Vaccinium myrtillus L.

Bilberry Fruit

Vaccinii myrtilli Fructus

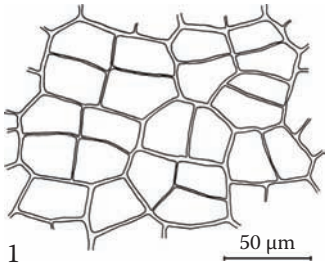
Ericaceae

Bilberry fruit, a European species of blueberry, is rich in anthocyanidins, which have powerful antioxidant activity with a specific affinity for the retina and cardiovascular system. Because of its effects on the retina, it is widely used for ocular conditions such as the prevention of macular degeneration and diabetic retinopathy. Bilberry fruit extract has been associated with adulteration with various other fruits and even vegetable dyes.

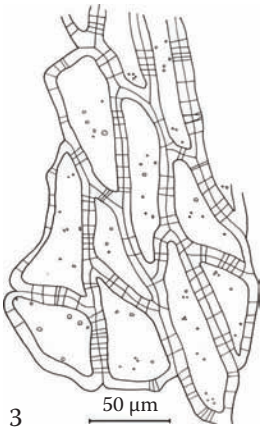
A. Fruit

Surface view: Exocarp consists of polygonal, rectangular, or quadratic cells with slightly pitted tangential walls; groups of two to four cells occur, each group surrounded by a thick wall, while within the groups, the walls are considerably thinner.

Transverse section: Exocarp consists of thin-walled, rectangular cells; mesocarp consists of large anthocyanin-containing violet-colored parenchyma cells with scattered solitary sclereids and vascular bundles containing spiral or helical vessels; endocarp is composed largely of groups of sclereids similar to those in the mesocarp and having an elongated or nearly quadratic shape.



1



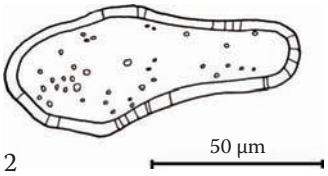
3

B. Seed

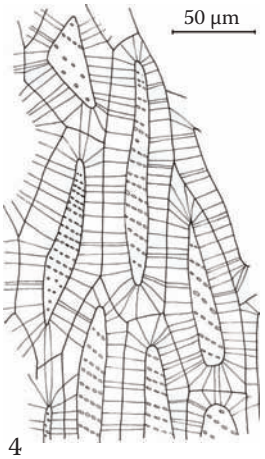
Surface view: Testa epidermis consists of elongated, heavily thickened, and pitted sclereids.

Transverse section: Epidermal cells of the testa have characteristic U-shaped secondary walls, the outer tangential wall being much thinner; underlying collapsed pigment layers of the testa; thin-walled endosperm cells contain droplets of fixed oil; calcium oxalate crystals occasional in all tissues.

Powder: Intensely violet colored; sclereids from the mesocarp, endocarp, and testa; parenchyma cells; fragments of vascular bundles; polygonal cells of the exocarp; oil droplets.



2



4