

Growing Garlic in Montana

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Garlic has become very popular over the past decade and fortunately is one of the few plants that will do quite well in most areas of our state. It tolerates our cold winters and short growing seasons if planted at the right time and with minimum care, it will produce all the garlic the average family needs. If you grow good onions you can grow good garlic.

There are no wild types of modern garlic found anywhere in the world, but we believe today's garlic originated somewhere in Central Asia. It has been cultivated for at least 5000 years. The Egyptians wrote about garlic in 3200 BC and the Greek historian Herodotus reported that laborers who built the Cheops pyramid about 2900 BC lived mostly on onions and garlic. Four garlic bulbs were found in King Tut's tomb and the pyramid builders went on what might have been the first strike in history when their garlic rations were decreased. Roman laborers ate garlic regularly and Roman gladiators ate garlic specifically before combat. Over 2500 years ago, the plant spread from the Mediterranean area eastward into China, and the bulbs were used in Indian medicine at least as early as the 6th century BC.

Although we eat relatively little garlic, the bulbs themselves are an excellent source of selenium and a

good source of calories, protein, phosphorus, iron, and potassium.

Choose the right kind of garlic

Garlic is a close relative of the onion, shallot, chives, and leeks. There are three kinds of garlic usually offered in seed catalogs.

Softneck (*Allium sativum* var. *sativum*):

These garlic bulbs have necks so soft the harvested plants are easy to braid into a rope of bulbs. It is the strongest-flavored garlic and stores the best, but is slightly less winter hardy than the stiff-necked garlic.

Try the cultivars Dixon, Inchehium, and New York White ('Polish White').

Stiffnecked (*Allium sativum* var. *ophloscorodon*):

This is also called Rocambole garlic. It produces a hard scape (stalk) that makes a 360 degree coil, then forms a cluster of bulblets at its tip. It is the most winter hardy garlic and milder in taste and easier to peel than the softnecked. Unfortunately, it is difficult to braid because of the woody scape. By removing the scapes as they form you can increase bulb size by up to one-third. If you don't pinch off the scapes, use the bulblets for stirfry or plant them out next year to get full sized bulbs in 2 years.



'Roja', 'German Extra-Hardy', 'Purple Italian', and 'Blue Italian' should do well in your garden.

Elephant (*Allium ampeloprasum*):

This popular garlic produces large bulbs up to 1/2 pound in size (under highly fertile conditions). Its cloves are mild-flavored and easy to peel, but the plant is the least winter hardy of the common garlics and the bulbs will not keep as long.

Preparing the soil

Garlic does best on rich, fertile, well-drained soil high in organic matter and with a slightly acid pH. Since low pH is rare in most of Montana, keeping the pH the least alkaline you can will encourage good yields.

Planting time

There has been much discussion about the right time to plant garlic. Traditionally, garlic is planted in very early spring and harvested at the end of the summer. This schedule was worked out for more moderate growing seasons. The difficulty with it in Montana is that many locales really have no spring, going

almost directly from cold weather to hot. Because of the physiology of bulb formation this condition leads to disappointing yields.

Many gardeners have better luck planting garlic in the fall, anytime from the first frost to freeze-up. The plants develop a strong root system, overwinter, and are harvested the following summer. If you decide on fall planting, be sure to mulch your plants with about 6 inches of straw to protect them from winter heaving and desiccation. Omit the mulch if you can count on a snowcover for most of the winter. The plants will grow beneath the snow and may be two inches tall as the snow melts in spring.

If you plant early enough in the fall so that the plants send up several inches of leaf growth, be sure to protect them from deer which will eat the leaves down to the ground.

Planting

Store bulbs for planting stock at temperatures between 40° F and 50° F. If they are stored below 40° F, bulbs on the resultant plants will be rough and mature too early. The early maturity can result in smaller bulbs and lower yields. If the bulbs have been stored above 50° F, their sprouting and maturity will be delayed, which could also reduce yields.

Each bulb is made up of several cloves held together by a thin membrane. Each clove consists of two miniature leaves and a vegetative bud. Separate the cloves just before planting and plant only the larger outer ones. Discard the smaller inner cloves, since the size of the resultant bulb is directly related to the size

of the clove planted. Plant small cloves and you'll get small bulbs.

Turn under about 5 pounds of 5-10-10 fertilizer or equivalent per 100 square feet before planting. Work some compost or other rotted organic material into the soil at this time.

Set the cloves into the soil right-side up about 2 inches deep and 4–6 inches apart in rows about 12 inches apart. Five feet of row will satisfy the average person for one year. You'll need about 1 pound of cloves to plant 20 feet of row. Garlic does best when planted in a sunny location but will tolerate partial shade.

How garlic grows

Garlic is a cool season plant. It makes all of its leaf growth while the temperatures are cool and the days short. As the temperatures warm and the days lengthen, the plant stops making leaves and begins to form bulbs. A large amount of leaf growth can support large bulbs. Spring-set plants often have too little time to produce enough top before they begin to bulb, hence the disappointing yield. Additionally, exposure of the cloves or young plants to temperatures of between 32° and 50° F for one to two months hastens subsequent bulbing under long days. So exposure to moderate winter conditions is beneficial, producing good yields, while bulbs stored or plants grown in temperatures above 77° F may not bulb at all. In a nutshell, cool weather and short days make garlic leaves; heat and long days make the bulbs. If the plants have poor leaf development, the bulbs will be puny.

Pinch off the scapes on stiff-necked garlic and the flowers on Elephant garlic as they form to increase bulb size.

Fertilizer and irrigation

Garlic has a small, shallow root system. Irrigate regularly to keep the plants growing but slack off a bit when the bulbs begin to form (early July). Sidedress with a complete fertilizer like 5-10-10 when the tops are about 4 inches tall and again about a week after bulbing begins.

Harvest

Garlic bulbs mature in late July and August. The time to harvest is when about half the leaves on the plant have browned and dried. Loosen the soil with a fork, gently pull the plant from the ground, shake off the soil from around the roots without bruising the bulbs, and air dry the bulbs (with tops intact) in the shade for a few weeks. Placing the bulbs on a window screen or a rack made from poultry fencing or hardware cloth works well. When the bulbs have cured, remove the tops about an inch from the top of the bulb and store the bulbs in a wide-meshed bag, such as an onion or grapefruit bag, hung in a well-aerated location. If you wish you can braid the tops of softnecked garlic together into a garland to hang in the kitchen or garage.

Sound garlic bulbs will keep for a few months when stored at ordinary temperatures but will keep longest (6 to 8 months) if stored near freezing at 65 to 70 percent relative humidity. The bulbs will sprout if stored above 41° F.

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File under: Horticulture
C-7 (Vegetables)

Revised September 2000 4721000299