

Acorus calamus

[Synonyms : *Acorus americanus*]

SWEET-FLAG is a semi-evergreen, aquatic rush. Native to eastern Europe, North America and central Asia (India, and Burma – known today as Myanmar – particularly) it has a spike (spadix) of many minute, sweet scented, greenish-yellow flowers shielded by a leaf-like green spathe.

It is also known as *Acorus*, *Acore odorant* (French), *Acore vrai* (French), *Acoro aromatico* (Italian), *Acoruswurz* (German), *Akorum* (Czech), *Bach* (Bengali, Hindi), *Bacha* (Punjabi, Urdu), *Baje* (Kannada), *Beewort*, *Bhadra* (Sanskrit), *Bitter pepper root*, *Calamo* (Spanish), *Calamo aramatico* (Italian), *Calamus*, *Calamus root*, *Calmus*, *Cinnamon rush*, *Cinnamon sedge*, *Daringo* (Javanese), *Deringo* (Indonesian), *Echter kalmus* (German), *Flag lily*, *Flagroot*, *Gandhilovaj* (Gujarati), *Gellesgen Beraroglaidd* (Welsh), *Gladdon*, *Grass myrtle*, *Jerangau* (Malay), *Kalamus* (German), *Kalmus* (Danish, Swedish), *Kasom cheun* (Thai), *Kahtsha itu* (Pawnee North American Indian), *Lubigan* (Filipino/Tagalog), *Maka-kereli* (Winnebago North American Indian), *Maka-ninida* (Omaha and Ponca North American Indian), *Myrtle bush*, *Myrtle flag*, *Myrtle grass*, *Myrtle sedge*, *Nejedlik* (Czech), *Pine root*, *Prskořen* (Czech), *Puškvorec obecný* (Czech), *Puškvorec obyčajný* (Slav), *Reed acorus*, *Rohtokalmujuuri* (Finnish), *Safed bach* (Hindi), *Sea sedge*, *Sedge cane*, *Sedge grass*, *Sedge rush*, *Shōbu* (Japanese), *Sikpe-ta-wote* (Dakota North American Indian), *Šišvorec* (Czech), *Swamp root*, *Sweet calomel*, *Sweet calamus*, *Sweet cane*, *Sweet cinnamon*, *Sweet-flag root*, *Sweet grass*, *Tatarák* (Czech), *Tatarská tráva* (Czech), *Tatarské býlí* (Czech), *Themeprii* (Assamese), *Vabi* (Kashmiri), *Vacha-vaj* (Gujarati), *Vadaja* (Telugu), *Vashambu* (Tamil), *Vashampe* (Malayalam), *Vekhand* (Marathi), *Wada-kaha* (Singhalese), *Wild flag*, and *Wild iris*; and in flower language is said to be a symbol of resignation.

The leaves, and the underground stem (both fresh or dried) have an aromatic cinnamon-like (*Cinnamomum verum*) fragrance, and yield an essential oil known as ‘Oil of Calamus’.

Warning – only small medicinal doses of the dried underground stem should be taken internally to avoid digestive irritation. The essential oil in the underground stem (which traditionally has been chewed by mill and mine workers) has cancerous properties and its use has been banned in the United States. However in Europe the stem grown there (compared with that from India) has lower concentrations of the offending ingredient aserone and no malignant cases have been reported. Large doses can cause hallucinatory effects.

Sweet-flag is similar in appearance to purple iris (*Iris versicolor*) and yellow iris (*Iris pseudacorus*) when not in flower although the leaves are glossy, yellowish-green unlike the dull blue-green iris blades.

Calamus is derived for some authorities from Greek *kalamos* (reed, cane) and for others from Arabic *kalon* of similar meaning, and is a classical Latin name for the plant.

A very old plant from the East (which is understood to have been traded for at least 4,000 years), the underground stems were imported by the Egyptians for their aromatic properties – and it was also familiar to the Arabs and the Persians. Sweet-flag is referred to in Exodus in the Old Testament of the *Bible* as an ingredient in ‘the oil of holy

ointment' used for anointing altars and sacred vessels. Although some authorities suggest that a grass-like plant (not sweet-flag) was in actual fact being referred to yet others note that the underground stem was imported to Jerusalem from central Asia at that time – and others still that it might be referring to palma-rosa (*Cymbopogon martinii*). It was also one of the at least 36 ingredients used by Mithridates (c.132-63 BC), the 1st Century King of Pontus (northern Turkey), in a poison antidote (known as Antidotum Mithradaticum or Theriac) which he took daily to acquire an overall immunity – an important consideration if it is remembered that he gained his position of power by poisoning his opposition.

The rush's medicinal properties are also mentioned in early Chinese and Sanskrit literature. Some authorities believe sweet-flag probably arrived in Russia in the 11th Century with the Mongolians. It had reached Poland by the 13th Century, and the plant also arrived in Vienna from Constantinople. It was not until the late 16th Century when the French botanist, Clusius (1525-1609) came across it being cultivated by the Viennese in 1574 that it made an appearance, with his encouragement, in western Europe (particularly in Britain and France).

It is thought that sweet-flag was first grown in England in 1596 by the barber-surgeon and herbalist (the latter as a charlatan for many authorities) John Gerard (1545-1612). At one time the plant was a common sight on the banks of the Thames in the London area but it was in such demand by perfumers (as well as the makers of hair powder and snuff) that all stocks there were irretrievably over-harvested. Sweet-flag was also in much demand not only for garlanding homes and churches but for strewing the floors as well. Mixed in with rushes the fragrance of sweet-flag would waft through the air as the plant was bruised or crushed under foot. Records show that the cathedrals of both Ely and Norwich in particular strewed the plant (even in the early part of the 20th Century) at times of major Christian festivals. Sweet-flag was cultivated on the Norfolk Broads and one of the key dates in the local calendar was that of the Gladdon harvest. Then the Broads would be littered with small boats laden ready for market with the flowers, called locally the 'rushes'. In country districts in that area many of the churches used to be thatched with these 'rushes'.

Today the perfumery industry uses the volatile oil from the leaves particularly in amber and oriental scents. Essences or oils are also used by the tobacco industry as a flavouring. One fascinating fact about sweet-flag is that it gives out a lot of heat when flowering. Where it is growing densely this can be sufficient for the temperature of the surrounding air to rise noticeably.

Sweet-flag does not escape superstition. Not only could it bring good luck, but also a horse would never run off if sweet flag was tied to its bridle with hazel (*Corylus avellana*). This last makes a little more sense if one notes that in some areas (such as East Anglia in England) the sweet flower scent was thought to have a calming influence.

It is considered to be an effective insecticide and in tropical countries like India and Sri Lanka the roots are pounded and strewn around plants as a repellent against termites and other insects. In India, specifically, dried and powdered root is used to destroy fleas and white ants. Many nationalities have also placed the sweet smelling root between clothing and furs as a moth repellent. Today the roots are used for making commercial insecticides.

In northern India a leaf paste is applied externally to animal wounds to kill off worms, and the oil is also used to treat some internal stomach disorders.

While in North America some tribes roasted the root to serve as a vegetable. Records indicate that both the Dakota and Abnaki tribes ate the root, and the former also used the leaves and stalks as food. Micmac Indians on the other hand made a drink from the plant.

Omaha Indians have used sweet flag as fish bait and, in the belief that it would foster ferocity, they have included the root in food given to their guard dogs. The Menominee used the

leaves when making their wigwams. For the Cheyenne the pulverized root was a tobacco ingredient, while the Omaha wove the aromatic leaves into neck wreaths to better enjoy their scent. Sweet flag combined with bloodroot (*Sanguinaria canadensis*) were used as a fixative in dyeing by the Chippewa tribe.

Some authorities suggest there are indications that the root may have been used for its hallucinatory effect by some of the North American Indian tribes. Certainly the plant was highly respected and featured in many of their rituals. Some of the Cree chewed the root during ceremonial rituals and succumbed to hallucinatory experiences. The Pawnee referred to sweet-flag in their ceremonial songs. While the Teton Sioux used to rub a paste of the chewed root on their faces before battle to promote calmness and courage. The plant featured in Cheyenne ceremonial events, and it is known that four tribes (the Pawnee, Omaha, Dakota and Winnebago) all wove the leaves into their ritual garlands. Sweet flag attracted some superstition for the Cheyenne Indians, as well as the Iroquois and the Chippewa. The Cheyenne attached a piece of the root to a child's clothing or blanket to protect it from night spirits while sleeping, and they also believed that the plant could repel ghosts. The Iroquois were convinced that the plant could detect bewitchment, and the Chippewa not only viewed the root as a charm which would repel rattlesnakes but also believed that a decoction of the roots washed over their fish nets would ensure a good catch. The Algonkin tribe carried a piece of the root on their person to ward off disease.

In veterinary medicine the Omaha tribe fed the plant to any sick horses.

Authorities have noted that the Winnebago North American Indians and the Iroquois, Chippewa, Blackfoot, Pawnee, Dakota and Omaha all used the root to counter toothache, and the Cree and Iroquois Indians both used it to ease earache. Both the Iroquois and the Cherokee tribes used sweet flag to treat worms, and root cooked in sugar was an answer for bad breath for the Shinnecock tribe who lived on what is now Long Island, New York.

But the greatest number of uses identified by the North American Indian tribes for the plant (in part or whole) were without doubt in the field of medicine. Many tribes used the root, chewed, smoked or in decoction or infusion for curing colds including the Micmac, Cherokee, Chippewa, Dakota, Mohican, Pawnee, Cheyenne, Malecite, Delaware, Algonkin, Cree, Iroquois, Menominee, Winnebago, Nanticoke and Omaha. As a treatment for gastrointestinal disorders (covering indigestion, cramp or wind) the Blackfoot, Winnebago, Iroquois, Nanticoke, Rappahannock, Menominee, Abnaki, Cree, Dakota, Pawnee, Chippewa, Cheyenne, Mohican, Delaware, Cherokee, Omaha and Meskwaki Indian tribes all used the root in decoction or infusion (as an ingredient with others or alone) internally, as a poultice or chewed. These and other tribes individually used the whole or part of sweet flag also for treating coughs, lung disorders, tuberculosis, diarrhoea, rheumatism, haemorrhaging, fluid retention, sore throats, headaches, epilepsy, period disorders, diabetes, fever, kidney ailments, cholera, venereal diseases, smallpox, rashes obtained from flora eg. nettles, stemming bleeding, burns and some heart problems, and during childbirth (or, for one tribe, abortion) and as a laxative or sedative.

It will be apparent from the many uses mentioned that sweet flag was held in the highest regard by many of the North American Indian tribes – so much so that it was even used by some of them, particularly the Blackfoot tribe, as a medium of exchange especially with tribes outside the temperate climate conducive to the plant's growth.

Sweet-flag has played a role in the kitchens of northern and western Europe. It is believed to have been an ingredient in beer (not only as flavouring but also to clear the appearance) and up to at least the 17th Century the root was added to both food and drink as a flavouring (instead of cinnamon (*Cinnamomum verum*), nutmeg (*Myristica fragrans*), or

ginger (*Zingiber officinale*) – and the flowers and young leaf buds were also eaten locally. In the Netherlands children used to gnaw the underground stem like chewing gum. While in the 20th Century the underground stem had long been an ingredient for confectioners in the United States and Canada where they sliced and boiled the roots in maple syrup (*Acer saccharum*) for a candied sweet. (Earlier the candied root had not only been a traditional family sweetmeat but it was available for sale especially in New England – a common sight on Boston streetcorners – and seems to have been particularly associated with the Quakers and was also valued as a breath freshener.) It can be found as a German delicacy too known as ‘German ginger’ which can often be an ingredient in fruit salads. Today essences or oils are also used by the drinks industry in making bitters, gin, the European *eau-de-vie* and liqueurs, such as Benedictine.

Today also the essential oil is used by the toiletry industry in toothpaste and in the manufacture of hair-powder and dry shampoo.

Medicinally, sweet-flag has been part of the herbalists’ repertoire for centuries. In Asia the roots have been used either in poultices or in decoction for various ailments including fever and rheumatism – but generally in conjunction with other ingredients. Also in India and Sri Lanka it has been used to treat worms. The Greek physician, Hippocrates (c.460-377 or 359 BC) who lived and practised on the island of Cos and is celebrated as the ‘father of medicine’, used the root for medicinal treatment. It has been recommended as an ingredient in treatments for bad breath, toothache, coughs, wind, indigestion, diarrhoea, liver and bowel disorders, poisoning, anaemia and fluid retention, and it has also been used to counter withdrawal symptoms experienced when stopping smoking tobacco. However recent Western research is said to have indicated that some varieties (other than those grown in Europe) have cancerous qualities. The pharmaceutical industry uses a drug from the roots (known in the West as ‘Calamus’ and in India and Myanmar – more familiar in the West as Burma – as ‘Vaka’) and it also uses extracts ultimately leading to Calamine Lotion. The roots are an ingredient in homoeopathy.

It is the birthday flower for 25th August.