crop off to an early start and improve yields.

Seed Cutting

Seed potatoes can be cut, make sure that each piece has at least one eye, as it is the eye that produces the stems and roots. Use a clean sharp knife.

Spacing

We recommend that you plant potatoes one foot apart. While planting potatoes closer together will yield more potatoes for a given area, it will produce smaller potatoes and the plants will mature later.

Planting

Plant the potatoes and cover them with an inch or two of soil. Shortly after the first leaves appear, cover the plants with more soil and continue until you have approximately six inches of soil over the seed. Later in the season when the tubers begin developing, you may need to pull some more soil on the developing potatoes if they start poking out the side of the hills.

Watering

Water is sometimes the forgotten nutrient. The soil should be moist at all times. The time of the biggest demand from the potato plant is during sizing, which occurs after flowering. Potatoes do very well when water is supplied consistently and evenly throughout the season. Don't over-water (see site selection above).

Hope 2006 is a great year for your garden.
Stan Mills

Organic Seed Potato Planting Guide

As an organic gardener you will appreciate the satisfaction of producing a delicious staple food without using harmful pesticides, herbicides, fungicides or fertilizers. We have written these guidelines to help make your gardening a success. These guidelines will have to be adapted to your location, climate and garden.

Planning

Here are some important considerations when selecting a site for your potatoes.

1. Do not use a site that has freshly plowed sod, a favorite home of wireworms which make holes on the surface of potatoes. Sod should be plowed the preceding fall or at least two weeks before planting.
2. If it has been less than three years since potatoes or a related crop have been grown there, plant elsewhere. Good crop rotation is key to preventing and managing disease and insects.
3. Potatoes do best in a site with full sun, optimum drainage, loose soil and a good water supply.
4. Check to see what insects or diseases exist in your area. Choose varieties that are not susceptible to known problems.
5. Grow the potatoes you will enjoy. Different varieties do better in different types of dishes. Select varieties that match your cooking criteria and delight your taste buds.
6. Keep in mind the amount of storage space you have. Storage qualities and harvest yields vary among varieties. You can expect yields to range from five to 15 times what you planted.

Fertility Management

Potatoes are heavy feeders but generally poor extractors so they must be close to luxurious amounts of nutrients. For optimum plant growth and harvest quality make sure there are adequate amounts of nitrogen, phosphorus, potassium, calcium, magnesium, sulfur, micronutrients and water. The only sure way to know the nutrient requirements of your soil is with a soil analysis. Pick a reputable lab to do the work. Unless otherwise noted, the following nutrient sources should be broadcast before planting the potatoes.

Nitrogen is available from the following sources:

1. Animal products such as composted manure and blood meal. The former should be applied in the fall; the latter is expensive and may raise the pH.
2. Seed meals, especially canola and alfalfa. Apply before planting.
3. Green manure, by far the most economical source, but it requires planning to be effective. Rye, peas or clover may be used. Plant potatoes seven days after plowing down.
4. Fish products may be applied as a meal at planting or as a foliar fertilizer to be sprayed on every two weeks. Apply in early morning or evening.

Phosphorus is available from either animal or mineral sources.

1. Rock phosphate is available as a powder and is referred to as hard rock or soft rock, also called colloidal. These contain between 18 and 30% total phosphorus, which becomes totally available in the ground during the next three to five years, depending upon biological activity. Apply the previous year.
2. Bone meal is a good, readily available source with total phosphorus ranging from 18 to 34%. Apply at planting.

3. Composted chicken manure is also a good source, but the available phosphorus is less than half that of rock phosphate or bone meal. Spread on green manure before plow down or before planting.

4. Seed and fishmeal contain minute amounts of phosphorus. Apply before planting.

Potassium is primarily available from mineral sources.

1. Sul-po-mag, a readily obtainable, non-acidic fertilizer, contains approximately 22% potash, 20% magnesium oxide and 18% sulfate. Apply the previous year.

2. Potassium sulfate contains 50% potash and 20% sulfate. Apply at planting.

3. Kelp meal, although a plant source, often contains up to 15% potash. Apply at planting.

4. Glauconite, known as "greensand," has up to 8% potassium. Apply the previous year.

5. Granite gravel and dust are often locally available and may contain up to 5% potassium. Apply the previous year.

6. Compost made with animal manure may also be a good source. Apply before planting.

Calcium is widely available in the form of agricultural or dolomite lime. Apply the previous year and do so sparingly as too much may raise the pH level. Rock phosphate and bone meal are also useful sources.

Magnesium is easily found in the form of dolomite lime and sul-po-mag. Magnesium sulfate, commonly known as "Epsom salts," serves well as a foliar fertilizer.

Sulfur which lowers the pH, is found in Tiger 90. Apply before planting.

Water management is critical. Without adequate amounts of water in the soil, many of the nutrients will be unavailable to the plant reducing the overall yield and tuber size. Generally, keep the soil just moist enough so there is no dust and the plants are not stressed. Potatoes usually need between one to two inches of water per week; more is needed if the weather is hot and sunny.

Planting

The number one objective in growing potatoes is to provide the best possible conditions for uniform, uninterrupted growth for the entire season. The developing plant has five phases and certain activities must be carried out during each phase.

Planting to Emergence Phase: The timing of planting and rapid emergence are the critical concerns.

1. It is best to wait until the ground warms to at least 45-55°F (8-12°C). Try to plant one to two weeks before the last frost date.

2. Prepare the soil carefully removing any large sticks, roots, rocks or other plant debris.

3. Add any necessary nutrients to the soil before planting. Potatoes like a slightly acidic soil so a pH of 6 is best although they will tolerate a slightly lower or higher pH. Avoid liming the soil, which will raise the pH, and don't add uncomposted manure that may contain the bacteria responsible for potato scab.

4. Rototill or disc and harrow the ground deeply. Generally, the deeper the better but till at least 8-10 inches. The finer the seed bed, the more potatoes the plant is likely to set.

5. Mark off the distance between rows according to the type and size of equipment you will be using. An average between-row spacing is 36 inches. In-row spacing between plants averages 12 inches. If you want smaller tubers, put seed closer together.

6. The seedbed should not be too wet or too dry.

7. Plant the potatoes with the eyes up, half above and half below ground level. Cover the potatoes with one and half inches of dirt. Seed that has been planted too deeply in very wet and cold soil is exposed to infection by a variety of diseases, including Rhizoctonia, which feeds on non-green tissue. The potatoes will emerge within one to two weeks of planting. If you live in a very dry area, plant three to five inches deep to keep the potatoes from drying out. They will emerge within two to three weeks.

8. Unless your garden has a very light sandy soil, do not irrigate before emergence as saturated soils promote seed decay.

Vegetative Growth Phase: The primary activities are cultivation, hilling and monitoring any disease and pest problems.

1. When the plants are one to two inches tall and 80 to 90 percent of the total crop is above ground, cover them with one to two inches of dirt, creating a flat-topped hill. A wider and bigger hill is better as this provides more space for the developing tubers to grow. An alternative to hilling is to put a loose one-foot high layer of straw mulch around (not on top of) the plants. This helps deter beetles and keeps the moisture in the soil during hot dry weather.

2. The goal is healthy plants with minimal competition from weeds. Hilling should take care of the first batch of weeds but you may need to weed later on in between plants.

Tuber Initiation Phase: This phase happens three weeks after emergence and is characterized by slight swelling on the ends of the stolons. Stolons are underground stems that develop into the final storage unit for the plant – potatoes!

1. It is critical to provide adequate water during the first 14 days of initiation because the plant is setting the number of tubers determining your final yield. Even if a lot of water is given the plant after this, the potatoes will get bigger but the number usually does not increase.

2. To know exactly when the plants are setting, you can inspect the stolons yourself to see if they are swollen at the end. Varieties will set at different times depending on whether they are early, mid or late season.

Tuber Bulking Phase: The potatoes are enlarging and are most affected by moisture, sunlight and available nutrients.

1. Careful irrigation management is still critical; 70% of available soil water should be maintained. Avoid excessive use of water to prevent nitrogen loss below the root zone. Nitrogen-deficient plants are more susceptible to early blight, which is most prevalent during this phase.

2. Frequent inspections of the garden for insects and diseased plants are necessary.

Tuber Maturation Phase: The vines begin to wilt, gradually yellow and lose their leaves. The tubers stop growing and the final skin develops. This process may occur naturally or by the first hard frost.

1. Irrigation should be reduced.

2. Potatoes destined for storage should be allowed to sit in the ground undisturbed for at least ten days (and no more than 17 days) to allow the true skin to form.

Harvesting and Storage

Harvesting can be done any time after the potatoes reach the size you want. Potatoes harvested while the vines are still green do not have mature skins and any skin you see is easily rubbed off.

Harvesting Tips:

1. Wait until the vines die naturally or kill them using a propane torch or weed whip.

2. After the vines are dead, wait two weeks before harvesting to allow the skins to set.
3. Harvest when the ground is dry so the potatoes can get into storage dry. If you must put your potatoes into storage while they are wet, run a fan to dry them. Wet potatoes are susceptible to rotting in storage.
4. Potatoes bruise easily so dig them carefully, making sure you do not injure them. Do not drop potatoes more than three inches.
5. Sort your potatoes before they go into storage. Eat small, bruised or cut potatoes first as they may not keep well.

Storage Tips:

1. Potatoes must be stored in TOTAL darkness. Left in the light they will turn green and become poisonous, and cooking the potato will not take care of the poison.
2. Put the potatoes into burlap or mesh bags to allow the free flow of air. Baskets or open bins will also work.
3. The storage temperature should not vary. Store table potatoes at 40°F (5°C) and as close to 98% humidity as possible. Potatoes stored at temperatures lower than 34°F (1°C) will become sweet. This sugar conversion may be reversed if they are left in the dark at room temperature for a few days.

Insects and Diseases

In order of appearance the main pests of potatoes are flea beetles, aphids, leafhoppers, psyllids, and – in most areas – Colorado potato beetles. In a small garden the most effective insect control is prevention. Floating row cover can be used to keep most insects off the plants. Rotenone will control flea beetles and Colorado potato beetle; insecticidal soap will control aphids, leafhopper and psyllids. Diatomaceous earth may also be effective in controlling soft-bodied pests. Manually picking off larvae clusters helps too.

Diseases can be viral, fungal or bacterial. In the case of most viral and bacterial diseases, there are few effective organic controls. Fungal diseases may be controlled with a very dilute Bordeaux mixture, copper sulfate, or elemental sulfur sprays. Consistent applications of compost tea have been effective in preventing and stopping certain fungal diseases. Late blight – the most disastrous disease that a gardener can face – is difficult if not impossible to control. The best strategy is prevention.

Besides the steps we have already mentioned, a gardener should do the following:

1. Never plant potatoes where tomatoes have been grown in previous years.
2. Determine when late blight is likely to occur in your area and plan to harvest your crop prior to that time.
3. Avoid planting in areas that are low, tend to be wet, or have little air movement.
4. Control aphids. The simplest method is row cover or you can use insecticidal soap.
5. Be observant and remove any diseased plants as soon as you see them.

In general the best measures for controlling diseases are sanitation, sanitation, sanitation and good rotation. Use high quality seed from a known source. Never put diseased plants on the compost pile.

Feedback

We welcome your feedback on your experiences. The information you provide will help us refine our recommendations to other potato enthusiasts. Please email your comments to inquiry@richters.com.