

Herba Polygoni Avicularis versus Polygoni Plebei Herba



Source

***Herba Polygoni Avicularis**
is the dried aerial part of
Polygonum aviculare L.
in the family Polygonaceae

Polygoni Plebei Herba
is the dried whole part of
Polygonum plebeium R. Br.
in the family Polygonaceae

Overview

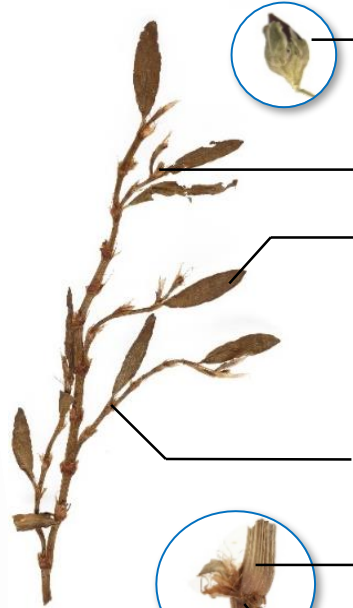
Herba Polygoni Avicularis is listed in both the Schedule 2 of the Chinese Medicine Ordinance and the Chinese Pharmacopoeia (2020), while Polygoni Plebei Herba has not been listed in either reference. According to the *Zhong hua ben cao*, the sources of both Herba Polygoni Avicularis and Polygoni Plebei Herba share the same family and genus. Both Chinese Materia Medica are distributed in various provinces of China and often grown in hillsides, fields and roadsides. According to the *Modern Chinese Materia Medica*, Polygoni Plebei Herba is mainly produced in Sichuan and is easily confused with Herba Polygoni Avicularis due to similar characteristics. The functions of Herba Polygoni Avicularis are to promote diuresis to relieve strangury, kill worms and relieve itching; whilst Polygoni Plebei Herba exerts functions of promoting diuresis to relieve strangury, clearing heat and detoxify, resolving dampness and killing worms. Since the functions of the two are not the same, they should be used accordingly.

Note:

*Its name in the Chinese Pharmacopoeia (2020) is “Polygoni Avicularis Herba”.

Key identification features

Macroscopic features of Herba Polygoni Avicularis decoction pieces

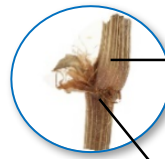


Flower is small and occasionally found. Perianth is brownish-green and the margin is white or light red

Fascicled at the leaf axil and mostly fallen off

Leaf is relatively large and has nearly no petiole or short petiole. Mostly fallen off and some are broken. Intact leaf appears lanceolate or elliptical, with entire margin and appears greyish-green, brownish-green or light brown when flattened

Stem appears cylindrical and slightly flat, relatively thick and some with branches



Surface of the stem is brownish-green, reddish-brown or greyish-green and has fine, dense and slightly protruded longitudinal striations

Node is slightly swollen and has light brown or whitish membranous ocrea which is mostly divided into filiform



Cut surface of the pith is white

Micro-morphological features

A: With dotted striations(→) observable between longitudinal ridges



(Surface of the stem)

500 μm

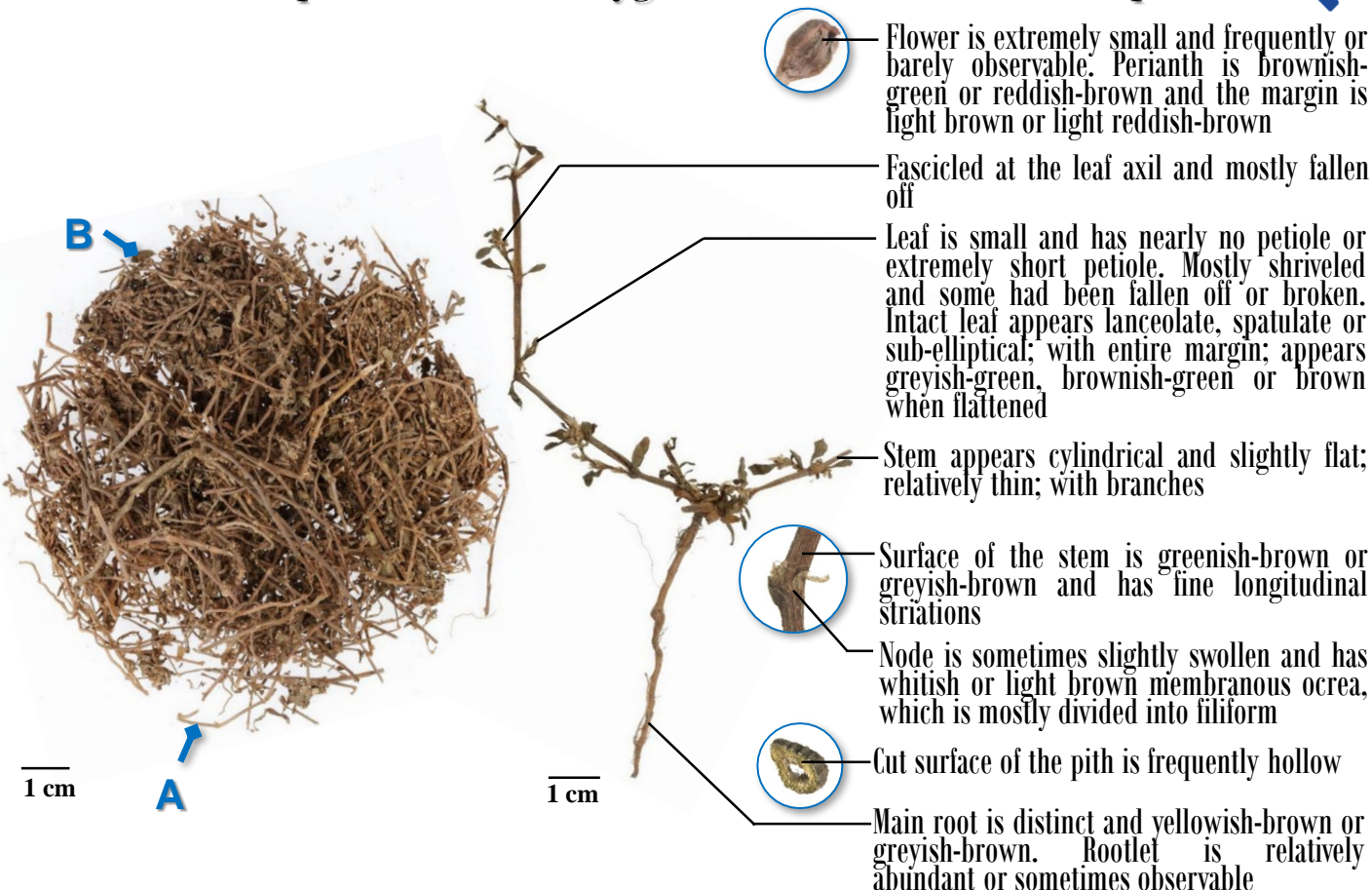
B: Lateral veins distinctly protruded(→). With dotted striations(→) observable on the lower surface of the leaf



(Lower surface of the leaf)

1 mm

Macroscopic features of Polygoni Plebei Herba decoction pieces



Micro-morphological features

A: With interrupted warty protuberances(→) observable at the margin of the fine longitudinal ridges



(Surface of the stem)

500 μm

B: Indistinct lateral veins(→). With distinct and dense dotted striations(→) observable on the lower surface of the leaf




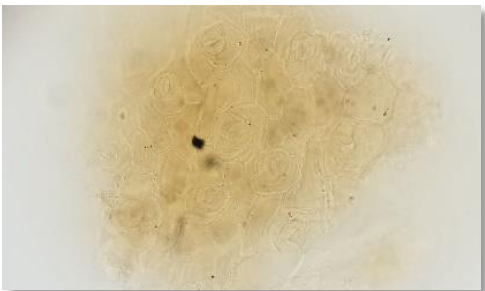


(Lower surface of the leaf)

1 mm

Microscopic feature comparison of Herba Polygoni Avicularis decoction pieces and Polygoni Plebei Herba decoction pieces powder[#]



| | Herba Polygoni Avicularis decoction pieces | Polygoni Plebei Herba decoction pieces |
|------------------------|--|--|
| Epidermal cell of stem |  <p>Sub-polygonal or sub-square in surface view, cells relatively short, stomata observable, light yellow or colourless</p> |  <p>Sub-polygonal or sub-rectangular in surface view, cells relatively long, stomata observable, brown or colourless</p> |
| Epidermal cell of leaf |  <p>Polygonal in surface view, with slightly beaded-thickened anticlinal wall, anisocytic stomata</p> |  <p>Sub-polygonal or irregular in surface view, slightly shriveled, with slightly thickened cell wall, anisocytic stomata</p> |

50 μm

Note:
[#]Features of Herba Polygoni Avicularis decoction pieces and Polygoni Plebei Herba decoction pieces powders are very similar, only small differences in the shape of epidermal cells of stem and leaf are observable.

Summary

Major differences in the features between Herba Polygoni Avicularis decoction pieces and Polygoni Plebei Herba decoction pieces:

| | | Herba Polygoni Avicularis decoction pieces | Polygoni Plebei Herba decoction pieces |
|--|---------------------------|--|---|
| Macroscopic and micro-morphological features | Size of the leaf | Relatively large | Relatively small |
| | Lower surface of the leaf | Lateral veins distinctly protruded. With dotted striations observable on the surface | Indistinct lateral veins. With distinct and dense dotted striations observable on the surface |
| Microscopic features | Epidermal cell of stem | Sub-polygonal or sub-square, cells relatively short, light yellow or colourless | Sub-polygonal or sub-rectangular, cells relatively long, brown or colourless |
| | Epidermal cell of leaf | Polygonal, with slightly beaded-thickened anticlinal wall | Sub-polygonal or irregular, slightly shriveled, with slightly thickened cell wall |

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



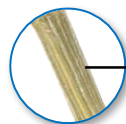
Polygoni Avicularis Herba - Hong Kong Chinese Materia Medica Standards (Volume 5)

Additional information

Photo of crude Herba Polygoni Avicularis



1 cm



Stem is cylindrical and slightly flat and has branches, 15-40 cm long, 0.2-0.3 cm in diameter



Surface is greyish-green or brownish-red and has fine, dense and slightly protruded longitudinal striations



Node is slightly swollen and has light brown membranous ocrea. Node interval is about 3 cm long; hard, easily broken



Pith is white in fracture

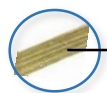
Alternate leaf nearly has no petiole or has short petiole. Blade is mostly fallen off or shriveled and broken. Intact blade appears lanceolate, with entire margin and appears brownish-green or greyish-green on both sides when flattened.

◆ Slight odour and slightly bitter taste

Photo of crude Polygoni Plebei Herba



1 cm



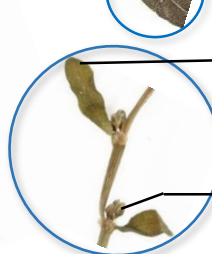
Stem is cylindrical, small and weak and has many branches, 1-2 mm in diameter



Surface is dirty green to greyish-brown and has fine longitudinal striations



Node is swollen and has 0.3-2 cm long in between. Stipule is sheath-like, membranous, transparent and appears lacerate at the apex



Leaf has entire margin and distinct midrib which protrudes towards the back

Alternate leaf is arranged linear, narrow obovate or lanceolate; 0.6-1.8 cm long, 2-5 mm wide; obtuse apex; base has node and is attenuate to short stalk-like

Flower is small and has short stalk. 1-3 flowers fascicled at the leaf axil

Main root is distinct and yellowish-brown

◆ Slight odour and weak taste



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