

GARLIC BOSS

Gourmet Garlic
www.garlicboss.com



Garlic Growing Guide



Maybe you've made your way here to Garlic Boss for the first time, and you're wondering just what the best way for you might be to enjoy the savory gourmet garlic varieties we have to offer. Maybe you're a garlic-growing veteran who is just looking for a few tips and tricks for garlic planting. Whatever background you might have, we hope this guide is helpful for everyone who wants to grow their own garlic and enjoy all the benefits this wonderful vegetable has to offer. Read on, my friends, and explore the fun of growing our favorite garden plant.

How Garlic Grows

Garlic is a fascinating plant that grows well in most climates of the United States. Some southern states will have a harder time growing cold-hardy varieties like Porcelain, Rocambole or Purple Stripe, and the results will certainly vary as to how the bulbs will acclimate when planted in those climates. Generally, it is advised for extreme southern growers to stick with the Creole garlic type which has been proven to do well in those areas.

Garlic thrives in very loose, well drained soils such as loam or sandy loam. Dig deep beds with a hoe or tiller to ensure the roots have ample space to prosper. It's best to ensure your crop is free of weeds as garlic has a very difficult time competing with weed roots. Proper fertilization is also critical to the plant's success. See the section [Preparing to Grow Your Garlic](#) for more information.

So let's start with the seed. It isn't exactly the seed you were thinking of like a tomato or pumpkin seed. Garlic plants produce bulbs that are comprised of individual cloves. Each clove is a seed. Pretty simple, right? When planting time comes, you will crack those beautiful, cured bulbs into a handful of cloves that will be used to plant into the ground. You got this!

How Much Garlic?

How much garlic should you grow? It's a fundamental question, but one that sometimes isn't all that easy or clear to answer. Because you will generally produce 4-7 times (sometimes higher) the yield of the weight you are planting, some basic planning has to be done in order to ensure you have the correct space and time to grow garlic. Also, garlic seed can be a big expense, so you'll want to factor that in when planning your

garden size. For example, the table below will give you an approximate number of plants that 1 pound of garlic seed will produce by each type.

- **Porcelain** - 25-30 plants
- **Rocamboles** - 40-50 plants
- **Purple Stripe** - 50-60 plants
- **Marbled Purple Stripe** - 35-45 plants
- **Turban** - 45-50 plants
- **Asiatic** - 50-60 plants

Garlic Boss sells seed garlic in quarter sizes, so you have options as to how much you want to plant, but let's start with a nice round number in explaining things. Say you want to grow a pound of Music. Since Music has 4-6 cloves per bulb and averages around 25-30 plants per pound, we'll take the highest yield example. Take 30 x 6 to get the approximate number of cloves = 180. If you use 6" x 6" spacing on center, you would take 6 x 6 to get 36 square inches. This is how much space a single plant requires. Take 36 times the number of cloves which is 180 to get 6,480 square inches required. Now convert it to square feet by taking that times 0.00694444. This gives you 45 square feet of space needed to plant that one pound of Music garlic. That's of course an approximation but generally will get you to the correct amount of space required. You could also do the calculation based on the amount of space you have.

Here's that example. I know, these may seem a little daunting, but follow along and we can get through this with minimal pain and head thrashing. You want to plant Music garlic, you have 250 square feet of space and need to know how many seeds. Here's the process:

- Take 250 square feet x 144 to give you square inches = 36,000 square inches
- Take 36,000 square inches / 36 square inches = 1,000 cloves (approximately 5.5 lbs.)

You've conquered the space calculation, now go celebrate with a glass of wine and read on.

Preparing the Soil

Let's talk about soil prep! It's a critical step, and while there are many ways to grow a garlic crop, we've found that using raised beds similar to how you might use raised boxes for your garden is the best method. Creating raised beds is a similar concept, but a little different than making boxes in that you won't need boards at all to construct a box. The soil should just be worked more into mounds approximately 6" high and 30" wide which will give you a very fluffy bed of deeply-worked soil to approximately 1' deep. This is the optimal method to get the biggest yields from your

garlic plants, but it's also the most difficult to achieve. It takes a little more time and effort, but you'll be glad when you harvest those big bulbs!

Some farmers will work the soil several times to get the soil as loose as possible before planting their seed. It's generally up to you and your desire, time, and amount of garlic. The garlic will still grow, but this gives it a greater chance of being optimal. Who doesn't want optimal?

Now let's talk chemistry! Soil fertility is critical to the optimal growth of a garlic plant and to establish healthy roots in the fall and thrive in the spring after vernalization. Fertilization should be done when you make your beds in the fall and in the early spring to foster good growth. Don't apply later in the spring as that can enhance leaf growth instead of bulb growth leaving you with smaller garlic. What to use? Go natural! Use dried manure or compost as the first solution and mix in the soil when preparing the beds. A 1-2-3 nitrogen (N), phosphoric acid (P), potash (K) mix is good if you're not going the natural way.

When to Plant Garlic

It's best to plant your garlic in the fall which allows the plant to grow established roots before it gets cold and the ground freezes. In northern Indiana that is generally around mid to late October. A good rule of thumb is to plant two weeks prior to the first frost. If you're an over achiever, you can purchase a soil thermometer and plant when the ground reaches 50 degrees F at 4 inches down; that's the perfect time to get those seeds in the ground. The plant must go through vernalization where it becomes dormant for a period. This process helps set up the plant to thrive in the spring. If it doesn't do this, the bulbs can be drastically smaller and, in some cases, may not even form into separate cloves. In areas where the winters are either extremely warm or cold, garlic can be planted in the spring. The seed must still go through the vernalization process, so it's recommended in those areas to store at 40-50 degrees F for about 2-4 weeks prior to planting. This will allow the seed to vernalize and give it the best chance at reaching optimal size.

Planting

So, you've managed to fluff up a nice raised bed; now it's time for dropping those beautiful cloves into the ground. But wait, it's not as easy as just throwing them into a furrow and covering them up. You've got to know which end is up! There is a basal end which is where the roots grow out, and a pointed end where the leaves and stem grow out. You'll want to plant the clove with the basal end facing down into the ground and the pointed end up to the sky. Once you have a hole or furrow dug down to about 3 inches, push the clove's basal end slightly down into the soil so it sticks straight up. This gives your plant the best chance of success. If you don't, it takes more energy

for the stem to wrap around the bulb and grow out of the ground which generally means smaller bulbs at harvest. So, get the right end up!

Some people use hoes or shovels to dig the holes or furrows. Whatever works best for you is great. As we mentioned in the How Much Garlic section, typical spacing is 6 inches apart at a depth of 2 to 4 inches. In regions that have hard winters, it's best to plant approximately 3" to 4" down to prevent frost damage. Spacing from row to row is completely optional and will likely depend on how much garlic you grow. If you are growing more than a few pounds, it makes sense for row distance to be around 18 inches which allows you to get a tiller or other mechanized weed control in between rows. Weed control is critical because garlic is a very bad competitor of weed roots. Weeds win usually. If you're planting a smaller amount, you can use an intensive method of planting using spacing of 6" x 6" x 6". That saves a lot of space (see How Much Garlic section). Either way, you still must pull the weeds. I hate weeds.

Plant Maintenance

There are many things that you'll want to consider once you've planted your garlic in the fall.

1. Weeding - It is absolutely critical to keep weeds out of your garlic plot because the roots of the garlic plant cannot compete with weed roots. It is estimated that bulbs can be 10-20% smaller if weeds are left to rule your garlic garden. Take some time to get those weeds out! There are a number of methods to use including:
 - o Good old-fashioned hand pulling
 - o Tilling - Be careful to not damage bulbs if row spacing is less than 12 inches.
 - o Flame removal - There are a number of good products on the market for flaming the weeds out, and your back will thank me!
2. Watering - Garlic needs water especially in the early spring to July when the plants undergo most of their growth. As the plants mature toward mid-summer (late June) it's good to diminish the amount of water as over-watering can lead to mold or fungus issues. It is good to stop water about 2 weeks prior to harvest.
3. Scape Removal - Hardneck garlic varieties produce scapes (rarely do softnecks). In early to mid-June, the garlic plants will begin to grow out the scape. The scape grows out of the flat base of the garlic bulb and flowers producing seeds. The scape is shot up by the garlic plant and initially grows erect (sometimes bends or coils during the growth). This is the time when the scape is most tender and best for cooking. Scapes have a mild garlic flavor with a texture resembling asparagus. To allow the garlic plant to focus all of its energy on growing a big bulb, it is recommended to cut the scapes. To cut your scape, wait until the center stalk completely forms and grows above the rest of the plant. As it grows up it will begin to curl or spiral upward. At that point, cut the stalk as far down as you can without cutting any leaves off. Scapes keep well for several

weeks in the refrigerator. See our [recipe section](#) for a great pesto that can be made from the scapes!

If you spend just a little time with your garlic to do these important maintenance items, you'll be giving your plants the best chance to be optimal.

Harvesting

Many people ask us about the right time to harvest. The reality is that it's difficult to pick the perfect time to harvest those bulbs. One thing is very certain; try to harvest on a nice dry day. A great rule of thumb is to look to the leaves as a good indicator of readiness. Generally, when several of the leaves have turned yellowish-green with the tips turning brown a bit, is a great time to harvest. Some say you can use the 60/40 rule to harvest when 60% of the leaves are green and 40% are brown. You can always dig up a bulb or two to inspect their readiness prior to harvesting your entire crop. Pitchforks or shovels work well to harvest but be careful not to bruise those bulbs! You don't even have to clean off the bulbs until they've been hung up and cured for several weeks. Some people like to wash off their bulbs, but our experience has been this practice generally leads to bulb wrappers that are wrinkled and look less attractive. Also, this can increase any fungal activity which you certainly don't want to happen.

Once you have the bulbs out of the ground, put them in a shady area to dry out a bit. Don't leave them laying in the sun as the outer layers can burn in a very short period. Leave the stem and leaves attached to the bulb for curing.

Asiatic and Turban types generally harvest earlier in the season, so be vigilant with those plants. Don't wait for the leaves to fall over because it's too late at that point and can result in poor looking and storing bulbs.

Curing

Garlic must be cured for 2-4 weeks after harvesting. Curing them well will greatly increase their storage life. A great practice is to tie your plants together near the top of the leaves after harvest and hang them in bunches of 5-10 plants in a very well-ventilated, shady place. We've found the best curing temperature is around 70 degrees F to let the bulb dry in a more gradual fashion. For many folks that is pretty hard to achieve with the Midwestern summer sun glaring down in late July or August. Do what you can to keep them dry and shaded as that's most important. If you have a cool, well-ventilated basement, that's another good option for curing.

You'll know the bulbs are cured well when the stems are nice and dry (brown); no wetness should be in the stems when you cut them. Once they're cured, cut the stems and leaves leaving about 1 to 2 inches of stem on the bulb.

If hanging your plants won't work or you don't have the space, you can just lay them flat on a table to dry in a very well-ventilated, shady place.

Storage

If you want that garlic to last, you'll have to take a number of things into consideration including how well it was grown and cured, the variety, temperature and humidity. If the plants didn't have good fertilization or water, it won't make the plants any better if you store them well. It is well-documented that certain garlic types store longer than others; Silverskins (softneck varieties) store the longest, then porcelains and purple stripes, next Turbans and Asiatic and Rocamboles coming in last. Some years there are exceptions, but that is generally what goes down.

What are optimal storage conditions? That's up for debate, but we've found that if you adhere to the following points, your garlic will reach its optimal storage life:

- Keep temperature around 60 degrees F
- Keep humidity around 50%
- Keep the bulbs well-ventilated

If the temperature gets below 55 degrees F for more than a few weeks, the plants tend to sprout prematurely and if the temperature goes above 70 degrees F, they start to dry out. If humidity is too high for extended periods of time, fungus can start to grow. If the humidity is too low for extended periods of time, the bulbs begin to dry out. Yeah, it's tough for the common man to achieve, but try to be somewhere in those ranges and the bulbs will store well. For the general population, storing in an air-conditioned house will probably be fine. If you have a basement that doesn't go below 55 F, you should be in good shape too.

Now go enjoy a martini with some garlic-stuffed olives. You've earned it!

Diseases and Pests

Another pretty important aspect of growing a great garlic crop is to be aware of diseases which can adversely affect your plants. It is generally a consensus among growers that the best way to prevent most diseases and pests is to buy good, healthy seed stock

from reputable growers. Be sure to inspect your bulbs when they arrive and burn anything that appears unhealthy. Below are the main culprits:

1. Nematodes - These little pests live inside the garlic plant and eat away at the bulb and leaves. They are somewhat illusive hiding away in the soil for many years before appearing to wreak havoc on your plants.
2. White Rot - One of the most devastating diseases for garlic is white rot which is a nasty fungal infestation of the plant. It can wipe out large sections of your garlic and leave tiny remnants called sclerotia that can remain in the soil for decades. If you find any garlic with this infestation, burn the plants and be sure to not compost them.
3. Thrips - These are another very tiny pest that harms the garlic plants by sucking their juices and scraping at the leaves. Plant leaves may turn pale, splotchy, and silvery, then die. Injured plants are twisted, discolored and scarred.
4. Wireworms - Wireworms are the larvae of the click beetle living in the soil for 3 to 6 years before becoming a beetle. Extensive root damage will cause a plant to wither or at least stunt its growth. Frequently, wireworms bore their way into the outer layers of a bulb leaving an unattractive but not contagious mark that can often be removed by peeling off a few layers.
5. Bulb Mites - Bulb mites are a problem of garlic that can go unrecognized unless you know what you're looking for or have your bulbs inspected by a plant health laboratory. They can reduce stands, slow plant vigor, and increase post-harvest diseases. Bulb mites have a very wide host range, but cause most of their damage to onions and garlic. Species from the genera *Rhizoglyphus* and *Aceria* are the most common garlic parasitic mites, with the latter being known as the dry bulb mite. Bulb mites can overwinter in soil and also survive in stored garlic. They can damage garlic in the field, but are particularly troublesome in storage. Their feeding can cause desiccation and creates wounds that provide an ingress for bacteria and pathogenic fungi such as *Fusarium* and *Penicillium*. In the field, mites are usually not seen on the bulb but feed mainly on the roots and basal plate. In storage, mites move into the garlic bulb.