

Perilla frutescens

Perilla

Introduction

Native to Eastern Asia, the genus *Perilla* contains only one species and three varieties. *Perilla frutescens* is well-known in Chinese medicine and has a long history of cultivation in China^[172].

Species and Related Varieties of *Perilla* in China

Scientific Name
<i>Perilla frutescens</i> (L.) Britt.
<i>Perilla frutescens</i> var. <i>auriculato-dentata</i> C.Y. Wu et Hsuan ex H.W.Li
<i>Perilla frutescens</i> var. <i>acuta</i> (Thunb.) Kudo
<i>Perilla frutescens</i> var. <i>crispa</i> (Thunb.) Hand.-Mazz.

Taxonomy

Family: Labiatae (Lamiaceae)

Genus: *Perilla* L.

Description

Perilla frutescens is an erect, annual herb that grows 0.3 to 2 m tall. The villose stems are purple or green with four parallel grooves. Opposite leaves are membranous or herbaceous, broadly ovate or orbicular, 7-13 cm long and 4.5-10 cm wide, with mucronate tips, a rounded or broad cuneate bases, and dentate margins. The pilose surface of the leaves may be green or purple on both sides, or purple on the underside only. Each leaf has seven to eight pairs of lateral veins, which are closer together near the base. The veins on the upper surface are slightly raised, significantly so on the underside. The petiole is flat and villose. Composed of a pair of flowers, the villose corymb inflorescence may grow terminally or from the leaf axil. The ten-veined, campanulate calyx is villos basally outside and yellow



Leaves and flowers of *Perilla frutescens*. (Photo by Jil M. Swearingen, USDI-NPS.)

glandular dotted on the surface, and pilose near the inside base, arranged in a ring. The calyx is initially about 3 mm long, but expands to 1.1 cm, spreading or drooping and swollen at the base when fruited. The labiate calyx has a broad upper sepal that is three-lobed and slightly longer than the lower sepal, which has two lanceolate lobes. The corolla is campanulate, white to magenta, 3-4 mm long, glabrous, and slightly pilose outside but less so inside. The limb of the corolla is also labiate, and composed of a slightly lobed upper petal and three-lobed lower petal. The sub-globose fruits are reticulate nutlets, grayish-brown, about 1.5 mm in diameter. In China, flowers and fruits appear in August and linger until November to

December^[172].

Habitat

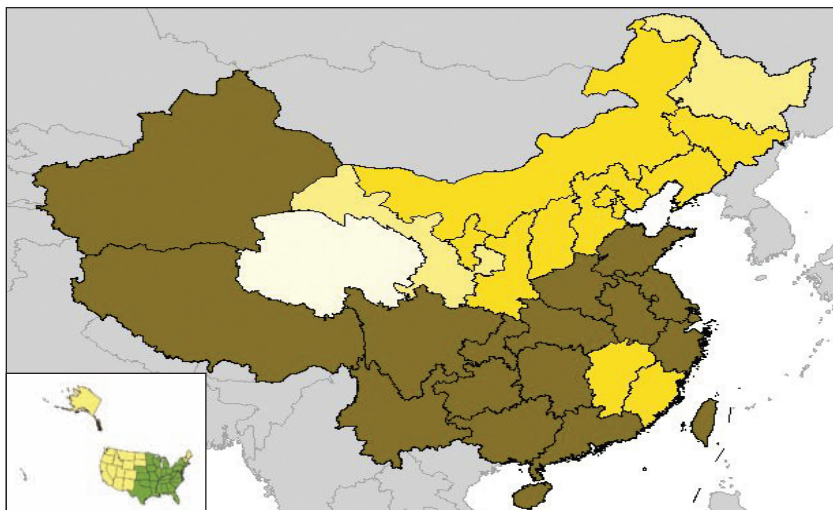
P. frutescens grows along roadsides, ditches, forest margins, and on hillsides.

Distribution

P. frutescens occurs naturally and is also cultivated in almost all provinces of China^[172].

Economic Importance

P. frutescens is widely cultivated as a source of medicine and spices. Perilla oil, which is contained in the seed, is edible and also used as a preservative^[172].



Other Varieties

Perilla frutescens var. *acuta* (Thunb.) Kudo has a pilose stem, smaller calyx, ovate leaves 4.5-7.5 cm long and 2.8-5 cm wide; its nutlet is light brownish yellow and 1-1.5 mm in diameter. This variety grows along roadsides, in disturbed areas, hillsides, and forest edges, and may be seen near houses. It occurs in Fujian, Guangdong, Guangxi, Guizhou, Hebei, Hubei, Jiangxi, Jiangsu, Shanxi, Sichuan, Taiwan, Yunnan, and

Zhejiang provinces.

Perilla frutescens var. *auriculato-dentata* C.Y. Wu et Hsuan ex H.W. Li is similar to *P. frutescens* var. *acuta*. This variety can be distinguished by the rounded or subcordate base, and earlike lobed leaf margin. It occurs on hillsides, roadsides, and in forests in Anhui, Guizhou, Hubei, Jiangxi, and Zhejiang provinces.

Similar to *P. frutescens*, *P. frutescens* var. *crispa* (Thunb.) Hand.-Mazz. has a deeply cut, dentate leaf margin. It

is planted nationwide for its medicinal uses and as a spice^[172].

Natural Enemies of *Perilla*

Six fungi and fourteen arthropods have been reported to damage *Perilla*. Two insect species, *Cryptaphis siniperillae* and *Pyrausta phoenicealis*, may be monophagous and oligophagous, respectively.

Fungi

Phylum	Family	Species	H. R.	Ref.
Basidiomycota	Coleosporiaceae	<i>Coleosporium perillae</i> Syd. & P. Syd.	p	23
Oomycota	Peronosporaceae	<i>Peronospora perilla</i>	o	188
Anamorphic <i>Mycosphaerella</i>		<i>Pseudocercospora perillulae</i> (Togashi & Katsuki) X.J. Liu & Y.L. Guo	o	110
		<i>Septoria kishitai</i> Fukui	o	23
		<i>Septoria perillae</i> Miyake	o	23
Anamorphic Mycosphaerellaceae		<i>Ascochyta perillae</i> P.K. Chi	m	23

Arthropods

Order	Family	Species	H. R.	Ref.
Coleoptera	Chrysomelidae	<i>Apophyllia flavovirens</i> (Fairemaire)	p	65
			p	185
Hemiptera	Pentatomidae	<i>Stollia guttiger</i> (Thunberg)	p	192
		<i>Stollia ventralis</i> (Westwood)	p	192
Homoptera	Aphididae	<i>Cryptaphis siniperillae</i> Zhang	m	189
	Cicadellidae	<i>Carinata</i> sp.	p	132
		<i>Empoasca biguttula</i> (Ishida)	p	48
Lepidoptera	Arctiidae	<i>Hyphantria cunea</i> (Drury)	p	41
	Noctuidae	<i>Argyrogramma agnata</i> Staudinger	p	85 ^I
		<i>Mamestra brassicae</i> (Linnaeus)	p	85 ^{II}
		<i>Polia illoba</i> (Butler)	p	209
	Pyrallidae	<i>Loxostege sticticalis</i> Linnaeus	p	145
		<i>Pyrausta phoenicealis</i> Hübner	m	85
			o	145
o			145	
	<i>Syngamia abruptalis</i> Walker	p	145	
Thysanoptera	Phlaeothripidae	<i>Haplothrips aculeatus</i> (Fabricius)	p	56

^I Recorded as *Plusia agnata* Staudinger

^{II} Recorded as *Barathra brassicae* (Linnaeus)