



**Identification of
Tiny Seed and Fruit
Types of Chinese
Materia Medica**

Semen Sinapis*



Source

The dried ripe seed of *Sinapis alba* L. or *Brassica juncea* (L.) Czern. et Coss. in the family Cruciferae

Property and flavour

Warm; pungent

Meridian affinity

Lung meridian

Actions

To warm the lung, transform phlegm and disinhibit qi; to disperse nodules, unblock collaterals and alleviate pain

Note:

* Its name in Chinese Pharmacopoeia (2020 Edition) is “Sinapis Semen”.

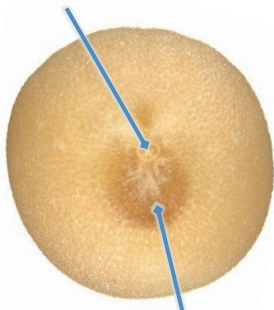
Micro-morphological features

Sinapis alba

Shape

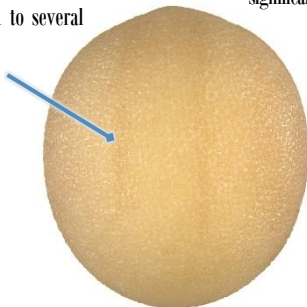
Sub-spherical

With round or sub-rounded hilum on one end, usually surrounded by white protuberances



Testa near one side of the hilum is significantly deeper in colour

Sometimes has 1 to several shallow grooves



Surface

Yellowish-white or light yellow, with reticulate protuberances; meshes are relatively small, sub-polygonal or irregular



0.2 mm

Odour

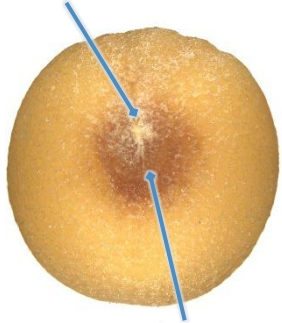
Slight

Brassica juncea

Shape

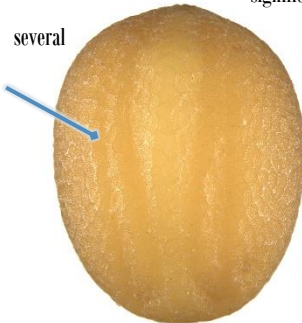
Sub-spherical

With sub-rounded hilum on one end, some are indistinct, usually surrounded by white protuberances



Testa near one side of the hilum is significantly deeper in colour

Usually has 1 to several shallow grooves



0.5 mm

Surface

Yellow or brownish-yellow, occasionally dark reddish-brown, with reticulate protuberances; meshes are relatively large, polygonal, with granular protuberances inside

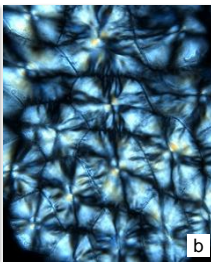
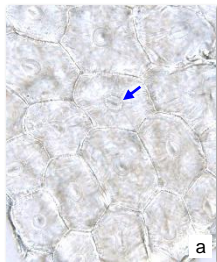


0.2 mm

Odour

Slight; characteristic and pungent after triturated and moistened with water

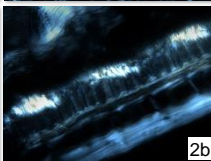
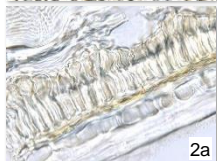
Powder microscopic features

*Sinapis alba***Testa**Epidermal cell of testa

Appears polygonal or sub-polygonal in surface view, anticlinal wall is beaded or slightly beaded; usually has sub-annular cellulose column (→) in the centre of the cell, with faintly visible mucilaginous striations at the surroundings, appear concentric-annular or linear; bright white or orange-yellow under polarized light microscope, with black cruciform or black radial lines

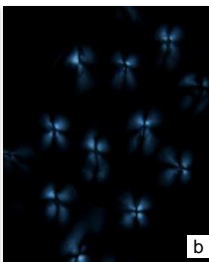
Palisade cell of testa

Colourless or light yellow, sub-polygonal or polygonal in surface view (1), intact cells are barely found in lateral view (2), with relatively thick inner wall and anticlinal wall; white or yellowish-white under polarized light microscope

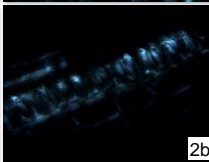
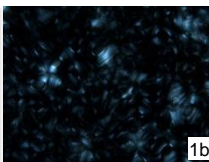


a. features under bright field; b. features under polarized light

50 μm

Brassica juncea**Testa****Epidermal cell of testa**

Polygonal or sub-polygonal in surface view, anticlinal wall is straight or slightly beaded; mucilaginous striations are indistinct, 1 small hole is sometimes observable in the centre of the cell; the centre of the cell appears bright white and black cruciform under polarized light microscope

Palisade cell of testa

Light yellow or yellowish-brown, polygonal in surface view (1), with distinct cell boundary; intact cells are barely found in lateral view, with relatively thick inner wall and anticlinal wall; white or yellowish-brown under polarized light microscope

Key identification features

Micro-morphology

- ⊙ Sub-spherical
- ⊙ Both have reticulate protuberances on the surface, *Sinapis alba* has smaller meshes; while *Brassica juncea* has larger meshes with granular protuberances inside

Powder microscopy

- ⊙ Epidermal cell of testa: for *Sinapis alba*, usually has cellulose column in the centre of the cell and with faintly visible mucilaginous striations at the surroundings; while for *Brassica juncea*, mucilaginous striations are indistinct, 1 small hole is sometimes observable in the centre of the cell
- ⊙ Palisade cell of testa: for *Sinapis alba*, cell appears sub-polygonal or polygonal in surface view; while for *Brassica juncea*, cell appears polygonal, with distinct cell boundary

For more information, please refer to [website of the Hong Kong Chinese Materia Medica Standards](#):

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