

Q&A from the Miller Library's Plant Answer Line

NETTLES FOR CLOTH AND SUSTAINABLE TEXTILES

BY REBECCA ALEXANDER

This regular column features Q&A selected and adapted from the Elisabeth C. Miller Library's Plant Answer Line program. If you'd like to ask a plant or gardening question of your own, please call (206) 897-5268 (UW Plant), send it via the library website (www.millerlibrary.org), or email directly to hortlib@uw.edu.

QUESTION: I have a large crop of nettles in the untamed area at the edge of my garden. I know people harvest them for cooking or medicinal use, but are there other purposes they might serve? Maybe I can offer them to someone, and not just cut them back and compost them.



ANSWER: Composting is still a valid option, but you might also check with local textile artists and papermakers. There is a recent revival in using nettles (*Urtica dioica* ssp. *gracilis* is our native species) to make paper and especially textiles. The use of wild plant fibers for textiles has a long history.

Wild plant fibers were a common source of textiles in Bronze Age Europe. Flax and hemp were prevalent, but nettles were also used. A 2800-year-old grave site in Lusehøj, Denmark held a bronze urn of human remains wrapped in cloth made of nettles imported from Austria. Much later, during World War I and the Allied shipping blockade, Germany and Austria relied on fiber from nettles (and milkweed and yucca) for making uniforms. In World War II, England relied on 90 tons of dried nettle as a source of dye for camouflage.

Nettles for textiles even make an appearance in folktales. In Hans Christian Andersen's "The Wild Swans," a literary adaptation from the

Grimm Brothers' "The Six Swans," a sister is able to break the spell that turned her brothers into swans by trampling nettles and using the fiber to weave magical shirts, which will return the brothers to human form.

The word "nettle" comes from the Anglo-Saxon *noedl*, meaning "needle." One might think this is a reference to the sharp, stinging hairs (trichomes) for which the plant is famous, but it is actually connected to the plant's use in making thread or twine. In some languages, the word is related to the making of fishing net. It may even be related to the ancient Sanskrit *nahyati*, from the verb "to bind."

Processing Nettles for Fiber

It may seem unlikely to make fabric from a plant whose genus name (*Urtica*) comes from Latin for "to burn" or "cause burning," but the sting of nettles is neutralized when the plants are dried, and cloth made with nettles has a reputation not only for durability but soft texture (comparable with high quality Egyptian cotton). The stems of the nettle are the part used for fiber. The hollow fibers lend nettle fabric insulating properties, and when the fibers are twisted, the resulting cloth is finer and more breathable. Nettles are considered a sustainable choice for textiles because they are readily available (wild and weedy), and there are perennial (*Urtica dioica*) as well as annual (*Urtica urens*) species, so plants can be propagated vegetatively as well as sown. Their cultivation does not require herbicide use or heavy irrigation.

Still, there is a fair amount of labor involved in the process: Long, woody stems have to be bashed hard and then split open to get at the inner fiber. The bast fiber, or phloem fiber—from hard sclerenchyma cells in the plants' stems—goes through a retting process, which decomposes the pectin-like substances holding the fibers together. This is done by leaving the nettles in the field and allowing microorganisms to perform the work, or by soaking the nettles in ponds or tanks of water, and then breaking, scutching (separating the fibers from the woody stalks), hackling (separating long and short fibers), and combing. Although no crop is produced the first year of cultivating perennial nettles, the yield rises each year—so that by the third year a hectare of plants will yield enough fiber to make 100 shirts, while also creating other useful by-products (leaves for edible use in gourmet restaurants, and for tea, etc.).

Coast Salish Connection

In North America, indigenous peoples use nettles to make rope, twine, nets and cloth. According to Liz Hammond-Kaarremaa of Vancouver Island University, historic examples of Coast Salish First Nations textiles often used fur from mountain goats, Salish woolly dogs, cedar, Indian hemp and nettles. Stinging nettle is abundant in the Pacific Northwest coastal region, and stems are collected in early fall and processed for their long, inner-bark fibers, which may be twisted into thread or yarn.

According to a recent article by Liz Hammond-Kaarema published by the Textile Society of America, nettle was often used by the Coast Salish for warp (the longitudinal yarn or thread in weaving) and “being long, was useful as a fibre for holding shorter fibres together. It would be mixed with down or other blends and mixtures.” Contemporary Salish weavers continue to incorporate nettles into their designs.

Though it is not yet a widespread trend, nettles are under consideration by many sustainable textile initiatives, especially in the world of high fashion. In 2019, Prince Charles offered 3000 nettle plants from the royal gardens at Highgrove to British designers Vin + Omi for the purpose of making eco-friendly, high-end apparel. The United Kingdom's Department for Environment,

Food and Rural Affairs partnered with the textile company Camira and De Montfort University in Leicester to develop Sting^{PLUS} nettle fabrics that are variously recycled, compostable, renewable or climate neutral.

NETTLES FOR PAPER

In an article documenting her artist book version of “The Wild Swans”—made of stinging nettle paper—Barbara Beisinghoff describes the challenges of working with nettles as a source of bast fiber for paper. The stems of the wild nettles she used contained only a small percent of bast fiber. She had to obtain cultivated nettle from the Institute of Applied Botany, University of Hamburg, which were taller and more fibrous. She needed well-broken nettle fiber to make the paper, so it had to be cooked in a solution of soda ash, rinsed and pulverized for four hours. The fiber was laid out in molds. The result was “thin, silky, and strong.” She likened the difficulty of the process to the message of the fairy tale: “an allegory for persistence and spirit.” ∞

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