

*Gaultheria procumbens* L. Species Productivity Schedule

**Names**

A common English name for this plant is Wintergreen because of the evergreen nature of the plant's leaves (Doctor Schar, 2014). The berries of this plant are made into a tea in the fall and early spring and giving the plant another common name, teaberry. *G. procumbens* is also called the checkerberry, Johnny Jump Ups, Boxberry, Mountain Tea, Canadian Mint, Deerberry, Creeping Wintergreen Leatherleaf, Groundtea, Groundberry, Hillberry, Mountainberry, Patridgeberry, Grouseberry, Spiceberry, Redberry Tea, Wax Cluster, and Ivory berry (Reagen, 1928). The French called this plant la petit te du bois or little tea of the woods, describing both the size, habitat, and use of the plant (Eat The Weeds and Other Things Too RSS, 2014). Wintergreen's scientific name is *Gaultheria procumbens* [*G. procumbens*]. This genus was named for Jean François Gaultier who was an eighteenth-century botanist appointed King's physician in 1741 for Quebec (WINTERGREEN, 2014). Wintergreen's specific epithet *procumbens* means, "with trailing, prostrate stems" describing the rhizomes *G. procumbens* produces (WINTERGREEN, 2014).

Winisibugons, winisiibag, winisiigugad, winisi bûgûd, and winisiibugoons are Anishinaabemowin names for Wintergreen. These names can be translated "little dirty leaves" (Densmore, 1928). These Anishnaabenowin names are describing one of the plant's characteristic features, having tiny black dots on the underside of many of their leaves (Smith, 1932) (Pilette, 2009). The Menomoni tribe had another name for wintergreen, wînanomînûn, which translates to real or true berry (Smith, 1923). The Potawatomi also called this same plant wînisibag, meaning evergreen plant (Smith, 1933).

**Description**

*G. procumbens* is a partially creeping plant with a fibrous root system connected to an underground rhizome. This plant also has erect above ground shoots that can be from 10.16 to 20.32 centimeters, or four to eight inches, tall and range in color from red to yellow-green, see Fig. 3. This evergreen perennial has a white, five-parted, bell-shaped, clustered, tubular flower originating from the leaves' axillary buds in the summer months. This flower can be from 0.635 to about 0.846667 centimeters, or a fourth to a third of an inch, long. This flower also has lobed edges and a berry-like aroma (Plant Portrait, 2014).

The waxy and glossy leaves of *G. procumbens* alternate on their stems and have pinnate venations, see Fig. 2 and 3 (Naegele, 1980) (Doctor Schar, 2014) (Plant Portrait, 2014). These leaves have blades that range in size from two to five centimeters, or 0.787402 to 1.9685 inches, long and are elliptical or oblong in shape, see Fig. 1. Leaves of this plant may also have a pointed tip. When young, these leaves have fine dark hairs

along their leaf margin, which either disappear, or are not noticeable when mature. However, these hairs do leave indentations on the edges of mature leaves (Plant Portrait, 2014). *G. procumbens* leaves range from a deep red purple in the winter to a red tinted yellow green in the spring (Plant Portrait, 2014). The leaves of this plant are edible with a sweet mint taste and aroma. The berries of this plant, which are collected in the spring and fall, consist of a bright pink-red capsule one to two centimeters, or 0.393701 to 0.787402, in diameter with a white inside, see Fig.1 and 3. These berries have a similar taste to the leaves but are sweeter (Naegele, 1980).



Fig. 1: *G. procumbens* leaves and berries (Noll, 2014).



Fig. 2: *G. procumbens* flower (Noll, 2014).

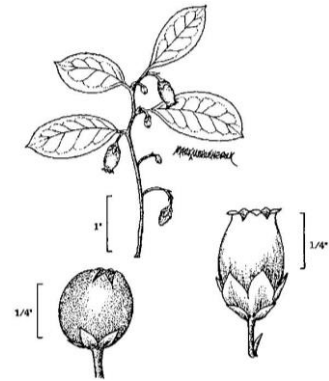


Fig. 3: Line drawing of *G. procumbens* with approximate measurements (Coladonato, 2014).

## Lifecycle

In the spring, new bright red leaves and stems form above ground from the shallowly buried underground rhizome. These leaves then become a red green as they enlarge and mature to eventually become a deep green in the summer. As winter approaches, the leaves turn to a green burgundy, and eventually, to a purple red (Plant Portrait, 2014). New shoot growth continues throughout the summer and is also accompanied by the branching of existing stems. *G. procumbens* can reproduce both sexually and asexually, typically doing so with rhizomes. This vegetative growth can also be done through the branching of old stems or the development of new stems of a rhizome (Coladonato, 2014).

Flowers develop at the ends of leaf axils and at the tops of branches in clusters at the end of May to September (Coladonato, 2014). If fertilization of these flowers is successful, a berry grows from the fertilized flower and develops with a dry style attached to the bottom of the berry. In mid fall, more flowers bloom while the berries are mature and ready to be harvested (Plant Portrait, 2014). Berries and leaves from the previous year can also be harvested in the early spring (GLIFWC, 2014). Additionally, birds such as, grouses and partridges, will eat these berries, thus carrying and depositing *G. procumbens* seeds, contained within the mature berries, allowing the plant to develop in new areas (Coladonato, 2014). Other mammals such as chipmunks, deer, and moose also eat the berries or leaves of *G. procumbens* and help with seed distribution (Rook, 2014).

## Habitat and Range

*G. procumbens* typically grows in the understory of pine, conifer, and hardwood forests, such as maple-oak or aspen forests, open meadows, bogs, swamps, moors, inland sands, and sand ridges (Herron, 2000) (Reagen, 1928). This plant also grows in poor, sandy, and acidic soils on various substrates including peat, sand, and coal spoils (Coladonato, 2014) (Naegele, 1980) (Gaultheria Procumbens Checkerberry, 2014). Specifically, the optimal soil pH for *G. procumbens* is 4.5 to 6.0 with a maximum of 7.0 (Coladonato, 2014). *G. procumbens* additionally, grows in moist places, but can tolerate a range from dry to poorly drained conditions (Coladonato, 2014). *G. procumbens* is native to eastern North America, see Fig. 4. Presently, *G. procumbens* occupies nearly the same areas of the continent, which include lands that lie east of the Mississippi river and Manitoba in Canada. This plant is also native to and currently occupies the counties such as Marquette and Macomb County, as shown in green in Fig. 5.

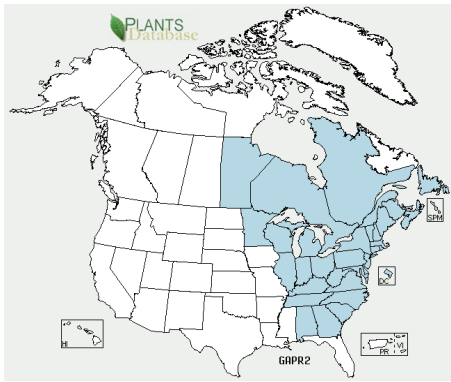


Fig. 4: Map indicating native range of *G. procumbens* shown in blue (USDA, 2014).

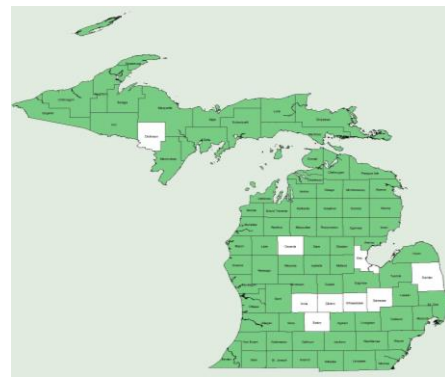


Fig. 5: Map indicating native range of *G. procumbens* in Michigan counties shown in green (USDA, 2014).

## Ecological Interactions

The fact that the leaves of *G. procumbens* are evergreen makes this plant one of the few sources of green leaves during the winter months. Because of this, animals such as the whitetail deer, wild turkey, black bears, and ring-necked pheasants use them as a food source (Coladonato, 2014). This plant's leaves and berries also serve as a minor food source for terrestrial birds and small animals making up about 2-5% of their diet. However, it is the favorite food of the Eastern chipmunk. *G. procumbens* also makes up about 5-10% of the diet of large mammals and is infrequently used for cover among these animals (Martin, 1951). Any of these animals that eat or transport berries of this plant help to distribute its seeds, leading to the colonization of new areas.

Little human care, or preparation, is needed for *G. procumbens* to grow due to its abundance in woodland areas. However, thinning the number of strands and removing vegetation growing over the top of the plants can stimulate fruit production. Additionally, *G. procumbens* is one of the many plants effected by logging, which leads to "increased light, temperatures, drought conditions, and competing vegetation", construction and development projects such as the instillation of power lines, and the spraying of pesticides (White, 2002). This plant also does not seem to be well adapted to fires that remove the soil's organic layer because its rhizomes are buried close to the

surface. *G. procumbens* will usually not survive if a fire removes the soil's organic layer, but may be able to survive a short duration fire that does not harm this organic layer. However, research such as a study in Minnesota, showed that after a severe fire, increased biomass of *G. procumbens* occurred in the years following the fire. This recolonization is likely due to asexual reproduction through branching of surviving stems and the distribution of seeds from unaffected areas by animals and birds (Coladonato, 2014).



Fig 6: An eastern chipmunk (*Tamias striatus*) for which *G. procumbens* is a favorite food source (Barbour, 2014).



Fig. 7: A ring-necked pheasant who uses *G. procumbens* as a food source (Stephens, 2014).

## Past Uses

In the past, *G. procumbens* berries were used as a food source, either fresh, dried, or mashed, and as a spice or flavoring agent by the Ojibwe, Iroquois, Menomini, and Algonquin tribes (Native American Ethnobotany, 2014) (Reagen, 1928) (Smith, 1923). *G. procumbens* leaves, which were used to make infusions or teas, are harvested year-round though the berries are only harvested for this purpose in the fall (GLIFWC, 2014). These teas or infusions, as well as topically applied oil extracted from the leaves, were used to treat ailments such as musculo-skeletal pain from osteo-arthritis and rheumatism as well as upset stomachs, headaches, sore throats, colds, toothaches, kidney problems, and increase strength (Naegele, 1980) (Smith, 1923) (Smith, 1932) (Doctor Schar, 2014) (Native American Ethnobotany, 2014). Such teas were made by bringing water to a boil, removing it from the heat, then adding *G. procumbens* leaves and/or berries. The mixture was then let stand for fifteen minutes and drank in one cup portions three times a day. The oil topically applied was made by adding leaves to a frying pan on low heat with olive oil and cooking the mixture until the leaves lose their color. The oil is then strained, cooled, and applied to the effected area (Herron, 2000). According to Dr. James A. Duke, cited in Scott Herron's "Medicinal Plants Usage of the Anishinaabek Great Lakes Indians", *G. procumbens* "is very effective for back pain and rather effective for sore throat[s]" (Herron, 2000).

*G. procumbens* could also be used to treat ailments such as excessive menstruation, coughs, and old ulcers or wounds. Oil from *G. procumbens*' leaves has been used as a stimulant, diuretic to treat urinary and bladder inflammation, astringent to remedy bloody stool or urine, emmenagogue to induce delayed menstruation, galactagogue to help breast pain and milk production, and to soften areas of hardened skin such as calluses, corns, and warts (Herron, 2000) (Native American Ethnobotany, 2014). *G. procumbens* was additionally used to increase resistance to diseases such as diphtheria, gonorrhea, tuberculosis, diabetes, asthma, auto-immune disorders, and cancer. *G. procumbens* was additionally used in various tonics with other plants such as wild

cherry for the above listed ailments (Doctor Schar, 2014).

These infusions of *G. procumbens* leaves, and those of the roots were used by the Iroquois tribe as a blood purifier and tapeworm treatment (Native American Ethnobotany, 2014) (Naegele, 1980). The Ojibwe also used this plant to make a spring and fall tonic to keep the blood in “good order” (Smith, 1933) (Native American Ethnobotany, 2014). Within the Cherokee tribe, this plant was taken orally to treat tender gums and used with trailing arbutuses (*Epigaea repens*) for chronic indigestion (Native American Ethnobotany, 2014). Additionally, the Cherokee chewed *G. procumbens* leaves as a treatment for dysentery and a substitute for chewing tobacco (Native American Ethnobotany, 2014). The Menomini and Ojibwe tribes used the volatile oils of *G. procumbens* as an antiseptic to treat sore throats, an analgesic, a carminative to relieve gas and colic pain, and to treat sciatica, or pain along sciatic nerves which run from the lower back to back of the legs (Smith, 1923) (Smith, 1932) (Herron, 2000). The Potawatomi tribe made a tea from the leaves of this plant and used it as a febrifuge to break fevers and to cure lumbago, or lower back pain (Smith, 1933) (Herron, 2000).

### **Current Uses**

Today, essential oil of *G. procumbens* is used as a topical analgesic for the treatment of muscle, rheumatic pain, and headaches in products such as Tei-Fu massage lotion (Nature's Sunshine, 2014) (Doctor Schar, 2014). Products like this massage lotion work by causing “localized capillary dilation, thereby [increasing the] temperature in the area of application” and relieving muscular pain in the associated area (Scott, 2014). Additionally, this oil is used as a mint flavoring in products such as toothpastes, candies, and a fragrance in cosmetic products such as shampoos (Scott, 2014). *G. procumbens* oil is also used in rubefacient preparations to decrease skin redness and is a part of many panacea products to remedy chronic disease and syphilis (Drugs.com Herbal Database, 2014) (Doctor Schar, 2014).

This oil, as of 2011, is being researched as a possible treatment for *Neisseria gonorrhoea* that is resistant to most antimicrobial and the antibiotic drugs that currently exist (Cybulska, 2011). It is also thought that the antioxidant abilities of compounds within *G. procumbens* such as tannins will help prevent the complications of diabetes (M. McCune, 2002). The essential oil of this plant has also exhibited some antifungal and antibacterial properties for certain bacterial species, namely those that cause food spoilage, as well as other gram-negative and gram-positive bacteria (Nikolića, 2013). The oil also exhibited antiradical properties that could help decrease free radicals, such as reactive oxygen species, that can contribute to oxidative stress, which is a factor in conditions like “cancer, autoimmune disorders, aging, cataracts, rheumatoid arthritis, cardiovascular and neurodegenerative diseases” (Nikolića, 2013).

### **Chemistry of *G. procumbens***

*G. procumbens* contains tannins as well as glycosides, or sugar derivatives of glucose, such as gaultherin, the crystalline principles arbutin, ericolin and urson, as well as tannic and gallic acid (Doctor Schar, 2014). Other compounds identified in the oil of this plant were cyclic monoterpene hydrocarbon, limonene,  $\beta$ -pinene,  $\alpha$ -pinene, sabinene,

myrcene as well as oxygenated monoterpenes (ketones), fenchone, and menthone (Nikolića, 2013). These compounds must contribute to the effects *G. procumbens* has on humans, as described in the previous section. Gaultherin, for example, is a diuretic and anti-inflammatory. This compound may lead *G. procumbens* to be used in the treatment of toothaches and perhaps as a blood purifier. *G. procumbens* leaves also contain Vanillic-acid and limonene which have possible anticancer properties (Nikolića, 2013) (Doctor Schar, 2014) (WebMD, 2014).

Additionally, the oils of *G. procumbens* are approximately 96.90% comprised of a volatile methyl ester called methyl-salicylate; see Fig. 8 (Drugs.com Herbal Database, 2014) (Nikolića, 2013). This compound was originally used to create aspirin (Naegele, 1980). When this compound is removed from the plant, little odor or flavor is left, suggesting that this compound is at least partially responsible for the plant's characteristic odor and flavor. Methyl-salicylate works much like aspirin that is derived from it due to the structural similarity of the compounds; see Fig. 9. Both the oil from *G. procumbens* and aspirin work by inhibiting inflammation and pain transmission processes lending the compounds their pain relieving and anti-inflammatory effects (Doctor Schar, 2014) (Lien, 2008). However, "methyl[-]salicylate [is] known to cause drowsiness, congestion, and... delirium" as well as ringing in a person's ears at high doses (Herron, 2000) (Smith, 1933).

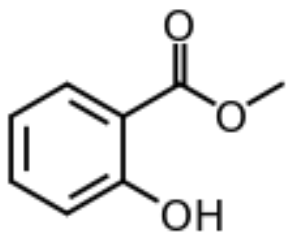


Fig. 8: Structure of methyl-salicylate (Wikipedia, 2014).

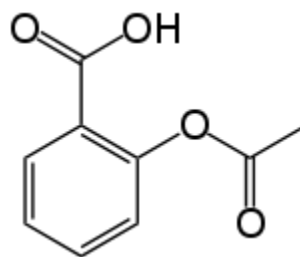


Fig. 9: Structure of aspirin or 2-acetoxybenzoic acid (Wikipedia, 2014).

## Conclusion

*G. procumbens* is a small, but useful understory plant that is bursting with important chemicals that were utilized in the past and as well as the present. The documentation of treatments by past researchers serves as evidence that the uses of this plant in the past were effective. On this assumption, if the treatment harmed a patient, the information would most likely not be shared, let alone passed down through following generations and survive to recent times. More research must be done on the chemicals contained within *G. procumbens* to ascertain the mechanism by which it treated the various ailments it was used for in the past. Research should also be done to see if any beneficial compounds like vanillic-acid or limonene could be used to treat current diseases like cancer. The abundance of this plant may make it less likely to be overharvested and thus a good candidate for investigation as more than just a flavoring (USDA Plants Database, 2014).

## Works Cited

- Barbour, Roger W. Digital image. *North American Mammals*. Smithsonian National Museum of Natural History, Retrieved June 9, 2014 from [http://www.mnh.si.edu/mna/full\\_image.cfm?image\\_id=255](http://www.mnh.si.edu/mna/full_image.cfm?image_id=255)
- Coladonato, Milo. Gaultheria procumbens. In: Fire Effects Information System, [Online]. U.S. Department of Agriculture, Forest Service, Rocky Mountain Research Station, Fire Sciences Laboratory (Producer). 2 June 2014. Retrieved on June 5, 2014 from <http://www.fs.fed.us/database/feis/>
- Cybulska, P., SD Thakur, BC Foster, IM Scott, RI Leduc, JT Arnason, and JA Dillon. "Extracts of Canadian First Nations Medicinal Plants, Used as Natural Products, Inhibit Neisseria Gonorrhoeae Isolates with Different Antibiotic Resistance Profiles." *Sex Transmitted Diseases* 36.7 (2011): 667-71. July 2011. Retrieved June 5, 2014 from <http://www.ncbi.nlm.nih.gov/pubmed/21301385>
- Densmore, Frances. "Uses of Plants By Chippewa Indians." Washington: United States Government Printing Office, 1928. Print.
- Doctor Schar. "Common Name: Wintergreen | Scientific Name: Gaultheria Procumbens." Retrieved June 3, 2014 from <http://doctorschar.com/archives/wintergreen-gaultheria-procumbens/>
- Drown, Jerry. Digital image. Retrieved June 8, 2014 from [http://tenn.bio.utk.edu/vascular/database/vascular-photos-enlarge.asp?CategoryID=Dicots&FamilyID=Ericaceae&GenusID=Gaultheria&SpeciesID=procumbens&PhotoNameID=ga\\_proc4&PhotographerNameID=Jerry%20Drown,%20TNPS](http://tenn.bio.utk.edu/vascular/database/vascular-photos-enlarge.asp?CategoryID=Dicots&FamilyID=Ericaceae&GenusID=Gaultheria&SpeciesID=procumbens&PhotoNameID=ga_proc4&PhotographerNameID=Jerry%20Drown,%20TNPS)
- Drugs.com Herbal Database. "Wintergreen Uses, Benefits & Dosage - Drugs.com Herbal Database." Retrieved on June 4, 2014 from <http://www.drugs.com/npp/wintergreen.html>
- Eat The Weeds and Other Things Too RSS. "Checkerberry Cum Wintergreen." Retrieved June 3, 2014 from <http://www.eattheweeds.com/teaberry-shuffle-2/>
- Farmacy Query*. "Dr. Duke's Phytochemical and Ethnobotanical Databases." Retrieved June 4, 2014 from <http://www.ars-grin.gov/cgi-bin/duke/farmacy2.pl>
- Gaultheria Procumbens Checkerberry, Eastern Teaberry, Teaberry, Creeping Wintergreen PFAF Plant Database "Gaultheria Procumbens Checkerberry, Eastern Teaberry, Teaberry, Creeping Wintergreen PFAF Plant Database." Retrieved June 4 2014 from <http://www.pfaf.org/user/plant.aspx?latinname=Gaultheria+procumbens>

- Gaultheria Procumbens. "Gaultheria Procumbens." Retrieved June 4, 2014 from <http://www.fs.fed.us/database/feis/plants/shrub/gaupro/all.html>
- Gilmore, Melvin R. "Some Chippewa Uses of Plants." *Papers of the Michigan Academy of Science, Arts and Letters*. 17 (1932): 119-43. Retrieved June 8, 2014.
- GLIFWC. "Seasonal Harvest Calendar". Retrieved June 7, 2014 from <http://www.glifwc.org/>
- Herron, Scott M., "Medicinal Plants Usage of the Anishinaabek Great Lakes Indians." Detroit, Michigan: Ningiziwaush Press, 2000. Print.
- Lien, Pham-Huy Ai, He Hua, and Pham-Huy Chuong. "Free Radicals, Antioxidants in Disease and Health." *International Journal of Biomedical Science* 4.2 (2008): 89-96. June 2008. Retrieved June 5, 2014 from <http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3614697/>
- Martin, A.C., H.S. Zim, and A.L. Nelson. "American wildlife and plants: A guide to wildlife food habits." Dover Publications. New York. 1951. Print.
- M. McCune, Letitia, Johns, Timothy. "Antioxidant activity in medicinal plants associated with the symptoms of diabetes mellitus used by the Indigenous Peoples of the North American boreal forest", *Journal of Ethnopharmacology*, 82. 2-3 (2002): 197-205, October 2002, Retrieved June 5, 2014 from <http://www.sciencedirect.com/science/article/pii/S0378874102001800>
- Native American Ethnobotany. "Gaultheria procumbens." University of Michigan Dearborn. Retrieved June 4, 2014 from <http://herb.umd.umich.edu/herb/search.pl>
- Naegele, Thomas A. Edible and Medicinal Plants of the Great Lakes. Calumet, MI: T. A. Naegele Survival Seminars, 1980. Print.
- Nature's Sunshine. "Tei Fu® Massage Lotion (4 Oz. Tube)". Retrieved June 7, 2014 from <http://www.naturessunshine.com/us/product/tei-fu-massage-lotion-4-oz-tube/3538/>
- Nikolića, Miloš, Tatjana Marković, Miloš Mojović, Boris Pejind, Aleksandar Savić, Tamara Perić, Dejan Marković, Tatjana Stević, and Marina Sokovića, Sokovića,. *Industrial Crops and Products* 49 (2013): 561-67. *Science Direct*. Aug. 2013. Retrieved June 5, 2014 from <http://www.sciencedirect.com.proxy.lib.umich.edu/science/article/pii/S0926669013002914>
- Noll, Christopher. Digital image. Retrieved June 8, 2014 from [http://wisplants.uwsp.edu/scripts/bigphoto.asp?bigphoto=GAUPRO\\_NOLL.jpg&taxon=Gaultheria%20procumbens%20L.&phog=Christopher%20Noll&spcode=GAUPRO](http://wisplants.uwsp.edu/scripts/bigphoto.asp?bigphoto=GAUPRO_NOLL.jpg&taxon=Gaultheria%20procumbens%20L.&phog=Christopher%20Noll&spcode=GAUPRO)



Pilette, Jacqueline. Little Traverse Bay Bands of Odawa Indians- Native Plants Initiative. 2009. Print.

"Plant Portrait - Wintergreen (Gaultheria Procumbens)." YouTube. Retrieved June 3, 2014 from [http://www.youtube.com/watch?v=EqT9Px1EH\\_Y#t=40](http://www.youtube.com/watch?v=EqT9Px1EH_Y#t=40)

Reagen, Albert B. "Plants Used by the Bois Fort Chippewa (Ojibwa) Indians of Minnesota." *The Wisconsin Archeologist* 7.4 (1928): 239. Wisconsin Archeological Society. Retrieved June 8, 2014.

Rook, Earl J.S. "Gaultheria Procumbens Wintergreen." Valley Internet Company, Retrieved June 7, 2014 from <http://www.rook.org/Fear!%2Fbwca%2Fnature%2Fshrubs%2Fgaultheriapro.html>

Scott, Paul, and R. Halprin. "What Is Methyl Salicylate?" *WiseGeek*. Conjecture, 30 May 2014. Retrieved June 8, 2014 from <http://www.wisegeek.com/what-is-methyl-salicylate.htm>

Smith, Huron. "Ethnobotany of the Menomini Indians." Milwaukee, Wisconsin: Order of the Board of Trustees, 1923. Retrieved June 8, 2014.

Smith, Huron. "Ethnobotany of the Forest Potawatomi Indians." Milwaukee, Wisconsin: Order of the Board of Trustees, 1933. Retrieved June 8, 2014.

Smith, Huron. "Ethnobotany of the Ojibwe Indians." Milwaukee, Wisconsin: Order of the Board of Trustees, 1932. Print.

Stephens, David. Digital image. *All about Birds*. Cornell Lab of Ornithology, n.d. Web. 9 June 2014. <[www.allaboutbirds.org/guide/Ring-necked\\_Pheasant/lifehistory](http://www.allaboutbirds.org/guide/Ring-necked_Pheasant/lifehistory)>.

USDA Plants Database. "Gaultheria Procumbens L. Show All Eastern Teaberry." USDA Natural Resources Conservation Services, Retrieved June 3, 2014 from <https://plants.usda.gov/core/profile?symbol=DGAPR2>

WebMD. "LIMONENE: Uses, Side Effects, Interactions and Warnings - WebMD." WebMD, Retrieved on June 5, 2014 from <http://www.webmd.com/vitamins-supplements/ingredientmono-1105-LIMONENE.aspx?activeIngredientId=1105&activeIngredientName=LIMONENE>>.

White, Stephen, Jr., and Karen C. Danielson. "Threats to Wild Plants in Ceded Territories." (2002): *GLIFWC*. Great Lakes Indian Fish and Wildlife Commission. Retrieved June 8, 2014 from <http://www.glifwc.org/Reports/Project%20Report%202002-01.pdf>

Whitmeyer, Angelyn. Wintergreen in Spring. Digital image Retrieved June 8, 2014 from <http://identifythatplant.com/wp-content/uploads/2014/01/Wintergreen2-1024x830.jpg>.

WINTERGREEN: UW-Stevens Point Freckmann Herbarium: Plant Details Page. "Search Results: Common Name: Wintergreen." Retrieved June 3, 2014 from <http://wisplants.uwsp.edu/scripts/SearchResults.asp?Common=wintergreen>

Wintergreen (Gaultheria Procumbens) // Alpine Plants. "Wintergreen (Gaultheria Procumbens) // Alpine Plants." Retrieved June 3, 2014 from <http://jordanv.biz/Wintergreen/wintergreen-gaultheria-procumbens>

Wikipedia. "Methyl Salicylate." Wikimedia Foundation, 06 Mar. 2014. Retrieved on June 4, 2014 from [http://en.wikipedia.org/wiki/Methyl\\_salicylate](http://en.wikipedia.org/wiki/Methyl_salicylate)

# Wintergreen

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 Scott Herron EEB 455  
 June 10<sup>th</sup> 2014

**Alternate Common Name:** Teaberry and Checkerberry

**Anishinaabemowin Name:** Winsibugons  
 "Little Dirty Leaf"

**Family:** *Ericaceae*

**Scientific Name:** *Gaultheria procumbens*

**Habitat:** acidic sandy soils in meadows and understory aspen and pine forests in Eastern North America

**CAUTION DO NOT** consume in large quantities or use if have adverse reactions to **aspirin** or **methyl-salicylate**

**Uses:**

- Leaves and berries as food for humans and other animals i.e. Eastern chipmunk, black bears, and ring-necked pheasants (+)
- Make tea out of leaves and berries (0)
  - As a beverage
  - For treatment of: upset stomach, headaches, muscle aches, and arthritis pain
- In past to treat sore throats, colds, and fevers (0)
- Today is a flavoring and fragrance as well as a topical and oral anti-inflammatory (0)

**Key**

- (+)= benefits plant
- (-)= detrimental to plant
- (0)=neutral



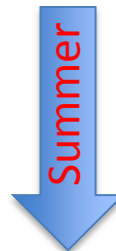
- Red shots emerge and grow into new stems and red-green leaves (+)
- Berries and leaves that survived the winter can be harvested (-/0)



- Leaves darken to a red purple to survive the cold (+)



(USDA Plants Database, 2014)



- Leaves darken to deep green (+)
- Clusters of white tubular flowers develop (+)
- Berries are produced (+)

## Life Cycle



- Berries and leaves mature and can be harvested (-/0)
- New shoot growth continues (+)
- More clustered white flowers bloom (+)

