

Perillae Fructus versus Fructus Perillae Purpurascensis



5 mm



5 mm

Source

Perillae Fructus
is the dried ripe fruit of
Perilla frutescens (L.) Britt.
in the family Labiatae

Fructus Perillae Purpurascensis
is the dried ripe fruit of
Perilla frutescens var. *purpurascens* (Hayata) H. W. Li
in the family Labiatae

Overview

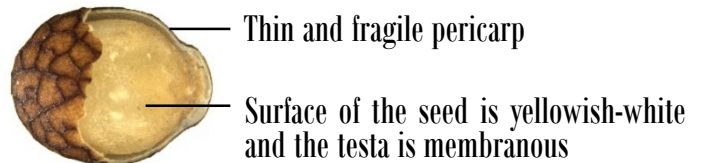
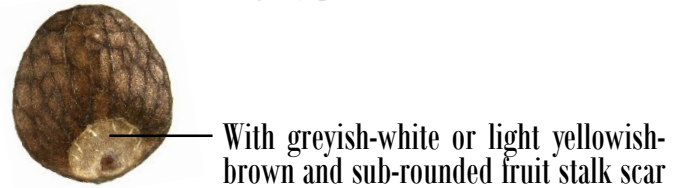
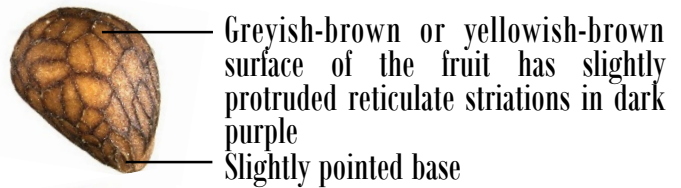
Perillae Fructus is listed in Chinese Pharmacopoeia (2020), while Fructus Perillae Purpurascensis is neither listed in Chinese Pharmacopoeia nor Schedule 2 of the Chinese Medicine Ordinance. According to the *Species Systematization and Quality Evaluation of Commonly Used Chinese Traditional Drugs*, *Perilla frutescens* var. *purpurascens* is one of the varieties of *P. frutescens*. Both of them are cultivated, their fruits are mixed and purchased for use in most areas of China. Although the appearances of Perillae Fructus and Fructus Perillae Purpurascensis are very similar, the content of perillaldehyde in the volatile oil of Fructus Perillae Purpurascensis is lower than that in Perillae Fructus, while the content of perillaketone is relatively high in Fructus Perillae Purpurascensis. In view of the differences of chemical composition, the two CMM should be used accordingly.

Key identification features

Macroscopic features of Perillae Fructus



- ◆ Ovoid or sub-spherical
- ◆ Relatively large, with diameter usually greater than 1.5 mm and can be up to 2 mm or more



Micro-morphological feature

A: With slightly protruded reticulate striations, the meshes are relatively large in general



(Surface of the fruit)

500 μm

Macroscopic features of Fructus Perillae Purpurascensis



- ◆ Ovoid or sub-spherical
- ◆ Relatively small, with diameter usually smaller than 1.5 mm



Greyish-brown, yellowish-brown or brown surface of the fruit has slightly protruded reticulate striations in dark purple, brown or light brown
Slightly pointed base



With greyish-white, light yellowish-brown or yellowish-brown and sub-rounded fruit stalk scar



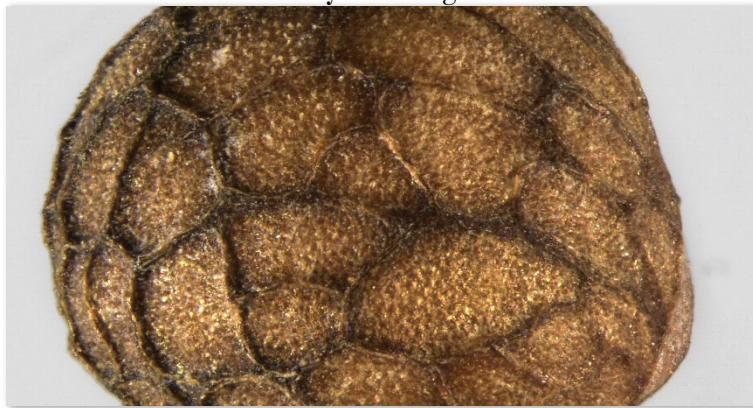
Thin and fragile pericarp

Surface of the seed is yellowish-white and the testa is membranous

1 mm

Micro-morphological feature

A: With slightly protruded reticulate striations, the meshes are relatively small in general

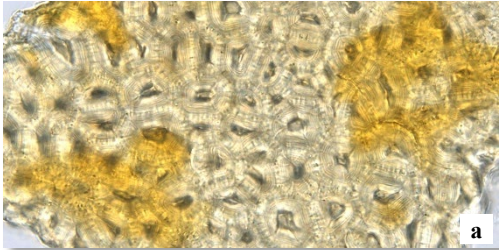
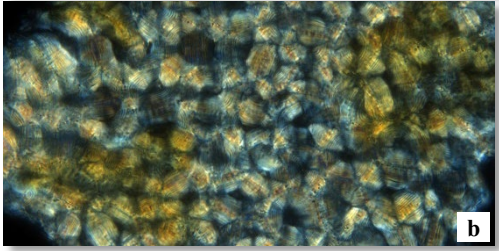
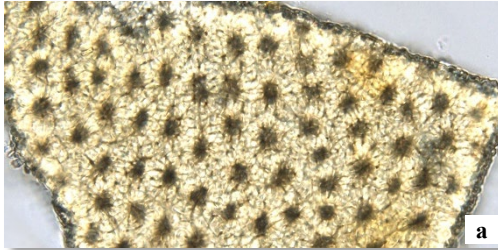
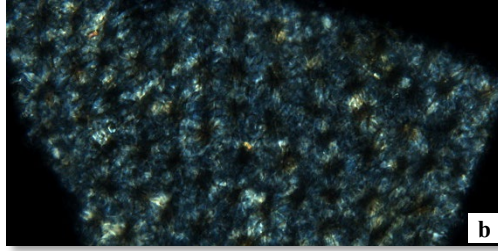




(Surface of the fruit)

500 μm

Microscopic feature comparison of Perillae Fructus and Fructus Perillae Purpurascensis powder*



	Perillae Fructus	Fructus Perillae Purpurascensis
Stone cell of pericarp	  <p>Present in groups, appears sub-polygonal or irregular in surface view, with pit canals and pits, some with observable striations; bright white or orange-yellow under the polarized light microscope</p>	  <p>Present in groups, appears sub-rounded or sub-polygonal in surface view, with relatively thick and dense pit canals and pits, striations indistinct usually; bright white or orange-yellow under the polarized light microscope</p>
Epidermal cell of testa	 <p>Usually larger, colourless or light yellow, appears elliptical or sub-polygonal in surface view, mostly separated, with reticulate thickening, frequently adheres with sub-square or sub-polygonal parenchymatous cells</p>	 <p>Usually smaller, colourless or light yellow, appears elliptical or sub-polygonal in surface view, mostly separated, with reticulate thickening, frequently adheres with sub-square or sub-polygonal parenchymatous cells</p>

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

50 μm

Note:

*Features of Perillae Fructus and Fructus Perillae Purpurascensis powders are very similar, only small differences in the shape or size are observable.

Summary

Major differences in the features between Perillae Fructus and Fructus Perillae Purpurascensis:

		Perillae Fructus	Fructus Perillae Purpurascensis
Macroscopic and micro-morphological features	Size	Relatively large	Relatively small
	Striations on the surface of the fruit	Larger meshes	Smaller meshes
Microscopic features	Stone cell of pericarp	With pit canals and pits, some with observable striations	With relatively thick and dense pit canals and pits, striations indistinct usually
	Epidermal cell of testa	Usually larger	Usually smaller



Government Chinese Medicines Testing Institute
 Department of Health
 Enquiry Hotline: 3188 8079
 Website: www.cmro.gov.hk

The information in this pamphlet may be re-disseminated or reproduced, provided that the Government Chinese Medicines Testing Institute (GCMTI), as the source of information, is acknowledged and that the re-dissemination or reproduction is for non-commercial use. Any other reproduction, adaptation, distribution, dissemination or making available of the information in this pamphlet for commercial use is strictly prohibited unless prior written authorization is obtained from the GCMTI.