Plant Diversity Website

Rubus strigosus Michx.

Common Names: American red raspberry (1), wild red raspberry (6), grayleaf red raspberry (2).

Etymology: "*Rubus*" is the latin word for blackberry/raspberry and "*strigosus*" is the latin word for thin (5).

Botanical synonyms*: Rubus idaeus* L. ssp*. strigosus* (Michx.) Focke*, Rubus melanolasius* Dieck, *Rubus neglectus* Peck, *Rubus carolinianus* Rydb (2).

FAMILY: Rosaceae, the Rose family (1)

Quick Notable Features:
- ¬ Glandular-bristly stems
- ¬ Pinnately compound leaves with 3-5 serrated leaflets, abaxially glaucous
- ¬ Perfect, white flowers with the sepals longer than the petals
- ¬ Red aggregate of drupelets that separates from the receptacle

Plant Height: *Rubus strigosus* can reach up to 2m (7).

Subspecies/varieties recognized (source 1,13):
R. strigosus var. *aberratus,*
R. strigosus var. *acalyphaceus,*
R. strigosus var. *albus,*
R. strigosus var. *arizonicus,*
R. strigosus var. *caudatus,*
R. strigosus var. *eucyclus,*
R. strigosus var. *heterolasius,*
R. strigosus var. *strigosus,*
R. strigosus var. *tonsus*.

Most Likely Confused with: Other members of the genus *Rubus*, such as *Rubus occidentalis*, *Rubus idaeus*, and *Rubus neglectus. Rosa englanteria* and *Rosa setigera* may also be similar in appearance (8,9).

Habitat Preference: *Rubus strigosus* grows in open or disturbed areas with well drained soil (7,8).

Geographic Distribution in Michigan: *Rubus strigosus* is found in most counties of the Upper and

Lower Peninsulas (2).

Known Elevational Distribution: *R. strigosus* was found at Mount Mitchell State Park (NC), at an elevation of 2,037m (12).

Complete Geographic Distribution: *R. strigosus* is native to North America and widely distributed on the United States (AK, AZ, CA, CO, CT, DE, IA, ID, IL, IN, MA, MD, ME, MI, MN, MO, MT, NC, ND, NE, NH, NJ, NM, NV, NY, OH, OK, OR, PA, RI, SD, TN, UT, VA, VT, WA, WI, WV, WY), Canada (AB, BC, LB, MB, NB, NF, NS, NT, NU, ON, PE, QC, SK, YT), and France (St. Pierre and Miquelon) (source 2).

Vegetative Plant Description: The species is a biennial bramble with bristly, erect stems, sometimes arching that forming stolons. Pinnately compound leaves are present, usually with 3-5 leaflets, stipules are linear and deciduous. Leaflets are serrate-margined ovate with an acuminate apex, and 2.5-10cm long. Primocanes (first year stems) are prickly, bristly and pubescence with glands. Floricanes (flowering stem) are bristly and may have spines and pubescence with glands. Floricane leaflets are heavily pubescent on the underside, giving them a pale green color, and usually 7-10cm long. All prickles are narrow at the base (6,8,9,10,14).

Flower Description: The axillary or terminal inflorescence (a raceme or panicle) is composed of 3-5 perfect flowers approximately 1cm wide, with 5 reflexed sepals that are longer than its 5 white petals (petals 5-6mm long), many stamens, and many carpels. The pedicels are glandular and hispid (6,8,9,10,14).

Flowering Time: June to August (7).

Pollinator: *R. strigosus* is not capable of self pollination; it is pollinated by insects, especially bees (10).

Fruit Type and Description: The fruits are aggregates of hairless drupelets containing a single seed each that turn red when ripe, each with a diameter of approximately 1cm. The receptacle remains attached to the plant after the

fruit is removed (8,9,10), distinguishing this species as a raspberry.

Seed Description: Numerous seeds are produced, measuring approximately 2mm each. Cold stratification for 4 months is necessary to ensure a successful germination. Seeds have a dormancy stage and can remain viable for more than 50 years (10).

Dispersal Syndrome: When the fruit matures, it falls off the receptacle. *R. strigosus'* fruit is a nutrition source for birds and mammals that disperse the seeds. It also disperses successfully vegetatively by root suckers and stolons (10).

Distinguished by: Can be confused with *R. occidentalis*, however, *R. strigosus*' bristles are not as thick and broad-based as the prickles found in *R. occidentalis*. Also, *R. strigosus*' fruits do not have white pubescence separating drupelets and remain red at maturity instead of turning black as do *R. occidentalis*. *R. idaeus* is very similar to *R. strigosus*, but it lacks glands. *R. neglectus*' inflorescence has 3-7 flowers and the fruit is a dark red, while *R. strigosus*' inflorescence has 2-5 flowers and the fruit is a bright red. *Rosa eglanteria*'s leaves are aromatic, its thorns have a large base and its leaves are composed of slightly more leaflets than *R. strigosus*, which is not fragrant and has fine bristles. *Rosa setigera*'s fruit is a red hip, the plant bears broad-based curved thorns, and pink flowers, while *R. strigosus*' fruits are red drupelets and its flowers are white (8,9).

Other members of the family in Michigan: *Rubus* (48), *Crataegus* (42), *Rosa* (18), *Prunus* (16), *Potentilla* (11), *Geum* (9), *Amelanchier* (6), *Spiraea* (6), *Agrimony* (5), *Malus* (4), *Sanguisorba* (3), *Sorbus* (3), *Physocarpus* (2), *Fragaria* (2), *Gillenia* (2), *Photinia* (2), *Argentina* (1), *Aruncus* (1), *Chamaerhodos* (1), *Comarum* (1), *Dalibarda* (1), *Dasiphorda* (1), *Duchesnea* (1), *Filipendula* (1), *Pyrus* (1), *Sibbaldiopsis* (1), *Sorbaria* (1), *Waldsteinia* (1) (source 2).

Ethnobotanical Uses: The leaves can be used to make an infusion to treat diarrhea, promote uterus health, and as an anti-inflammatory. The fruits and young shoots are edible. The fruits can also be used to make a blue dye (7,11).

Phylogenetic Information: The genus *Rubus* is classified as member of the subfamily Rosoideae in the Rosaceae, which is in the order Rosales, a Eudicot clade of the angiosperms. Members of the Rosaceae family can be found worldwide, and the genus *Rubus* is found in both north and south temperate climatic zones (3,4).

Interesting Quotation or Other Interesting Factoid not inserted above: *R. strigosus* is one of the sources of the widely cultivated varieties of red raspberry. The main reproductive strategy is vegetative through rhizomes and stolons. *R. strigosus* can have a negative effect on the restoration of forests due to its excellent capability of spreading in disturbed sites and outcompeting conifer seedlings. *R. strigosus* can thus slow the return of other native species, although it can protect the soil from erosion and from the invasion of other species (8,10).

University of Michigan Herbarium Holdings: There are approximately 125 specimens of *R. strigosus* in the University of Michigan Herbarium collection, mostly floricanes with 3 leaflets, all collected in Michigan, with one of the oldest collected in 1868 (pers. observ. CVS).

Literature and websites used:

Tropicos.org. Missouri Botanical Garden. (http://www.tropicos.org/Name/27801382, 04 Nov 2010). Saint Louis, Missouri 63110 USA.

1. The PLANTS Database: USDA, NRCS, 1991-2007. http://plants.usda.gov/java/profile?symbol=RUIDS2
2. Judd, W.S., C.S. Campbell, E.A. Kellogg and P.F. Stevens. 1999. *Plant Systematics: A Phylogenetic Approach*. Sunderland, Massachusetts, USA: Sinauer Associates, Inc.
3. Stevens, P.F. Angiosperm Phylogeny Website. Version 9 June 2008. http://www.mobot.org/mobot/research/apweb.
4. Brown, R.W. 1956. *Composition of Scientific Words*. Washington, D.C.: Smithsonian Institution Press.
5. Parkhurst, H.E. 1903. *Trees, shrubs and vines of the northeastern United States.* New York, New York: C. Scribner's Sons.
6. Plants For A Future, 1996-2010. http://www.pfaf.org/user/Plant.aspx?LatinName=Rubus%20strigosus
7. Voss, E. G. 1985. Michigan Flora Part II: Dicots. Ann Arbor, Michigan: Cranbrook Institute of Science.
8. Gleason, H. A. 1963. *Illustrated Flora of the Northeastern United States and Adjacent Canada, Volume 2*. New York, New York: Hafner Publishing Company, Inc.
9. Oleskevich, C., S.F. Shamoun, and Z.K. Punja 1995. The biology of Canadian weeds. 105. *Rubus strigosus* Michx., *Rubus parviflorus* Nutt., and *Rubus spectabilis* Pursh. *Canadian Journal of Plant Science* 76: 187-201.
10. Cook, W. 1869. The Physiomedical Dispensatory. Medical Herbalism Journal. http://medherb.com/cook/html/RUBUS_STRIGOSUS.htm
11. N.C. Division of Parks & Recreation. Mount Mitchell State Park. http://www.ncparks.gov/Visit/parks/momi/main.php
12. International Plant Names Index. 2005. http://www.ipni.org/
13. Britton, N.L. & H.A. Brown 1970. *An Illustrated Flora of the Northern United States and Canada: Volume I*. New York, NY: Dover Publications, Inc.

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