

## *Stevia rebaudiana* (Bertoni) Bertoni

### Stevia Leaf

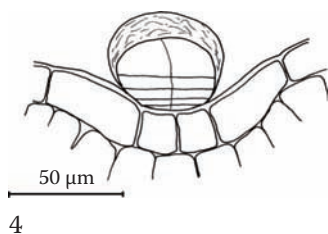
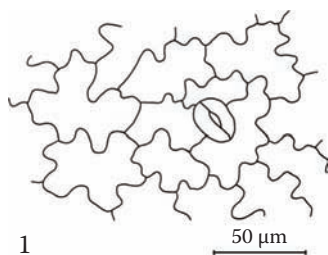
#### *Steviae Folium*

#### Asteraceae

Stevia leaf is one of the most widely used botanical sweetening agents worldwide. It is the most popular sugar substitute used in Japan and only recently has been approved as a sugar substitute in North America.

#### A. Leaf

**Surface view:** Epidermal cells with sinuous anticlinal walls; cells are slightly smaller on the lower surface than on the upper; anomocytic stomata, approximately 25–30  $\mu\text{m}$  long, occur on both surfaces, but much more frequently on the lower one; covering and glandular trichomes occur on both surfaces; covering trichomes are uniseriate, approximately 180–400  $\mu\text{m}$  long, of several slightly thick-walled cells, with an acute or hooked apex; glandular trichomes of two types occur: (1) small, sessile, biserial trichomes, slightly sunken at their base, occur over the entire leaf surface; they are circular in outline, approximately 40–50  $\mu\text{m}$  diameter, with a diagonal cell wall and detached cuticle; (2) uniseriate glandular trichomes of several stalk cells and a single elongated, extremely thin-walled terminal glandular cell, 80–200  $\mu\text{m}$  long are present; on the upper epidermis, they occur primarily along the veins and also in the intercostal regions on the lower epidermis.



**Transverse section:** Bifacial; palisade cells are usually in two or three layers; veins are accompanied by fibers and very inconspicuous secretory ducts discernible due to their oil droplets; calcium oxalate is absent.

#### B. Inflorescence and Disk Florets

**Surface view:** Indumentum of the involucre bracts is similar to that of the leaves; disk floret outer surface is densely covered with biserial glandular trichomes; pollen grains with spiny exine; cypselae densely covered with biserial glandular trichomes and very short, biserial, thick-walled covering trichomes.

**Powder:** Fragments of leaf epidermis with broken covering trichomes, scattered circular glandular trichomes, and anomocytic stomata; fragments of covering trichomes; vessels with accompanying fibers; occasional fragments of flower heads.

