



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

Semen Cassiae*



Source

The dried ripe seed of *Cassia obtusifolia* L. or *C. tora* L. in the family Leguminosae

Property and flavour

Mild cold; sweet, bitter and salty

Meridian affinity

Liver and large intestine meridians

Actions

To clear heat and brighten the eyes; to moisten the intestine and promote bowel movements

Note:

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

Micro-morphological features

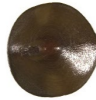
C. obtusifolia

Shape

Usually rhombic in surface view, sometimes sub-trapeziform; sub-rounded in top and bottom views



Surface view



Top view



Bottom view

1 mm

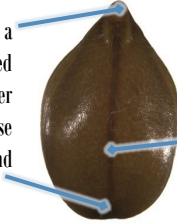
Has 1 light yellowish-brown linear dent on both sides in surface view



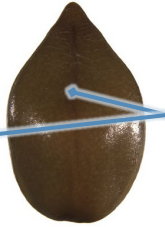
Surface view

1 mm

Visible with a relatively pointed end and another relatively obtuse end in ventral and dorsal views



Ventral view



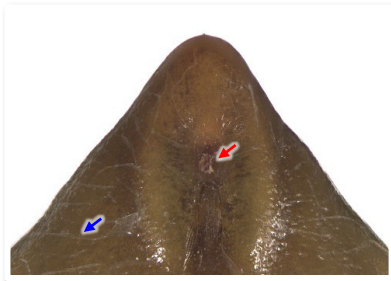
Dorsal view

With 1 ridge on both sides

1 mm

Surface

Greenish-brown or dark brown, smooth and lustrous, sometimes with irregular cracks (→); has dented and dotted hilum (→) at one end



0.2 mm

*C. tora***Shape**

Usually sub-square or rhombic in surface view, sometimes sub-trapeziform; sub-rounded in top and bottom views; generally smaller than *C. obtusifolia*

Surface viewTop viewBottom view

 1 mm

Has 1 light yellowish-brown broad band on both sides in surface view

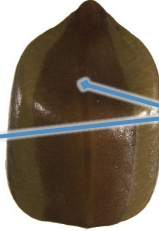
Surface view

 1 mm

Visible with a relatively pointed end and another relatively obtuse end in ventral and dorsal views



Ventral view



Dorsal view

With 1 ridge on both sides

1 mm

Surface

Greenish-brown or dark brown, smooth and lustrous, sometimes with irregular cracks (→); has dented and dotted hilum (→) at one end



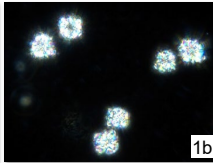
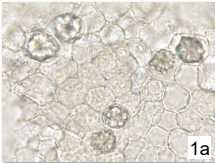
0.2 mm

Powder microscopic features

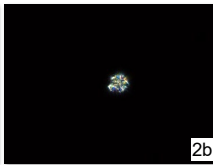
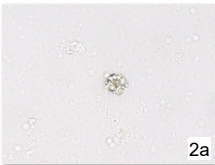
C. obtusifolia

Crystal

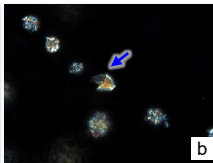
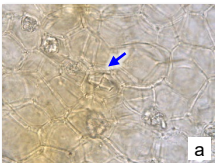
Cluster of calcium oxalate



Numerous, usually present in parenchymatous cell (1) or scattered (2); bright white or polychromatic under polarized light microscope



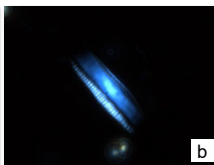
Prism of calcium oxalate



Occasionally found or barely found, usually present in parenchymatous cell (→); polychromatic under polarized light microscope

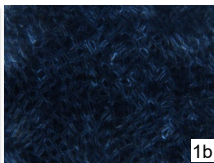
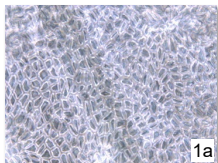
Testa

Fragment of cuticle

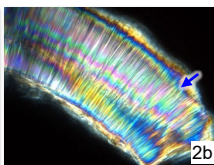
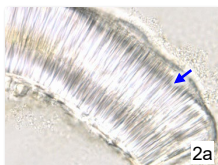


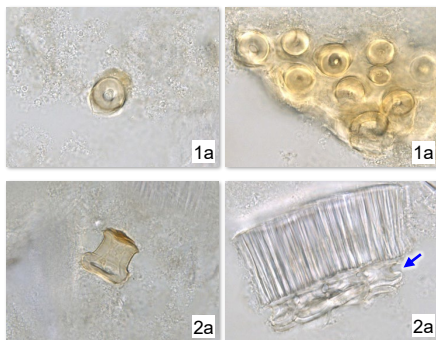
Colourless, some have linear striations, which are scars left by detachment of palisade cells; bright white under polarized light microscope

Palisade cell of testa



Colourless or light yellow, appears sub-polygonal in surface view (1), with thick and slightly shriveled wall; cells occur in 1 row in lateral view (2), rectangular, arranged slightly uneven, with relatively thick wall, small and narrow lumen, and 1-2 luciferous band(s) (→); bright white or polychromatic under polarized light microscope

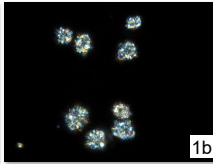
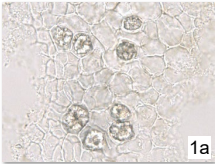


Brace cell of testa

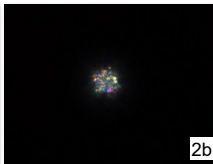
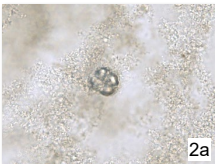
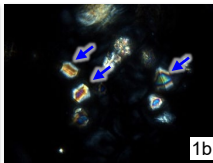
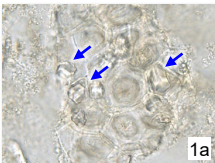
Solitary or present in groups, some adhere to palisade cell of testa (→), appears sub-rounded in surface view (1), with 2 concentric circles; dumbbell-shaped or gourd-shaped in lateral view (2), with thick wall

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

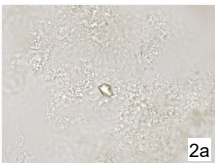
50 μ m

*C. tora***Crystal****Cluster of calcium oxalate**

Numerous, usually present in parenchymatous cell (1) or scattered (2); bright white or polychromatic under polarized light microscope

**Prism of calcium oxalate**

Barely found, usually present in parenchymatous cell (→)(1) or scattered (2); polychromatic under polarized light microscope

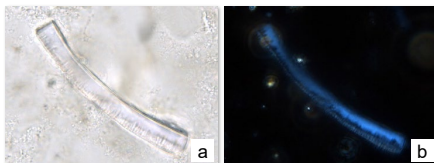


a. features under bright field; b. features under polarized light

50 μ m

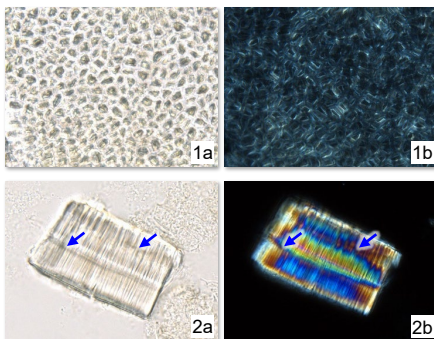
Testa

Fragment of cuticle

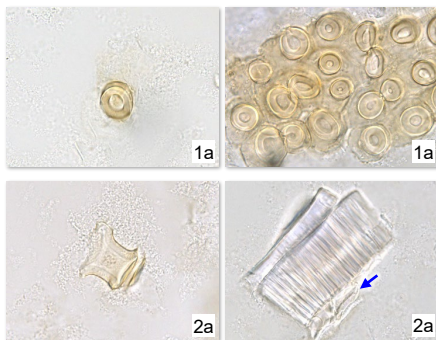


Colourless, some have linear striations, which are scars left by detachment of palisade cells; bright white under polarized light microscope

Palisade cell of testa



Colourless or light yellow, appears sub-polygonal in surface view (1), with thick and slightly shriveled wall; cells occur in 1 row in lateral view (2), rectangular, arranged slightly uneven, with relatively thick wall, small and narrow lumen, and 1-2 luciferous band(s) (→); bright white or polychromatic under polarized light microscope

Brace cell of testa

Solitary or present in groups, some adhere to palisade cell of testa (→), appears sub-rounded in surface view (1), with 2 concentric circles; dumbbell-shaped or gourd-shaped in lateral view (2), with thick wall

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

50 μ m

Key identification features

Micro-morphology

- ⊙ In surface view, usually rhombic for *C. obtusifolia*; usually sub-square or rhombic and generally smaller for *C. tora*
- ⊙ In surface view, *C. obtusifolia* has 1 linear dent on both sides; *C. tora* has 1 broad band on both sides

Powder microscopy

- ⊙ Cluster of calcium oxalate: numerous for both
- ⊙ Palisade cell of testa: appears sub-polygonal in surface view and occurs in 1 row in lateral view for both
- ⊙ Brace cell of testa: with 2 concentric circles in surface view and appears dumbbell-shaped or gourd-shaped in lateral view for both

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

Semen Cassiae — HKCMMS (Vol 3)

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