

Vitex agnus-castus L.**Chaste Tree Fruit***Agni casti Fructus**Verbenaceae*

Chaste tree fruit has a long history of use in the treatment of gynecological conditions and, specifically, for promoting fertility. Numerous clinical trials support its use as a dopaminergic agonist and prolactin inhibitor with clinical efficacy demonstrated for gynecomastia, PMS, and menopausal symptoms. A number of different species of *Vitex* are traded, including species from China and India (e.g., *V. negundo*, *V. rotundifolia*, *V. trifolia*). These other species are used for different indications than those for *Vitex agnus-castus*.

A. Calyx

Surface view: Highly diagnostic outer epidermis is composed of small polygonal cells, most of which form the base for a covering or glandular trichome; covering trichomes consist of one to four cells as a group up to 100 μm long; they are tapering, often bent, and may obscure the epidermal cells; a cicatrix may occur when a trichome breaks off at the base; glandular trichomes consist of a very small unicellular stalk and a (two-) four-celled, scale-like, glandular head $\sim 50 \mu\text{m}$ diameter; stomata (type unknown) occur very rarely on the outer epidermis; glabrous inner epidermis is composed of rectangular elongated cells, often with sinuous anticlinal walls, and slight irregular cell wall thickenings are possible (illustrated in drawing 3 as cells with thin, wavy walls); cells over a vein are further elongated with slightly thickened and lignified walls; in the basal regions, the inner epidermis is fortified with axially elongated birefractive sclereids; occasional pigmented cells.

B. Fruit

Surface view: Epicarp epidermis of polygonal cells with thickened walls and some with large, conspicuous, simple pits; covering trichomes are short, unicellular or bicellular; glandular trichomes are frequent, each with a single-celled stalk and a two- to four-celled head, similar to those found on the calyx.

Transverse section: Epicarp cells have a thick cuticle; mesocarp consists of several layers of isodiametric parenchyma cells with slightly thickened and pitted cell walls

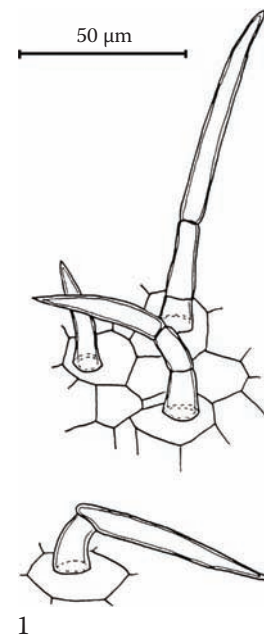
and occasionally brownish granular contents; walls of outer mesocarp cells are brown; in the outer mesocarp, very small brown vascular bundles are arranged in a circle; toward the endocarp, cells become smaller and their walls thicker; the innermost cell layers consist of small sclereids that have a narrow branched lumen.

C. Seed

Surface view: Testa consists of several layers of thin-walled cells showing characteristic narrow, sometimes reticulate bands of lignified thickening.

Transverse section: Thin-walled testa epidermal cells with narrow, sometimes reticulate bands of lignified thickening; at the position of undeveloped seeds, cells with considerably thickened, reticulate cell walls occur; small, thin-walled endosperm cells surround the large cotyledons; aleurone grains and fixed oil globules are abundant in both tissues.

Powder: Fragments of calyx with covering and glandular trichomes on the outer side and birefractive elongated sclereids on the inner side; exocarp with trichomes; pitted cells of the mesocarp; cells with reticulate thickenings from the testa; endosperm and cotyledon tissue with fixed oil.



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