

***Urtica urens* L.** **Dwarf Nettle Herb**

Urticae urens Herba
Urticaceae

Dwarf nettle is a botanical that is not commonly used in the herbal products industry but may be found mixed with the more common species of nettles, *Urtica dioica*. *U. urens* is much smaller than *U. dioica* and the leaves are morphologically different. Both are accepted in most pharmacopoeias as interchangeable.

A. Leaf

Surface view: Upper epidermis is composed of cells with sinuous anticlinal walls; abundant idioblasts (lithocysts) have a circular outline and contain large cystoliths (up to 70 μm in diameter), with wrinkled surface, appear as bright dots on the leaf surface; numerous stinging trichomes, with a narrow, parenchymatic, multicellular base and a long and thick-walled terminal cell having a small bulbous apex, overall length of approximately 1–1.5 mm; unicellular covering trichomes, up to 350 μm in length, are swollen at the base, tapering, wall thickened (frequently secondarily), cuticle smooth or warty, occurring predominantly along the leaf margin; glandular trichomes with unicellular stalk and mostly a bicellular glandular head, sometimes one- or four-celled head occurring predominantly along the veins; stomata are usually absent; lower epidermis with numerous anomocytic stomata 20–30 μm in length; lithocysts are frequent; glandular trichomes are scattered over the surface,

covering trichomes along the veins; stinging trichomes may be present.

Transverse section: Bifacial; palisade cells in a single row; lithocysts are larger than epidermal cells, roundish, elliptical, or ovoid cystoliths; cystoliths on both sides of the leaf are well developed.

B. Stem

Surface view: Unicellular covering and multicellular stinging and glandular trichomes are present.

Transverse section: Quadrangular, densely covered with unicellular covering trichomes and stinging hairs; angular collenchyma is conspicuous beneath the epidermis at the corners; usually three vascular bundles at each corner; parenchyma with cluster crystals of calcium oxalate.

C. Flowers

Unisexual; tepals with trichomes similar to those found on leaves; perianth segments with stinging hairs; spheroidal pollen grains with smooth exine, approximately 15–20 μm in diameter; ovary with numerous small cluster crystals of calcium oxalate.

Powder: Fragments of leaves with cystoliths; stinging trichomes are mostly broken; covering trichomes along margin and veins; fragments of flowers may be present (cluster crystals from ovary, pollen grains); fragments of stem (collenchyma, parenchyma with cluster crystals, vessels).

