



Identification of Tiny Seed and Fruit Types of Chinese Materia Medica

Descurainiae Semen



1 cm

Source*

The dried ripe seed of *Descurainia sophia* (L.) Webb ex prantl[#] in the family Cruciferae

Property and flavour

Highly cold; pungent and bitter

Meridian affinity

Lung and bladder meridians

Actions

To drain the lung and alleviate panting; to circulate water and resolve swelling

Note:

* According to Schedule 2 of the Chinese Medicine Ordinance and Chinese Pharmacopoeia (2020 Edition), *Lepidium apetalum* or *Descurainia sophia* can be the plant source. The former one is known as Semen Lepidii or Lepidii Semen (*Bei Tingzi*), the latter one is known as Semen Descurainiae or Descurainiae Semen (*Nan Tingzi*). Only *D. sophia* is included in this study as currently it is the main species in the market.

[#] The scientific name of the plant source in Chinese Pharmacopoeia (2020 Edition) is "*Descurainia sophia* (L.) Webb. ex Prantl."

Micro-morphological features

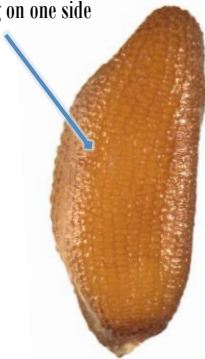
Shape

Appears oblong, elliptical or sub-ovate in surface view, sub-polygonal is occasionally found



0.5 mm

Slightly flat, some are relatively protruding on one side



Lateral view

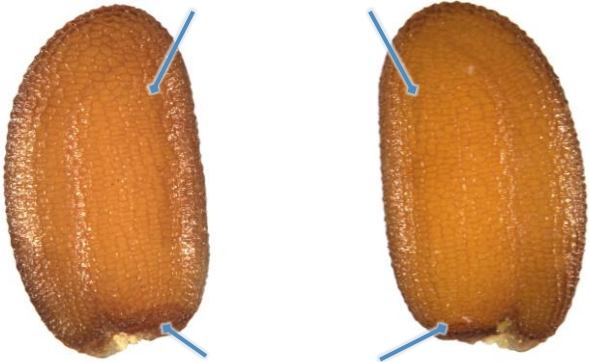
Hilum is short linear-shaped



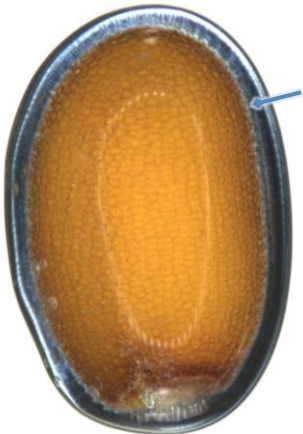
Bottom view

0.2 mm

Both sides usually have 2 shallow longitudinal grooves each, one of which is usually deeper; some have relatively distinct longitudinal grooves on one side



Base is slightly dented or truncate



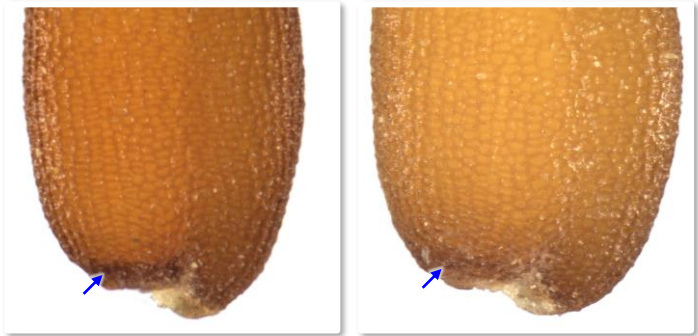
After being soaked in water, epidermis swells to form a transparent mucilaginous membrane surrounding the whole seed

Surface view

0.2 mm

Surface

Reddish-brown or yellowish-brown, with extremely fine and dense reticulate striations; base near the hilum (→) is blackish-brown or brown



0.5 mm

Powder microscopic features

Testa

Outer epidermal cell of testa

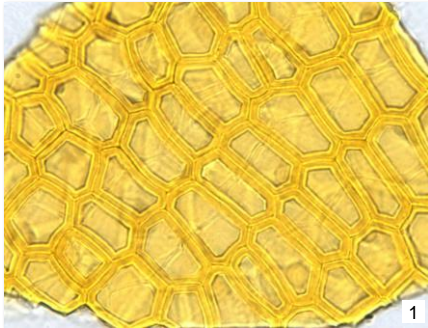


Colourless, appears polygonal or sub-square in surface view (1), with 1 sub-annular cellulose column (→) in the centre, mucilage is sometimes observable; appears sub-rectangular or sub-rounded in lateral view (2), outer wall and lateral wall are mostly broken, cellulose column (→) is rectangular or trapeziform; usually adheres to inner epidermal cell of testa



 50 μm

Inner epidermal cell of testa



Yellowish-brown or yellow, appears polygonal or rectangular in surface view (1), with slightly thick wall; lateral wall and inner wall are slightly thick in lateral view (2), outer wall (→) is usually broken, relatively thin; usually adheres to outer epidermal cell of testa

Key identification features

Micro-morphology

- Appears oblong, elliptical or sub-ovate in surface view, sub-polygonal is occasionally found; slightly flat
- Both sides usually have 2 shallow longitudinal grooves each, one of which is usually deeper
- Surface has extremely fine and dense reticulate striations

Powder microscopy

- Outer epidermal cell of testa: appears polygonal or sub-square in surface view, with 1 sub-annular cellulose column in the centre
- Inner epidermal cell of testa: yellowish-brown or yellow, appears polygonal or rectangular in surface view, with slightly thick wall

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

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Government Chinese Medicines Testing Institute

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