



Sweet Flag: *Acorus americanus*, *Acorus calamus*

Muskrat root, sweet root, rat root, sweet sedge, singers root

Overview and Identification: This wonderful aromatic root can be found in sunny wetlands, particularly where there is flowing water or at the edges of clean water. I have often found calamus in areas where a stream spreads out, where a continual spring emerges, or less commonly on the edges of bogs. Look for tall, light green, upright or arching leaves that are aromatic when you cut one—the aromatic has a spicy, sweet, earthy, bitter smell that may have hints of ginger, nutmeg, citrus peel, celery root, or sweet hay (really, calamus smells like calamus, but until you know the smell, this is my best description!). When you think you've found a patch, tear off a leaf and sniff the leaf! On the leaves, look for a wavy margin on the leaves with a nice raised midrib and a yellow-green color.

There are two primary species of Calamus that you can find in Northern Appalachia. Here are some of the ways that you can identify the two in our ecosystem:

American Sweet Flag (<i>Acorus americanus</i>)	Eurasian Sweet Flag (<i>Acorus Calamus</i>)
Habitat: natural marshes, fens, bogs, slow streams, springs, and undisturbed wetlands	Habitat: More likely around canals, ponds, disturbed wetlands, or peoples gardens, drainage ditches, farm ponds, can naturalize (and has naturalized in PA)
Leaf width: Narrow, 3/8 -3/4" or up to 1"	Leaf width: Broader, 3/4 - 1 1/4" inches, occasionally broader in more vigorous plants
Overall appearance: More slender, graceful, arching, softer in appearance. Does not have the wavy margin on the leaf.	Overall Appearance: More robust, coarse, vigorous, rigid, and upright. Has a very nice rippled or wavy margin on the leaf.
Fruiting: <i>Acorus calamus</i> produces berries – they would be green to reddish in color; these are viable seeds.	Fruiting: The spadix (flower spike) does not produce berries; it will dry up.
Midrib: A ridge running lengthwise along the center of each leaf: the midrib in <i>Acorus americanus</i> is more subtle, less raised, and more blended into the rest of the leaf blade (the leaf is thinner and more flexible)	Midrib: More prominent, strongly raised, thicker, and easier to feel with your fingers.

Harvest: Let's start with the fact that Calamus is a wetland plant—so if you are going to harvest, you will want to look for where the plant is easy to access and where you will not significantly disrupt an established wetland (this is one reason many of us who work with calamus end up creating a wetland garden and keeping calamus there!) If I do have to go into

the muck, I often will take off my shoes rather than lose them in the bog or wetland where calamus grows—this also minimizes my disruption of the ecosystem.

Herbalists primarily work with the rhizomes of calamus and sometimes with the roots. The best time to harvest rhizomes is either in the late autumn and through the early spring—this is when the aerial leaves have died back and the plant has pulled all of the energy into the rhizome. I prefer late fall after a frost. Late fall is also good if you are harvesting from a wetland as you will do less damage when the plants are died back. The rhizome is often part of a large underground network—you will want to only harvest from large, established colonies, where you take a few sections from the outer edges. To harvest ethically, take only a small portion of a healthy patch. Start by locating the rhizome, feeling in between the leaves—the rhizome grows horizontal and has many small roots coming down from it—they may all be a giant plant. The best way to do this is to cut through both the rhizome and the rootlets to dislodge a bit of the plant. You can also cut the rhizome between two upright leaf cluster.

Once you have harvested, calamus is likely completely full of mud. Thus, you will want to get a few clean scrub brushes of different sizes—let them soak, scrub off the mud, let them soak some more, and keep scrubbing. You may also need to remove dead outer layers of the rhizome and roots. I like to use both the roots and the rhizome--the roots are much more mild while the rhizome is very powerfully aromatic.

Slice your calamus into thin rounds and then dry gently, without much heat (a maximum of 95 degrees in your dehydrator, or on the counter). You will want to ensure that your dried roots are still very aromatic and spicy. As the rhizome dries, the flavor becomes more bitter, deeper, and intense.



Herbalism Overview

- **Taste:** Aromatic, pungent, sweet, warming, bitter.
- **Herbal Actions:** Aromatic bitter, carminative, digestive stimulant, anti-spasmodic, mild expectorant, nervine, warming circulatory stimulant, mildly anti-microbial, alterative, mild stimulant and restorative tonic. Overall, we might think about Calamus as a *warming, aromatic bitter* that restores movement and breaks up stagnation.
- **Organ and System Affinities:** Digestive, nervous, respiratory, circulatory, and oral health
- **Addressing tissue states:** Cold, damp/stagnation, tense

Uses

Calamus has a rich history of use in cultures around the world, including in India (Ayurveda), in Traditional Chinese Medicine, and here in the Americas. Here are some uses:

Bringing Voice, Eloquence, and Your Words: One of my favorite uses of Calamus—and one with a very strong historical connection across traditions--comes from the doctrine of signatures (which says that the plant itself reflects the body part that the plant helps). When we look at calamus rhizome, we see something that looks like the throat and larynx. And indeed,

Calamus is an herb that can help us with both clarity of thought and clarity of words. Calamus allows our voices to be strong and firm, for us to sing, chant, or share our ideas with others. It also might be that you need to give something voice and it is challenging to speak it—Calamus can help bring voice to something. To speak your truth.

In indigenous cultures in Michigan, Jim McDonald notes that this plant was often called “singer’s root” for people who have been singing or speaking for a long period of time, and the throat is starting to get scratchy and irritated. It allows you to continue to speak or sing longer.

Focusing and Awakening the Mind. Calamus is a cognitive stimulant. Calamus is a superb plant for helping you focus your mind, lift mental fog, and concentrate better. This plant can help with mental fatigue or mental stagnation. Ayurvedic uses include an emphasis on memory, speech, and clarity.

ADHD, Neurodiversity, and Learning Disability Support. One of the more recent uses for Calamus has been for people who have Attention Deficit Hyperactivity Disorder (ADHD), Attention Deficit Disorder (ADD), Autism, or other forms of learning disabilities that may impact focus or clarity. Calamus can help clear and focus the mind in these cases, allowing a lessening of some of the challenges of these conditions. In my personal experience as someone with dyslexia and dyscalculia, I have often found that chewing on a piece of calamus can help me focus and clear.

Oral Health: Calamus can be used not only for digestive support but to freshen the breath and help fight against mouth bacteria.

Digestive, aromatic bitter. As a warming, aromatic bitter plant, calamus is very useful for a range of digestive issues that bitter, aromatic plants are used for. This can include any of the following:

- Increasing a poor appetite
- Increasing peristalsis
- Toning the tissues in the digestion
- Addressing sluggish digestion, especially with gassiness (aromatic) and/or difficulty in digesting fats and oils (bitter quality)
- Calming an unhappy GI system: addressing gas and bloating, lessening abdominal discomfort, addressing sluggish digestion after meals
- Anti-emetic – helping reduce the symptoms of nausea
- Calamus has a slight anti-microbial effect on the digestion, but you’d still want other anti-microbials for this purpose.

Calamus pairs well with other digestive aromatic plants such as ginger, fennel, cardamom, or chamomile.

Respiratory Support: As an aromatic expectorant, calamus can be used to help break up and clear thick and stuck mucus and respiratory congestion. This specifically addresses cold, damp respiratory patterns. It is especially good for upper respiratory congestion, specifically for head colds and sinus pressure, good for foggy brain due to head colds.

Sore throat and throat infections: Especially those that have phlegm, it can help clear and disperse it—chewing it works especially well for this purpose.

Anxiety and panic attacks. Jim McDonald uses calamus regularly for people who have anxiety or panic attacks. The bitter and aromatic qualities can help—for this, you can remember to take Calamus when you are having a panic.

Physical stimulant: Another traditional indigenous use of this plant was that you could keep going—people would chew the root and it would give you some extra energy to get a little further. You can use it also when you are on a long drive and you want to stay awake.

Tonic for the Mind and Body: In Ayurveda, Calamus is used as a tonic for the mind and body. Indications that calamus would be a good tonic herb include not being able to think clearly and having brain fog combined with lethargy and general physical tiredness. Calamus

could be not only be used internally, but in Ayurvedic medicine they would also make an infused oil and rub it on the body.

Shifting Perception and Creativity. In larger doses, Calamus can help us overcome challenges with staying focused on one thing and not seeing the broader picture. This can help both with us working through some of our challenges but also as a potentially great creativity herb, where creativity is focused on creating novel solutions or novel ideas.

Historical Uses for Leaves: People traditionally would use the leaves as a “strewing” herb, where the leaves would be spread over floors, and as you walked on them, it would make spaces smell good. They had an air-freshening quality along with keeping fleas and other insects out of the house. Jim McDonald reports that he powdered calamus root and rubbed it into a flea-ridden cat and watched the fleas leave.

Indigenous Medicine: Jim Duke notes that Calamus is one of the most important plants across different indigenous peoples—calamus was hugely important as a medicine and also was regularly traded.

Preparation and Use

Parts Used: Roots and rhizomes,

Preparation: Most of us usually use calamus dried, and you can simply cut it and have small pieces available, you can chew it or stick it in your cheek. Tincture can also be highly effective. You can either cold infuse the root (dried or fresh) in cold water overnight. Some people candy calamus root, in a similar way you might candy ginger (cut up roots in small sections, add sugar, let dry out, and eat that). Some people may initially not like the flavor, but it often grows on you the more you eat.

Contraindications: See safety, below.

Safety and β -Asarone

I will note that Calamus has literally thousands of safe uses by cultures all over the world and is known as a longevity herb, nourishing tonic, and a tremendously important medicinal plant. While *A. calamus* has been used medicinally for thousands of years throughout Europe, India, and Asia, North American herbalists generally prefer *A. americanus*. Although the two species share many traditional uses, they differ in their chemistry.

The primary distinction concerns β -asarone, an aromatic constituent found in many Eurasian populations of *A. calamus*, specifically in the essential oils. European plants contain moderate amounts, while some Asian plants contain very high concentrations—all of these are used globally for medicine. In contrast, *Acorus americanus* has repeatedly been shown to contain little or no detectable β -asarone in either its rhizome or leaf essential oils.

Concern over β -asarone in the USA arose after animal studies conducted in the 1960s = demonstrated carcinogenic and genotoxic effects when rodents were exposed to large doses of β -asarone-rich extracts and high doses of isolated essential oils. These studies were not on humans, they were in extremely large doses, and there are literally no recorded human cases even of the Asian plants in causing cancer or toxicity. However, these findings led the United States Food and Drug Administration to prohibit the use of *Acorus calamus* extracts in foods (note, there is a very similar story with Sassafras and safrole). Notably, this prohibition did not distinguish between the chemically distinct North American and Eurasian species. Additionally, isolated chemical compounds are not the same medicine as the whole plant—in many cases, the whole plant has a wide range of effects that are complimentary across chemical constituents. I will note that the European Medicines Agency (EMA) has taken a more nuanced position the USA. Rather than recommending complete avoidance, the EMA advises that diploid varieties (*Acorus americanus*) should always be preferred and recommends minimizing exposure to β -asarone-rich preparations. As an interim safety measure, it recommends limiting total β -asarone exposure from herbal medicinal products to approximately 115 μg per day. At

the same time, modern pharmacological research has revealed that β -asarone possesses a wide range of biological activities, including antimicrobial, neuroprotective, anti-inflammatory, and anticancer effects in laboratory and animal studies. For example, Das, Swamy, Koti, and Gadad (2019) reviewed evidence that β -asarone can inhibit tumor growth through multiple cellular mechanisms, although these findings have not yet been confirmed in human clinical trials.

Given the thousands of years of traditional use with no human ill effects, most modern herbalists disregard these concerns and use both species of plant. As always, I present the information for you to make an informed choice for yourself.

A note on Psychoactive Properties: Calamus may have some psychoactive properties in extremely large doses (like 8-10" of rhizome)—it will not create hallucinations, but it can affect the mind in large doses and can change your perception. The way that Jim McDonald describes it is that you can create a greater sense of focus. Calamus may help create an open