

Fructus Nelumbinis Nuciferae versus Semen Caesalpiniae Minacis



Source

Fructus Nelumbinis Nuciferae
is the dried ripe fruit of
Nelumbo nucifera Gaertn.
in the family Nymphaeaceae

Semen Caesalpiniae Minacis
is the dried seed of
Caesalpinia minax Hance
in the family Leguminosae

Overview

Both Fructus Nelumbinis Nuciferae and Semen Caesalpiniae Minacis have not yet been listed in the Schedule of Chinese Medicine Ordinance and Chinese Pharmacopoeia (2020). According to the supplement of *Chinese Materia Medica Standards in Sichuan Province* (1987 Edition), Fructus Nelumbinis Nuciferae recorded in ancient times was the fruit of *Nelumbo nucifera* in the family Nymphaeaceae until a type of “*Shi lian zi*” being described as “appearing as stones and taste bitter” was recorded in *Ben cao gang mu* and named firstly as “*Ku shi lian*” in the *Zeng ding wei yao tiao bian*. According to *Zhong hua ben cao*, Semen Caesalpiniae Minacis has been named due to its bitter taste and similar appearance as Fructus Nelumbinis Nuciferae. It can clear heat and resolve dampness, and dissipate stasis and relieve pain. Fructus Nelumbinis Nuciferae can clear dampness-heat, increase the appetite, clear the heart and tranquilize, astringe essence and check ejaculation. Due to their differences in source and efficacy, they should be used accordingly.

Key identification features

Macroscopic features of Fructus Nelumbinis Nuciferae decoction pieces



- ◆ Broken. Appears semi-spherical or irregular



Slightly pointed on both ends



Surface of the pericarp is greyish-brown or blackish-brown and smooth. With luster and white frost-like powder



Reddish-brown testa

With fine longitudinal striations and vein striations



Yellowish-white, plump and starchy cotyledons are observable

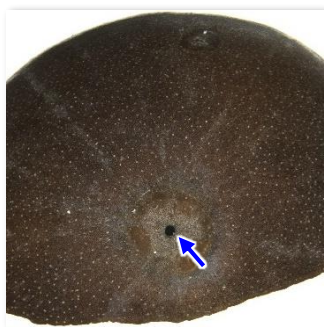
With dark green plumule at the hollowed centre

5 mm

- ◆ Slight odour, bitter taste for plumule, while slightly sweet taste for other parts

Micro-morphological features

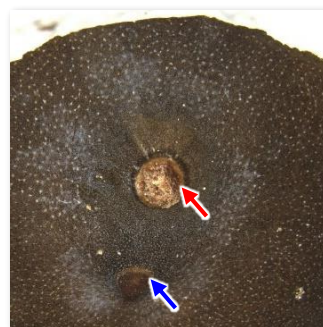
A: Surface has white maculae and perforated style scar or remnant of style(→)



(Apex)

2 mm

B: Yellow fruit stalk scar(→) has a dented brown dot(→) beside

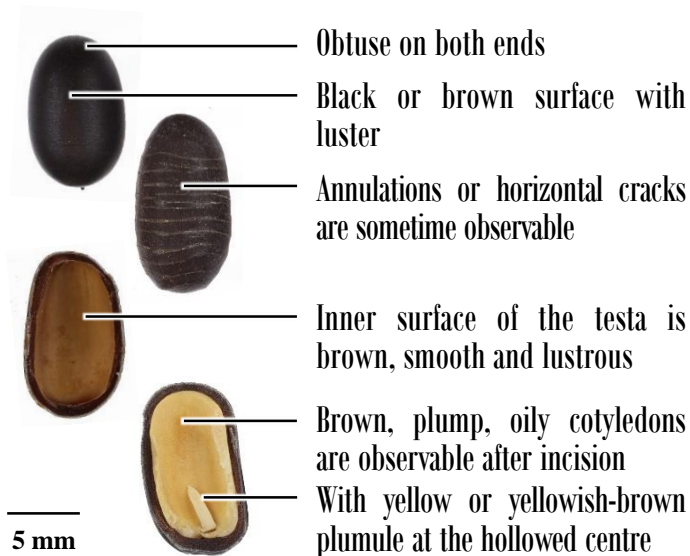
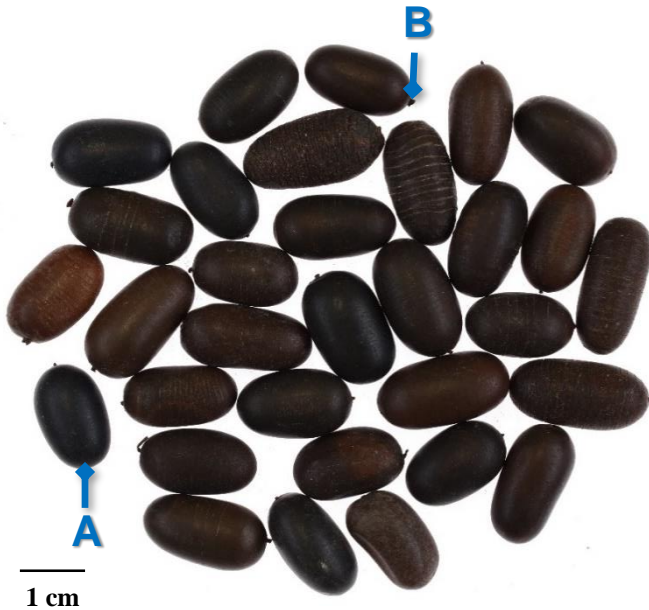


(Base)

2 mm

Macroscopic features of Semen Caesalpiniae Minacis 🔍

◆ Oblong or elliptical



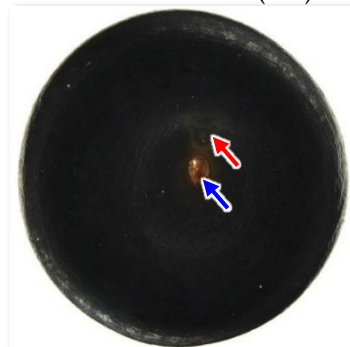
◆ Slight odour, extremely bitter taste

Micro-morphological features

A: Smooth surface

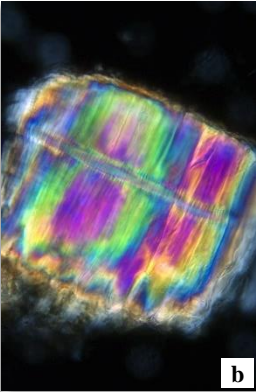
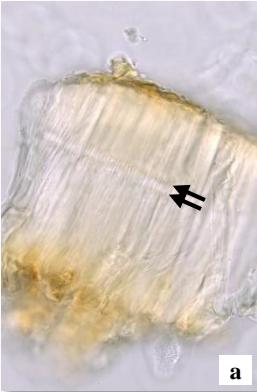
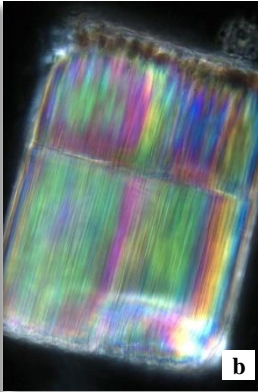
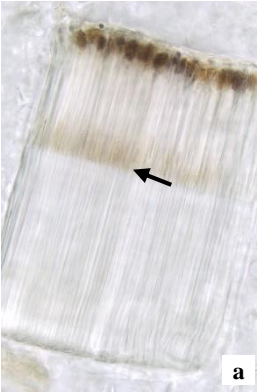
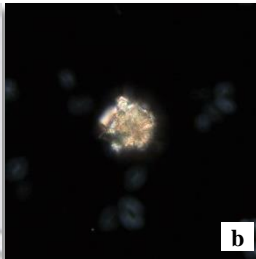
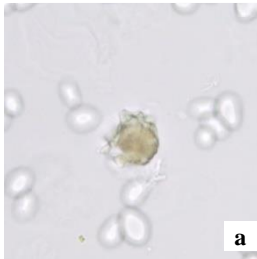
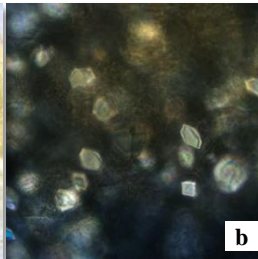
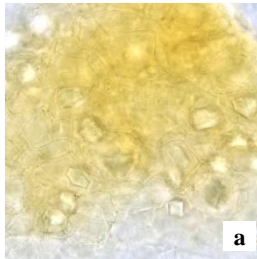


B: Yellowish-brown fruit stalk scar (→) has a brownish-black dot (→) beside





Microscopic feature comparison of Fructus Nelumbinis Nuciferae decoction pieces and Semen Caesalpiniae Minacis powder

	Fructus Nelumbinis Nuciferae decoction pieces	Semen Caesalpiniae Minacis
Palisade cell of testa	<div></div> <p>Occur in 1 column of rectangular cell in lateral view, covered with brown cuticle; with 2 luciferous bands (→); polychromatic under the polarized light microscope</p>	<div></div> <p>Occur in 1 column of rectangular cell in lateral view, covered with colourless cuticle; with 1 luciferous band (→); polychromatic under the polarized light microscope</p>
Crystal of calcium oxalate	<div></div> <p>Cluster of calcium oxalate scattered or present in parenchymatous cell; polychromatic under the polarized light microscope</p>	<div></div> <p>Prism of calcium oxalate appears square, double-conical or rectangular. Scattered or present in parenchymatous cell; polychromatic under the polarized light microscope</p>

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

50 μm

Summary

Major differences in the features between Fructus Nelumbinis Nuciferae decoction pieces and Semen Caesalpiniae Minacis:

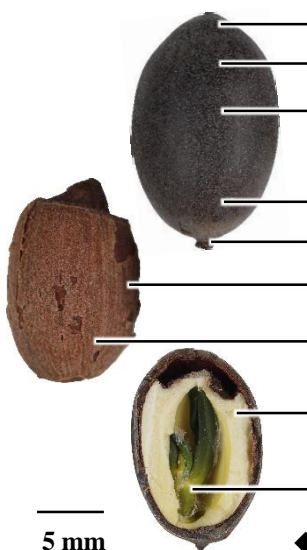
		Fructus Nelumbinis Nuciferae decoction pieces	Semen Caesalpiniae Minacis
Macroscopic and micro-morphological features	Shape	Broken. Appears semi-spherical or irregular	Oblong or elliptical
	Plumule	Dark green	Yellow or yellowish-brown
	Apex	Surface has white maculae and perforated style scar or remnant of style	Smooth surface
Microscopic features	Palisade cell of testa	With 2 luciferous bands	With 1 luciferous band
	Crystal of calcium oxalate	Cluster of calcium oxalate	Prism of calcium oxalate

Additional information

Photo of crude Fructus Nelumbinis Nuciferae



1 cm



5 mm

- With perforated style scar or remnant of style
- Ovoid-elliptical, slightly pointed on both ends
- Surface is greyish-brown to blackish-brown and smooth. With white frost-like powder
- 1.5-2 cm long, 0.8-1.3 cm in diameter
- With fruit stalk scar at the base
- With 1 ovate seed observable inside after breaking open
- The yellowish-brown or reddish-brown testa is not easy to peel
- With 2 light yellowish-white and starchy cotyledons
- With 1 dark green plumule in the centre
- ◆ Hard, not easily broken open
- ◆ Slight odour and taste slightly sweet. Bitter taste for plumule



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