Ambrosia artemisiifolia 简体中文 正體中文

System: Terrestrial

Kingdom	Phylum	Class	Order	Family
Plantae	Magnoliophyta	Magnoliopsida	Asterales	Asteraceae

Common name

ambrosia con foglie di atremisia (Italian, Italy), bitterweed (English), vermellapu ambrozija (Latvian, Latvia), kietine ambrozija (Lithuanian, Lithuania), Aufrechte Ambrosie (German, Germany), bastard wormwood (English, United Kingdom), hog-weed (English), ambrosia aux feuilles d'armoise (French, France), ragweed (English), artemisia del pais (Spanish), ambrosia de hojas de ajenjo (Spanish), ambroisie annuelle (French, France), blackweed (English, Canada), stickweed (English, Canada), carrot-weed (English, Canada), stammerweed (English, Canada), wild tansy (English, Canada), ambroisie élevée (French, France), Beifußambrosie (German, Germany), roman bitterweed (English, Canada), hay-fever weed (English, Canada), vadkender (English, Hungary), ambrozja bylicowata (English, Poland), marunatuoksukki (English, Finland), beiskambrosia (English, Norway), parlagfu (English, Hungary), ambrozja bylicolistna (English, Poland), pujulehine ambroosia (English, Estonia), bynke-ambrosie (Danish, Denmark), low ragweed (English), Roman wormwood (English), malörstambrosia (English, Sweden), annual ragweed (English), short ragweed (English), common ragweed (English), Hohes Traubenkraut (German, Germany), Aufrechtes Traubenkraut (German, Switzerland), small ragweed (English), Shinners ragweed (English, South Korea), Stalin weed (English, Hungary), petite herbe à poux (French, Canada), ambroisie à feuille d'armoise (French, France), Beifussblättriges Ambrosie (German, Germany), Beifussblättriges Traubenkraut (German, Germany), römischer Wermut (German, Germany)

Synonym

Ambrosia artemisiifolia , var. *elatior* (Descourt., 1821)
Ambrosia artemisiifolia , var. *elatior* f. *villosa* (Fernald & Griscom, 1935)
Ambrosia elatior , L.
Ambrosia media , (Rydberg, 1910)
Ambrosia artemisiifolia , var. *artemisiifolia*
Ambrosia artemisiifolia , var. *paniculata* (Michx.)
Ambrosia absynthifolia , (Michx., 1803)
Ambrosia artemisiifolia , L. var. *octocornis* (Kuntze, 1891)
Ambrosia artemisiifolia , L. var. *jamaicensis* (Griseb. 1861)
Ambrosia artemisiifolia , L. subsp. *diversifolia* (Piper, 1837)
Ambrosia artemisiifolia , L. var. *quadricornis* (Kuntze, 1891)
Ambrosia diversifolia , (Piper)
Ambrosia elata , (Salisbury, 1796)
Ambrosia elatior , L. var. *heterophylla* (Muhlenburg ex Willedenow, 1913)
Ambrosia heterophylla , (Muhlenburg ex Willdenow, 1803)
Ambrosia longistylus , (Nuttall, 1840)
Ambrosia glandulosa , (Scheele, 1849)
Ambrosia monophylla , (Rydberg, 1922)
Ambrosia paniculata , (Michaux, 1803
Ambrosia simplicifolia , (Raeuschel, 1797)
Iva monophylla , (Walter, 1788)

Similar species

Artemisia spp.

Summary

Ambrosia artemisiifolia is a summer annual herbaceous plant that is native to temperate North America in the United States and Canada. Also commonly known as ragweed this forb establishes easily in human impacted and disturbed areas in high abundance. It is considered an invasive species in Europe, parts of Asia and Australia, although it is not an extremely competitively aggressive species and is mainly considered a noxious weed that interferes with other cultivated crops. The main impact of this plant is the copious amount of pollen produced from male flowers that are allergens to sensitive people, compounding health problems like rhinitis, oculorhinitis, asthma and causing skin irritations.

view this species on IUCN Red List

Species Description

Ambrosia artemisiifolia is a summer annual herbaceous plant that is erect, with many branches (AWCNI, undated) and can reach heights between 1-2 metres (NRW, 2007) with a grooved, reddish, hairy stem (Wittenberg, R. (ed.) 2005). The leaves are opposite, compound, and toothed (Wittenberg, R. (ed.) 2005) reaching lengths of 4-10cm long (VTWIG, undated). The tops of the leaves are green and hairy, with white hairs adpressed on the underside of the leaf (Wittenberg, R. (ed.) 2005). Male flowers are green, small, 4-5mm, with bractless flowers arranged in a terminal spike located in the upper portions of the plant (Wittenberg, R. (ed.) 2005), often drooping (AWCNI, undated). The female flowers are located in the axils of the upper leaves, sessile, and inconspicuous in either small clusters or singly (Wittenberg, R. (ed.) 2005). The fruit of the common ragweed is a woody achene, 3-4mm long and 1-2mm wide, with 4-7 spine-like projections, resembling a crown (VTWIG, undated). The leaves are bright green on both sides with whitish nerves. On older plants the lower leaves can be arranged opposite and the upper leaves can be alternately arranged on the stem (C. Bohren., pers.comm., 2007).

Lifecycle Stages

Ambrosia artemisiifolia is a summer annual plant. Fruit and seed production begin after fertilisation around the middle of the summer and into the fall. Seeds are shed directly from the parent plant and most seeds land with proximity to the parent plant with a seed rain of 500-7300 seeds/square metre (EPPO, 2006). Seeds enter a dormancy period that requires a cold stratification in order to germinate (Bazzaz, 1970). Germination occurs in the spring with only a portion of the seed bank germinating while the rest of the seeds enter a secondary dormancy period (Bazzaz, 1970). The secondary dormancy of the seed makes this species well adapted at surviving in continuously disturbed sites (Bazzaz, 1970). Seeds have been known to remain viable after 20 years of burial with 85% germination rate (Lewis, 1973).

Uses

An essential oil of *Ambrosia artemisiifolia* acts as an antimicrobial, having antibacterial and antifungal compounds (Chalchat *et al*. 2004).

Habitat Description
Ambrosia artemisiifolia is commonly found in ruderal or waste sites associated with frequent and extensive disturbance regimes resulting from human activities. Roadsides, railways, gravel pits, construction sites, agricultural fields, waterways, urban areas, and private gardens are all sites that this species establishes easily and prolifically on (Bohren, 2006). Common ragweed is a pioneer species establishing after disturbance in early successional plant communities (Maupin & Apparicio, 2004). It prefers full sun and warm areas, with nutrient rich and slightly acidic soils (Wittenberg, R. (ed.) 2005) and can tolerate dry soil conditions (Maupin & Apparicio, 2004). The texture of the soil does not play an important role in establishment but the thickness of the organic layer is inversely related to its presence (Maupin & Apparicio, 2004).

Reproduction
Common ragweed is a monoecious plant with male and female sex organs occurring in different flowers located on separate areas of the same plant. Flowering period is daylength dependent (Bohren, 2006) and is from early summer to early autumn (Wittenberg, R. (ed.) 2005). This species is self-compatible (Genton *et al*. 2005), meaning that it can self-fertilise for seed production. The mechanism for pollination is through the wind, since the flowers are not attractive to insects (Genton *et al*. 2005).

General Impacts
Common ragweed is an abundant seasonal aeroallergen in late-summer to early fall (Wayne *et al*. 2002) resulting in millions of dollars annually in health care costs and lost labour hours (Bohren, 2006). In studies performed in Europe and North America, approximately 10-15% of the population is sensitive to the pollen of common ragweed (Bohren, 2006) causing rhinitis, oculorhinits, asthma, and dermatitis(Bass *et al*. 2000). *A. artemisiifolia* is also considered a weed pest in agricultural crops like sunflower, sugarbeet, corn and other cereal crops (Wittenberg, R. (ed.) 2005). It also displaces native vegetation in its introduced range especially after a disturbance such as overgrazing or construction which put competitive pressures on the native flora (Protopopova *et al*. 2006). *A. artemisiifolia* fruits are a food source for the bobwhite quail but can cause illness in livestock that ingest it (USGS-NPWRC, 2006).

Management Info
Preventative measures: Preventing an infestation is the most cost-effective approach to weed control. Preventative measures include maintaining healthy vegetation to inhibit the establishment of common ragweed, detection and surveillance along with proper land management to deter an infestation (NRW, 2007) and prevention of overgrazing, sourcing animal feed and hay, along with commercial agricultural seed (NWR, 2007). Hand-pulling of single plant stands should be combined with early detection and surveillance in areas with beginning infestation (C. Bohren., pers.comm., 2007). European scientists issued a Call for Action in 2008 to motivate responsible authorities to adopt measures to prevent further spread of ragweed in Europe and to control current infestations (C. Bohren., pers.comm., 2008).
Please follow this link to read the English language version of 'The "Guidelines for management of *Ambrosia*", Buttenschøn *et al* 2009 . The Guidelines are also available in Danish, French, German, Italian and Slovene. The Guidelines have been developed to provide European authorities, private landowners, gardeners, constructors, birdseed producers, trade companies dealing with agricultural products with scientifically based, but simple and operative practical management methods to prevent further invasion and reduce the abundance of common ragweed.
Please follow this link for detailed information on physical, mechanical, biological, cultural and integrated methods used to control the common ragweed compiled by the IUCN/SSC Invasive Species Specialist Group.

Pathway
Another introduction of *Ambrosia artemisiifolia* is thought to have occurred in France through the cultivation of potatoes and legumes (Chauvel *et al*. 2006). The plant was intentionally grown and cultivated in Ukraine for medicinal purposes and subsequently escaped from agricultural fields (Protopopova *et al*. 2006).The seed of *Ambrosia artemisiifolia* is often found in commercial bird mixes and is considered one of the main ways the species was introduced into several European countries. The species was found in contaminated cereal seed, like sunflower and sorghum and introduced by those means as well (Bohren, 2006).A common practice in neighbouring countries in Europe, particularly between Switzerland, France and Italy, building construction materials and substrates near borders are exchanged leading to contamination and facilitation by disturbance (Bohren, 2006).War has been cited as a mechanism of dispersal for this species since disturbance favors its spread and establishment. Horse-fodder for calvary is considered a contaminant source along with depots for stationing troops (Chauvel *et al*. 2006). In Yugoslavia war was responsible for the spread of *A. artemisiifolia* into fallow lands (Bohren, 2006).

Principal source: Bohren, C., 2006, *Ambrosia artemisiifolia* L.- in Switzerland: concerted action to prevent further spreading, Nachrichtenbl. Deut. Pflanzenschutzd., 58 (11), S.304-308, 2006, ISSN 0027-7479;
Wittenberg, R. (ed.) 2005. An inventory of alien species and their threat to biodiversity and economy in Switzerland. CABI Bioscience Switzerland Centre report to the Swiss Agency for Environment, Forests and Landscape ;
Genton, B.J, Shykoff, J.A., & Giraud, T., 2005, High genetic diversity in French invasive populations of common ragweed, *Ambrosia artemisiifolia*, as a result of multiple sources of introduction, *Molecular Ecology*, Vol. 14, no. 14, pp. 4275-4285.

Compiler: National Biological Information Infrastructure (NBII) & IUCN/SSC Invasive Species Specialist Group (ISSG)

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ALIEN RANGE

[1] ARGENTINA
[1] AUSTRIA
[2] BELGIUM
[1] BRAZIL
[7] CHINA
[1] CROATIA
[1] CZECH REPUBLIC
[1] EX-YUGOSLAVIA
[3] FRANCE
[1] GUADELOUPE
[1] HUNGARY
[1] ITALY
[1] JAPAN
[1] KOREA, REPUBLIC OF
[1] LITHUANIA
[1] MAURITIUS
[1] NETHERLANDS
[1] NORWAY
[1] PERU
[1] PORTUGAL
[2] RUSSIAN FEDERATION
[2] AUSTRALIA
[1] AZERBAIJAN
[1] BOLIVIA
[1] CHILE
[1] COLOMBIA
[1] CUBA
[1] DENMARK
[1] FINLAND
[1] GERMANY
[1] GUATEMALA
[1] INDIA
[1] JAMAICA
[1] KAZAKHSTAN
[1] LATVIA
[1] MARTINIQUE
[1] MOLDOVA, REPUBLIC OF
[1] NEW ZEALAND
[1] PARAGUAY
[1] POLAND
[1] ROMANIA
[1] SERBIA AND MONTENEGRO

[1] SLOVAKIA
[1] SPAIN
[1] SWITZERLAND
[1] TURKEY
[1] UNITED KINGDOM
[1] URUGUAY
[1] SLOVENIA
[1] SWEDEN
[1] TAIWAN
[1] UKRAINE
[5] UNITED STATES

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Managment information

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Summary: The main source article cited for its relevance to introduction, spread, health, ecology, management options and legal aspects for the control efforts in Switzerland for common ragweed.

Buttensch&#65533;n, Rita Merete; Stephanie Waldisp&#65533;hl and Christian Bohren, 2009. Guidelines for management of common ragweed, *Ambrosia artemisiifolia*.
Summary: The guidelines for management of common ragweed are based on the results of the project Strategies for *Ambrosia* control (AMBROSIA) funded by Euphresco 2008 &#65533; 2009. These guidelines are also available in 6 languages [Danish, English,French, German, Italian and Slovene] at the project homepage: EUPHRESCO project AMBROSIA 2008-09.
English version available from: http://www.agrsci.dk/ambrosia/outputs/ambrosia_eng.pdf [Accessed 17 March 2010]
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Summary: A report on some of the current efforts in collaboration between the Chinese and American educational institutions to work on invasive species and biological control agents. Common ragweed was among the species mentioned and describes some of the risks to biological control as well as a few species attempted as control.

European and Mediterranean Plant Protection Organization (EPPO), Sept. 2006, *Ambrosia artemisiifolia* in European countries: impacts and management options, EPPO Reporting Service, No. 9, Paris.
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Available from: http://archives.eppo.org/EPPOReporting/2006/Rse-0609.pdf [Accessed 12 March 2007]

Natural Resources and Water, Feb. 2007, Annual Ragweed *Ambrosia artemisiifolia*, Queensland Government fact sheet.
Summary: A factsheet produced by the Australian government giving plant description, habitat, lifecycle, and various control options.
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Summary: An article describing the failures of a biological control attempt in Russia using *Zygogramma suturalis* and the causes as to why it was unsuccessful.
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Summary: Mechanical and chemical control options for ragweed in urban and suburban environments. Its main options for control in these environments is through mechanical means.

Wan, F-H., & Wang, R., Undated, Biological Weed Control in China: An Updated Report, Biological Control Institute, Chinese Academy of Agricultural Sciences, China.
Summary: This report reviews the potential biological controls available and in testing phases for the control of ragweed. Some species have had set backs in field trials while new species are being considered.
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General information

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Summary: An Australian website with fact pages on different weed species introduced into the country. Gives information on description, origin, dispersal, habitat, and other similar species.
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Summary: A good journal article exploring the means and methods of introduction of ragweed into france through historical and herbarium records. This article gave lots of insight into human dispersed methods with dated records.
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Summary: English:
The species list sheet for the Mexican information system on invasive species currently provides information related to Scientific names, family, group and common names, as well as habitat, status of invasion in Mexico, pathways of introduction and links to other specialised websites. Some of the higher risk species already have a direct link to the alert page. It is important to notice that these lists are constantly being updated, please refer to the main page (http://www.conabio.gob.mx/invasoras/index.php/Portada), under the section Novedades for information on updates.
Invasive species - Plants is available from: http://www.conabio.gob.mx/invasoras/index.php/Especies_invasoras_-_Plantas [Accessed 30 July 2008]
Spanish:
La lista de especies del Sistema de informaci&#65533;n sobre especies invasoras de m&#65533;xico cuenta actualmente con informaci&#65533;n aceca de nombre cient&#65533;fico, familia, grupo y nombre com&#65533;n, as&#65533; como h&#65533;bitat, estado de la invasi&#65533;n en M&#65533;xico, rutas de introducci&#65533;n y ligas a otros sitios especializados. Algunas de las especies de mayor riesgo ya tienen una liga directa a la p&#65533;gina de alertas. Es importante resaltar que estas listas se encuentran en constante proceso de actualizaci&#65533;n, por favor consulte la portada (http://www.conabio.gob.mx/invasoras/index.php/Portada), en la secci&#65533;n novedades, para conocer los cambios.
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The North European and Baltic Network on Invasive Alien Species (NOBANIS). Undated, *Ambrosia artemisiifolia* (Asteraceae, Angiosperms)
Summary: The North European and Baltic Network on Invasive Alien Species (NOBANIS) is a gateway to information on alien and invasive species in North and Central Europe. The participating countries are Denmark, Estonia, Finland, Faroe Islands, Germany, Greenland, Iceland, Latvia, Lithuania, Norway, Poland, European part of Russia, Sweden. The NOBANIS project will provide fact sheets on 60 of the most invasive alien species of the region, covering both animals and plant as well as microorganisms. We intend to upload 60 fact sheets - so please visit this page regularly.
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