



GROWING JERUSALEM ARTICHOKES

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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. Most areas of North Carolina are satisfactory for producing the crop although yields are not as good as in cooler climates where the crop is better adapted. 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*), which is not adapted to N.C. conditions. In globe artichokes, the edible portion is the globular flower.

Varieties - There are few distinct varieties known. The literature mentions *Mommoth French White* and/or *French White Improved* as varieties, but it is believed that in most cases existing stocks are mixed to such a degree that strains, rather than true varieties, exist. A few varieties are listed and available from seed companies.

Variety	Description	Company/Location	Phone
Stampede	Early yielding (90 days); white	Johnny's Selected Seed Albion, MA Garden City Seed Victor, MT	207/437-9294 406/961-4873
Fuseau	Long, straight, knob-free tubers; white	Southern Exposure Seed Exchange, Earlsville, VA	804/973-4703
Red Fuseau	Early yielding; elongated; smooth maroon-red skinned	Garden City Seeds, Victor, MT	406/961-4837
No Name Listed	White	Gurney's; Yankton, SD	605/665-1930

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Interested growers should plant local stock which is known to be adapted to the area and produce acceptable yields. Since limited information about how well the varieties grow under North Carolina growing conditions, only small plantings should be considered to determine the most adapted variety before making large plantings. If local plant stock cannot be found, the following table lists some possible seed sources.

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 500 to 700 lb per acre of 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 0F. 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.

Yields - There is considerable variation in yields but generally N.C. growers may expect from 5 to 7 tons per acre.

Pests - Very little information is known about diseases and insects on Jerusalem artichoke in North Carolina. Very few pesticides are labeled on this crop.

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. It is important to destroy all these volunteer plants before they can set tubers in August.

Summary

1. Grow strains known to be high yielding and have good color.
2. Use only healthy seed pieces.
3. Plant early in spring as soon as the soil can be worked properly.
4. Plant in 36 to 42 inch rows and 15 to 24 inches between plants.
5. Cover seed 3 to 5 inches deep.
6. Leave crop undisturbed until killed by frost.
7. Store tubers at high humidity and a temperature near 32 0F.