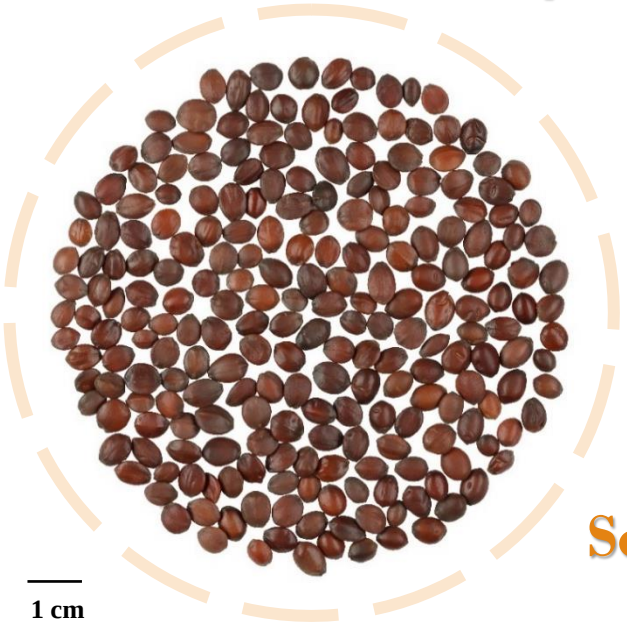
Ziziphi Spinosae Semen
versus
Choerospondiatis Fructus



1 cm

Source

1 cm

Ziziphi Spinosae Semen
is the dried ripe seed of
Ziziphus jujuba Mill. var. *spinosa* (Bunge) Hu ex H. F. Chou
in the family Rhamnaceae

Choerospondiatis Fructus
is the dried ripe fruit of
Choerospondias axillaris (Roxb.) Burtt et Hill
in the family Anacardiaceae

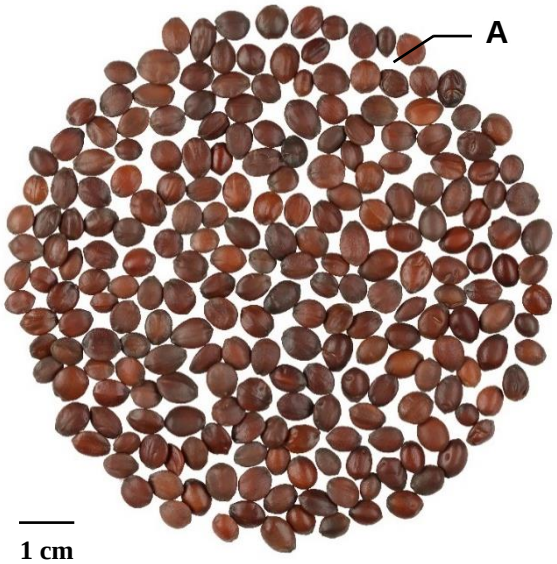
Overview

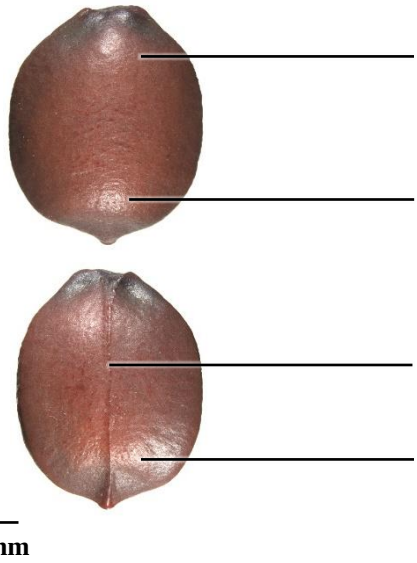
Ziziphi Spinosae Semen and Choerospondiatis Fructus are both listed in Chinese Pharmacopoeia (2020 Edition). Choerospondiatis Fructus is also called "*Nan suan zao*", which is a medicine traditionally used in Mongolia and Tibet, and the fruit of *Choerospondias axillaris* has a long history of consumption habits in southern China. Since the fruits of *Ziziphus jujuba* and *Choerospondias axillaris* are similar in appearances and have "*Suan Zao*" in their names, it causes confusion. According to the Chinese Pharmacopoeia, Ziziphi Spinosae Semen can nourish the heart and tonify the liver, calm the heart to tranquilize the mind, relieve sweating, and engender fluid; while Choerospondiatis Fructus can move qi and activate blood, nourish the heart, and tranquilize the mind. As the two Chinese Materia Medica differ in functions, they should be used accordingly.

Key identification features

Macroscopic features of Ziziphi Spinosae Semen

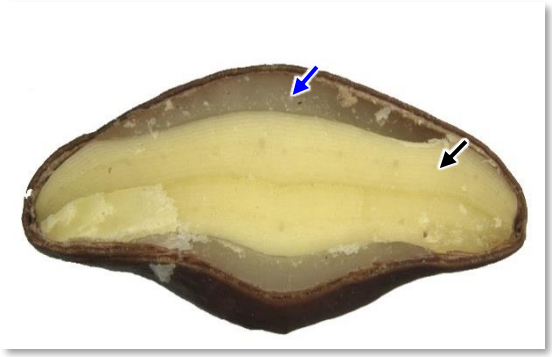
- Flattened round or flattened elliptical





Micro-morphological feature

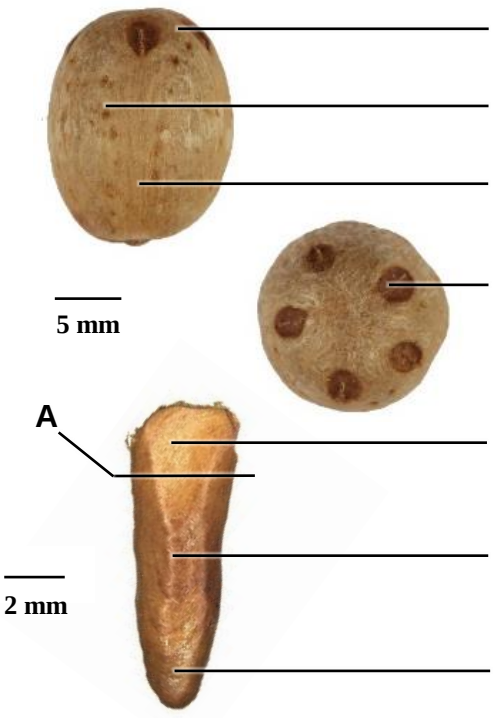
A: Cotyledon (→) is light yellow, with thickness almost twice as thick as that of endosperm (→)



(Transverse section of seed)

Macroscopic features of Choerospondiatis Fructus

- Flattened round or nearly ovate, sacrocarp is thin, black or dark brown, slightly lustrous, with irregular corrugations



Kernel is nearly ovate, light yellowish-brown or brown

With irregular striations and dot-like scar on the surface

Extremely hard, difficult to break

With 5 (occasionally 4 or 6) obvious small holes at the apex, and usually with 1 seed inside each hole

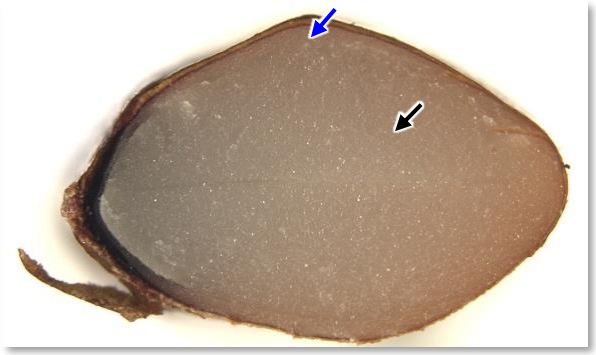
Seed is narrowly oblong, is relatively broad and slightly flat at one end

Brown, smooth and lustrous, with no significant difference on both sides, texture soft

The other end is relatively narrow

Micro-morphological feature

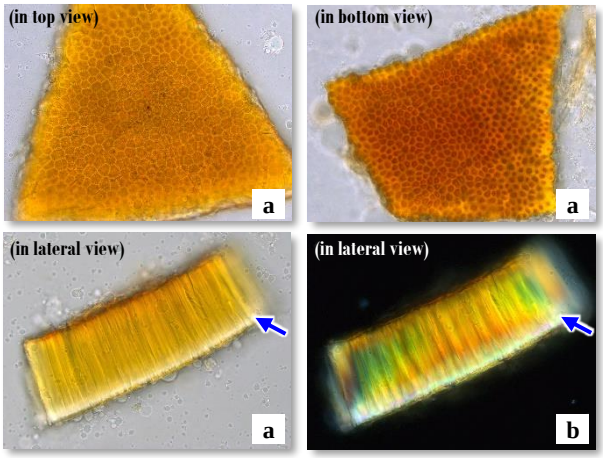
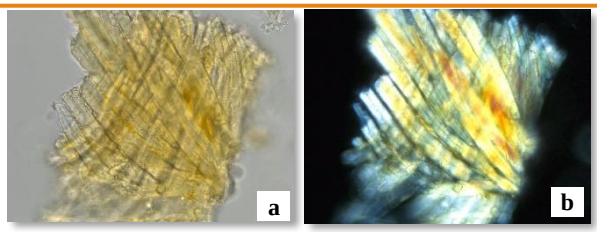
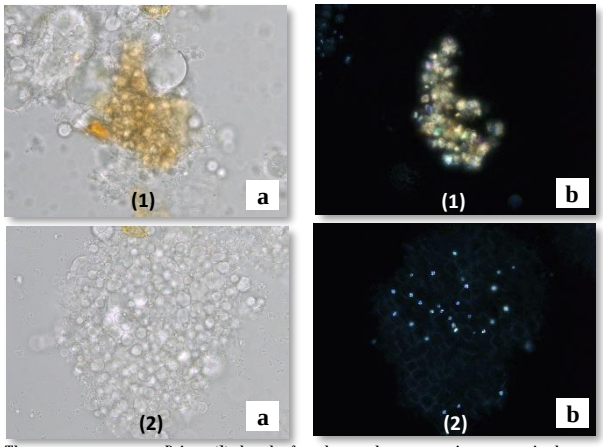
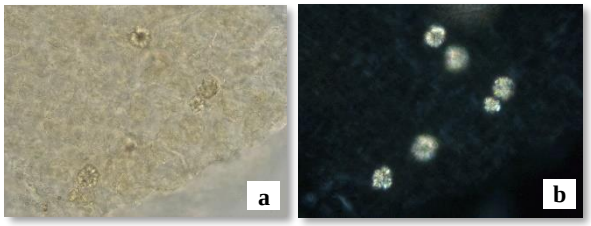
A: Cotyledon (→) is milky white, with thickness more than twice as thick as that of endosperm (→)



(Transverse section of seed)

1 mm

Microscopic feature comparison of Ziziphi Spinosae Semen and Choerospondiatis Fructus

	Ziziphi Spinosae Semen	Choerospondiatis Fructus
Palisade cell of testa	 Brownish-red or light brown. Top view is frequently found, polygonal, thick-walled and lignified, with observable radial striations, lumen is small; is relatively narrow in lateral view, long strip-shaped, with thickened outer walls and the walls are much thickened in upper and middle parts. The walls are gradually thinner towards the lower part, luciferous band (→) distinct; polychromatic under the polarized light microscope; bottom view is frequently found, sub-polygonal or rounded-polygonal, lumen is slightly large	Absent
Endocarp fibre	Absent	 Mostly present in groups, mostly arranged in interlacing pattern in upper and lower layers, thick-walled with lumen containing yellowish-brown substance; polychromatic under the polarized light microscope
Crystal of calcium oxalate	 There are two types. Prism (1) barely found, mostly present in groups in brown-coloured cells, sub-square, double-conical, irregular or slightly cluster-shaped; polychromatic under the polarized light; fine crystal (2) present in cotyledon cells, sub-polygonal, dotted hollow is frequently observable in the centre; bright white under polarized light microscope	 Cluster is observable or barely found, present in mesocarp cells; polychromatic under the polarized light microscope

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

50 μm

Summary

Major differences in the features between Ziziphi Spinosae Semen and Choerospondiatis Fructus:

		Ziziphi Spinosae Semen	Choerospondiatis Fructus
Macroscopic and micro-morphological features	**Appearance**	Flattened round or flattened elliptical seed	Flattened round or nearly ovate fruit
	Surface of seed	Purplish-red or purplish-brown, with 1 raised longitudinal ridge in the centre on one side	Brown, with no significant difference on both sides
	Transverse section of seed	Cotyledon is light yellow, with thickness almost twice as thick as that of endosperm	Cotyledon is milky white, with thickness more than twice as thick as that of endosperm
Microscopic features	**Palisade cell of testa**	Present	Absent
	Endocarp fibre	Absent	Present
	Crystal of calcium oxalate	With prism and fine crystal	With cluster

Department of Health

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