



# Plants for the Prevention and Treatment of Type 2 Diabetes

## Salish Country and Plants from around the world

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### ABSTRACT

Salish speaking peoples in southwestern Canada and northwestern United States use a wide range of plants for medicinal purposes that contain compounds that naturally prevent and treat chronic diseases—in particular Type 2 Diabetes. These populations have been engaged in nutritional transition for over 50 years and are more dependent on processed and commercial foods that stimulate insulin and thus contributes to Type 2 Diabetes. Indigenous peoples' incidence of chronic diseases is increasing more rapidly than other populations, though it is evident that the incidence of Type 2 Diabetes experienced by adults is increasing at a higher rate in middle income and lower income countries throughout the world. Many plants are available globally and in Salish Country are hypoglycemic, anti-inflammatory and anti-oxidant all of which can to help prevent and treat Type 2 Diabetes.

**Key Words:** Type 2 Diabetes, indigenous peoples, World Health Organization, chronic disease.

Plants are one of the earth's gifts of medicine and, until recently, were the primary source of medicine before pharmaceuticals. Plant medicine is one form of spirit power that an experienced and knowledgeable person of medicine can help reverse. For example, stinging nettles provide a powerful treatment for arthritis when the freshly harvested canes are brushed over the painful area. The same plant makes a fine tea that helps "clean the blood" and helps the liver release its toxins. Oregon grape, a low growing evergreen that produces a deep blue berry, is a good source for taming upset stomachs. Numerous other plants have powers to stop diarrhea or help soften the stools. Salal berries, huckleberries, and cranberries slow sugar absorption and consequently serve the purpose of helping people prevent or slow the adverse effects of diabetes. They are also rich in blue pigment that scavenges the "rust" that collects in the bloodstream. Leaves, berries, bark, roots, stems and flowers are all power parts of plants that act as helpful energizers, digestive stabilizers or aids for sight, and serve as skin cleansers, hair washers, fungus managers, and pulmonary congestion reducers. With such immense capacities to help, it is no wonder that plant medicine is so important. Below is a selection of plants used in Salish Country and while most of these plants are endemic to the Pacific Northwest, some of them are also found elsewhere, with some brought by contact with outsiders that have become part of the local pharmacopeia.

The process of identifying, cataloging and preparing plants for medicinal use is an important part of cultural and medical revitalization within communities. The Salish repertory of plant medicine is extensive. Below is a brief selection of plants with special application for Diabetes Type 2 and related cardiovascular sequelae.

## Alaskan Blueberry

*Vaccinium alaskaense* Howell



**Uses:** Blueberries are eaten fresh, dried, and cooked into sauces, jellies and jams. They are a good source of fiber, as well as vitamins A and C. Traditional uses of blueberry include blending the berries with meat and fat to make pemmican, as well as eating them fresh or dried. The Inupiat people use blueberries to pickle fish and bearded seal. The berries are also used as a bluish dye, and the twigs of the plant are used in the joints of cedar wood boxes.

Medicinally, blueberries are known to be helpful in treating cystitis/urethritis, diabetes, and hypoglycemia. For diabetes, an afternoon dose of one-half cup of a blueberry leaf infusion helps the effects of insulin (injections) last longer. To prepare this infusion, steep one ounce of dried blueberry leaves (or three ounces fresh) in two cups of just boiled water for 10 minutes. Strain and drink. This may help lower the number of necessary insulin injections throughout the day.

## Black Hawthorn

*Crataegus douglasii* Lindl



**Uses:** Hawthorn berries are dried and ground into flour for making bread and cakes. Hawthorn berry jelly is another way to eat this wonderful plant. Hawthorn flowers support heart health, and especially improve coronary circulation, stabilize blood pressure, and reduce angina attacks. The flowers have been used to treat hypertension, arteriosclerosis, and angina pectoris for centuries. The berries are rich in bioflavonoids, which prevent bruising and are a powerful antioxidant.

To prepare a Hawthorn flower infusion, steep one ounce of the dried herb (or three ounces fresh) in two cups of just boiled water for 10 minutes. Drink half a cup, three times a day. The berries can be made into a decoction by simmering one ounce of dried berries in three cups of water for 15 minutes. Drink one-half cup up to three times a day.

## Blackberry, Pacific Blackberry, Wild Blackberry

*Crataegus douglasii* Lindl



**Uses:** Blackberries are edible and are commonly added to jams, or canned or frozen. Traditionally, they are mashed and made into cakes and mixed with fish and meat. Tea is made from very fresh or dried leaves for diarrhea, stomach problems, sore throats, and mouth sores, while the roots are sometimes used to treat colds. Beyond medicinal uses, many Salish peoples make tea from the leaves for a delicious beverage, or add the leaves to bitter beverages to sweeten them.

## Blue Elderberry

*Sambucus cerulea* Raf.



**Uses:** Blue elderberries are edible, although the stems, leaves and bark of this plant are toxic and should be avoided. Red elderberries are also toxic and should not be eaten. The blue berries are frequently used to make preserves and syrup, and they are rich in vitamin C. They are eaten fresh in late summer or dried for winter use. The bark and leaves are made into an extract and used to treat diarrhea, colds, sore throats, fevers, cuts, and sores. Removing the pith from the stems allows the stems to be used as whistles or flutes.

To make a tea of elderberry, steep one ounce of the dried berries (or three ounces fresh) two cups of just boiled water for 10 minutes. Drink half a cup, three times a day. Combining it with peppermint leaves makes a relaxing tea.

## Bog Cranberry, Small Cranberry, Wild Cranberry

*Vaccinium oxycoccos* L.



**Uses:** Cranberries can be eaten fresh, cooked, or dried. Salish peoples prefer to cook the berries and eat or store them in oolichan oil. Dried cranberries are stored for winter use and used in desserts. The Quinault, Klallam, and Makah of Washington steam the green berries and eat them or wrap them in moss until they soften. Medicinally, cranberries are used to help with urinary infections; it is believed that D-Mannose in the cranberry prevents bacteria from adhering to the epithelium of the urinary tract.

## Cattail

*Typha latifolia* L



**Description:** Cattail, an aquatic perennial, forms in dense stands in wetlands, marshes and shallow ponds. The leaves are narrow and erect, sprouting from the base of the stem and growing to around seven feet long. The flower stalk is strong and unbranched, typically rising to around six feet. Mature plants have both yellowish male and greenish female flowers, with the male flowers occurring above the female flowers on the stem. Flowers bloom in summer and afterwards the male flowers break up and are dispersed, leaving the tips of the stalk bare. The female flowers turn brown and form a cylindrical spike that resembles a cat's tail.

**Uses:** The cattail has many edible parts. The roots can be dug up in early spring and the young shoots peeled and eaten. The flowers, which are high in carbohydrates, can be steamed or cooked when in bloom, or collected late in the season when they are filled with nutritious pollen that can be used to enrich flour. This pollen is high in amino acids and protein. Traditionally, the roots and the stocks of the cattail are baked in ashes and eaten. Cattail is used for weaving mats and baskets. Cattail flowers are used for diarrhea and indigestion, and the boiled roots are applied to burns and skin problems.

## Chestnut, American Chestnut

*Castanea dentata* (Marshall) Borkh.



**Description:** Chestnut is a large tree, reaching over 100 feet in height, that grows in North America, Europe and western Asia. It has alternate, toothed, long and narrow leaves that are dark green on top and lighter underneath. The pale green to white flowers are long catkins which may be male or female. Fruits form inside of round spiny burrs in groups of 1-5 brown nuts. Chestnuts ripen in early fall and are nearly round except for one or two flattened sides. The chestnut is not native to the Pacific Northwest, but it was introduced to this region in the 19th century.

**Uses:** The leaves and inner bark of the chestnut have medicinal properties, and the chestnuts are edible and high in carbohydrates, starch, and potassium. Fresh or dried leaves are useful in treating coughs, hiccuphs and other respiratory conditions. Chestnut leaves are also helpful in cases of diarrhea, arthritis, hemorrhoids, and intestinal inflammation.

## Chickweed

*Stellaria media* (L.) Vill.



**Description:** A small, widespread plant, chickweed is low growing and tends to form mats. The small plants are not bothered by frost and can be found in bloom or in seed throughout the year. It has small oval and opposite leaves, and tiny, white flowers with five, deeply-notched petals. The fruits are small pods containing large numbers of tiny seeds. Since it is widespread and non-native, chickweed is frequently considered an invasive weed in many areas.

**Uses:** Chickweed is rich in iron and potassium, and it tastes similar to spinach. It can be included in soups or stews, and the raw leaves, seeds, and flowers can be added to salads. The small seeds can also be ground into a flour to be added to other cereals, breads, or used for thickening. Chickweed is used for any condition involving itching as it is astringent. It can be added to bath water to help relieve inflammations, typically those specific to joints. Decoctions are used to improve circulation, and juice from the plant.

To make an infusion of the leaves and flowers, steep 2-3 ounces of the fresh plant in two cups of just boiled water for 10 minutes. Drink one-half cup up to three times daily.

## Choke Cherry

*Prunus virginiana* L.



**Description:** A deciduous shrub, 3 to 10 feet high, with alternate, broadly oval, pointed, toothed leaves. The small, whitish, flowers grow in elongated clusters and develop into round, bright red to purplish black fruits with large stones. Choke cherry grows in thickets, ravines, sandy and rocky areas, and woodlands.

**Uses:** Choke cherries are eaten fresh, cooked, or dried. They are easy to harvest and ripen in August and September. Traditionally, they are crushed with fat, dried bear, or elk meat. They are also dried in large quantities on mats in the sun and saved for winter use. Dried cakes are also eaten with fish or as a dessert. Choke cherries are also commonly used to make juice, jellies, and wine. Medicinally, this fruit has been used extensively for trade as a cough medicine. It is also good for high blood pressure, heart problems, stomachaches, diarrhea, and flues. A tea made from the leaves, stems, barks and roots, is beneficial for loosening phlegm in the throat.

## Dandelion

*Taraxacum campylodes*

G.E. Haglund



**Description:** This well known plant was originally introduced from Europe and quickly adapted to North America, where it is pervasive. It has thick leaves in a rosette form that release a milky white fluid when broken. The root is a long taproot, and it has single yellow flowers growing on hollow stalks. When broken, the stems release a milky fluid.

**Uses:** Dandelion greens are commonly eaten in salads and cooked and steamed. They are an excellent source of vitamin A, calcium, potassium, and iron. Young leaves harvested before the flowers bloom are the best, as the older leaves tend to have a bitter flavor. As a diuretic, dandelion is helpful for retaining fluids and helping with urinary problems. The root, which can be roasted and made into a delicious, coffee-like tea, is mildly laxative and detoxifying for the liver. Dandelion root is also used for arthritis and skin problems.

To enjoy the benefits of dandelion, the fresh leaves can be pureed with water and made into a juice. Drink one-half ounce up to three times a day. A dandelion infusion can also be made by steeping one ounce of the dried herb (or three ounces fresh) in two cups of just boiled water for 10 minutes. Drink one-half cup three times daily.

## Dock, Yellow Dock

*Rumex crispus* L.



**Description:** Dock is found everywhere and commonly grows along roadsides. It has tall, vertical stems rising from the root crown that turn a reddish-brown at maturity. The leaves of dock are crisped, or curly, at the margins and they are long and narrow. Small green flowers grow at the end of long stalks. The thick yellow taproot may reach as deep as four feet, with branches as long as three feet.

**Uses:** Dock is used both as an edible and medicinal plant. The greens are high in vitamin A, potassium, and magnesium. The Chehalis traditionally cook the larger plant stems on hot rocks over cedar and maple limbs, and the Cowlitz use a decoction made of the boiled stalks to treat leg sores. It is a cleansing herb and is useful in dealing with chronic skin problems, arthritis, jaundice, and rheumatism. It is also detoxifying and mildly laxative.

To make an infusion, steep one ounce of the dried herb (or three ounces fresh) in two cups of just boiled water and drink one half cup, three times a day.

## Hazelnut

*Corylus avellana* L.



**Description:** This tall, branching shrub has smooth branches and pointed leaves that are broad and toothed. The young twigs of this bush are fuzzy. Hazelnut has both male flowers, which form in long yellow catkins, and female flowers, which are small and red at the ends of branches. The fruits are nearly round nuts encased in oblong, green, prickly husks. This plant is found along the coast in shady forests or in open areas inland throughout western, central, and eastern North America.

**Uses:** A valuable source of protein, calcium, phosphorus, and potassium, hazelnuts are edible and can be eaten fresh or stored for later use. They are traditionally buried in the ground for ten days in order for the prickly husks to rot off. The Cowlitz people store hazelnuts for winter by burying them in a cylindrical fish trap. The Lummi, Snohomish, and Swinomish eat the fresh nuts. In addition to a food source, the hazelnut bush is also used for making arrows from the young shoots, and the Skokomish twist the peeled shoots into rope. The twigs are used by the Chehalis to tie things together. Fresh branches were made into mats for sitting on, and a green dye is obtained from boiling the nuts.



## Hemp

*Cannabis sativa* L.



**Uses:** The most commonly used parts of the plant are the leaves and flower buds, which may be either smoked or eaten; the leaves are often added to soups or stews. The leaves and buds, when grown in a hot climate, are well known for their narcotic effects. Seeds are edible in much the same way as sunflower seeds. They are made into snacks, cookies, porridge, and trail mix. They can be ground into flour and are used as a grain to make beer. Hemp seeds are very nutritious, with high amounts of protein, calcium, and phosphorus. The oil within the seed can be used for cooking, lubrication, and medicinal purposes. Hemp seeds may be purchased at health food stores and co-ops. Medicinal uses are wide, varied, and controversial in the United States. Hemp or Marijuana is most commonly used for pain relief, as a sleep aid, and to soothe nervous disorders.

The fibers of the hemp plant can be made into thread or rope, or a pulp can be made and formed into paper, while the plant itself acts as a repellent for cabbage white fly and some other soil microorganisms.

## Juniper (Berries)

*Juniperus communis* L.



**Uses:** While juniper berries are edible, they are very astringent and are toxic for small children or when eaten in large quantities. Use a small amount in stews as flavoring or to make a diuretic tea. Juniper oil, the extract from the leaves, is toxic. Native peoples use many parts of the pungent juniper plant, but the berries are only eaten in times of scarcity. The leaves provide high amounts of protein, vitamin C, calcium, phosphorus, potassium, and magnesium. The berries are used to flavor deer meat while cooking. Juniper wood is used to make bows, and the branches are burned as a cleansing smoke and incense. Cleaning solutions are made from boiling the branches in water. As a medicine, juniper root is used by the Swinomish to treat rheumatism, and the leaves are boiled to use as a disinfectant.

## Lamb's Quarter, Fathen

*Chenopodium album* L.



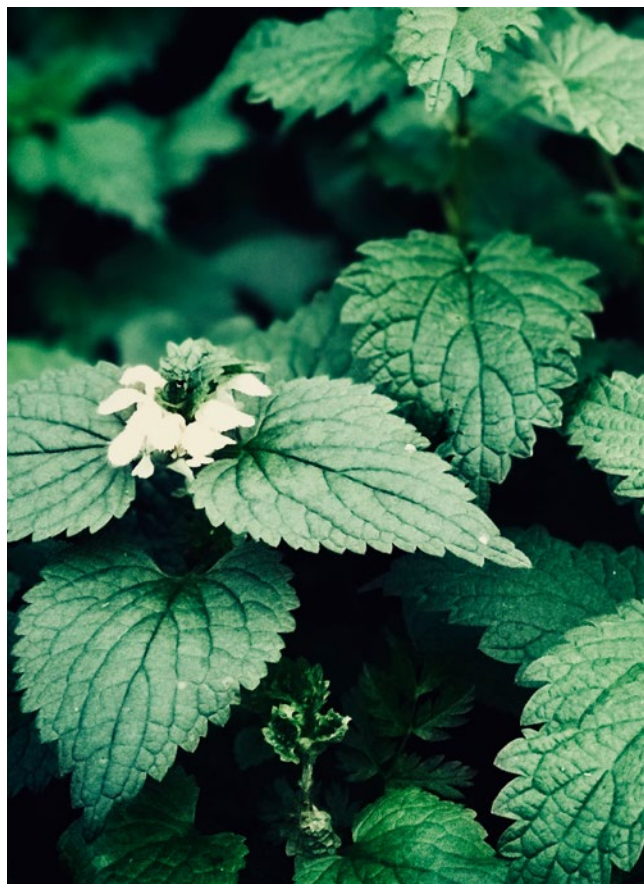
**Uses:** The young, tender leaves can be eaten like spinach, either raw in salads or cooked. It is more nutritious than spinach, and better tasting. The leaves are especially high in protein, vitamins A, B and C, iron, calcium, phosphorus and potassium.

The seeds are the size of poppy seeds and are rich in protein, carbohydrates, fiber, calcium, potassium, magnesium, and iron. They can be eaten as a grain or seasoning.

Medicinally, lamb's quarter can be made into an infusion to treat painful limbs, and can be used both externally to reduce inflammation. To make an infusion of lamb's quarter, steep three ounces of the fresh leaves in two cups of just boiled water for 10 minutes. Strain and drink one half cup, three times daily.

## Nettle

*Urtica dioica* L.



**Uses:** The leaves and tender shoots are edible when cooked. Nettle leaves and plant tips should be collected with gloves on before they flower in spring. They can be cooked like spinach, simply steaming or parboiling for a few minutes, which deactivates the stinging hairs. They are rich in protein, chlorophyll, vitamins A, C and D, as well as iron, calcium, potassium, magnesium, and manganese. Traditional uses of nettle include making twine from the inner pith of the dried stems, and spinning fiber to make blankets.

As a medicinal nettle is an excellent spring tonic, and oils and ointments are useful in treating skin problems and arthritic or rheumatic pain.

## Red Elderberry, Red Elder

*Sambucus racemosa* L.



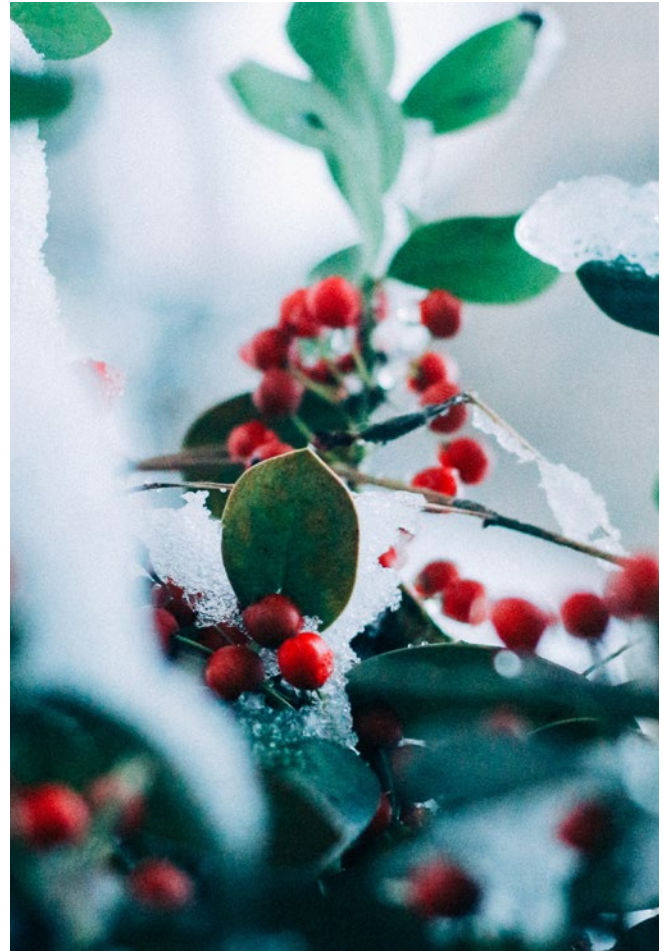
**Uses:** Eating fresh red elderberries is not recommended, but they can be cooked and eaten as long as the seeds are removed before eating them. Indians eat them after cooking them, and they harvest the berries using long hooked poles. They are then boiled, mashed, and stirred while cooking, to make a thick, jam-like sauce which can be eaten or stored for winter in dried cakes. Elderberry stems have traditionally been hollowed out to make flutes, whistles, straws, and pipe stems.

Elderberry medicines are useful in treating colds, fevers, sore throats, diarrhea, and open wounds. The flowers are made into eyewashes and they are also used for rheumatism as a nerve relaxer. The leaves can be made into poultices to help with sprains and skin problems. Both the leaves and flowers are frequently used in topical treatments for hemorrhoids, boils, and burns.

The blossoms of elderberry can be made into a soothing herbal tea medicine useful in treating colds, fevers, sore throats, and diarrhea. Steep one ounce of dried blossoms (or three ounces fresh) in two cups of just boiled water for 10 minutes and strain, then drink the tea.

## Red Huckleberry, Red Bilberry

*Vaccinium parvifolium* Sm.



**Uses:** The berries are used fresh or dried. Rather than picking individual berries, natives comb the berries off the twigs. Huckleberry syrup, jams, and jellies are a popular way to prepare these delicious berries. Tea can also be made from the dried fruit and leaves. Decoctions of the bark are used in the treatment of colds and red huckleberry juice is used for excessive menstruation. Infusions of the bark, leaves and berries are used to stimulate appetite and in the treatment of arthritis, diabetes, and heart trouble.

## Redroot Pigweed, Redroot Amaranth

*Amaranthus retroflexus* L.



**Uses:** Both the leaves and stems are edible and can be cooked as a green, like spinach, or eaten fresh in salads. They are very nutritious and high in protein and many vitamins and minerals, including vitamin A, calcium, sodium, potassium, and zinc. The seeds of amaranth, which are very nutritious, can be cooked as a grain or made into flour. Amaranth is used as a restorative tonic.

An infusion can be made with the leaves by steeping one ounce of the dried leaves (or three ounces fresh) in two cups of just boiled water for 10 minutes. Strain and drink one half cup, up to three times a day.

## Violet

*Viola* spp.



**Description:** There are approximately 22 genera and 900 species within the violet family. In the Northwest some common varieties include the early spring violet, marsh violet, Canada violet, stream violet and the trailing yellow violet. It is a low growing plant with leaves that are usually simple and alternating on the stems. Flowers are small and heart-shaped, ranging in color from blue to violet, white, and yellow.

**Uses:** The whole plant is edible; the leaves and flowers are used as greens and in salads, or in soups and sautés. There is more vitamin C in a small handful of violet leaves than in an entire orange. They are also high in vitamin A. Moderation should be used in eating the fresh wild leaves, however, because they contain soap-like compounds called saponins that can upset the stomach when eaten in large amounts.

As a medicine, violet is useful for inflammation, sore throats and coughs, pain, and swollen glands, as well as for chronic skin problems and bruising. An infusion can be prepared by steeping one ounce of the dried leaves and flowers (or three tablespoons fresh) in two cups of just boiled water for 10 minutes. Drink up to three cups a day. Crushed flowers may be used for pain relief by laying them on the chest or side, but leaving them on for more than two to three hours can cause blistering, so use caution.

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## Western Hemlock

*Tsuga heterophylla* (Raf.) Sarg.



**Description:** Western Hemlock is an evergreen shrub that grows from 100 to 160 feet tall with a trunk of about 3 feet in diameter. Both the top and the branches are drooping and it has thick, dark brown bark. The needles are varied in length, between 1/4 to 3/4 inches long, and they are flat with a blunt end. The underside of the needles has two white bands. It has light brown cones about an inch long. Western Hemlock is found growing from Alaska to California and prefers humid climates.

**Uses:** The twigs and tips of hemlock make a delicious tea that is high in vitamin C. Steep one table-

spoon of the fresh or dried tips in one cup of hot water for at least 5 minutes, strain and drink. A tea made with the inner bark or twigs is traditionally used to treat colds, flu, and fevers. Hemlock is also used in the treatment of kidney and bladder ailments, and for skin sores, sore throats, and arthritis.

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## Wild Crabapple

*Malus fusca* (Raf.) C.K.Schneid.



**Description:** A small shrub like tree, wild crabapple grows between 9 to 30 feet tall. It has gray bark and dark green, pointed, toothed leaves. The white to pink flowers grow in flat groups of 5 to 12. The small, oblong, yellow to reddish crabapples hang from long stems in clusters. Western crabapple can be found growing in moist areas in the Pacific Northwest.

**Uses:** Crabapples are edible, although tart when eaten alone. They are usually made into jelly or sauces. The boiled bark is traditionally used as a decoction to treat stomachaches, ulcers, tuberculo-

sis, and loss of appetite. Crabapple wood is used to make handles, bows, wedges, sledge hammers, and digging sticks. The Quileute use the wood to make maul handles, seal-spear prongs, and lures.

To make a decoction of the bark, place one ounce of dried crabapple bark in two cups of cold water. Bring it to a boil and let simmer for 15-20 minutes until the liquid is reduced to about two-thirds of the original amount. Strain and drink as needed.

## Wild Ginger

*Asarum caudatum* Lindl.



**Description:** Wild ginger has glossy, heart-shaped green leaves that grow directly out of the spreading rootstocks. When crushed the leaves release the smell of ginger. The rootstocks are usually spreading just below leaf mulch. The small lavender flowers have three long petals and bloom in mid-spring. The flowers are often difficult to see as they typically grow beneath the leaves.

**Uses:** Wild ginger can be used just like commercial varieties. The leaves can also be used to make tea. Medicinally, wild ginger is known for its sweat

inducing properties. It is useful for hot, dry head colds, bronchial problems, and general issues of heat and dryness. The dried roots and leaves can be made into extracts or teas. To make a tea, steep one ounce of the dried root and/or leaves (or three ounces fresh) in two cups of just boiled water for 10 minutes.

## Wild Raspberry

*Rubus idaeus* L.



**Description:** Similar to the garden variety of raspberry, wild raspberry grows between 1 to 6 feet tall. It is a spreading shrub with thin prickles. Its leaves grow in groups of three to five leaflets with irregular toothing and pointed tips. The small flowers are white with five petals and appear from May to July. The red, hollow berries ripen from July to August. It grows from south of Canada through Washington to California.

**Uses:** Raspberries are sweet, delicious, and full of vitamins B and C, and rich in magnesium, calcium, iron, and phosphorous. They can be eaten fresh, dried, or prepared as jellies, deserts, cakes, pies,

syrups, and vinegars. The young, tender sprouts are also edible and nutritious. The leaves are useful as a medicinal to sooth stomach problems, diarrhea, and influenza. It is also well known for its ability to relieve cramps and reduce menstrual bleeding. During pregnancy it will diminish morning sickness and tone the reproductive organs. Raspberry leaf tea is also beneficial for strengthening the body and the heart, and its mild sedative effect makes it an excellent bedtime tea.

To make raspberry leaf tea, steep one ounce of the dried leaves (or three ounces fresh) in two cups of just boiled water for 10 minutes. Strain and drink as needed to relieve stomach problems, diarrhea, and cramps.

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## Beach Strawberry

*Fragaria chiloensis* (L.) Mill.



**Description:** This perennial grows low to the ground from 2 to 8 inches high. It has thick, toothed leaves that grow in groups of three and turn reddish during the winter months. They are dark green

above with fine hairs below. The flowers are white with five petals and grow on stalks separately from the leaves. The red berries are sweet and juicy with seeds on the surface. They appear between April and June.

**Uses:** Wild strawberries are eaten fresh, dried, or cooked in a multitude of desserts. They are high in vitamins A and C, as well as sulfur, calcium, potassium, and iron. The young shoots are also edible, as are the leaves, which can be used fresh or dried in herbal tea blends. Strawberry also has many medicinal values, especially as a tonic that is well suited for pregnant women. Strawberry tea is also known for healing loose teeth and spongy gums. Additionally, it is used externally to treat eczema, wounds, vaginitis, and as a gurgle for mouth sores and sore throats. Whereas the fruits are mildly laxative, the leaves and roots are astringent and will firm up loose bowels, making them useful for diarrhea, dysentery, and urinary tract problems.

Many plants native to locations around the world contain compounds that effectively prevent or treat Type 2 Diabetes. Indeed plants specifically provide compounds that lower blood sugar (hypoglycemic) reduce inflammation (anti-inflammatory) and reduce oxidative stress (Anti oxidants) Knowing the specific plants that can benefit the prevention and treatment of this chronic disease is significant in light of the growing level of incidence of diabetes people suffer around the world. As the figures illustrate, melons, grasses, roots and nuts are part of the repertoire of plants that has served human health since time immemorial. The Salish plants sources echo the global plant picture of foods that can be consumed to prevent and treat Type 2 Diabetes.

## Most Widely-Used Traditional Anti-Diabetic Plants Around the World

COMMON	SCIENTIFIC NAME	COUNTRIES WHERE USED TRADITIONALLY
<b>Bitter Melon</b>	Curcubitaceae (Momordica charantia L.)	Saudi Arabia, West Africa, Pakistan, India, Sri Lanka, Thailand, Fiji, Bimini, Panama, Puerto Rico, Belize, Jamaica, Trinidad, Virgin Islands, England, Mexico
<b>Madagascar Periwinkle</b>	Apocynaceae (Catharanthus roseus L.) G Don	Australia, England, Thailand, Zulu Natal, Mozambique, India, Philippines, Vietnam, Dominican Republic, Jamaica
<b>Cashew Nut</b>	Anacardiaceae (Anacardium occidentale L.)	Ecuador, Colombia, Mexico, Venezuela, Jamaica, Madagascar, India, Thailand, England
<b>Cumin</b>	Apiaceae (Cuminum cyminum L.)	India, Pakistan, Thailand, West Indies, USA, West Portugal
<b>Eucalyptus</b>	Myrtaceae (Eucalyptus globules Labill.)	Indies, Mexico, Guatemala, China
<b>White Lupine</b>	Leguminosae (Lupinus albus L.)	Canary Islands, India, Israel, Portugal, Morocco, Israel, Egypt
<b>Fenugreek</b>	Leguminosae (Trigonella foenum-graecum L.)	France, India
<b>Onion</b>	Amaryllidaceae (Allium cepa L.)	Haiti, India, Tunisia, Kuwait, India, Saudi Arabia, Mexico
<b>Aloe Vera (the wand of heaven)</b>	Xanthorrhoeaceae (Aloe vera L.) Burm f.	Mexico, North Africa, Canary Islands, Cape Verde Islands, Florida Keys, Dominican Republic
<b>Garlic</b>	Amaryllidaceae (Allium sativum L.)	North Africa, Peru, India, Saudi Arabia, Mexico, Venezuela
<b>Yellow Bells, yellow Elder</b>	Bignoniaceae (Tecoma stans L.) Juss ex Kunth	India, Mexico, Guatemala, Virgin Islands, Cuba
<b>Stinging Nettles</b>	Urticaceae (Urtica dioica L.)	England, USA, Guatemala, Nepal, India
<b>Dandelion</b>	Compositae (Taraxacum campylodes G.E. Haglund)	Costa Rica, Mexico, USA

Adapted from: Farnsworth, N., *The Protocol Journal of Botanical Medicine*. Winter 1996, p. 90



## Most Widely-Used Traditional Anti-Diabetic Plants Around the World

COMMON	SCIENTIFIC NAME	COUNTRIES WHERE USED TRADITIONALLY
<b>Unispike Kyling</b>	Cyperaceae (Kyllinga nemoralis J.R. Forst & G. Forst Dandy ex Hutch & Dalziel)	India, Ethiopia, Indonesia, South America (country not specified)
<b>Emblic</b>	Phyllanthaceae (Phyllanthus emblica L)	India, Nepal, Tibet, Pakistan, Indonesia, India, West Indies
<b>Stone-breaker, gale-of-the-wind</b>	Phyllanthaceae (Phyllanthus niruri L.)	India, Pakistan, Thailand, West Indies, USA, West Portugal
<b>Neem Tree</b>	Meliaceae (Azadirachta indica A. Juss)	India, Fiji, Saudi Arabia, Trinidad
<b>White Mulberry</b>	Moraceae (Morus alba L.)	India, USSR, China, Peru
<b>Wild carrot, Queen Anne's lace</b>	Apiaceae (Daucus carota L.)	India, China, England, USA
<b>Onion</b>	Amaryllidaceae (Allium cepa L.)	Haiti, India, Tunisia, Kuwait, India, Saudi Arabia, Mexico

Adapted from: Farnsworth, N., *The Protocol Journal of Botanical Medicine*. Winter 1996, p. 90

The World Health Organization reported in 2016 that the incidence of adults living with diabetes increased to 422 million documented cases by 2014 from an earlier measure of 108 million documented cases in 1980 (Chan, 2016; World Health Organization, 2017). As the WHO notes, the incidence of diabetes has grown at a faster rate in middle income and lower income countries than in higher income countries. The conventional remedy for preventing Type 2 Diabetes follows this line of thinking: “as exercising regularly, eating healthily, avoiding smoking, and controlling blood pressure and lipids” (Kuhnlein et al., 2013; World Health Organization, 2017). While the conventional wisdom is widely reported there is growing evidence that indigenous peoples experience even higher levels of chronic

disease associated with what is increasingly understood as “nutrition transition”—the increased consumption of commercially produced foods at the expense of traditional foods and what is also called Nutrition trauma. <sup>1</sup>Nutrition trauma occurs when introduced foods overwhelm the capacity of the local (indigenous) peoples to digest and metabolize these new foods, which often cause conditions that were unknown or rare before the colonial process. (Korn, & Ryser, 2006). Type 2 Diabetes is fully associated with the consumption of commercially produced foods by indigenous peoples and this is

<sup>1</sup>Korn, L., & R yser, R. (2006). Burying the umbilicus: Nutrition trauma, diabetes and traditional medicine in rural West Mexico. In G. C. Lang (Ed.), *Indigenous peoples and diabetes: Community empowerment and wellness* (pp. 231–277). Durham, NC: Carolina Academic Press.

no less true among indigenous peoples in the southwest of Canada and the northwest of the United States (Korn, 2009). The varied diet of Salish peoples prior to contact ensured virtually no diabetes and its sequelae preceding the settlement of their homelands by Russians, Spaniards and the British between 1774 and 1855. The nutrition transition for the Salish began in the middle 19th and accelerated by the early to middle 20th century resulting in rapidly growing incidence of chronic disease. The restoration of native plants and the elimination of commercially processed foods in the diet of the Salish peoples as with peoples around the world will begin the process of eliminating many chronic diseases such as Type 2 Diabetes.

Many thanks to Ethnobotanist Juliet Totten, for assistance identifying the Latin Binomials for the plants in this paper.

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## REFERENCES

Chan, M. (2016). Global report on diabetes. *World Health Organization*, 58(12), 1–88. <http://doi.org/10.1128/AAC.03728-14>

Korn, LE (2009) Preventing and Treating Diabetes, Naturally, The Native Way. Daykeeper Press.

Kuhnlein, H., Egeland, G., Turner, N., Marquis, G., Creed-Kanashiro, H., Salmeyesudas, B., ... Damman, S. (2013). *Indigenous Peoples' Food Systems & Well-being: Interventions & policies for healthy communities*. (H. Kuhnlein, B. Erasmus, D. Spigelski, & B. Burlingame, Eds.). Rome, Italy: Food and Agriculture Organization of the United Nations.

World Health Organization. (2017). *World Health Statistics 2017 : Monitoring Health for The SDGs*. World Health Organization. <http://doi.org/10.1017/CBO9781107415324.004>

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### ***This Article may be cited as:***

Korn, L.E., (2019) Plants for the Prevention and Treatment of Type 2 Diabetes. Salish Country and Plants from around the world. *Fourth World Journal*. Vol 17, N 2. pp. 44-61.

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