

Time to Plant Garlic

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Garlic is an important crop for many market growers in Virginia. For direct marketers, garlic can be an important sales item to complement other early summer crop offerings. Though it requires advance site preparation and planning, garlic is generally an easy crop to grow, and one which lends itself well to organic production.

Like flower bulbs, garlic is a perennial bulb and performs best when fall-planted. It begins to root shortly after planting, makes top growth the following spring, and eventually begins to senesce, and is harvested by early to mid-summer. Garlic can be spring planted, but a chilling requirement must be met for the cloves to properly grow, and plants need to reach an adequate size before day length increases, which triggers bulb formation. To meet this requirement, spring planted garlic should be stored under refrigeration for at least 8 weeks prior to planting, and should be set as early in the spring as possible. Fall-planted garlic however, will obtain its chilling in the soil and has the advantage of gaining fall root growth and earlier maturity. If properly planted, cold temperatures per se will not damage most garlic varieties, but frost heaving of soils can affect newly formed roots.

Timing of garlic planting is important. In western Virginia early to mid-October plantings have been shown to be the best target period. This timing allows for good root growth and some advance top growth. Earlier dates may lead to too much tender top growth by winter; a later date may not allow adequate root development. For the Eastern Piedmont and southern regions of the state, best planting dates should be adjusted back accordingly, but still allow for adequate growing time prior to day-length cues for late spring bulb formation, and to provide for the 8 weeks of cold soil exposure for bulb chilling. November into early December may be good a good range for these areas, and growers will need to experiment to determine what works in their specific location.

Soil requirements for garlic include moderate organic matter levels and most of all, good drainage. A waterlogged soil will cause cloves to rot. Prior to planting, soil fertility should be amended to add 30-60 lbs of nitrogen/acre, with phosphorus and potassium

levels amended (depending on soil tests) at a 1:2:3 total nutrient ratio to added nitrogen. Composted organic matter should be added when possible. Incorporate amendments well into the soil. Most small-scale garlic growers utilize raised beds, especially if soils are heavy or poorly drained.

When planting, separate individual cloves from the main bulb and plant them about 4"-6" apart in the row. As a general rule, the larger the clove, the larger the bulb will be at harvest; thus medium to large size cloves should always be planted. Where harvest uniformity is of importance, advance sorting of planting stock may be useful if there is significant variance in seed clove size. On a raised bed, several rows can be planted, with each row 12-18" apart. Cloves should be set with tip up, and 1-2" below the soil surface.

Because garlic is a poor competitor, good weed control is essential. Though fall weed problems will be minor, spring and early summer weeds will need to be addressed. Start by mulching the soil with straw or other organic materials after planting. This will also help to alleviate frost heaving. In heavier soils, remove or rake back straw once growth resumes in the spring or excess moisture may rot developing bulbs. One to two light soluble fertilizer sidedressings (10-20lbs N/acre) during the spring will promote vigorous and uniform growth. During the growing season, be aware that garlic is susceptible to the same disease and insect problems as onions, such as thrips and various bulb rots. However garlic is relatively care free when given a well-drained site with good air circulation, and kept on a good rotation program with other vegetables.

Harvest garlic before tops completely die down, preferably with 4-6 green leaves still attached. Remove excess soil, but do not wash, and lay whole plants on screens or hang in small bunches to dry. Allow it to cure completely in a warm well, ventilated room. Watch for rotting bulbs, remove these and increase air circulation if needed. Curing will take about 4-6 weeks. At that time roots and tops can be trimmed, and outer dirty skins can be removed. Store cured garlic in a cool dry place. Remember all garlic varieties taste the same at harvest time, but after curing and some storage time, individual variety flavors will come out.

Garlic can be broken down into two basic groups, softneck and hardneck (top set) types. Most of the 250 million pounds grown annually in this country are softneck cultivars, with California leading production of this type. Softneck cultivars prefer milder climates, tend to more irregular in individual clove sizes, and lack the strong flavors of hardneck types. They do not produce a seed scape (flower stalk) during the bulbing period, which for hardneck types, should be removed or bulb size is compromised.

There are hundreds of varieties of garlic. A quick search on the web will reveal several companies that specialize in mail order seed garlic, and which offer a wide (and sometimes confusing) selection. Interestingly, garlic adapts to various sites and many different strains have been developed, each with claims of unique characteristics. Thus performance can be very site specific, and with selection over time, a grower may be able to encourage area adaptivity of a specific strain.

In general most small-scale growers produce hardneck types. Reports from growers in western Virginia indicate that the variety "Music" (or "Musik"), a hard neck type, has performed reliably. For a range of garlic strains/types to try, some worth experimenting with may include "Spanish Roja" and "Carpathian", (both rocambole types); also "Inchelium Red" "Idaho Silverskin" and "Persian Star", which are artichoke, silverskin and purple stripe types respectively. Keep in mind that these recommendations are based mostly on grower feedback, and not controlled university trials in this state.

This fall, we are implementing some initial trials to evaluate different garlic varieties in the Blacksburg area, and also are experimenting with planting into frost-killed cover crops. We are also interested in extended utilization of existing plasticulture beds, with garlic as a second crop. We will keep you posted as these experiments are harvested next summer.



Garlic scape



Hard neck garlic and cloves