

FRUITS OF OUR LABORS 2016 GARLIC PLANTING GUIDE

WHAT IS, OR SHOULD BE, “SEED” GARLIC?

“Seed” garlic is the common terminology for garlic planting stock, much like “seed” potatoes. Garlic is increased by planting the cloves found within each head of garlic. These cloves are effectively clones of the original head, keeping the characteristics of a garlic strain by division. Planting one clove results in one full garlic head the next year. Think of the clove itself as a food storage unit for the future growth of the garlic.

Large garlic cloves have more “food” from which roots and early top growth benefit. A good comparison would be tulip bulbs; the bulbs of a tulip variety bear flowers of that variety and are propagated by division or tissue culture. Different size grades of tulip bulbs are standard fare, and the largest planting stock yields the best, largest flowers. Garlic heads and bulbs are informally offered at what each grower/seller might decide is “planting stock” size, but sadly there are wide misconceptions within the buying public about is “seed grade” garlic. Some very tiny “seed” garlic with little potential of growing well or even surviving has been pawned off on unsuspecting gardeners. Minimum two inch diameter heads are the standard planting “seed grade”. Accept nothing less, and pay more for larger grades if offered.

Ideally, a large diameter garlic head relates to an average of large sized garlic cloves within that garlic head. And, the bigger the cloves planted, the better probability the garlic crop will handle stress and result in pretty decent sized heads at harvest. Hence, buying large heads of garlic for “seed” garlic is the first, best way to safeguard performance and yield. Admittedly, this is an imperfect metric, but experience shows its wisdom.

COMMON TYPES OF GARLIC

HARDNECK GARLIC: refers to a very stiff stem, growing up to waist high. Hardneck garlic should grow an edible garlic scape, which should be removed for best sizing of the bulb. Hardneck garlic is divided into further general classes.

PORCELAIN: These are hardneck strains/varieties that are known for their huge cloves numbering 3 to 7, depending on the variety. Some of the biggest heads (3” to 4” diameter) can be mistaken for Elephant Garlic. Skins are bright white, but can have rose/purple streaks under the outer white layer. Cloves often have light rose/purple streaks as well. The large size of the cloves make them ideal for chopping and roasting. Flavor is hot and spicy, but without bitterness. Scapes are thick and succulent, the best of all kinds. Stalks grow up to waist high, and leaves are very dark green. **GERMAN EXTRA HARDY**, **GEORGIAN FIRE**, and **GEORGIAN CRYSTAL** are examples of Porcelain garlic.

ROCOMBOLE: These are hardneck strains/varieties that are known for their nice skin colors, hardness, and good keeping. The heads can be quite huge in diameter (3” +), are flattened/broad in shape, and contain 6 to 10 cloves of medium but varying size. There can be large cloves and small cloves within the same head. The very largest cloves can have two centers that have begun dividing again. This is why a planting can show 2 or 3 garlics growing from the same spot; you did not accidentally plant extra in the same hole. This happens about 5% of the time. Skins are streaked with purple and rose, cloves are tan/grey skinned. Medium size cloves are useful for all cooking/roasting. Flavor is earthy, medium spicy, with some sharpness that mellows nicely when cooked. Scapes are tasty, emerging after Porcelain varieties, giving a good succession of yummy edible tops. Stalks grow above knee high, and leaves are medium dark green. **RUSSIAN RED** and **PHILLIPS** are examples of Rocombole garlic.

AND OTHERS?: Other hardnecks exist, as shown by the BOGATYR strain/variety. Always admired for its beauty, Bogatyr has flattened heads and colored skins like Rocomoboles but the number and size of the cloves are of a Porcelain. The scape, stalk height, and leaf color are of Rocombole, but the flavor being of Porcelain. Then, it gets weird: Bogatyr can create what are called “throat sets”, which are clusters of bulbils on the stalk just above the head. And, when over ripe, Bogatyr will split open from the bottom. These are traits of Softneck types! There is a very unscientific label of “Purple Marble Striped” or some version thereof for this form of garlic. These are made up names, and little work has been done to tease apart the genetic origins of various garlic forms. To me Bogatyr represents an in-between form of Hardneck and Softneck, another manifestation from the wild foundation.

SOFTNECK GARLIC

Just like Hardneck garlic, there is lots of Softneck variations with many unscientific classifications. In general, Softneck strains/varieties are knee height with floppy stalks that never (rarely) produce a scape. It is the floppy neck that makes Softneck the braiding garlic of choice! Heads are fully white or white under rose/purple streaking and wash, with 7 to 20 cloves arranged in 2 rings. The cloves of the outer ring are about the size of a small Rocombole/Porcelain clove. Only the cloves in this outer ring are planted for “seed” garlic. The cloves of the inner ring are what I would call “shards”; small narrow odd shaped pieces. Diameter of Softneck heads can be large (3”), but rarely as big as Hardneck kinds. Although not producing scapes, Softnecks can produce “throat sets” of bulbils in the stalk just above the head itself. Softneck types are considered not as hardy as Hardnecks. Flavor is mild, warmly spicy, even sweet sometimes. The only garlic recommended for raw use in general consumption, and is very mild in pungency when cooked. For those that like garlic, but not a lot of garlic. Softnecks keep longer than Hardnecks; we've had heads that have kept into July. POLISH and RED INCHELLIUM are examples of Softneck garlic. Harder to grow consistent large sizes in Maine, but mild in flavor and very long keeping.

GARLIC PEST/DISEASE TESTING

Please note the correct use of the word “pest” in agriculture includes insects, animals, viruses, bacterium, and fungi (and a other things, but you get the idea). There are major garlic pests that MAY be spread by the “seed” garlic heads that you buy for your garden or farm. Chief and most serious among these are White Rot and Bloat Nematode. One of these more serious pests introduced to your soil (and then into any current garlic you have) can eliminate your ability to ever grow garlic and onions again. Botrytis, Fusarium, and Penicillium mold are also problems. Leek Moth and a few other insects are up and coming. Each year I find that many potential customers have never heard of these concerns. Keep in mind that your own current or past plantings of bulbs, onion sets, and other plant material might have already introduced these pests into your garden or farm. Clean and healthy purchased “seed” garlic can be infected by pests already present in your home plot.

There is no certification for “seed” garlic like “seed” potatoes at this time. I would like this to occur but there is plenty of push back by states and producers to maintain unregulated state-to-state garlic sales. It is my opinion that garlic stands at a precarious point in its commercial history. If diseases and pests do indeed get a foothold, the consequences are exponential for home gardeners and farmers. The best advice I can give is to ask to see test results, and withstand the ambition to become a collector of garlic strains. At this time, I would find it very risky to buy or be given a single untested strain of garlic, regardless of legendary provenance or renowned flavor. It could literally be the President of the United States giving me garlic and I would still get the testing done. Trust but verify!

HOW TO GROW GOOD GARLIC

This advice is really only applicable to the northeastern United States, and northern half of the Midwest/Mountain West regions. I cannot speak to how things grow in the Southeast, Northwest, and Southwest. Please contact your local cooperative extension or garden club for more local experience.

PLANTING SITE: Garlic requires full sun and prefers a well tilled, good draining preparation for best growth. Prepare/pick your spot accordingly. Plan a crop rotation that does not return your garlic crop to the same spot for at least 3 years (4 years even better). **CLARITY:** Your rotation requires allium-free (onions, garlic etc) cycling for 3 to 4 years before returning to the same spot/plot.

NUTRITIONAL NEEDS: A soil ph of 6 to 6.8 has worked well for me. Garlic is also a heavy feeder, liking high organic matter and balanced but high levels of NPK. Get a soil test (yearly) and amend accordingly. Apply an NPK fertilizer during the Fall tilling/preparation of the garlic planting area. This fertilizer should be gauged to fulfill all of the P & K needs of the garlic, and about half of the N needs. Certified Organic folks will find dehydrated chicken poop useful for Fall, and non-organic folks will find standard 10-10-10 equally effective.

BUY ONLY PEST/DISEASE TESTED “SEED” GARLIC. TESTING SHOULD BE DONE YEARLY BY THE GROWER/SELLER. BUY 2” MINIMUM DIAMETER “SEED” HEADS FOR PLANTING.

DIVIDE THE HEADS: Before planting, pull apart the head of garlic into distinct cloves. This is done with fingers. I do this no more than 5 days before planting, and often the day before. Keep all cloves of all varieties separate; do not mix! You might never be able to figure out which are which if you are unfamiliar with garlic. A paper bag of cloves for each variety, well labeled, is fine until planting.

TIME OF PLANTING: Plant when freezing weather has begun, but the ground has not frozen solid. Most of the Northeast United States plants “seed” garlic between October 15th and November 15th. The coldest areas might plant October 1st and the warmest areas as late as December 1st. Consult your local cooperative extension and fellow farmers/gardeners for more specific timing in your region.

PLANTING SPACING: This varies by preference; some prefer 6” X 6” spacing, while some prefer 12” X 12” spacing. Wider spacing can mean bigger garlic heads at harvest, but only if fertility is good and water plentiful. I use a 10” X 10” spacing. Use a dibber or other tool (a piece of rebar works well) to create your holes, about 3” to 4” deep, by about 1” to 2” wide. Fingers are best to plant cloves, setting firmly one clove per hole. The broader bottom of the somewhat teardrop shaped clove should be at the bottom of the hole, with the pointy tip up. **PLANT CLOVES OF EACH VARIETY AS DISCTINCT ROWS OR BLOCKS AND LABEL WELL!!** Lightly rake the bed/area smooth, filling the holes with dirt in the process. I often use the backside (flat) of a steel rake.

TO MULCH OR NOT TO MULCH? In theory, 6” of loose straw mulch is applied following planting and is intended to provide Winter protection/insulation to the growing clove. That's right, you read correctly: the clove is hopefully growing lots of roots during the Winter. For many years I followed the practices of others and mulched with 6” of loose straw. But my mother and step-father use sawdust (not chips!!) also with good results. My friend Bruce has now shown me that planting into black plastic mulch (laid down in the Fall or course) works as well. The plastic mulch is kept on all the next season and reduces hand weeding. Bruce did not irrigate under the mulch in 2016 and still had nice sized garlic.

And finally, I did NOT mulch my garlic at all during the open Winter of 2015 (Maine) and had

very good results with everything except a small amount of loss of cloves in the Softneck types. The counter was that the Softneck crop was better than ever in size and vigor. I attribute this to much earlier emergence in the Spring for all types of the garlic. Usually, the straw mulch has degraded into a cold, wet, and even frozen mat of straw but Spring. I think this mat of material can delay emergence, and Softneck varieties struggle to push through this mat. My solution to the loss will be to either plant the Softneck a little deeper, or mulch the Softneck types only but remove the mulch as soon as possible before emergence.

I am not alone in this “no mulch” practice. Many growers in the coldest areas of the Northeast have discovered that mulch is not required, although Winter damage can occur. Good snow cover does the same job as the mulch, I suspect. I consider the “no mulch” practice one of many experiments worth trying, but **BEGINNERS SHOULD APPLY 6” OF STRAW MULCH**. Do not take chances when just starting out. Get familiar with garlic and its culture, and then maybe try something out of the ordinary and compare.

EMERGENCE: Spring arrives, and the green tips of your garlic start to show. In Maine, I have found two top-dressings of a nitrogen (N) fertilizer are needed for healthy, large garlic heads at harvest. For the Maine Spring, these applications happen sometime between April 15th and May 15th. Based on the Fall soil test and amount of N incorporated at that time (half in theory), I divide the remaining half into two applications. For Certified Organic folks, blood or fish meals are the best sources for top-dressings. For non organic folks, standard pelletized Urea is excellent. I time these feedings to right before a predicted gentle rain, not a downpour which will wash away much of your intended plant food. I do not recommend applying any fertilizer after the garlic has reached one foot in height; this can encourage more leaf than bulb growth later in the season.

KEEP YOUR GARLIC PLANTING AS WEED FREE AS POSSIBLE.

GARLIC SCAPES: Garlic scapes are the “tails” or “sprouts” that grow from the top of the stalk, usually thru June in Maine. The scapes make a loop-tee-loop and then straighten into an extended stalk topped with a cluster of what are known as bulbils. Bulbils, about the size of a large pea, are another way garlic propagates, and are little clones of the garlic just as the cloves are. Egyptian onions, walking onions, etc have similar structures often called “top sets” They are not true seeds.

Imagine in the wild, a garlic with its scape and bulbils atop that. When the wild garlic stalk topples over (since no one harvests it), these top set bulbils are now 2' to 4' from the original head/mother plant. What a great way to insure a new population that can grow without competing with the mother plant, and maybe escape any diseases plaguing the mother plant as well! This top set structure also contains the potential flowering parts of the garlic, but most people conclude that domesticated garlic has lost the ability to flower naturally.

As garlic growers, we want to remove the garlic scape as it emerges and begins to make its first loop. This is easily done by snapping the scape stem right where it takes its bend, usually in mid to late June in Maine. There are some folks that say keeping the scapes on makes no difference in size to the harvested head and helps the garlic store longer. Both assertions are false. Leaving the scapes on will stunt Hardneck garlic. Period. I have experimented and you do not have to experience the same folly. The storage of garlic is related to good soil nutrition affecting garlic growth/maturity, proper curing, and good storage conditions. Period.

Many of you are familiar with the edible nature of scapes; the green stem is diced into stir fries & sauces, pureed into scape pesto, whatever you can imagine. The pale, pointy tip is not really edible, more fiber than flavor. In general, Hardneck types have scapes, and Softneck types do not. After growing a lot of garlic, I have seen some interesting variations occur where a Softneck grows a scape and a Hardneck does not! I find Porcelain varieties to have the thickest, most succulent scapes.

WHEN & HOW TO HARVEST: First, I want to say that the best day to harvest garlic is a dry day, when the garlic and the soil is not damp or mucky. I begin harvest in Maine around the 20th of July for the Softneck garlic and around the 25th of July for Hardneck garlic. Other places south of me can be harvesting as early as the first week in July. But this timing is based on the leaves of the garlic: the bottom-most two leaves will be almost entirely shriveled and the third wilted and maybe the fourth leaf starting when the bulb is ready. But I always pull a sample of each type around 15th of July to see if the head of garlic has started to have well-formed cloves. Heads do not really begin to size up in earnest until a few weeks after the scapes form. That last month of growth before harvest is when the garlic puts its growth into the below ground bulb. It is amazing to see a fifty cent piece or silver dollar sized garlic in mid June turn into a 3” diameter bulb at harvest a month later! So do not fret if things are small for a while; its normal.

Some of us have light soil types and we can just grasp our garlic stalks and pull them out of the ground by hand. Some of us have to dig each head out with a shovel. Farmers often use what is called a bed-lifter or under-cutter. I do not recommend using potato diggers; too much potential damage that can introduce decay. Regardless of required method, shaking clumps of dirt off the roots is good practice. I do not recommend washing/rinsing garlic at harvest: this can allow moisture between the skin layers of the garlic and moldy issues. Simple Rule: harvest dry, cure dry.

Fresh garlic makes for very potent eating!! Its wonderful, but beware!

IT IS VERY IMPORTANT TO KEEP VARIETIES OF GARLIC DISTINCT AND WELL LABELED DURING HARVEST AND CURING!!

CURING/DRYING: Immediately following harvest, garlic should be brought into a protected structure with excellent cross-ventilation. This shaded, dry, breezy environment is key to good storing garlic, free from rot. Barns with all the doors open, greenhouses with shade clothes and all sides/ends open, three or four-sided sheds/tents, well-ventilated garages with fans, these are all examples of useful structures. The key points are again: no sun but not pitch black, completely dry, and great airflow.

Many folks hang their garlic to dry in bundles. If this is your technique, do not put more than 6 to 12 heads in a bundle to hang. Check the bundles frequently, especially the stalks and leaves, for any mold issues. By bringing the stalks and leaves into the drying area, you bring a bunch of moisture containing “green” plant material with you. If the weather is wet and humid, this can really challenge the drying of the garlic.

I and many other growers are now cutting the garlic stalks at about 3” above the bulb at harvest, and leaving the tops in the field to be turned under. Only the bulbs themselves are brought into the drying area. Often tables with wire mesh tops are used. I have been using this process of cutting off the stalks in field for 6 years now, and I can recommend it without hesitation, especially for farmers. But, if you wish to braid Softneck garlic, obviously the tops must be left on!!

There are folks that say drying garlic with the tops on makes the garlic store longer. This is not true. The storage of garlic is related to good soil nutrition affecting garlic growth/maturity, proper curing, and good storage conditions. Period. I have done it both ways and there is no difference.

After harvest, the curing period usually takes 2 to 3 weeks. More “papery” skins on the garlic, dry stems (whether cut or left to hang), and a more soft, less intense, dry garlic odor are the signs curing has been accomplished. Trimming roots, cutting any stalks off, and peeling a layer or two of garlic “papers” off the heads can all be done now.

REPLANTING YOUR GARLIC: Congratulations! You now have your own garlic and can continue on forever if all goes well! Select your largest and healthiest heads from your cured crop. These best and finest are next year's crop! Set them aside, keeping varieties distinct, and get the ground ready to plant the next crop. Eat the rest!

With good culture, you should find that your own select “seed” garlic is larger than what you originally purchased. If the size does not increase over a few years, refer to your soil test to see if something is too abundant or too deficient. If you plan to give away your garlic to friends and family for them to plant, please send samples of your garlic crop away for pest/disease testing. This reassurance helps garlic help us all for years to come.

STORAGE: On a commercial level, temperatures just above freezing (35 to 40 degrees F), seem to be good storage for garlic. On a home level, a cool dry dark pantry of 50 degrees F works pretty well. Porcelain garlic keeps until about February/March, Rocombole garlic keeps thru about April, and Softneck garlic can keep as long as May or June!

ENJOY!!!