Jerusalem Artichoke, *Helianthus tuberosus*

**Overview**

Short description of *Helianthus tuberosus*, Jerusalem Artichoke

A stout, hairy herbaceous perennial which can grow 1-3m high in a single season. Rough, unlobed leaves are opposite on the lower part of the stem, becoming smaller and alternate higher up. Flower heads are sunflower-like, yellow, up to 10cm in diameter and borne late in the season. Seeds are encased in a tough wedge-like shell. Plants have fibrous rhizomes up to 50cm long which bear knobbly tubers resembling ginger at their tips.

**Description of *Helianthus tuberosus*, Jerusalem Artichoke status in GB**

Jerusalem artichoke is well established but scattered in southern GB but spreading steadily into lowland areas. Rare in northern England, Wales, Scotland and Ireland but likely to increase.

**Habitat summary: *Helianthus tuberosus*, Jerusalem Artichoke**

It is mostly found in man-made habitats including rubbish tips, disturbed ground and cultivated land.

**Overview table**

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<th>Terrestrial</th>
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<td>Native range:</td>
<td>Northern America</td>
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<td>Location of first record:</td>
<td>v.c.22</td>
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**Invasion history: *Helianthus tuberosus*, Jerusalem Artichoke**

**Origin**

It is a native of eastern North America.

**First Record**

It was naturalised in the wild by at least 1897.

**Pathway and Method**

It was cultivated in Britain by 1607 for its fleshy edible tubers which were considered a delicacy. It is grown on a small scale as a vegetable in gardens and in recent times it has sometimes been planted with other broad-leaved herbs in game cover and conservation strips by farmers. Plants can also grow from bird-seed.

**Species Status**

Casual or naturalised in widely scattered lowland localities in southern GB and apparently increasing. By 1999 it had been reported from 159 10km squares with more than half of those records made between 1987 and 1999. In Europe it is naturalised widely and is considered
invasive in some countries e.g. Slovakia, Romania and Hungary. In the United States it is a troublesome weed in many states and in Ontario, Canada.

**Ecology & Habitat: Helianthus tuberosus, Jerusalem Artichoke**

**Dispersal Mechanisms**

The plant can spread by tubers, rhizomes and seed. Tubers and rhizomes may be dispersed when plants are dug up and cast out of gardens; soil moved from one place to another may also be infested. In Romania, small rodents and water (rivers) are noted as agents of distribution of rhizomes and tubers. Seed is palatable to birds and they can disperse it away from planted stock. However, seeds appear to be infrequently produced in GB’s climate, and seedlings are more likely to originate from split bird seed.

**Reproduction**

It is a monoecious species, bearing compound inflorescences (the ‘flower heads’) after a hot summer. Flowers are pollinated by bees and other insects. Heavy, wedge-shaped seeds are sometimes produced in small numbers but foliage is normally cut down by GB autumn frosts before flowers can bloom.

**Known Predators/Herbivores**

Leaves are palatable to some livestock and pigs in particular are fond of the tubers, which they will dig up and eat. Fungal *sclerotinia* diseases, slugs and wireworms can also cause some damage to plants.

**Resistant Stages**

Under optimal growing conditions, each mature plant can produce 75-200 knobbly tubers each season, borne at the tips of the rhizomes. These tubers can survive up to two years in the ground but have the capacity to form as many as 6 shoots each even when they are buried up to 30 cm deep. The viability of the seed is not known here.

**Habitat Occupied in GB**

It is typically found on rubbish tips, in disturbed places and as a relic of cultivated land.

**Distribution: Helianthus tuberosus, Jerusalem Artichoke**

Most populations occur south of a line from the Wash to Aberystwyth and it is most frequent around London and the Home Counties extending across East Anglia. It prefers rich, moist soils in lowland sites and is rare in northern England, Scotland, Wales and Ireland.

**Impacts: Helianthus tuberosus, Jerusalem Artichoke**

**Environmental Impact**

Once established in a site it is difficult to eradicate and may form dense stands of vegetation several metres high. Plants grow aggressively and out-compete native vegetation. Its roots are known to be allelopathic, suppressing the growth of other species nearby.

**Health and Social Impact**

It is not harmful to human health – in fact the tubers have been cultivated in parts of the world for a variety of useful products including vegetables, alcohol, dietary and medicinal products, biofuels, industrial fructose and animal feed. However, tall clumps of the plant may interfere with enjoyment of scenery or natural situations.

**Economic Impact**

When Jerusalem artichoke invades cultivated ground even just a few plants can have a detrimental effect on the crop species, severely reducing productivity and yield. It competes with all other plant species and is difficult and costly to eradicate.

**References & Links: Helianthus tuberosus, Jerusalem Artichoke**

**Identification**


**Biology, ecology, spread, vectors**

Distribution map from the NBN Gateway: [www.searchnbn.net/searchengine/search.jsp?tab=1&pg=1&searchTerm=Helianthus+tuberosus](http://www.searchnbn.net/searchengine/search.jsp?tab=1&pg=1&searchTerm=Helianthus+tuberosus)

[Ohio Perennial and Biennial Weed Guide: www.oardc.ohio-state.edu/weedguide](http://www.oardc.ohio-state.edu/weedguide)
Management and impact


General

https://www.cabi.org/isc/datasheet/26716


Species account on Weedipedia: www.weedipedia.net

Species account on Wikipedia: http://en.wikipedia.org