Urtica dioica L.

Stinging Nettle Rhizome and Root

Urticae dioicae Rhizoma et Radix

Urticaceae

In relatively recent years, the roots and rhizomes of the common stinging nettles have been used for the treatment of urinary tract disorders, including enlarged prostate. For these purposes, it is commonly combined with saw palmetto (*Serenoa repens*) and pumpkin seeds (*Curcubita pepo*). There is a possibility that the roots of dwarf nettle, *U. urens,* may be mixed with supplies of *U. dioica*. However, the medicinal uses of the roots of *U. urens* have not been as widely investigated as those of *U. dioica*.

A. Rhizome

Transverse section: Brown cork is of variable thickness and often exfoliating; phelloderm of parenchyma cells, often with triangular cell wall thickenings at the corners; periderm separates brown remnants of primary tissue on the outside from the relatively narrow secondary phloem on the inside; secondary phloem consists of irregularly shaped sieve tubes and companion cells; broad medullary rays with parenchyma cells arranged in distinct tangential and radial rows; fibers are solitary or in groups scattered in all tissues outside the vascular cambium; their walls are completely thickened, the lumen appears as a small dot, and often an additional circular line indicates the border between primary and secondary cell wall; cluster crystals of calcium oxalate approximately 15–20 µm diameter are frequent in the parenchyma tissue of the medullary rays and may accompany fibers; secondary xylem consists of several broad cuneiform groups of vessels and fibers separated by broad medullary rays; vessels up to 100 µm diameter; medullary rays consist primarily of regularly arranged parenchyma cells; at the inner end of the secondary xylem, a ring of thickened and pitted cells is located; such rings may also occur within the rays, resulting in an alternation of parenchymatous and thickened areas; pith cells contain calcium oxalate cluster crystals up to 35 µm diameter.

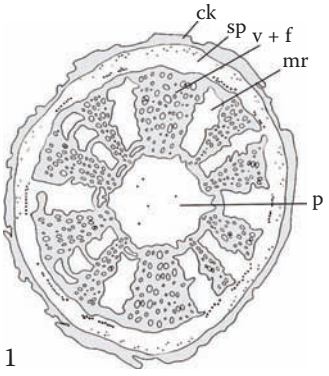
Longitudinal section: Vessels are annular, helical, reticulate, or with bordered pits; calcium oxalate prism crystals accompany fibers and the thickened and pitted cells of the medullary rays; cluster crystals are frequently arranged in columns; medullary rays of parenchyma and thickened and pitted cells, both of which are elongated; fibers show an oblique cell wall texture, particularly in polarized light.

B. Root

Transverse section: Cork and parenchyma internal to it are narrow; secondary phloem with scattered fibers as in rhizome; large, diarch secondary xylem with two conspicuous cuneiform groups of vessels and fibers separated by very broad medullary rays, each ray forming an angle of approximately 140°; in older roots, a ring of thickened and pitted cells forms an arm across each ray that connects the groups of vessels and fibers; primary xylem is visible in the center as two short lines of vessels, each at a right angle to the secondary xylem; vessel members, fibers, and crystals are similar to those found in the rhizome.

Starch: Occurs in all parenchymatous tissues of the rhizome and root; solitary granules more or less spherical and very small (up to 5 µm).

Powder: Fibers with characteristic wall texture; fragments of bordered-pitted, helical, annular, or reticulate vessels; parenchyma cells with cluster crystals of calcium oxalate; calcium oxalate prisms attached to fibers or the thickened pitted cells of the medullary rays; starch.



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