Fructus Malvae
versus
Semen Abutili

1 cm

1 cm

Source

***Fructus Malvae**
is the dried ripe fruit of
Malva verticillata L.
in the family Malvaceae

Semen Abutili[#]
is the dried ripe seed of
Abutilon theophrastii Medic.
in the family Malvaceae

Overview

Fructus Malvae and Semen Abutili are both listed in Schedule 2 of the Chinese Medicine Ordinance and the Chinese Pharmacopoeia (2020). In *Zhong hua ben cao*, Fructus Malvae is named as *"Dong kui zi"*, but according to the *Species Systematization and Quality Evaluation of Commonly Used Chinese Traditional Drugs*, the name of *"Dong kui zi"* refers to more than one Chinese Materia Medica (CMM). Seeds of various species in the same family have been named *"Dong kui zi"* for medicinal use, in which the seed of *Abutilon theophrastii* is the most common. Moreover, in 1977 and 1985 editions of the Chinese Pharmacopoeia, the name of *"Dong kui zi"* had even been used as an additional name for Semen Abutili. According to the Chinese Pharmacopoeia, Fructus Malvae can clear heat and promote diuresis, and disperse swelling; while Semen Abutili can clear heat and detoxify, drain dampness and remove nebula. As the functions of these two CMM vary, they should be used accordingly.

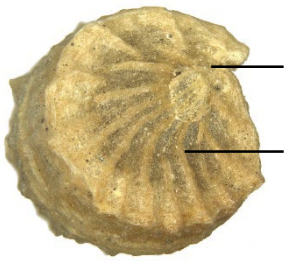
Note:
*Its name in the Chinese Pharmacopoeia (2020) is "Malvae Fructus".
[#]Its name in the Chinese Pharmacopoeia (2020) is "Abutili Semen".

Key identification features

Macroscopic features of Fructus Malvae

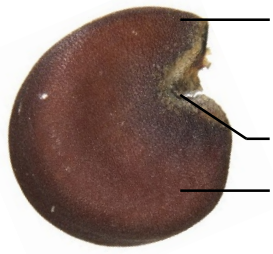
◆ Usually split into single mericarp

5 mm



Citrus segment-shaped mericarp, slightly dented on thinner side

Surface is yellowish-white or light yellowish-brown and has protruded radial stripes from the slightly dented area on both sides



With 1 reniform or citrus segment-shaped reniform seed observable after removing the pericarp

With hilum and strophiole at dented area

Blackish-brown or brown surface

0.5 mm

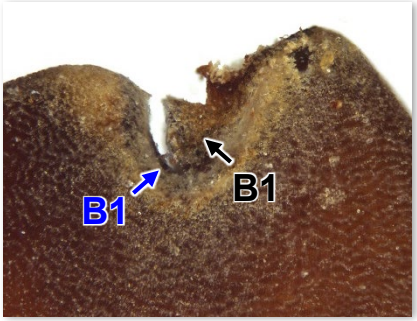
Micro-morphological features

A: Glabrous, slightly rough

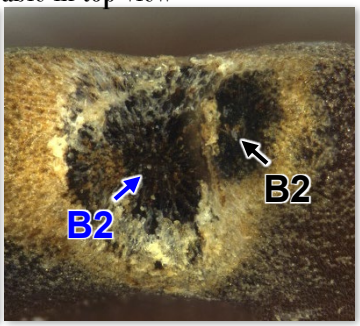
(Surface of the seed) 200 µm

B1: With short strophiole(→) on one side of the hilum in lateral view which covered the hilum(→) partially, glabrous on the surface

B2: After removing part of the strophiole(→), sub-rounded hilum(→) becomes observable in top view



(Lateral view of hilum and strophiole) 500 µm



(Top view of hilum and strophiole) 500 µm

Macroscopic features of Semen Abutili

5 mm

0.5 mm

Triangular-reniform

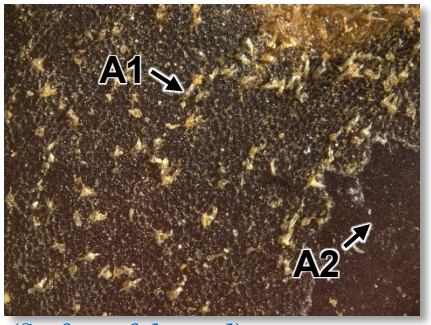
With hilum and strophiole at dented area

Surface is blackish-brown or greyish-black and sparsely covered with greyish-white or yellowish-white short hairs, some detached

Micro-morphological features

A1: With reticulate striations and non-glandular hairs, denser near the dented area

A2: Partial surface layer and non-glandular hairs detached, slightly rough

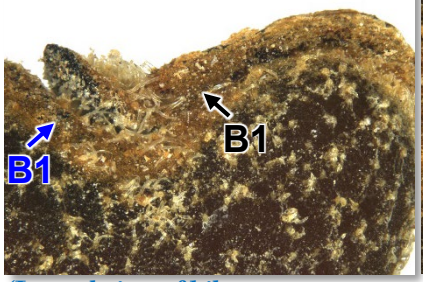


(Surface of the seed)

200 μm

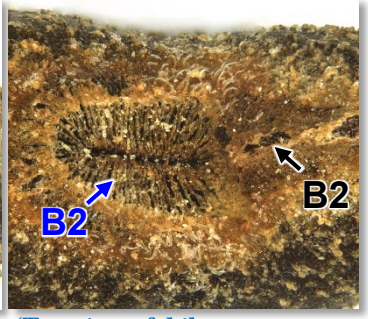
B1: With long strophiole(→) on one side of the hilum in lateral view which covered the hilum(→) partially, with non-glandular hairs on the surface

B2: After removing part of the strophiole(→), hilum with radial striations(→) becomes observable in top view



(Lateral view of hilum and strophiole)

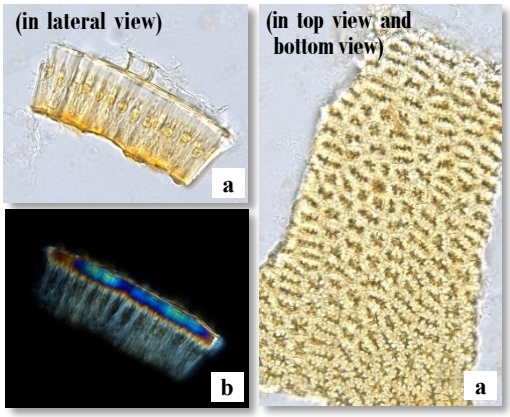
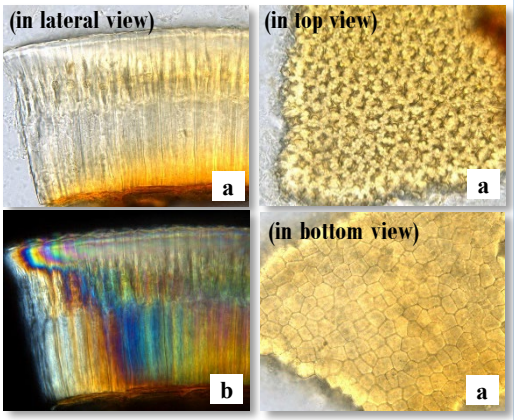
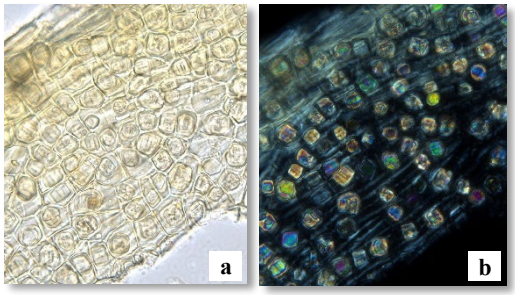
200 μm



(Top view of hilum and strophiole)

200 μm

Microscopic feature comparison of Fructus Malvae and Semen Abutili powder

	Fructus Malvae	Semen Abutili
Palisade cell of testa	 Rectangular cells occur in 1 column in lateral view, lumen located in the centre; polychromatic under the polarized light microscope. Appears polygonal or sub-polygonal both in top view and bottom view, irregular lumen visible	 Rectangular cells occur in 1 column in lateral view, lumen located towards the outer side; polychromatic under the polarized light microscope. Appears sub-rounded or irregular in top view, irregular lumen visible; appears polygonal in bottom view
Prism of calcium oxalate	 Mostly found in groups in the mesocarp cell with slightly thick wall; polychromatic under the polarized light microscope	Absent
Unicellular non-glandular hair	Absent	 Numerous, slightly thick wall

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

50 µm

Summary

Major differences in the features between Fructus Malvae and Semen Abutili:

		Fructus Malvae	Semen Abutili
Macroscopic and micro-morphological features	**Appearance**	Citrus segment-shaped mericarp	Triangular-reniform seed
	Surface of the seed	Glabrous	With hairs
	Strophiole	Shorter	Longer
Microscopic features	**Palisade cell of testa**	Lumen located in the centre	Lumen located towards the outer side
	Prism of calcium oxalate	Present	Absent
	Unicellular non-glandular hair	Absent	Present

Department of Health

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