

Flos Inulae versus Flos Anisopappi Chinensis



Source

***Flos Inulae**
is the dried capitulum of
Inula japonica Thunb. or
I. britannica L.
in the family Compositae

Flos Anisopappi Chinensis
is the dried capitulum of
Anisopappus chinensis (L.) Hook. et Arn.
in the family Compositae

Overview

Flos Inulae is listed in both Schedule 2 of the Chinese Medicine Ordinance and the Chinese Pharmacopoeia (2020), while Flos Anisopappi Chinensis has not been listed in either reference. According to the *Guang dong zhong yao zhi*, *Anisopappus chinensis* has a long history of being medicinally used as “*Xuan fu hua*” in the Guangdong province, as a regional custom herb and native herb, thus, is customarily named as “*Guang dong xuan fu hua*” or “*Tu fu hua*”. According to the Chinese Pharmacopoeia, Flos Inulae has the functions of directing qi downward, resolving phlegm, moving water and checking vomiting. On the other hand, according to the *Guang dong zhong yao zhi*, Flos Anisopappi Chinensis can eliminate head wind, direct qi downward to check vomiting, and resolve phlegm and suppress cough. As the functions of these two Chinese Materia Medica vary, they should be used accordingly.

Note:

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

Key identification features

Macroscopic features of Flos Inulae



1 cm



5 mm

Involucre consists of several layers of linear or lanceolate bract



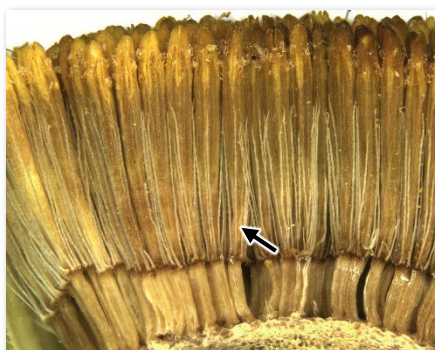
With white and long pubescences or nearly glabrous at the lower surface of the bract

Yellow ray flowers are arranged in 1 whorl and located at the periphery of inflorescence. With relatively long ligules, which mostly appear curled and easily fallen off

Numerous brownish-yellow or yellowish-brown tubular flowers are located in the centre of the inflorescence

Micro-morphological features

A: Tubular flower(→) without collateral receptacle paleae



(Longitudinal section of inflorescence)

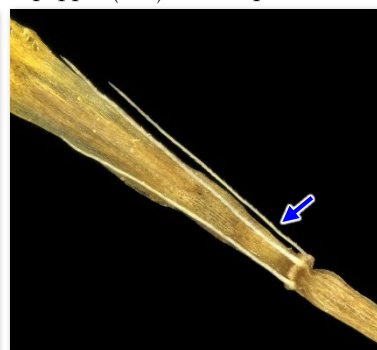
1 mm

B: Ovary of both ray flower and tubular flower with 1 whorl of relatively long and bristle-like pappus(→) at the apex



(Surface of the ray flower)

500 μ m



(Surface of the tubular flower)

500 μ m

Macroscopic features of Flos Anisopappi Chinensis 🔍

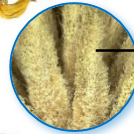


1 cm



5 mm

Involucre consists of several layers of lanceolate bract



Densely covered with white and thick hairs at the lower surface of the bract

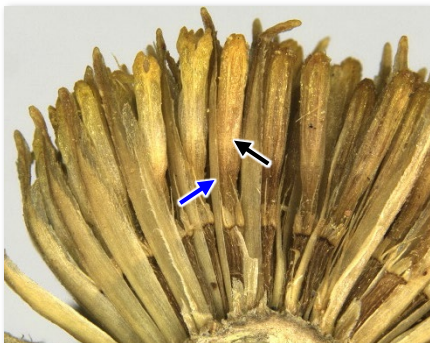
Yellow ray flowers are arranged in 1 whorl and located at the periphery of inflorescence. With relatively short ligules, which mostly appear curled and easily fallen off

Numerous brownish-yellow or yellowish-brown tubular flowers are located in the centre of the inflorescence

Micro-morphological features

A: Each tubular flower(→) has 1 collateral keeled receptacle palea(→) of nearly the same length

B: Ovary of both ray flower and tubular flower with 1 whorl of relatively short and membranous pappus(→) at the apex. Apex of the pappus is irregular and has several small awns



(Longitudinal section of inflorescence)

1 mm



(Surface of the ray flower)

500 μm






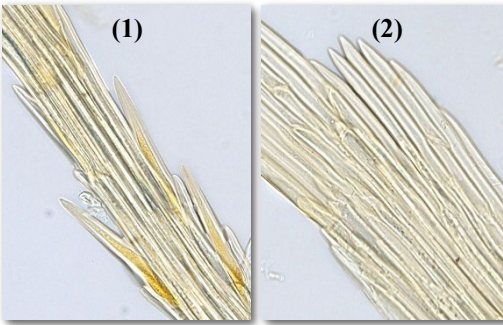


(Surface of the tubular flower)

500 μm

Microscopic feature comparison of
Flos Inulae and Flos Anisopappi Chinensis powder



	Flos Inulae	Flos Anisopappi Chinensis
Uniseriate non-glandular hair	 <p>Frequently found, extremely long, relatively thin, apical cell or 1-2 cells at the apex are significantly longer</p>	 <p>Numerous, extremely long, relatively thick, every cell of nearly the same length or apical cell slightly longer</p>
Epidermal cell of receptacle palea	 <p>Absent</p>	 <p>Long-polygonal in surface view, usually with thick-walled and unicellular non-glandular hairs (→) at the margin</p>
Pappus	 <p>Numerous, with several columns of seriated cells, apex of the cell protruded outwards</p>	 <p>Numerous, with several columns of seriated cells at the awn-like part(1), apex of the cell protruded outwards; cells orderly arranged at the membranous part(2), apices vary in length</p>

50 μm

Summary

Major differences in the features between Flos Inulae vs Flos Anisopappi Chinensis:

		Flos Inulae	Flos Anisopappi Chinensis
Macroscopic and micro-morphological features	Ray flower	Relatively long ligule	Relatively short ligule
	Tubular flower	Without receptacle paleae	With receptacle paleae
	Pappus	Bristle-like	Membranous and with several small awns
Microscopic features	Uniseriate non-glandular hair	Apical cell or 1-2 cells at the apex are significantly longer	Every cell of nearly the same length or apical cell slightly longer
	Epidermal cell of receptacle palea	Absent	Present
	Pappus	Only one form	Form differs between the awn-like and membranous parts



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