

Wild Foods from Foraging to Feasting

John Kallas continues to help readers understand the value, practical use, and potential of edible wild plants in this second volume of The Wild Food Adventure Series. Enjoy extensive photographs of the plants at every important stage of growth, close-ups of edible parts at their prime, edibility of each part explained, fun and authoritative text, nutrient charts, range maps, starter recipes, and additional preparation and cooking tips. Kallas gives foragers the knowledge and confidence needed to be successful, well-fed wild food adventurers.



I'm loving it. This book is great. With fantastic photos and detailed text, John shares all you need to know about some of our most practical wild food plants.

—Sam Thayer, author of *Foragers Harvest*, *Nature's Garden*, and *Incredible Wild Edibles*

John Kallas sets the platinum standard for wild plant foraging guides. This book features stunning photos and in depth text to properly identify, harvest, and prepare common wild foods for a gourmet dining experience.

—Thomas J. Elpel, author of *Foraging the Mountain West* and *Botany in a Day*

When someone asks how to get started with wild foods, this is the book I'll suggest. It's user-friendly and enjoyable to read. Kallas answers every question you might have about each plant, their look-alikes, and the nutritional data, all heavily illustrated. The bountiful recipes are a bonus. The book gets my highest recommendation.

—Christopher Nyerges, author of *Guide to Wild Foods*

\$27.99 U.S.

For more information on this book, other publications by John Kallas, and wild foods in general, see www.wildfoodadventures.com

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Edible Wild Plants

Kallas

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THE WILD FOOD ADVENTURE SERIES

VOLUME
2

Edible Wild Plants

Wild Foods from Foraging to Feasting



JOHN KALLAS, PhD

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FAMILY: Lamiaceae

SPECIES: *Lamium purpureum*

Purple Sweet Nettle

This sweet purple pagoda plant colorfully blankets many a yard and field.



Purple sweet nettle in flower, carpeting a grassy field.

Yellow Iris—Poisonous

Iridaceae

Iris pseudacorus

Toxic look-alike

There are many iris species, but the common ornamental yellow iris shares some superficial similarities that might cause it to be confused with cattail. It is also known as yellow flag. At early stages of growth, before the yellow flowers appear, its strap-like leaves give it a cattail look. Iris never gets as tall as cattail.

This iris and cattails inhabit the same exact habitat. They grow along the edges of ponds, both in and out of the open water. Their roots need to be exposed to saturated ground in either case.

Iris plants are easy to distinguish from cattails after flowers have emerged. In order for the flowers to appear, iris sends up a stalk that, like cattails, arises from between the already-formed long leaves. Once the stalks are 2 to 3 feet tall, buds and flowers appear. The flowers are typically up to 4 inches across. Several flowers can inhabit each stem, arising from where stem leaves meet the stem. The stalks mostly max out at about 5 feet. Cattail stems grow taller, are unbranched, and produce a long, green, unshowy reproductive spike at the tip.



Yellow iris grows in dense populations in standing water and along the edges of ponds, just like cattails.



Once in flower, yellow iris is easy to distinguish from cattail.



Left: Cattail leaf bases of the pseudo-stem are rounded. Right: Iris leaves are V-shaped. They wrap around each other in a different pattern than cattail leaves do. These V-shaped leaves clearly overlap each other in a left-right-left-right pattern. Cattail's overlapping leaves together give a rounded appearance in cross section. Iris bases where the leaves all come together give a thin, flatter look.



Iris rhizomes are densely covered with hairy roots. Root removal reveals that the underlying rhizome has a more highly segmented pattern than cattails and is reddish orange on the inside. That color is very apparent once you cut into it.

Iris leaves have similarities and differences to cattail leaves. If you look at the base of each plant where the leaves originate, you see those leaves wrapped tightly around each other. Leaves on one side wrap around leaves of the other side creating a pseudo-stem prior to the real stem emerging. The most obvious difference is in the shape of that wrap.

Cattail leaf bases show that wrap as rounded. Outer leaves encircle inner leaves. Iris leaves clasp over other iris leaves at a sharp angle so that their midrib is pointed outward.

Iris leaves have a hard-angled wrap at their pseudo-stem. In other words, they fold over each other creating overlapping "V" shapes. The older outer leaves clasp over the newer younger leaves. This hard-angled clamping creates a two-dimensional rib that you can see and feel in the leaves as they spread out independently above the pseudo-stem. Long cattail leaves will look and feel flat, with no mid-rib as they spread out above their pseudo-stem.

Iris rhizomes are very different than cattails. They are various shades of reds and yellows on the inside with a fibrous outer covering. Cattail rhizomes are off-white. The only way that a novice would accidentally mistake iris rhizomes for cattails is if they know nothing about either one. This is how people get poisoned. They hear that cattails have a rhizome, they see strap-like leaves in a pond, they dig the rhizome, they marvel at how red it is, and eat it. Poisoning occurs. The fact that you are reading this chapter makes you relatively immune to that kind of mistake. It is my assumption that a rare livestock poisoning attributed to cattails was really the animals eating iris rhizomes.



Cattail leaves (the two on the left) are strap-like, smooth, and flat. Yellow iris leaves (the two on the right), in comparison, are angled (V-shaped) at the center creating a ridge when you try to flatten the leaf. If you look close, you can see the center ridge here. Iris leaves are about the same width as cattails, but are more tapered near the tip.

Calamus

Acoraceae

Acorus calamus and *Acorus americanus*

Edible look-alike

Also known as “sweet flag,” calamus is a wetland plant with strap-shaped leaves similar to cattail and yellow iris. The native *Acorus americanus* and the introduced *Acorus calamus* are identical for our purposes. They are smaller in stature than cattails, with leaves about 2 to 4 feet long. According to others, the whole plant has an aroma reminiscent of tangerine. My experience with calamus is limited and I have not studied it in enough detail to report about its true edibility. Fernald (1958) reported that the young spring shoots were a vegetable, and the rhizomes were boiled in syrup to make candy.

I mention the plant since it grows where cattails do, has similar leaves, and produces a rhizome. The root is said to be bitter and is banned as a food by the FDA (FDA, 2022). The fact that the rhizome was used medicinally should give one pause. So while calamus is an “edible” look-alike of cattails, it could also have parts that require special attention to be edible. I list it here only to show it for physical comparison.

Calamus grows in shallow water and has strap-like leaves reminiscent of cattail. The leaves spread out from the base, apparently not forming a pseudo-stem. Photo Courtesy of H. Zell (User Llez), Wikipedia Commons.



Above: Close-up of the flowers on the calamus flower spike. The geometric pattern of tiny individual flowers is striking. Tiny yellow anthers surrounding each green pistil. Photo Courtesy of Dennis Stevenson, New York Botanical Gardens.

Left: Flower spikes of calamus rising off leaflike stems. The leaves have a midrib and may be smooth or wrinkled. Photo Courtesy of H. Zell (User Llez), Wikipedia Commons.



Above: A calamus rhizome can create new plants at each segment along its length. There are many segments sometimes partially, tightly overlapping each other. This is a young rhizome. Older ones get thick with many rings representing segments. The roots hanging down from the rhizome are often thick and prominent, sometimes coming off like a thick mat of material. Calamus rhizomes are clearly aromatic, having a smell reminiscent of citrus. In contrast, cattail rhizomes typically create new plants at their growth tips (ends), not all along the rhizome. The roots coming off its rhizome are sparse and less prominent. While the cleaned rhizome may smell fresh and plain (never citrus), it can also smell like rotting organic swamp gas under the right conditions. Not to worry, if the cattail rhizome is good, once you peel off the rind, the swampiness will disappear. The same swampy smell can happen on the surface of any material pulled from the muck, including calamus. Photo Courtesy of Dennis Stevenson, New York Botanical Gardens.



Here are just a few variations on *Hemerocallis*. The last 2 are “Flasher” and “Aquire the Fire.” I don’t know what the others are. If you want to see even more forms, visit the American Hemerocallis Society website: http://www.daylilies.org/ahs_dictionary/flower_forms.html

Mix them with other foods to add character and enhance overall flavor. Any disagreeability disappears.

Bases of young shoots

Until you know this plant well or know you are gathering from a patch you saw flower in the previous year, I would not collect young, preflowering pseudo-stems made of tightly wrapped leaf bases. If you are certain of your

Left: Young shoot of tightly compressed daylily leaf bases, clasping each other. Right: the sliced bases of a slightly older and bigger shoots, ready to stir-fry, along with some lower, tender parts of leaves.



identification, any part of the young, aboveground plant near the base that is chewable is usable like celery. The young shoot’s tightly compressed leaves are tender at their base, because that is where they are still growing. The farther you go up each leaf, the more fibrous that leaf is. If you slice across the base, the overlapping leaves hold together, making them great additions to salads, stir-fries, and soups.

Flower buds

The buds are easily gathered and snap cleanly from their receptacles. Unless you are going for a certain size, always collect the largest one or two per plant, leaving the rest to grow for later harvest. The largest are the ones that will most likely open the next day. This selective gathering can supply you from a moderate patch for a whole month. The buds can be 2 to 3 inches long. Serve fresh, sauté quickly (less than a minute), steam, or boil them for about 2 minutes. They are delicate and easily destroyed if treated roughly. I recommend that everyone cut off and discard the handle, or lower part of the bud, about an 1/8 inch above where it connects to the tepals.



Fresh daylily buds in hand. The upper part is made up of sepals enclosing the petals. The lower greener part is what I call the handle—which encloses the ovary of the plant. The ovary should be discarded, or left on the plate if you are biting off the fresh bud above it.



Buds cooked differently have different appearances. Left: buds pan-seared for about 30 seconds on both sides. Center: Steamed 30 seconds. Right: Boiled 30 seconds.

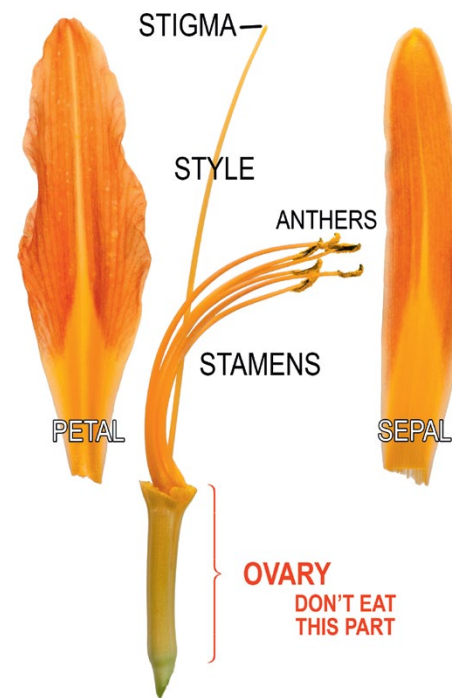
Of course, I am speculating here and cannot guarantee that cutting off the ovaries will solve the problem. But the logic to its reality is compelling. So I am recommending that if you eat daylily flowers or buds, remove the ovary area.

Tepals (petals and sepals)

The daylily flowers are easily plucked from their receptacles. They are delicate but stand up to careful handling. If you want to transport them, use an open container lined with a soft towel. You can gently pile them about two deep with only a little breakage. Lightly spray-mist them. Do not soak them! Put them in the fridge in closed zip-top bags with plenty of trapped air so they don't get crushed. You can store more in a smaller space if you just include the tepals. They can last there well for up to three days. Note that refrigeration prevents them from shriveling, allowing them to last two days longer than they would on the plant.

WHEN TO HARVEST THE TEPALS IN ORDER TO HAVE THEIR BEAUTY AND EAT THEM TOO:

In cities all over the planet there are homeowners who have tawny daylily in their yards or fallow fields. If I just asked them if I could pluck their beautiful flowers and cart them off for my purposes, they would say no. Instead, I educate them about the daylily name and that every bloom they see today will be closed in the night, never to open again. I ask if I can come by at dusk, to collect today's flowers that will wilt before morning. To that they say yes. And they are pleased to see that their patch looks perfectly full of flowers the next day as that day's buds open. And if it is a big enough patch, and/or I can collect from there several days in a row, providing me with enough flowers, I make daylily preserves. I follow up by giving the homeowners a jar of those preserves as a thank-you gift. If you do this, you make friends for life.



Left: Parts of the daylily flower highlighting the ovary. I recommend you do not eat the ovary. Daylily flowers have six tepals made up of three petals and three sepals. There are six stamens which have anthers on their tips. The anthers release the pollen. The pistil (female part of the flower) has three parts: a sticky tip called a stigma, a long neck called the style, and an ovary at the base where the seeds develop. The ovary is below the tepals.



Daylily tepals as a decorative salad ingredient.



Sepals only in water, strictly as decoration. Petals will deteriorate in water; sepals will hold up.



Spring rolls made with "Flasher" variety tawny daylily. Ingredients include daylily tepals, sweet red peppers, mozzarella cheese, avocado, and lettuce, wrapped in rice paper.



Left: Wild radish seedlings and young plants soon after the soil was disturbed, growing right through mulch.



Above: The large basal rosette of leaves develops just before the plant sends up a tall stalk. Each leaf here is about 7 inches long. The surrounding leaves have been darkened to highlight a single basal rosette.

Above: Young wild radish plants, so densely growing that they are covering the soil. Leaves here are about 5 to 6 inches long. Tender and perfect for harvesting.



Different leaf shapes you will see on wild radish. When the plants are first developing, you will see mostly the three shapes at the lower left at about 2 to 3 inches long, including the stems. But as the plants get more vigorous, you will see the whole bottom row of shapes. The largest leaf on the right will predominate just before and as the stem begins its rapid growth. Largest multi-lobed leaves can be 6 to 12 inches long. Every one of the leaf types in this image can be seen on a tall-stemmed mature flowering plant—the tiniest leaves at the top of the stem, the larger leaves near the base, with other sizes and shapes in between.

First, you will see a single blade, then a tiny pair of lobes will arise from the leaf stem under the main leaf blade. The number of lobes will increase in number and size as the plant continues to produce leaves. Once they reach a critical stage, just before the flower stalk develops, the leaves will be fully lobed along its full length of about 7 inches.

On all the wild radish leaves in my area, there appear to be reddish glands at the tips of each tooth on the leaf blades. They are red and associated with raspy hairs. They are tiny. If your eyes are sharp, you can see them without a hand lens. While mostly red, they can tend toward tan or gray-green. Since this feature has not been mentioned in botanical literature, I question my sanity. It just may be a feature not really noticed before, or an unusual variety found in my locale. But here, just seeing this feature is a sure sign that you have wild radish.

After the basal rosette has fully formed, the flower stalk begins growing upward, lifting some of the basal leaves onto the stem and creating new leaves. Stem leaves have many shapes that systematically change as you go up the plant. Most have a large terminal lobe with varying numbers of mostly paired smaller lobes. At the top of the stem near the flowers, leaves are so reduced in size that they no longer have lobes.

In the surrounding images, you can see leaf variations. Refer back to the original 7-inch fully developed basal leaf to compare and contrast how the leaves up the stem are different.

Radish is a weak-stemmed plant, particularly if growing in soft, fertile soil. It can grow upright or easily fall over, making its branches grow upward from the ground level. If it is growing among other plants, it can use them for support and climb around in a messy sort of way.

Radish can grow upright to a couple of feet if the soil is hard or rocky. I have seen many individual plants at the Oregon coast growing upright in rocky brackish (salty) soil.



A close-up of the margin of the terminal lobe, showing the reddish glands at the tips of each tooth.



Brushing off fennel flower petals, stamens, and pollen. What is left behind on the umbellettes are the pistils and flower stems.



Close-up of brushed off fennel petals with lesser amounts of stamens and pollen. This is what is mistakenly called fennel pollen.



Cutting off the mini-umbels of fennel for use in different dishes.

I tried brushing the pollen off myself and made a discovery. What is called *fennel pollen* is actually mostly fennel flower petals with just a little pollen. Since the petals are so small and yellow, they have been passed off as pollen. I don't think this is malicious mislabeling; I think it just looked like pollen, so people called it that. Regardless of name, this is some delicious stuff.

The flavor of the petals at their prime is a fantastic feature of this plant. It is unique, powerful, sweet, and versatile. There are two ways to harvest them. You can use the brush-off or the snip-off method. The brush-off method involves using your hand to brush off the petals, stamens, and incidental pollen. This leaves the pistils (female parts that produce seeds) behind. Fennel petals are ready to use at this point.

The other method requires scissors and has you snipping off the umbellettes, which are then used whole to flavor things. If you include none of the main umbel stem, the umbellettes are quite tender. Since they carry all of the flavor of the flowers at their peak, they are great for flavoring dishes, adding to salads, and using as a garnish.

There are fennel "pollen" recipes on the internet for you to play with using the brushing technique I just mentioned, and you certainly can try those. The recipes in this chapter use the umbellettes and are fantastic as is. I have not seen recipes for umbellettes, labeled as such in any reference materials or on the internet. Both the petals or whole umbellettes give excellent results. You decide what you want to use as your flower ingredients.

John's Fennel Blossom Soup

Serves 4 to 6

I adapted this from a recipe by Jerry Traunfeld from his cookbook, *The Herbal Kitchen: Cooking with Fragrance and Flavor*, for use with wild sweet fennel stalks rather than store-bought fennel bulbs. Fennel stalks are fibrous, inedible, and don't benefit by peeling by the time the flowers are produced, so you will need to use previously frozen fennel stalks or buy fennel bulbs to make this soup.



INGREDIENTS

- 3 cups chopped wild fennel stalks, thawed from frozen, or fennel bulbs
- 2 cups sliced leek, tender white part only (about 1 large leek)
- 2 tablespoons extra virgin olive oil
- 4 cups vegetable broth
- 4 teaspoons finely chopped fresh fennel umbellettes in flower
- Salt and pepper, to taste
- Some umbellettes for garnish

DIRECTIONS

In a large saucepan, sauté the leeks in the olive oil until softened. Stir in the fennel stalks and cook for about 2 minutes, then add the broth. Turn down the heat and simmer, covered, for 30 minutes.

Stir in the chopped fennel umbellettes and season with salt and pepper. Immediately purée the soup in the pan using an immersion blender, or, working in batches, use a regular blender, being careful not to burn yourself.

Serve hot, or as a cold soup. Let's face it, it's good no matter what the temperature. Sprinkle on some fresh umbellettes as a garnish and enjoy.

Poison Hemlock Complicates Life

Poison hemlock has killed many people over the ages—mostly because it is mistaken for wild carrot. The look and the flavors of wild carrot and poison hemlock, *when young*, are similar enough to fool, then kill, the unknowing. So become a knower. Poison hemlock is covered for important side-by-side comparisons in this chapter, and later as a stand-alone chapter in the Poisonous Plants section.

I affectionately refer to people not seriously studying wild foods as *civilians*, versus those of us in the trenches who are buying books, researching, and investigating the potential of edible wild plants. We know the importance of detail. The devil and the angels are in the detail. Civilians are people who don't take classes, do research, or study books on wild foods. Some might own books because they see themselves as outdoorsy, but never look at them. Many have preconceived notions and impressions of how the plant world works. Historically, most poisonings from poison hemlock come from civilians.

Although it is good to know their differences throughout the life spans of carrot and hemlock, it is vitally important to know the differences while these plants are in the carrot-top stage. Once stalks and flowers develop, these plants are much easier to distinguish, making them less of a risk. Most people who do not know what they are doing are even more clueless about the adult plants since neither looks like the carrot-top stage of carrot. Since these are ignored, there is less chance of poisoning from an adult plant.

Young plants with carrot-like tops are the problem stage. If you walk up and see a bunch of feathery leaves sticking out of the ground that look like carrot tops, slow down, curb your enthusiasm, and put on your thinking cap. You have some work to do to keep yourself safe. You have to positively determine what plant you have in front of you. No guessing, no assuming, you must be confident in your identification.

CARROT-TOP STAGE

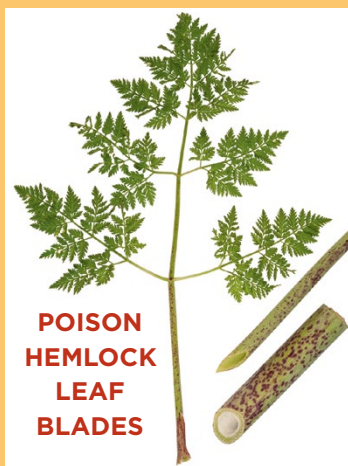
The carrot-top stage is what you see when you go to the supermarket to buy a bunch of carrots, and the leafy tops are still attached. In the wild this is known as a basal rosette of leaves. You see aboveground leaves radiating out from their hidden root below. At this stage, no flower stalk has formed yet. This stage is illustrated by the photos at the bottom of pages 350 (carrot) and 377 (hemlock).

Leaf Blade Comparison



WILD CARROT LEAF BLADES

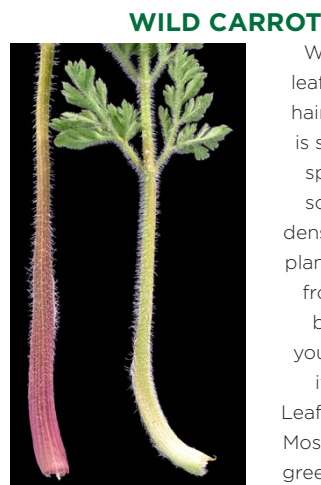
Standard shape of leaf blade: long, like a spear head. Consider all the leaflets together as the blade. While this is the standard shape, carrot has a lot of variation so unusual leaves might be more triangular.



POISON HEMLOCK LEAF BLADES

Standard shape of leaf blade: triangular. Leaflet stems are often long. Poison hemlock leaves do not vary much from this overall triangular leaf blade shape

Leaf Stem Comparison



WILD CARROT

Wild carrot leaf stems are hairy. The hair is sometimes sparse and sometimes dense. Examine plants carefully from top to bottom if you don't see it at first. Leaf stem color: Mostly green or greenish yellow.

When red is present, it is smooth and regular, not in spots. Odor of cut stem is a mild, typical green-plant smell, not strong like the carrot root.



POISON HEMLOCK

Poison hemlock leaf stems have no hair. Leaf stem color: Mostly green. When red is present, it is spotty and uneven. Look closely as those speckles of color can range from strong (left) to barely visible (right).

Cut leaf stem odor is unusual and even unpleasantly fetid for most people. Just interesting and different for others, but not a typical 'green' aroma. For less than 10 percent, the smell is unbearable. Leaves and stems do not smell like carrot root.

And why would anyone eat a plant on a guess? Eat a plant they just *imagine* they know is edible? Finding free food accidentally is such a bonus that many people cannot help themselves. It is like finding a \$50 bill on the sidewalk—they cannot pass it up. And since many poisonous plants like hemlock taste great, flavor only encourages them. Then they die. So learn your edible plants well, and you won't have to worry about the poisonous ones.

FAMILY: Apiaceae
SPECIES: *Conium maculatum*

Poison Hemlock

A very poisonous plant that can be confused with wild carrot at its early stages.



A 7-foot-tall mature poison hemlock in full flower.