

***Larrea tridentata* (Sessé & Moç. ex DC.) Coville**

Chaparral Leaf

Folium Larreae tridentatae

Zygophyllaceae

Chaparral leaf has a long history of use among Native Americans in the Southwest United States. It has been used for a wide array of conditions ranging from arthritis to psoriasis to cancer. There are no reports of adulteration of chaparral leaf.

A. Leaf

Surface view: Both leaf surfaces consist of polygonal cells with slightly sinuous anticlinal walls and anomocytic stomata; outline of subsidiary cells is often unclear on lower surface due to prominent cuticular striations; numerous unicellular covering trichomes on lamina and margin of upper surface; thin- or thick-walled trichomes (500–800 μm long), acute, with a lumen of variable width, may be slightly curved near narrowed base; cells surrounding the trichome base are arranged in a rosette pattern; covering trichomes are similar on lower surface, except that they are found mainly adjacent to veins; calcium oxalate cluster crystals are abundant throughout; solitary prism crystals, up to 10–20 μm long, occur along veins.

Transverse section: Isobilateral; epidermis of thick-walled rectangular cells with convex outer wall covered

by thick cuticle; stomatal guard cells protrude above level of epidermal cells; a palisade layer occurs on both the adaxial and abaxial sides of the leaf; abaxial palisade cells are slightly shorter than adaxial ones; cluster crystals of calcium oxalate occur throughout palisade layers (especially the adaxial one) and spongy mesophyll, also forming sheaths around collateral vascular bundles; vascular bundles are dominated by phloem, with only a few narrow vessels present, each $\sim 8 \mu\text{m}$ diameter; reticulate vessels are attached to vascular bundles or are characteristically solitary in spongy mesophyll.

B. Stem

Transverse section: Cross-like stem with four wings, each containing a vascular bundle; subrectangular epidermal cells with very thick cuticle and heavily thickened inner tangential wall; numerous covering trichomes and vascular bundles are similar to those found in leaves; broad phloem; narrow xylem is composed of narrow vessels up to 10 μm diameter; bundles of fibers with attached sclereids and a sheath of calcium oxalate prism crystals occur directly outside the phloem; calcium oxalate cluster crystals are abundant in parenchyma of cortex and pith.

Powder: Fragments of leaf epidermis with anomocytic stomata and cluster crystals; numerous covering trichomes; veins with cluster crystal sheath; fiber bundles from stem with attached prism crystals; reticulate vessels; parenchyma.

