

Jerusalem Artichokes



Jerusalem Artichoke

The Jerusalem artichoke, (*Helianthus tuberosus* L.), also known as sunchoke, can be produced throughout the United States. However, the plant is better adapted to the northern two-thirds of the country than the southern third. Jerusalem artichokes are also often used for pickling purposes. The fresh tuber tastes like a water chestnut and is used in salads. Tubers can also be cooked like potatoes.

The edible portion of this member of the sunflower family is the tuber or swollen end of an underground stem, which in some respects resembles a potato. However, unlike most starchy vegetables, the principal storage carbohydrate in sunchoke immediately after harvest is inulin rather than starch. When consumed the inulin is converted in the digestive tract to fructose rather than glucose, which can be tolerated by diabetics.

Jerusalem artichokes should not be confused with the Globe artichoke (*Cynara scolymus*). In globe artichokes, the edible portion is the globular flower.



Soils

This crop is adapted to various soil types and cultural conditions. However, for best results, it should be planted in fertile sandy loams or well-drained river bottoms in which tubers are easier to dig. Generally soils suitable for potato (*Solanum tuberosum*) and corn (*Zea mays*) production are suitable for Jerusalem artichoke production.

Fertilizer

Generally it is suggested that 6-12-6 be broadcast in the row. This rate may be increased on soils low in natural fertility.

Planting

Planting should be early in the spring, when the soil can be satisfactorily worked. Later planting results in reduced yields. Whole tubers or pieces of tubers that are no less than two ounces and have two or three prominent buds should be planted. Smaller seed pieces will reduce yields but larger seed pieces (over 2 oz) will not significantly increase them. Do not allow cut seed pieces to dry before planting. Plant 3 to 5 inches deep, in rows 36 to 42 inches wide with 15 to 24 inches between plants.

Cultural Management

Cultivate shallowly and only as needed to control grass and weeds as the planting is being established. During plant establishment, grass and weed problems will be reduced by shading since plants grow over 6 ft high. Tubers begin to form in August and may become 4 inches long and 2 to 3 inches in diameter.

Harvesting

The crop should not be harvested until after frost. Tubers dug later in the season are sweeter but have less inulin. Tops should be cut with a mower. Plow open the furrow, pick up the tubers, place in field containers, and remove from the field. Hand rakes can be used to great advantage in locating the tubers. Because of their small size it is necessary to use a small, modified potato harvester to mechanically harvest the tubers.

Handling and Storage

The skin of Jerusalem artichokes is very thin. Care should be taken in handling to avoid skinning, cuts and bruises. The skin is also susceptible to rapid moisture loss so the crop should be put in storage immediately after harvest. Cold storage facilities should have high humidity (85 to 95% relative humidity) and a temperature near 32 °F. Under these conditions, tubers can be kept for several months. If the tubers are to be washed, fresh water sanitized with bleach should be used.

Pests

Very little information is known about insects on Jerusalem. Very few pesticides are labeled on this crop. Few diseases are reported to affect Jerusalem artichoke. The primary disease is Sclerotinia (white mold), which can cause early wilt, stalk rot and degradation of the tubers. This pathogen also can cause severe yield reductions in dry edible bean, sunflower, and soybean.

If possible, susceptible crops should be rotated with small grains or corn. Avoid close rotations with dry edible beans, sunflowers, safflower, mustard and soybeans. Diseases such as downy mildew, rust and southern stem blight have been reported but have not been of economic concern. No fungicides are currently labeled for Jerusalem artichokes.

Precaution

The Jerusalem artichoke is a very strong growing perennial and can become a weed problem. Since it is nearly impossible to harvest all the tubers in a field or garden, there will be a large number of volunteer plants the following spring. If you do not want to continue the crop the following year, it is important to destroy all these volunteer plants before they can set tubers in August.

Summary

- Plant early in spring as soon as the soil can be worked properly.
- Plant in 36- to 42-inch rows and 15 to 24 inches between plants.
- Cover seed 3 to 5 inches deep.
- Leave crop undisturbed until killed by frost.
- Store tubers at high humidity and a temperature near 32 °F.