

Flos Daturae Metelis versus Flos Campsis



Source

***Flos Daturae Metelis**
is the dried flower of
Datura metel L.
in the family Solanaceae

Flos Campsis[#]
is the dried flower of
Campsis grandiflora (Thunb.). K. Schum. or
C. radicans (L.) Seem.[^]
in the family Bignoniaceae

Overview

Flos Daturae Metelis and Flos Campsis are both listed in the Chinese Pharmacopoeia (2020) and are listed in Schedule 1 and Schedule 2 of the Chinese Medicine Ordinance respectively. The medicinal parts of these two Chinese Materia Medica (CMM) are the dried flowers, where their corollas are funnelform. Flos Daturae Metelis is a toxic CMM, and in the past, there have been poisoning cases in Hong Kong where this toxic CMM was mistakenly used as the non-toxic Flos Campsis. According to the Chinese Pharmacopoeia, Flos Daturae Metelis can calm panting and suppress cough, arrest convulsions and relieve pain; while Flos Campsis has the functions of blood activating and unblock the meridian, as well as blood cooling and dispel wind. Due to differences in toxicity and functions, the use of these two CMM should be strictly distinguished.

Note:

*Its name in Chinese Pharmacopoeia (2020) is “Daturae Flos”.

[#]Its name in Chinese Pharmacopoeia (2020) is “Campsis Flos”.

[^]Only *Campsis radicans* is included in this study as currently it is the main species of Flos Campsis in the market.

Key identification features

Macroscopic features of Flos Daturae Metelis@



Light yellow or yellowish-brown corolla is mostly broken and appears funnellform if intact. Slightly 5-lobed at the apex. Lobe with mucro which has 3 significant longitudinal veins below. Slightly retuse between lobes

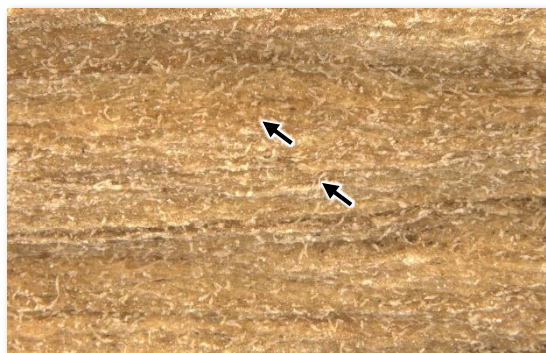
5 stamens. Filaments partially adnate to the inner of corolla tube and anthers are flat

1 pistil. With club-shaped stigma

Greyish-green or greyish-yellow tubular calyx 5-lobed at the apex. With 5 longitudinal veins at the base

Micro-morphological features

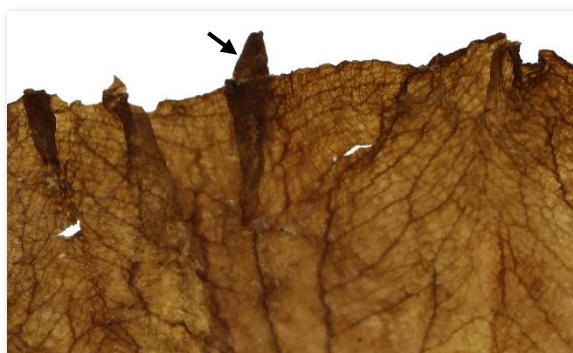
A: With non-glandular hairs



(Outer surface of calyx)

0.5 mm

B: With mucro



(Corolla lobe)

2 mm

Note:

@Flos Daturae Metelis is a toxic CMM. Handle with care and avoid tasting during identification.

Macroscopic features of Flos Campsis



Corolla 5-lobed at the apex. With yellowish-brown semicircle lobes, lower part joined to become funnelform and with fine veins

4 stamens inserted at the corolla. 2 long and 2 short stamens with divergent anthers

1 pistil. With flat stigma

Tubular calyx is coriaceous and 5-dentate at the apex. With yellowish-brown or light purplish-red triangular lobes. Without significant longitudinal ridges outside the calyx tube

Micro-morphological features

A: Without non-glandular hairs



(Outer surface of calyx)

0.5 mm

B: With non-glandular hairs at margin



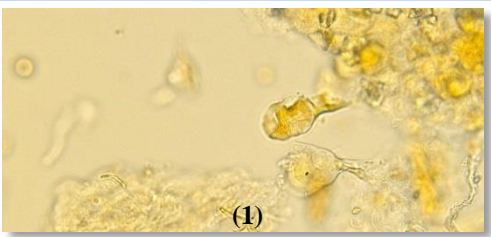

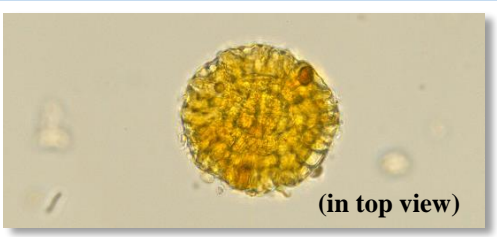
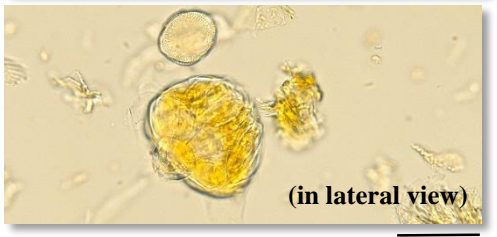




(Corolla lobe)

2 mm

Microscopic feature comparison of Flos Daturae Metelis and Flos Campsis powder



	Flos Daturae Metelis	Flos Campsis
Pollen grain	 <p>50 μm</p> <p>Sub-spherical, with linear sculpture on the exine, with 3 apertures visible sometimes</p>	 <p>50 μm</p> <p>Sub-spherical, with extremely fine and dense reticulate sculpture on the exine, with 3 apertures visible sometimes</p>
Glandular hair	 <p>(1)</p>  <p>(2)</p> <p>50 μm</p> <p>Occasionally found, with 2 types of glandular hair: short glandular hair with head consists of 2-6 cells, stalk consists of 1-3 cells(1); long glandular hair with unicellular head, stalk consists of 2-6 cells(2)</p>	 <p>(in top view)</p>  <p>(in lateral view)</p> <p>50 μm</p> <p>Numerous, light yellow or yellowish-brown, multicellular head appears flattened round, sub-rounded or oblong, cells arranged radially from centre to peripheral in top view, 1-2 layers of cell arranged in palisade-like pattern in lateral view, stalk consists of 1-3 cells</p>
Non-glandular hair	 <p>50 μm</p> <p>Mostly broken, consists of 1-4 cells, with warty protuberances on the wall, some with cells collapsed in the middle</p>	 <p>50 μm</p> <p>Mostly broken, consists of 1-12 cells, with linear cuticular striations and warty protuberances on the surface</p>

Summary

Major differences in the features between Flos Daturae Metelis and Flos Campsis:

		Flos Daturae Metelis	Flos Campsis
Macroscopic and micro-morphological features	Apex of corolla lobe	With mucro	Semicircle
	Stamen	5, flat anthers	2 long and 2 short with divergent anthers
	Outer surface of calyx	With non-glandular hairs	Without non-glandular hairs
Microscopic features	Pollen grain	With linear sculpture on the exine	With extremely fine and dense reticulate sculpture on the exine
	Glandular hair	With 2 types of glandular hair - short and long	Only 1 type of glandular hair
	Non-glandular hair	With warty protuberances on the wall, some with cells collapsed in the middle	With linear cuticular striations and warty protuberances on the surface

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



Daturae Flos - Hong Kong Chinese Materia Medica Standards (Volume 8)



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