

Rumex acetosella  [简体中文](#) [正體中文](#)

System: Terrestrial

Kingdom	Phylum	Class	Order	Family
Plantae	Magnoliophyta	Magnoliopsida	Polygonales	Polygonaceae

Common name acederilla (Spanish), vinagrera (Spanish), romacilla (Spanish), pactilla (Spanish), hierba roja (Spanish), acedera menor (Spanish), sangre de toro (Spanish), acedera (Spanish), himesuiba (Japanese), dock (English), romacilla aceitosa (Spanish), vinagrillo (Spanish), hierba de cristo (Spanish), lengua de vaca (Spanish), kuzu kulagi (Turkish)

Synonym *Acetosella acetosella* , (L.) Small
Acetosella vulgaris , (Koch) Fourr.
Rumex acetosella , ssp. *angiocarpus* (Murb.) Murb.
Rumex acetosella , var. *pyrenaeus* (Pourret) Timbal-Lagrange
Rumex acetosella , var. *tenuifolius* Wallr.
Rumex angiocarpus , Murb.
Acetosella tenuifolia , (Wallr.) A. L.
Rumex tenuifolius , (Wallr.) A. L.
Acetosa acetosella , (Linnaeus) Miller
Acetosa hastata , Moench
Acetosella vulgaris , Fourreau
Rumex acetosella , var. *vulgaris* W. D. J. Koch

Similar species

Summary *Rumex acetosella* is an herbaceous perennial plant which occurs in disturbed areas, such as roadsides and pastures, but also in degraded forests. A fairly common weed, it invades natural habitats more rarely as is the case in a Réunion. *Rumex acetosella* contains oxalic acid which can be toxic to livestock in large quantities.



[view this species on IUCN Red List](#)

Species Description

Rumex acetosella is a dioecous spreading perennial herb with creeping rhizomes (Alaska Natural Heritage Program, 2006). Its stems are numerous, erect and branchy, growing 10-50cm in height (Archer & Martin, 1979). Lower leaves with petioles, lanceolate, 1-5cm in length, 1.5-2mm in width with a lanceolate or ovoid-lanceolate top part and two smaller blades. Upper leaves are prostrate, lanceolate or lanceolate-linear (AgroAtlas, 2009). A membranous sheath surrounds the stem at each node \r\n\r\n Flowers are arranged in branched loose, leafless, terminal panicles (inflorescences) 3-40cm long. \r\nMale and female flowers are borne of separate plants. Male flowers are orange-yellow; female flowers are red-orange. Female flowers have a single basal ovule; male flowers have six anthers (Pickering et al. 2003). Flowers consist of three scale-like sepals and three petals (Alaska Natural Heritage Program, 2006). Sepals of male flowers are reddish yellow, red or purplish or rarely pale green; sepals of female flowers are pure red to dark red or purplish (AgroAtlas, 2009).\r\n\r\n Fruits (achenes/nuts), often called are small (0.9-1.5 x 0.6-1mm), pale yellow-brown to slightly reddish brown, smooth, shiny (AgroAtlas, 2009) and enclosed in three persistent flower scales (Alaska Natural Heritage Program, 2006).

Notes

Rumex acetosella is extremely variable and taxonomically complicated polyploidy complex which includes diploids, tetraploids, hexaploids and octoploids (eFloras, Undated).

Lifecycle Stages

Rumex acetosella is a short-lived perennial herb. It grows year-round and flowers from May to September (in the Northern hemisphere) (GOERT, 2009). It possesses both flowering and leafy ramets. Flowering ramets consist of several leaves and a stem containing dozens or hundreds of florets; leafy ramets consist of several leaves without a flowering stem. Flowering ramets appear from early to mid summer, with flowering lasting several days. Male flowering ramets senesce after flowering, but female flowering ramets last until fruit ripens (Fujitaka & Sakai, 2007).

Male and female plants exhibit sexual dimorphism in terms of growth patterns and resource allocation. For example, males allocate more resources to below-ground organs (Fujitaka & Sakai, 2007) and appear to be more drought tolerant (Zimmerman & Lechowicz, 1982). These mechanisms may have evolved to enhance reproductive success (Fujitaka & Sakai, 2007).

Uses

In its native range *Rumex acetosella* provides food for larvae of butterfly species that may be in decline, including the meadow brown butterfly (*Maniola jurtina*) and the scarce copper (*Lycaena virgaureae*) (Schneider *et al.*, 2003).

While sheep sorrel contains oxalic acid which is poisonous to some livestock and wildlife species (Cal-IPC in Alaska Natural Heritage Program, 2006), it is grazed by mule deer. The seeds are rich food source for birds (Wilson *et al.*, 1999 in Alaska Natural Heritage Program, 2006).

It has also been used for revegetation in mining regions. (Alaska Natural Heritage Program, 2006) and is eaten as a food in Turkey. A recent study demonstrated that it has antioxidant properties (Alpinar *et al.*, 2009).

Habitat Description

Often found in disturbed areas such as along roadsides and railways, cultivated fields, field edges, lawns, meadows on slopes, in coniferous forests, in sands, on precipices, in fallows and sandy or muddy shores. It can grow in a wide range of soil types including sandy loam, sand, silt and gravel (Alaska Natural Heritage Program, 2006). It prefers light, sandy and podzol (acidic) soils, but will occur even in very poor soils. It can grow up to 2700m in altitude (AgroAtlas, 2009; eFloras, Undated).

Sheep sorrel has small seeds that form persistent and deep seed banks, making it fire and heat resistant (Gonzalez & Ghermandi, 2008).

Reproduction

Rumex acetosella reproduces both by seed and vegetatively (Putwain *et al.* 1968). Clonal reproduction occurs through production of horizontally creeping roots. Short vertical rhizomes initiate from creeping roots to the ground surface and produce clumps with one or several ramets at their tips (Fujitaka & Sakai, 2007).

Plants are dioecous, meaning female and male flowers are borne on separate plants. Flowers are wind pollinated (Houssard & Escarre, 1991). Plants can produce up to 10,000 seeds (1mm in length). Optimum temperature for seed germination is 20-22°C. Seeds cannot germinate if buried more than 8-10cm below the surface. They retain germination capacity in the soil for as long as five (AgroAtlas, 2009) or seven years (Steinbauer & Grigsby 1958 in Putwain *et al.*, 1968), although up to 80 years has been reported (GOERT, 2009).

Reproduction via seedling establishment is common in recently disturbed regions, while in dense cover vegetative propagation is more common (Putwain *et al.*, 1968).

General Impacts

Sheep sorrel is able to form dense stands which displace native grasses and forbs (Agroatlas, 2009). It colonises disturbed areas rapidly, especially areas that have been burned. This species may impede the reestablishment of native species and affect natural successional processes (Alaska Natural Heritage Program, 2006).
It contains high levels of oxalic acid which may be poisonous to livestock and wildlife species (Alaska Natural Heritage Program, 2006; USDA Forest Service, 2006). It also causes hay fever in humans.

Management Info

Manual: Hand pulling of plants can be effective when the infestation is small and does not yet have extensive roots and rhizome systems. Caution must be used to prevent the spread of root and rhizome fragments which can resprout. Repeated cultivation can also control sheep sorrel as continued removal of top-growth will eventually starve the roots. Manual means, are however, highly labour intensive (USDA Forest Service, 2006; GOERT, 2009).

Chemical: In general control of *Rumex acetosella* can be achieved with readily available general herbicides such as dicamba or triclopyr. Follow label and country requirements (USDA Forest Service, 2006). Herbicides are most effective when applied to young and actively growing plants. As *R. acetosella* prefers acidic soils, control can be increased when combined with liming to increase soil pH (GOERT, 2009).

Other: *Rumex acetosella* infestations may actually increase after grazing or burning, as it survives via rhizomes in the soil or through seeds buried in the soil. These techniques are not recommended (GOERT, 2009).

Pathway

Sheep sorrel can be transported on agricultural equipment (Gooch, 1963 in Alaska Natural Heritage Program, 2006). Seeds can be distributed with nursery stock or in contaminated seeds and hay (Gooch, 1963 in Alaska Natural Heritage Program, 2006). Seeds can be transported on vehicle tyres (Gooch, 1963 in Alaska Natural Heritage Program, 2006).

Principal source:

Compiler: Comité français de l'IUCN (IUCN French Committee) & IUCN SSC Invasive Species Specialist Group (ISSG)

Review:

Publication date: 2010-10-04

ALIEN RANGE

[1] AUSTRALIA
[1] FALKLAND ISLANDS (MALVINAS)
[1] GREENLAND
[1] REUNION
[1] SAINT PIERRE AND MIQUELON
[1] SOUTH GEORGIA AND THE SOUTH SANDWICH ISLANDS

[1] CANADA
[3] FRENCH SOUTHERN TERRITORIES
[1] NEW ZEALAND
[5] SAINT HELENA
[1] SOUTH AFRICA
[3] UNITED STATES

BIBLIOGRAPHY

28 references found for *Rumex acetosella*

Managment information

[IUCN/SSC Invasive Species Specialist Group \(ISSG\), 2010. A Compilation of Information Sources for Conservation Managers.](#)

Summary: This compilation of information sources can be sorted on keywords for example: Baits & Lures, Non Target Species, Eradication, Monitoring, Risk Assessment, Weeds, Herbicides etc. This compilation is at present in Excel format, this will be web-enabled as a searchable database shortly. This version of the database has been developed by the IUCN SSC ISSG as part of an Overseas Territories Environmental Programme funded project XOT603 in partnership with the Cayman Islands Government - Department of Environment. The compilation is a work under progress, the ISSG will manage, maintain and enhance the database with current and newly published information, reports, journal articles etc.

[Varnham, K. 2006. Non-native species in UK Overseas Territories: a review. JNCC Report 372. Peterborough: United Kingdom.](#)

Summary: This database compiles information on alien species from British Overseas Territories.

Available from: <http://www.jncc.gov.uk/page-3660> [Accessed 10 November 2009]

General information

[AgroAtlas. 2009. Weeds - Rumex acetosella L. - Small Sorrel](#)

Summary: Available from: http://www.agroAtlas.ru/en/content/weeds/Rumex_acetosella/ [Accessed 27 August, 2010]

[Alaska Natural Heritage Program. 2006. Non-Native Plant Species of Alaska: Sheep sorrel \(Rumex acetosella L.\)](#)

Summary: Available from: http://akweeds.uaa.alaska.edu/pdfs/species_bios_pdfs/Species_bios_RUAC.pdf [Accessed 27 August, 2010]

Alpinar, K., Özyürek, U., Kolak, U., Gökçek, K., Aras, C., Altun, M., Çelik, S.E., Berker, K.I., Bektasoglu, B. & Apak, R. 2009. Antioxidant capacities of some food plants widely grown in Ayvalik of Turkey. Food Science and Technology Research, 15(1): 59-64.

[Chile Flora. 2009. Rumex acetosella L.](#)

Summary: Available from: <http://www.chileflora.com/Florachilena/FloraEnglish/HighResPages/EH0686.htm> [Accessed 27 August, 2010]

[Conservatoire Botanique National De Mascarin \(BOULLET V. coord.\) 2007. Rumex acetosella.- Index de la flore vasculaire de la Réunion \(Trachophytes\) : statuts, menaces et protections. - Version 2007.1](#)

Summary: Base de données sur la flore de la Réunion. De nombreuses informations très utiles.

Available from: <http://flore.cbnm.org/index2.php?page=taxon&num=beb22abb9ec56c0cf7ec7d811dd91a56> [Accessed march 2008]

[eFloras. Undated. Rumex acetosella. Flora of North America. Volume 5.](#)

Summary: Available from: http://www.efloras.org/florataxon.aspx?flora_id=1&taxon_id=242414256 [Accessed 27 August, 2010]

Etcheberry, pers. comm., 2007

Summary: Etcheberry, Roger. Naturalist and regional expert of the flora and fauna of Saint Pierre and Miquelon

[Frenot, Y., Chown, S.L., Whinam, J., Selkirk, P., Convey, P., Skotnicki, M., & Bergstrom, D. 2005. Biological invasions in the Antarctic: extent, impacts and implications. Bio. Rev. 80, 45-72.](#)

Summary: Article de synthèse sur les invasions biologiques (plantes, invertébrés et vertébrés) en antarctique.

Available from: <http://www.anta.canterbury.ac.nz/resources/non-native%20species%20in%20the%20antarctic/Talk%20%20Frenot.pdf> [Accessed 4 April 2008]

Frenot, Y., Gloaguen, J., Massé, L., & Lebouvier, M. 2001. Human activities, ecosystem disturbance and plant invasions in subantarctic Crozet, Kerguelen and Amsterdam Islands. Biological Conservation, 101, 33-50.

Summary: Cette article propose une liste des plantes exotiques pour 3 des îles subantarctiques françaises. Le rôle passé et présent des activités humaines dans les phénomènes d'invasions est discuté.

Fujitaka, T. & Sakai, S. 2007. Sexual dimorphism in clonal growth forms and ramet distribution patterns in *Rumex acetosella* (Polygonaceae). Ecological Research, 22: 248-254.

[Garry Oaks Ecosystem Recovery Team \(GOERT\). 2009. Rumex acetosella \(sheep sorrel\).](#)

Summary: Available from: <http://www.goert.ca/documents/R.acetosella.pdf> [Accessed 27 August, 2010]

Gonzalez, S. & Ghermandi, L. 2008. Postfire seed bank dynamics in semiarid grasslands. Plant Ecology, 199: 175-185.

Houssard, C. & Escarre, J. 1991. The effects of seed weight on growth and competitive ability of *Rumex acetosella* from two successional old-fields. Oecologia, 86: 236-242

Hultén, E. 1968. Flora of Alaska and Neighboring Territories. Stanford University Press, Stanford, CA. 1008 p.

[ITIS \(Integrated Taxonomic Information System\), 2008. Online Database Rumex acetosella L.](#)

Summary: An online database that provides taxonomic information, common names, synonyms and geographical jurisdiction of a species.

In addition links are provided to retrieve biological records and collection information from the Global Biodiversity Information Facility (GBIF) Data Portal and bioscience articles from BioOne journals.

Available from: http://www.itis.gov/servlet/SingleRpt/SingleRpt?search_topic=TSN&search_value=20934 [Accessed 3 April 2008]

Moore, B. 1954. Some *Rumex acetosella* communities in New Zealand. Vegetatio, 5-6: 268-278.

[New Zealand Plant Conservation Network \(NZPCN\). 2010 Rumex acetosella.](#)

Summary: Available from: http://www.nzpcn.org.nz/flora_details.asp?ID=2915 [Accessed 27 August, 2010]

[Pacific Island Ecosystems at Risk \(PIER\). 2009. Rumex acetosella.](#)

Summary: Available from: http://www.hear.org/pier/species/rumex_acetosella.htm [Accessed 27 August, 2010]

Pickering, C.M., Kirkwood, A. & Arthur, J.M. 2003. Habitat and sex specific differences in the dioecious weed *Acetosella vulgaris* (Polygonaceae). Austral Ecology, 28: 396-403.

[PIER \(Pacific Island Ecosystems at Risk\), 2007. Rumex acetosella](#)

Summary: Available from: http://www.hear.org/pier/species/rumex_acetosella.htm [Accessed March 25 2008]

Putwain, P.D., Machin, D. & Harper, J.L. 1968. Studies in the Dynamics of Plant Populations: II. Components and Regulation of a Natural Population of *Rumex acetosella* L. Journal of Ecology, 56(2): 421-431.

Schneider, C., Dover, J. & Fry, G.L.A. 2003. Movement of two grassland butterflies in the same habitat network: the role of adult resources and size of the study area. Ecological Entomology, 28: 219-227.

[USDA Forest Service. 2006. Weed of the week: Sheep Sorrel Rumex acetosella L.](#)

Summary: Available from: http://www.na.fs.fed.us/fhp/invasive_plants [Accessed 27 August, 2010]



GLOBAL INVASIVE SPECIES DATABASE

FULL ACCOUNT FOR: *Rumex acetosella*

[USDA NRCS, Undated. Plants Profile - *Rumex acetosella* L. common sheep sorrel.](#)

Summary: Available from:

<http://plants.usda.gov/java/nameSearch?keywordquery=Rumex+acetosella&mode=sciname&submit.x=0&submit.y=0> [Accessed 27 August, 2010]

Williams, P.A. 1980. *Vittadinia triloba* and *Rumex acetosella* communities in the semi-arid regions of the South Island. New Zealand Journal of Ecology, 3: 13-22.

Zimmerman, J.K. & Lechowicz, M.J. 1982. Responses to Moisture Stress in Male and Female Plants of *Rumex acetosella* L. (Polygonaceae). Oecologia, 53: 305-309.