

Fructus Tribuli versus Semen Astragali Complanati



5 mm



5 mm

Source

***Fructus Tribuli**
is the dried ripe fruit of
Tribulus terrestris L.
in the family Zygophyllaceae

Semen Astragali Complanati[#]
is the dried ripe seed of
Astragalus complanatus R. Br.
in the family Leguminosae

Overview

Fructus Tribuli and Semen Astragali Complanati are Chinese Materia Medica listed in Schedule 2 of the Chinese Medicine Ordinance and the Chinese Pharmacopoeia (2020). According to *Zhong hua ben cao*, as the origin of Semen Astragali Complanati includes “Sha yuan”, and the leaf shape of its original plant is similar to that of Fructus Tribuli (“*Ji li*”), therefore, Semen Astragali Complanati is also called “*Sha yuan ji li*”. Due to similarities of their names, confusion arises easily. According to the Chinese Pharmacopoeia, the function of Fructus Tribuli include pacifying the liver and relieving depression, activating blood and dispelling wind, improving vision and relieving itching; while Semen Astragali Complanati can tonify the kidney and assist yang, secure essence and reduce urination, and emolliate the liver and improve vision. Due to variations in origin and functions, they should be used accordingly.

Note:

*Its name in the Chinese Pharmacopoeia (2020) is “Tribuli Fructus”.

[#]Its name in the Chinese Pharmacopoeia (2020) is “Astragali Complanati Semen”.

Key identification features

Macroscopic features of Fructus Tribuli



◆ Fruit which splits into single dolabriform mericarp



Micro-morphological feature

A: Linear and with 2 light yellow or yellowish-brown cotyledons



(Transverse section of the seed)

0.1 mm

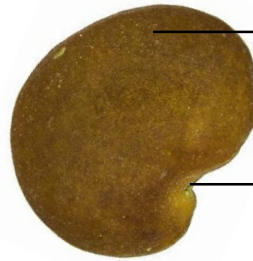
Macroscopic features of Semen Astragali Complanati



◆ Reniform and slightly flat seed



1 mm



Surface is smooth and brownish-green or greyish-brown

Slightly dented on one side at the margin

0.5 mm



With round hilum at slightly dented area

0.5 mm

Micro-morphological feature

A: Oblong and with 2 light yellow or dark brownish-yellow cotyledons





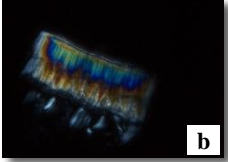


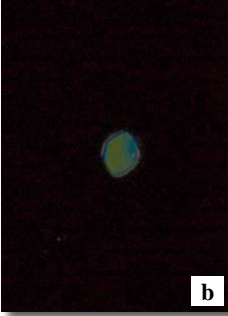



(Transverse section of the seed)

0.1 mm

Microscopic feature comparison of Fructus Tribuli and Semen Astragali Complanati powder



	Fructus Tribuli	Semen Astragali Complanati
Exocarp cell	 <p>Polygonal or sub-square in surface view, with annular scars(→) of non-glandular hair observable sometimes</p>	 <p>Absent</p>
Palisade cell of testa	 <p>Absent</p>	<p>(in lateral view)</p>   <p>(in surface view)</p>  <p>Occur in 1 column in lateral view, covered with cuticle and appears rectangular; with 1 luciferous band located at about 1/5-1/8 area of outer side; appears irregular in surface view, with extremely thick wall, small lumen and fine and dense pit canals; polychromatic under the polarized light microscope</p>
Prism of calcium oxalate	  <p>Numerous, appears rhombic, sub-square or sub-polygonal; polychromatic under the polarized light microscope</p>	 <p>Absent</p>

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

50 μm

Summary

Major differences in the features between Fructus Tribuli and Semen Astragali Complanati:

		Fructus Tribuli	Semen Astragali Complanati
Macroscopic and micro-morphological features	Appearance	Fruit which usually splits into single dolabriform mericarp	Reniform and slightly flat seed
	Transverse section of seed	Linear	Oblong
Microscopic features	Exocarp cell	Present	Absent
	Palisade cell of testa	Absent	Present
	Prism of calcium oxalate	Present	Absent

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



Tribuli Fructus - Hong Kong Chinese Materia Medica Standards (Volume 6)

Astragali Complanati Semen - Hong Kong Chinese Materia Medica Standards (Volume 6)



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