

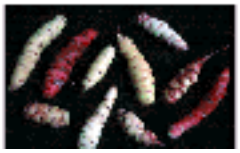


Nettles For Food and Medicine

By Aimee Trojnar

Despite its nondescript appearance, the stinging nettle (*Urtica dioica*) has a knack for grabbing the attention of anyone passing by. Unfortunately, most people never notice nettles until they are viciously attacked with sharp, hot, itching stings. Consequently, most people familiar with nettles regard them as pesky and undesirable weeds. Few people today realize that nettles may actually be counted among nature's most useful plants.

As is frequently the case with common names, the term nettle is often used for plants that aren't nettles at all. In the Midwest, the plant known as Red Dead-Nettle is actually a member of the Mint Family and the Horse Nettle (which is poisonous) is actually a Nightshade (Seymour, 1997). The true nettles belong to the Urticaceae, also known as the Nettle Family. The Nettle Family is found worldwide and consists of about 45 genera and 700-1000 species. Most of the species are tropical and herbaceous (Walters and Keil, 1996).

Urtica dioica, the plant most often called by the name Stinging Nettle, is a dioecious perennial plant that stands about one meter tall. It has simple, opposite, toothed leaves (5-10cm long) with persistent stipules and, most importantly, stinging trichomes. The radially symmetrical flowers are arranged in axillary panicles, completely lack petals, and have 4 sepals and 4 stamens. The fruits are small, oval achenes (1-2mm long). In addition to growing from seed, the plants are able to spread rhizomatously (Radford, Ahles and Bell, 1968).

The Stinging Nettle is actually not nearly as common in the U.S. as the closely related Wood Nettle (*Laportea canadensis*). The Wood Nettle is often mistaken for the Stinging Nettle by most people because the Wood Nettle also has stinging hairs. *Laportea canadensis* is not as tall as *Urtica dioica*, has larger leaves (up to 20cm) and minute stipules. The staminate flowers have 5 sepals and 5 stamens and are found in axillary panicles. The pistillate flowers have only 4 sepals and are found in either terminal or axillary panicles. The achene is crescent-shaped (Radford, Ahles and Bell, 1968). The wood nettle grows well in rich forests and may be particularly abundant along hiking trails near streams. Hikers are frequently dismayed to discover that when such trails aren't carefully maintained, nettles quickly begin to arch dangerously over the paths.

There are several other species from the Nettle Family in the United States, but only 4 of the genera represented, *Urtica*, *Hesperocnide*, *Laportea*, and *Urera*, have the characteristic stinging trichomes. In those plants that do sting, short, hollow, extremely sharp hairs resembling miniature hypodermic needles arise from "bulbous liquid-filled bases...[which] easily penetrate the skin and break off" (Walters and Keil, 1996). Slight pressure on the base of the hair leads to the injection of formic acid, the same substance that makes a bee sting hurt, beneath the skin. As one might guess from the relationship to bee stings, the irritation caused by a nettle can "cause severe inflammation or allergic reactions" (Walters and Keil, 1996). Nettle stings can be quite difficult to avoid since merely brushing up against the plant is enough to activate the trichomes.

How Could Nettles Possibly Be Useful?

Since nettles brutally attack any creature that has the misfortune of rubbing up against them, it seems logical to ask how they can be used at all. Strangely enough, the fluid that causes hikers such misery breaks down easily when heated or dried. Cooked nettles and those that have been dried for hay lose all of their ability to sting. Even more interesting than the loss of attack capabilities, however, is the fact that some people actually seek out fresh nettles to make use of the sting.

Traditional Herbal Remedies

Flipping through herbals, ancient and modern, it is easy to get the feeling that nettles can be used to treat just about anything, as the following passage suggests:

"The Nettle which some call Knide [some Adice, ye Romans Urtica, ye Egyptians Selepsion, ye Dacians Dyn...]. There is a double kind of them, for ye one is wilder, sharper, & blacker in ye leaves but it hath a seed like to Hempseed, but smaller, and ye other is of a thin seed, & not alike sharp. But ye leaves of either of them being smeared on with salt, doe heal things bitten by dogs, & Grangranicall, & malignant, & cancerous, & ye foulness of ulcers, & luxations, tumours, ye Parotidas, ye Pani, Apostumations. But they are laid to ye splenicall with Cerat. And ye leaves being beaten small, & applied with the juice are good for ye fluxes of blood from ye nostrils. They move also ye menstrua being small beaten & applied with Myrrh, & ye new leaves being laid to, do restore ye fallings down of ye matrix. And ye seed being drank with Passum doth incite to conjunction, & doth unstop ye womb, but being licked in with honey it helps ye Orthopneas & Pleursies & Peripneumonies, & fetcheth up ye stuff out of ye Thorax. It is mixed also with septicalls. But ye leaves being sodden together with small shellfish, do mollify ye bellies, dissolve windiness, move ye urine. But being sodden with Ptisana, doth bring up ye stuff from ye Thorax. But ye decoction of ye leaves being drank with a little myrrh, moveth ye menstrua, but ye juice being gargarized doth keep down an inflamed Uvula."

--Dioscorides, 512 C.E.
The Greek Herbal

Other herbalists from the distant past used nettles as "an antidote for poisoning by hemlock, henbane and nightshade" as well as for curing scurvy (Gibbons, 1966). Russian claims for the nettle are even more extensive than those of Dioscorides. In addition to being a general tonic that is good for the respiratory system and the blood, nettles are used (or were in the past) in Russia for everything from diabetes and liver disease, to malaria and promoting the flow of milk in nursing mothers. Nettles appear in Russian medical texts dating back to the seventeenth century and official medical research is still being done on the nettle today (Zevin, 1997).

As it turns out, one of the most consistent uses for nettles worldwide is the treatment of arthritis. While it appears that in Russia people generally just drink nettle juice or tea for this purpose, a more commonly accepted remedy entails actually being stung. Used in this way, nettles are an effective counterirritant that increase blood flow in inflamed areas. People pursue the sting with varying degrees of fervor. Some actually flog themselves with the plants, while others are content with an "occasional sting" from potted plants kept for that purpose (Foster and Duke, 1990).

Modern Medicinal Use

For many years, modern medical science discounted much of traditional herbal medicine as superstition. Plants, such as the nettle, that could be considered to be panaceas garnered particular suspicion for the simple reason that it seemed unlikely that all of the claims could be true. Fortunately that attitude is changing and many plants, including the nettle are being actively investigated.

The efficacy of nettles in treating scurvy and bolstering the immune system were among the first uses supported by medical research. Nettles are extremely high in vitamin C and A, iron and protein, so any diseases arising directly or indirectly from deficiencies in these nutrients can reasonably be treated with this herb (Gibbons, 1966). In addition, nettles have shown antibacterial and CNS (Central Nervous System) depressant activity (Foster and Duke, 1990).

In recent years, it has also been proven that nettles provide impressive results in treating rheumatoid arthritis. According to one study, "A post marketing surveillance on 8955 patients documenting the analgesic efficacy of 0.77 g of *Urtica dioica* eaten twice daily provided evidence that in 60% of the patients who took non-steroidal anti-inflammatory drugs (NSAIDs) before the beginning of treatment, NSAID consumption could be reduced or entirely eliminated. Adverse effects occurred in only about 1% of patients" (Chrubasik and Eisenberg, 1999).

Another important area of investigation has been treatment of benign prostate hyperplasia. A study from the University of Marburg found that, "The antiproliferative effect of stinging nettle roots observed in both an in vivo model and in an in vitro system clearly indicates a biologically relevant effect of compounds present in the extract" (Konrad, et al, 2000). Yet another study found that nettles have significant antimutagenic effects, so consumption of nettles may also be beneficial for people at risk for prostate cancer and other types of cancer as well (Karakaya and Kavas, 1999).

Additional Uses

Although the medicinal uses of nettle are impressive, they are not all that the plant has to offer. In the past, the most important economic value of nettles lay in its fibers. Many plants in the Nettle Family, including species of *Urtica*, *Laportea*, and *Boehmeria* have stems with long cellulose fibers that can be woven into fabric. "There is archaeological evidence that Native Americans used [such fibers] to make thread and fabric dating back nearly 2000 years" (Seymour, 1997). Nettles are used in the commercial production of the silky fabric known as ramie. Apparently the relatively low production of ramie is due to the fact that removing the gums from the stem fibers is quite difficult. Generally, only species of *Boehmaria* are actually used in commercial fiber production because these plants lack stinging trichomes (Walters and Keil, 1996).

When cut and dried, nettles also provide excellent, nutritious feed for livestock. "Horses get shinier coats and improve in health and cows give more and richer milk when fed on nettle hay...Powdered dried nettle leaves are actually as rich in protein as cottonseed meal" (Gibbons, 1966). Many animal feeds are now supplemented with antibiotics to increase the growth rate of animals. This practice has lead to a decrease in the efficacy of some antibiotics against some diseases. Perhaps in an effort to seek out alternatives, a recent study compared the growth of pigs given feed supplemented with antibiotics with that of animals given feed supplemented with an herbal blend containing nettles. The study found that, "Herb mixture supplementation of the diets improved the average daily gains and feed utilization ratio by about 5 and 10%, respectively [over unsupplemented feed]. The antibiotic "Avotan" additive had approximately half the influence on pig performance" (Grela, Krusinski and Matras, 1998).

Finally, young nettles can simply be boiled and eaten like spinach. As mentioned above, nettles are an extremely nutritious vegetable. In Russia, nettles are usually the main ingredient in "Spring Soup," as they are one of the first green vegetables available following the long, cold winter. The leftover water from boiling supposedly even makes an excellent hair rinse, a fact not lost on hair care companies who now often include nettle extracts in their herbal formulas.

It seems kind of unbelievable that a plant that provides so much-fiber, food, medicine, animal feed-could possibly be scorned as a worthless and annoying weed. Next time you are assaulted by stinging nettles, remember as you yell how lucky you are to have found such a useful herb.

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