GLOBAL INVASIVE SPECIES DATABASE

FULL ACCOUNT FOR: ***Salsola tragus***

Salsola tragus 简体中文 正體中文

System: Terrestrial

Kingdom	Phylum	Class	Order	Family
Plantae	Magnoliophyta	Magnoliopsida	Caryophyllales	Chenopodiaceae

Common name

Russian tumbleweed (English), Russian-thistle (English), Russian-cactus (English), soude roulante (French), spineless saltwort (English), ci sha peng (Chinese), tumbleweed (English), hari-hijikii (Japanese), Ukraine Salzkraut (German), soude épineuse (French)

Synonym

Salsola australis , R. Br.
Salsola iberica , auct.
Salsola kali , auct. w. N. Amer.
Salsola kali , subsp. *iberica* (Sennen & Pau) Rilke
Salsola kali , var. *tenuifolia* Tausch
Salsola kali , subsp. *tragus* (L.) Nyman
Salsola pestifer , A. Nelson
Salsola ruthenica , Iljin
Salsola tragus , subsp. *iberica* Sennen & Pau
Salsola kali , subsp. *ruthenica* (Iljin) Soó

Similar species

Summary

Salsola tragus is an annual weed that begins life as a typical multiple branched bush but then takes on a spherical form. Once the spherical form is achieved the plant breaks at the soil line and becomes a tumbleweed which is blown by the wind, spreading thousands of seeds. It is abundant in semi-desert regions and is a typical plant of salty soils, where rainfall is not abundant. It infests range and semi-arid pasture lands as well as cropland, railroad, and highway rights of way, as well as vacant agricultural, residential and industrial areas. Salsola tragus is a road hazard, as tumbling plants can surprise drivers and cause traffic accidents. It is also responsible for allergic sensitisation in Europe and North America. It should be noted that nitrates and soluble oxalates accumulate in the plants photosynthetic parts at levels poisonous to sheep.

view this species on IUCN Red List

Species Description
The Ontario Ministry of Agriculture and Food (2003) state that, \"*S. tragus* is an annual, reproducing only by seed. A very bushy, much-branched, spiny plant 5-120cm high, its diameter often exceeds its height. Stems are green, and usually striped with red lines, and rough with short, firm hair. Cotyledons are very narrow and grass-like, gradually lengthening and reaching 3-5cm long. The first true leaves are opposite (2 per node) and as long as or longer than the cotyledons which are needle-like, round, or slightly flattened in cross-section. Older leaves gradually become shorter and are mostly alternate (1 per node). Young plants are often crowded with erect leaves and resemble a grass. Older plants have firm, short, bract-like leaves, usually only 6mm long, with a broad base tapering to a slender point and ending in a hard, sharp spine. Flowers are small, and lacking petals but with 5 pinkish to greenish-white, membranous-winged sepals. *S. tragus* is stalkless in the axil of each cluster of 3 spine-tipped bract-like leaves. At maturity, the brittle stem breaks at the top of the root and the whole plant is rolled and tumbled by the wind, dropping seeds with each bounce and turn. Seeds cone- or top-shaped, the broader end flattened or hollowed and with a small point in the center, about 2mm across and the same long; the coiled embryo being visible through the nearly transparent seed coat.\"

Notes
Ryan and Ayres (2000) state that, \"*S. tragus* spread rapidly throughout the western United States owing to plant dispersion by wind perhaps aided by railroad shipment of cattle.\"

Lifecycle Stages
Carnes *et al*. (2003) state that once the spherical form of the bushes starts aging, \"the plant breaks at the soil line and becomes a tumbleweed. In this shape, the plant is blown by the wind, spreading between 20 000 and 50 000 seeds.\"

Uses
Duke (1983) states that, \"Young plants serve as useful fodder, as long as they are not too high in nitrites or oxalic acids. As a low-water-use plant, germinating quickly on minimally disturbed soils, and relatively free of diseases and parasites, this has been suggested as a fuel source for arid lands (Foster *et al*., 1980). This is one of several plants burned to make soap, even in Biblical times, at least so we read in WSSA. Soap made in this fashion is still traded at Joppa and other Mediterranean ports [WSSA Newsletter 9(4): 12. 1981]. On account of its high alkali content, the plant has also been used in making glass (Watt and Breyer-Brandwijk, 1962). Salsolin has been used to regulate the blood pressure, said to resemble papaverine in its effect on vasoconstriction, hydrastine in its effect on the smooth muscles of the uterus (List and Horhammer, 1969-1979).\" Williams (undated) states that, \"A severe drought in the 1930's in Canada led farmers to use young *S. tragus* as hay and silage for livestock.\"

Habitat Description
Carnes *et al*. (2003) state that, \"*S. tragus* is abundant in several semi-desertic regions of the United States and central Australia. *S. tragus* is a typical plant of salty soils, where rainfall is not abundant.\" They also state that, \"In the USA, *S. tragus* are found along the coast from the northeast to the west. In Europe, it is also very common in coastal areas from the Baltic Sea to the Mediterranean coast. In Spain, *S. tragus* is very common in Aragón, Andalucía, Murcia and Levante.\" This species can also be found on range and semi-arid pasture as well as crop-land, railroad, and highway rights of way, and vacant agricultural, residential, and industrial areas (Hasan *et al*., 2001). Williams (undated) states that, \"*S. tragus* thrives in salty and alkaline soils but will generally be out competed by natives in undisturbed habitats.\"

Reproduction
The Ontario Ministry of Agriculture and Food (2003) state that, \"At maturity, the brittle stem of *S. tragus* breaks at the top of the root and the whole plant is rolled and tumbled by the wind, dropping seeds with each bounce and turn. Seeds are cone or top-shaped, and the broader end is flattened or hollowed and with a small point in the center, and about 2mm across and the same long. The coiled embryo is visible through the nearly transparent seed coat.\"

General Impacts
Sobhian *et al*. (2003) states that, \"*S. tragus* was introduced in the USA in the late 1800s and since then has become one of the most troublesome weeds in the drier regions of western North America (Whitson, 1992). It infests range and semi-arid pasture lands as well as cropland, railroad, and highway rights of way, and vacant agricultural, residential and industrial areas. Moreover, the plant is a primary summer host of the beet leafhopper, *Circulifer tenellus* (Baker) (Cicadellidae), which is a vector of curly top virus to several important crops including sugar beets, tomatoes, beans, melons, and cucurbits (Goeden, 1968; Bennett, 1971). *S. tragus* is a road hazard as tumbling plants surprise drivers and cause traffic accidents. Windblown plants fill irrigation canals and catchments, pile against fences and dwellings and accumulate other windblown debris (Goeden and Pemberton, 1995). It is a weed of wheat in the northwestern United States, where infestations have caused yield losses of greater than 50% in spring wheat (Pan *et al*., 2001).\"
Carnes *et al*. (2003) state that, \"The family Chaenopodiacea contains several genera, such as Chenopodium and Salsola, which are responsible for allergic sensitization in Europe and North America. In Spain, *S. tragus* pollen load may represent up to 5% of the total pollen, being responsible for many allergic sensitizations. In 1933, Lamson *et al*. described the first cases of sensitization to this pollen in Arizona. In 1978, Powell *et al*. described two cases of contact dermatitis after exposure to tumbleweed. Shafiee *et al*. described nine Iranian patients with hypersensitivity to pollen of *Salsola spp.*, who showed positive skin-prick tests to *S. tragus* and detectable levels of specific IgE. In some regions of Spain, with a high concentration of *S. tragus* pollen, more than 30% of the allergic patients who inhabit theses areas are allergic to this pollen and exhibit a positive skin-prick tests and symptoms upon exposure.\"
The Manitoba Department of Weeds, Insects, and Disease (2001) states that, \"Nitrates and soluble oxalates accumulate in the plants photosynthetic parts at levels poisonous to sheep.\" *S. tragus* also acts to increase the amount of available phosphorous in the soil (Cannon *et al*., 1995).

Management Info
For details on bio-control of this species please see *biological control*

Principal source: Sobhian *et al.* 2003. Observations on the host specificity and biology of *Lixus salsolae* (Col., Curculionidae), a potential biological control agent of Russian thistle, *Salsola tragus* (Chenopodiaceae) in North America.

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

Review: Expert review underway

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ALIEN RANGE

[1] AUSTRALIA
[48] UNITED STATES

[1] CANADA

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16 references found for **Salsola tragus**

Managment information

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Summary: This page contains information on common names, description, habitat, propagation, native range, impacts, and control measures.
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Summary: This page contains information on common names, description, habitat, propagation, native range, impacts, and control measures.
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Summary: Information on the effects of oxaltes produced by Russian thistle on available soil phosphorus levels.
CONABIO. 2008. Sistema de informaci&#65533;n sobre especies invasoras en M&#65533;xico. Especies invasoras - Plantas. Comisi&#65533;n Nacional para el Conocimiento y Uso de la Biodiversidad. Fecha de acceso.
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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