

***Achillea millefolium* L.**

Yarrow Aerial Parts

Herba Millefolii

Asteraceae

Yarrow is one of the most widely used herbal styptics worldwide and is additionally used as a diaphoretic and herbal bitter, among many other uses. The entire plant can be used though flowers alone or aerial parts, which predominate in trade. There are many different varieties of *Achillea* including wild and ornamentals. The wild white-flowered (occasionally pink to reddish flowers) variety is used by most herbalists.

A. Leaf

Surface view: Upper and lower epidermis consists of isodiametric or slightly elongated cells with wavy anticlinal walls; anomocytic stomata 22–48 μm long; numerous covering trichomes, 400–800 μm long, with up to six short basal cells and one very long, acute, thickened terminal cell that is frequently broken off; biseriate glandular trichomes, with four to eight plate-like pairs of cells arranged in tiers; leaf segments are terminated by a bristle-like apex.

B. Stem

Surface view: Rectangular, longitudinally elongated epidermal cells; anomocytic stomata; covering and glandular trichomes are similar to those on leaves.

Transverse section: Vascular bundles are arranged in a ring and associated with numerous fibers.

C. Inflorescence and Flower

Capitulum: Radiate, with both ray and disk florets; conic or convex receptacle; imbricate phyllaries, in several series.

Phyllary: Elongated epidermal cells; abaxial surface may have covering and glandular trichomes similar to those on leaves; bract margin is irregular in outline, consisting of free tips of elongated epidermal cells; a sclerenchymatous cell layer is conspicuous at the bract base.

Ray floret: Pistillate; white; corolla up to 5 mm long; quadrangular ligule, up to 3 mm long; adaxial epidermal cells of ligule are isodiametric, papillose, and striated;

elongated abaxial epidermal cells; on the outside of the corolla tube are glandular trichomes similar to those on leaves.

Disk floret: Hermaphroditic; ~3 mm long; elongated epidermal cells of corolla; tips of triangular lobes are papillose; biseriate glandular trichomes are frequent on the outside of the floral tube; small cluster crystals of calcium oxalate occur in the mesophyll; free portion of the filament directly beneath the anther has slightly thickened, rectangular cells arranged in longitudinal rows; connective tissue of thickened cells forms a large terminal lobe above the anthers; tricolporate, spheroidal pollen grains, with spiny exine, 30–45 μm diameter (including spines); bilobed, papillate stigma.

Undeveloped cypselae: Cylindrical, translucent, with a ring of sclereids at apex and base.

Powder: Fragments of leaves with covering trichomes; bundles of fibers from the stem; ray florets with papillose epidermis; disk florets with triangular corolla lobes, papillate stigma, glandular trichomes; phyllaries; cypselae with sclerenchymatic ring at apex and base; tricolporate pollen grains with a spiny exine.

