Identification of Easily Confused Species of Chinese Materia Medica in Hong Kong by Macroscopic and Microscopic Characteristics Project

Herba Taxilli versus Herba Visci





1 cm

Source

*Herba Taxilli

is the dried stem and branch with leaf of Taxillus chinensis (DC.) Danser in the family Loranthaceae

Herba Visci#

is the dried stem and branch with leaf of *Viscum coloratum* (komar.) Nakai in the family Loranthaceae

Overview

Herba Taxilli and Herba Visci are both listed in Schedule 2 of the Chinese Medicine Ordinance and the Chinese Pharmacopoeia (2020). According to the research by the *Species Systematization and Quality Evaluation of Commonly Used Chinese Traditional Drugs*, various species from the family Loranthaceae had been used as "*Sang ji sheng*" across China, the majority being *Viscum coloratum*. On the other hand, in the southern and southwestern regions, *Taxillus chinensis* was more commonly used. Although both Chinese Materia Medica (CMM) have the functions of dispelling wind-dampness, tonifying the liver and kidney, strengthening the sinew and bone, and preventing abortion, the nature and flavour of the CMM differ. Herba Taxilli is bitter, sweet and neutral, while Herba Visci is bitter and neutral. Due to various properties, these two CMM should be used accordingly.

Note:

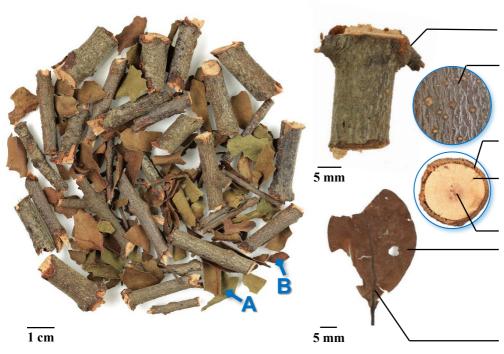
^{*}Its name in the Chinese Pharmacopoeia (2020) is "Taxilli Herba".

^{*}Its name in the Chinese Pharmacopoeia (2020) is "Visci Herba".

Key identification features

Macroscopic features of Herba Taxilli





◆ Stem hard, not easily broken

Cylindrical stem, some with branching observable

Surface is greyish-brown or reddishbrown and has fine longitudinal striations and numerous lenticels; lenticel is brown and fine

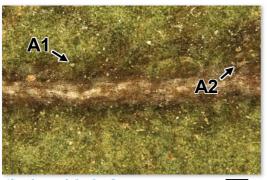
Narrow and reddish-brown bark in the cut surface

Wood is light reddish-brown or yellowish-brown and has fine radial striations

Pith usually located in the centre Leaf mostly broken. Slightly intact leaf appears ovate or elliptical when flattened and has petiole; young leaf is barely observable and covered with brown fine hairs Surface is yellowish-brown, yellowish-green or brown and has I significant midrib

Micro-morphological features

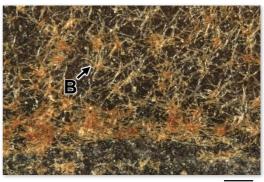
A1: With remnants of non-glandular hair observable on both sides A2: Some with remained stellate non-glandular hairs observable



(Surface of the leaf)

 $200 \, \mu m$

B: With reddish-brown stellate non-glandular hairs on both sides of the young leaf



(Surface of the young leaf)

200 μm

Macroscopic features of Herba Visci





Cylindrical stem with swollen node, branch is barely observable

Surface is yellowish-brown or brown and has significant longitudinal wrinkles Yellow or light yellowish-brown bark

in the cut surface Wood is light yellow or light yellowishbrown and has significant radial striations Pith usually located towards one side

Leaf usually intact, appears ellipticallanceolate and without petiole Surface is yellowish-brown and has wrinkles and 5 midribs, in which the 3 midribs in the centre are relatively significant

◆ Stem fragile and easily broken

Micro-morphological feature

A: Glabrous and with wrinkles on both sides



3

1 mm

Microscopic feature comparison of Herba Taxilli and Herba Visci powder



Herba Taxilli Herba Visci Stone cell Sub-square, sub-polygonal or sub-rounded, distinct striations, lumen Sub-polygonal, irregular, ovate or sub-square, distinct usually contains prism of calcium oxalate; stone cell appears bright striations, with pits; bright white or polychromatic white, orange-vellow or polychromatic under the polarized light under the polarized light microscope microscope, while prism of calcium oxalate appears polychromatic Epidermal cell of leaf Sub-polygonal in surface view, paracytic stomata (\longrightarrow) Sub-polygonal in surface view, large, some with beaded-thickened anticlinal wall, covered with yellow thick cuticle, paracytic stomata (→) (1) Form of pericyclic fibre(1) and xylem fibre(2) with significant With 1 form only, slightly thick wall, some wall difference. Pericyclic fibre with thick wall and narrow lumen; irregularly wavy; bright white, orange-yellow or xylem fibre with slightly thick wall and sparse pits; bright white, polychromatic under the polarized light microscope orange-yellow or 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 Herba Taxilli and Herba Visci:

		Herba Taxilli	Herba Visci
Macroscopic and micro-morphological features	Colour	Greyish-brown or reddish- brown stem; yellowish- brown, yellowish-green or brown leaf	Yellowish-brown or brown stem; yellowish- brown leaf
	Cut surface of the stem	Pith usually located in the centre	Pith usually located towards one side
	Surface of the leaf	With remnants of non- glandular hair or stellate non-glandular hairs	Glabrous
Microscopic features	Stone cell	Lumen usually contains prism of calcium oxalate	Without prism of calcium oxalate in lumen
	Epidermal cell of leaf	Smaller	Larger, covered with yellow thick cuticle
	Fibre	With 2 forms	With 1 form only

For more information, please refer to the <u>Hong Kong Chinese Materia Medica</u> Standards website:



Herba Taxilli - Hong Kong Chinese Materia Medica Standards (Volume 3) Visci Herba - Hong Kong Chinese Materia Medica Standards (Volume 5)



 $\label{lem:covernment} \begin{tabular}{ll} Government Chinese Medicines Testing Institute \\ Department of Health \\ \end{tabular}$

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