

Tussilago

Tussilago farfara, commonly known as coltsfoot,[2]: 770 [3] is a plant in the tribe Senecioneae in the family Asteraceae, native to Europe and parts of western and central Asia. The name "tussilago" is derived from the Latin *tussis*, meaning cough, and *ago*, meaning to cast or to act on.[4][5] It has had uses in traditional medicine, but the discovery of toxic pyrrolizidine alkaloids in the plant has resulted in liver health concerns.

Tussilago farfara is the only accepted species in the genus *Tussilago*, although more than two dozen other species have at one time or another been considered part of this group. Most of them are now regarded as members of other genera (*Chaptalia*, *Chevreulia*, *Farfugium*, *Homogyne*, *Leibnitzia*, *Petasites*, *Senecio*).[1]

Coltsfoot is a perennial herbaceous plant that spreads by seeds and rhizomes. *Tussilago* is often found in colonies of dozens of plants. The flowers, which superficially resemble dandelions, bear scale-leaves on the long stems in early spring. The leaves of coltsfoot, which appear after the flowers have set seed, wither and die in the early summer. The flower heads are of yellow florets with an outer row of bracts. The plant is typically 10–30 cm (3.9–11.8 in) in height. The leaves have angular teeth on their margins.[6][7]

Coltsfoot is widespread across Europe, Asia, and North Africa, from Svalbard to Morocco to China and the Russian Far East. It is also a common plant in North and South America where it has been introduced, most likely by settlers as a medicinal item, or to provide early blooms for honeybees. The plant is often found in waste and disturbed places and along roadsides and paths. In some areas it is considered an invasive species.[1][8][9]

The common name comes from the leaf's supposed resemblance in shape to a colt's foot.[10] It is a 16th-century translation of the medieval Latin name *pes pulli*, meaning "foal's foot".[11] Other common names include tash plant, ass's foot, bull's foot, coughwort (Old English),[12] *farfara*, foal's foot, foalswort, and horse foot. Sometimes it is confused with *Petasites frigidus*, or western coltsfoot.

It has been called *bechion*,[13] *bechichie*, or *bechie*, from the Ancient Greek word for "cough".[14] Also *ungula caballina* ("horse hoof"),[13] and *chamæleuce*. [15]

Coltsfoot has been used in herbal medicine[13] and has been consumed as a food product with some confectionery products, such as Coltsfoot Rock. *Tussilago farfara* leaves have been used in traditional Austrian medicine internally (as tea or syrup) or externally (directly applied) for treatment of disorders of the respiratory tract, skin, locomotor system, viral infections, flu, colds, fever, rheumatism and gout.[16] An extract of the fresh leaves has also been used to make cough drops and hard candy.[10]

Coltsfoot is used as a food plant by the larvae of some Lepidoptera species including the Gothic and small angle shades. It is also visited by honeybees, providing pollen and nectar.

Tussilago farfara contains tumorigenic pyrrolizidine alkaloids.[17] Senecionine and senkirkine, present in coltsfoot, have the highest mutagenetic activity of any pyrrolizidine alkaloid, tested using *Drosophila melanogaster* to produce a comparative genotoxicity test.[18][19]

Two cases of supposed liver damage (and death) due to coltsfoot tea have been shown to actually be the result of mistaken identity. In one, coltsfoot tea causing severe liver problems in an infant was actually the result of *Adenostyles alliariae* (alpendost).[20] In another case, an infant developed liver disease and died because the mother drank tea originally believed to contain coltsfoot during her pregnancy, but which was later shown to be *Petasites hybridus* (butterbur) or a similar species.[21][22] In one 27-year-old male, ingesting a multicomponent herbal supplement that included coltsfoot may have caused him to develop non-lethal deep vein thrombosis and pulmonary embolism.[23]

In response, the German government banned the sale of coltsfoot. Clonal plants of coltsfoot free of pyrrolizidine alkaloids were then developed in Austria and Germany.[24] This has resulted in the development of the registered variety *Tussilago farfara* 'Wien', which has no detectable levels of these alkaloids.[25]

