EPPO Datasheet: *Heracleum persicum*

Last updated: 2026-04-09

The original datasheet covered *Heracleum mantegazzianum*, *Heracleum sosnowskyi* and *Heracleum persicum*. Only relevant parts of the datasheet is present for each species in this dynamic datasheet.

IDENTITY

Preferred name: *Heracleum persicum*
Authority: Fischer
Taxonomic position: Plantae: Magnoliophyta: Angiospermae: Campanulids: Apiales: Apiaceae
view more common names online...
EPPO Categorization: A2 list
view more categorizations online...
EU Categorization: IAS of Union concern
EPPO Code: HERPE

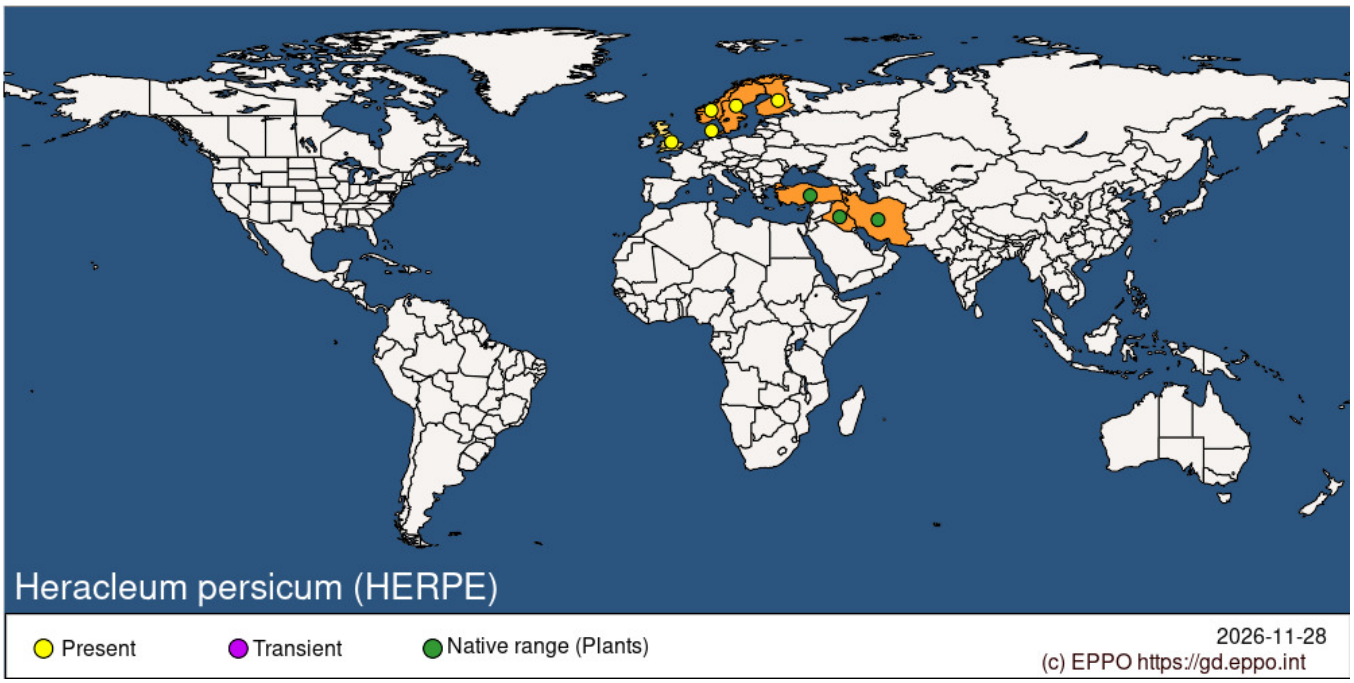
Notes on taxonomy and nomenclature

Heracleum persicum was described in 1841, and some subsequent identifications of *H. persicum* were probably mistaken for *H. mantegazzianum* and *H. sosnowskyi* (Nielsen *et al.*, 2005). In Norwegian, Danish and Swedish floras, the plant has been called *H. laciniatum*, but recent morphological and genetic analyses have shown that it is synonymous with *H. persicum* (Jahodová *et al.*, 2007b; Jahodová *et al.*, 2007a; Lars Fröberg, unpublished data).

GEOGRAPHICAL DISTRIBUTION

History of introduction and spread

Heracleum persicum is native to Türkiye, Iran and Iraq (EPPO, 2020). Its non-native distribution is restricted to northern countries of the EPPO region (e.g. Denmark, Finland, Norway, Sweden). Genetic analyses of plants from the native and introduced range show that European populations originated from different sources (Falahati-Anbaran *et al.*, 2021).



EPPO Region: Denmark, Finland, Norway, Sweden, Türkiye, United Kingdom
Asia: Iran, Islamic Republic of, Iraq

MORPHOLOGY

Plant type

H. persicum is a herbaceous, polycarpic (it blooms several times during its life) and perennial seed-propagated herb (EPPO, 2020).

Seeds of the three species are illustrated in Figure 1.

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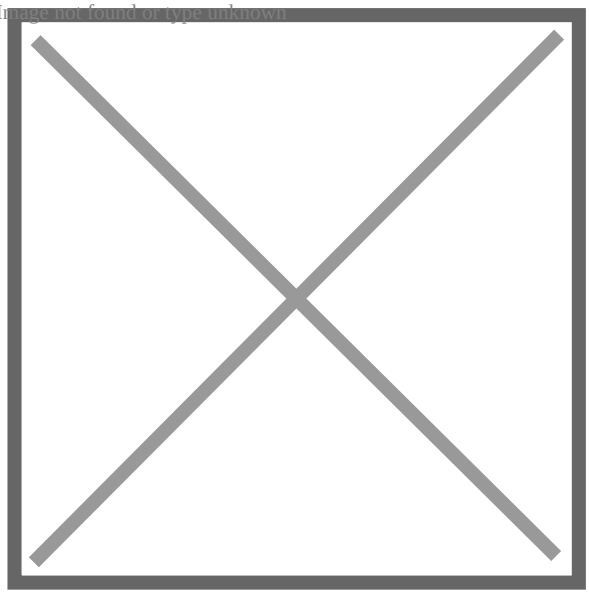

FIGURE 1

Drawings of *H. mantegazzianum*, *H. sosnowskyi* and *H. persicum* seeds by J. C. Schou (in Nielsen *et al*., 2005).

Heracleum persicum can easily be confused with *H. mantegazzianum*.

Plants are most often 1–2?m in height, especially for newly established plants, but can reach 3–4?m. Plants often have more than one stem. Stems are purple, 1.5–2?cm thick, with large even areas of purple to purple-red colour at the base. Leaves are more divided than for *H. mantegazzianum*. They may be up to 2?m in length and deeply incised with very sharp points, with 2–3 pairs of lateral leaf segments and less deeply serrate. The whole plant smells of aniseed.

Umbels of *H. persicum* are more convex than those of *H. mantegazzianum*, which has flat umbels. Whereas *H. mantegazzianum* has especially large umbels with side umbels as well developed as the main umbel, and all umbels develop fruit, the side umbels of *H. persicum* are rather small compared with the main umbel and often do not develop fruit. According to Lars Fröberg (Fremstad & Elven, 2006), another characteristic, which may be used in distinguishing the two species, is the shape and placement of hairs on the two plants. *Heracleum mantegazzianum* has transparent, very curly hairs that stand out at 45 degrees from the stem. *Heracleum persicum* has somewhat stiffer and whiter hairs, which stand straight out from the stem.

The morphological characteristics of *H. persicum* vary according to the environmental conditions in which it grows, making identification difficult. Compared to *H. mantegazzianum* and *H. sosnowskyi*, there is a lack of studies on *H. persicum* (but see e.g. Zakhozhiy *et al.*, 2022, Falahati-Anbaran *et al.*, 2021).

Heracleum spp. hybridize easily, thus causing confusion in identification. The common *Heracleum* species in Europe, *H. sphondylium, H. sibiricum* and the corresponding common species in the USA, *H. montanum* Bartr. (= *H. lanatum* Michx.) are not easily confused with the invasive hogweeds, being much smaller, rarely over 2?m high, with grey-green, pubescent and less acutely toothed leaves.

BIOLOGY AND ECOLOGY

General

The plant has a growth and development similar to those of *H. mantegazzianum*. Pollination by insects is common, but self-pollination also occurs. The species is spread by seeds and does not reproduce vegetatively. Because the side umbels of the plant are often poorly developed and do not always produce ripe fruits, the potential of *H. persicum* for seed production is thought to be inferior to that of *H. mantegazzianum*. The leaves of *H. persicum* wilt in the autumn, but the plant overwinters with buds below the soil surface. The plant needs one or more years to build up a nutrient reserve in its root system to be able to flower.

Habitats

Heracleum persicum colonizes the same habitats as *H. mantegazzianum*: areas strongly influenced by anthropogenic factors, urban areas (along roadsides and railroads), grasslands and wetlands (Klingenstein, 2006). It is common in meadows, pasturelands or agricultural fields that are no longer in use and in ruderal areas or wastelands, as well as in riparian habitats, growing along streams and rivers. It has been reported growing on mountainsides and on mountain slopes and in cracks where the soil layer is quite thin, but it is not known whether it will flower in this habitat. It has also been found in coastal habitats (beaches) where *H. mantegazzianum* has not been found. In Tromsø, Norway, *H. persicum* has been found growing among the seaweed vegetation on beaches. Its presence on unpopulated islands indicates that it may be spread with seawater (Alm, 1988; Alm & Jensen, 1993). In Norway it is becoming more common, growing at the edge of forests and has been reported as growing in birch forest (*Betula* spp.), probably because of the high light conditions of this ecosystem (Fremstad & Elven, 2006). It does not flower in the forest but survives for a long time in the shade under the trees.

Environmental requirements

Climatic preferences include temperate and cold climatic regions without a dry season, characterized by reasonable moisture and cold winters. Cold winters are required to ensure germination. Moist conditions are favoured for much of the year, but moderate summer droughts can be tolerated (Tiley *et al.*, 1996). Recently, several studies focused on climate modelling were published, but most of the data come from GBIF or iNaturalist, so they predict a restricted

spread to the east of Europe as a result of biased source data (Cuddington *et al.*, 2022).

Uses and benefits

Heracleum persicum has also been used as an ornamental.

PATHWAYS FOR MOVEMENT

The main pathway of introduction for all three species was plants for planting for use as ornamentals (especially for *H. mantegazzianum*) or as fodder crops or honey plants (especially for *H. sosnowskyi* in Russia and in the Baltic countries) (Laivinš & Gavrilova, 2003). Seeds may also be introduced involuntarily, as contaminants of soil and growing media, from used machinery, vehicles, plants for planting or footwear (EPPO, 2020).

Once introduced, *Heracleum* spp. reproduce very efficiently from seed, which are spread by wind (e.g. 4?m), water (up to several kilometres) and human activities (Laivinš & Gavrilova, 2003). Seeds can float along rivers for up to 3? days before they sink (Pyšek, 1994). In Latvia, seed has been observed to spread on frozen snow, where it forms a thin ice layer on the surface, and then wind can blow seeds over several kilometres (EPPO, 2020).

IMPACTS

Heracleum mantegazzianum, H. sosnoswkyi and *H. persicum* have negative impacts on biodiversity and on the environment in general, on human health and tourism.

Effects on plants

There are no records of direct impact on crops. *Heracleum mantegazzianum* is not normally a weed of crops but there are reports of its encroachment into crop fields, for example in potatoes in Sweden, and it has also been seen invading pastures. In Latvia alone, the total cost of the 2006–2012 control program of this species was estimated at 12 million EUR (Cabinet of Ministers Order No. 426, 2006).

Heracleum persicum, as well as the two other *Heracleum* spp., block sunlight from penetrating to the undergrowth and suppress other vegetation. The leaves of *H. persicum* contain allopathic substances which may act as growth inhibitors on other plants as the leaves decompose (Myras, 1978).

For these species, significant costs are incurred by the measures taken to control the weed in amenity and other areas and to turn the land back to agriculture, and this activity is also likely to increase soil erosion along stream banks where they occur.

Heracleum spp. can create stands that may range in extent from square metres to hectares; small patches, linear stands or fringes can be found. The density of populations may also vary: in large stands, it ranges from sparse growth (1–3 adult individuals/10?m^2) to almost entire ground cover (more than 20 adult individuals/10?m^2) (Nielsen *et al.*, 2005). The cover of *H. mantegazzianum* in the vegetation sampled in a German study varied between 1% and 95% (Thiele & Otte, 2007). In 31% of sampled plots, it was dominant, with cover exceeding 50%. The enormous height and leaf area of *H. mantegazzianum* are assumed to overgrow most (indigenous) plant species and hence to be in competition with them for light, absorbing up to 80% of incoming light in dense stands. A strong decline in species richness has been observed in abandoned grasslands and ruderal habitats in Latvia due to the presence of *H. sosnowskyi* (Nielsen *et al.*, 2005). In amenity areas, established colonies compete strongly with and rapidly replace most other plants except trees. Along riverbanks, it can almost totally replace the natural vegetation and threaten biodiversity, including fauna associated with (native) plants, building a ‘giant hogweed landscape’ (Nielsen *et al.*, 2005).

Nevertheless, since many stands of the species are linear, the biodiversity effects are often overestimated, as light can filter in from the sides (Starfinger & Kowarik, 2003). According to the study conducted in Germany by Thiele and Otte (2007), observed impacts on plant communities and local plant species richness are largely driven by successional changes following abandonment of land use or after large-scale disturbance. In the course of

succession, competitive native tall herbs, such as *Urtica dioica*, have similar impacts on resident vegetation. Therefore, these impacts could be seen as symptoms of human-driven changes rather than a particular effect of *H. mantegazzianum*. Moreover, although *H. mantegazzianum* affects up to 10% of the area of suitable habitats in the study area, it appears that regional populations of native plant species have not been endangered until now, as these co-occurring species are very common.

Heracleum mantegazzianum can lead to riverbank erosion through the suppression or exclusion of native species, which play an important role in riverbank stabilization. When *H. mantegazzianum* plants in dense stands die off in winter, they leave bare soil that can be eroded by rainfall or winter floods. Deposition of eroded silt can alter substrate characteristics in rivers and, for example, render gravel substrates unsuitable for salmonid spawning (Thiele & Otte, 2007).

Environmental and social impact

Hybrids are possible in the genus *Heracleum* (Gavrilova, 2003). Hybrids between *H. mantegazzianum* and native *H. sphondylium* are reported from Great Britain (McClintock, 1975) and Germany (Ochsmann, 1996). They are found in sites where the two species grow together, although they are not numerous (Grace & Nelson, 1981; Stewart & Grace, 1984). Hybridization of both *H. mantegazzianum* and *H. sosnowskyi* with the native *Heracleum sibiricum* is expected in Lithuania (pers. comm. Z. Gudžinskas). Hybridization between *H. mantegazzianum* and *H. sosnowskyi* is possible (Klingenstein, 2006).

Heracleum mantegazzianum, *H. sosnowskyi* and *H. persicum* contain photosensitizing furanocoumarins. In contact with the human skin and in combination with ultraviolet light, a toxic reaction can occur 15?min after contact, with a sensitivity peak between 30?min and 2?h causing burning of the skin. After about 24?h, flushing or reddening of the skin (erythema) and excessive accumulation of fluid in the skin (edema) appear, followed by an inflammatory reaction after 3?days. Approximately 1?week later, a hyper-pigmentation (usually darkening of the skin) occurs, which can last for months. The affected skin may remain sensitive to ultraviolet light for years. Although such photosensitized toxic reactions can be caused by other plants in the EPPO region, these *Heracleum* sp. are particularly dangerous because of the high intensity of the reactions and the large size of the plants. The public is not generally aware that such risks exist, so these plants present a real hazard, especially to children.

Dense infestations can seriously interfere with access to amenity areas, riverbanks, etc., and along roadsides, large stands can reduce visibility and result in road safety hazards. Obstruction of lake shores and riverbanks by stands of *H. mantegazzianum* affects anglers, water sports enthusiasts, swimmers, bird watchers, hikers and those working along river systems (Thiele & Otte, 2007). The costs of maintenance of roads may increase due to *H. sosnowskyi* (A. Garkaje, pers. comm., 2008).

A German study from 2003 assessed the economic impact of *H. mantegazzianum* to be more than 12 million EUR annually in the country, distributed among the health system (1?050?000 EUR), nature reserves (1?170?000 EUR), road management (2?340?000 EUR), municipal management (2?100?000 EUR) and district management (5?600?000 EUR) (Reinhardt *et al.*, 2003).

CONTROL

The EPPO Standard PM 9/9 (2) *Heracleum mantegazzianum*, *H. sosnowskyi* and *H. persicum* describes the control procedures aiming to contain and eradicate the three species.

Additional information can be found in Pergl (2017) and Rajmis *et al.* (2017).

Some countries developed dedicated legislation acts specifying control measures for these *Heracleum* species (e.g. Czech Republic https://invaznidruhy.aopk.gov.cz/zasady-regulace).

REGULATORY STATUS

In the United Kingdom, legislation requires that landowners should control the plant and prevent further spread

(Willoughby, 1996).

Heracleum persicum is on the EPPO A2 list of pests recommended for regulation and and is listed as (EU) species of Union concern.

PHYTOSANITARY MEASURES

All three *Heracleum* species are listed as (EU) species of Union concern, and as such their sale is prohibited and their movement in the EU is restricted. Phytosanitary measures for existing populations and preventing spread include managing the pathways. This can include preventing spread via unintentional transport of seeds or contaminated soils. Early detection is required to prevent the establishment of new populations and allow rapid eradication. Management practices can follow those detailed in the control section.

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Datasheet history

This datasheet was first published in the EPPO Bulletin in 2009 and revised in 2025. It is now maintained in an electronic format in the EPPO Global Database available at **https://gd.eppo.int**. The sections on ‘Identity’ and ‘Geographical distribution’ are automatically updated from the database in the online version of the datasheet.

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