Phellodendron amurense

Amur corktree

Leaves and fruits of *Phellodendron amurense*. (Photo by Pat Breen, Oregon State University.)

Introduction

The genus *Phellodendron* contains four species, distributed primarily in eastern Asia. Two species and one variety are native to China. Members of the genus *Phellodendron* are famous for their abundant alkaloid (berberine, palmatine, cadicine, phellodendrine, magnoflorine), essential oil, and flavonoid (amurensin) content[3].

Species of *Phellodendron* in China

Scientific Name
P. amurense Rupr.
P. chinense Schneid.

Taxonomy

Family: Rutaceae
Genus: *Phellodendron* Rupr.

Description

Phellodendron amurense is a deciduous tree that grows to 10-20 m, with a maximum height of 30 m. At maturity, the bark is light gray or grayish brown, with webbed fissures on the surface of a thick corky layer. Wide-spreading branches are dark purple and glabrous. The slender rachis bears 3-15 papery leaflets, which are ovate lanceolate or ovate, 6-12 cm long and 2.5-4 cm wide, and have an acuminate apices and cuneate bases, with lightly serrate and hairy margins. Flowers bloom from May to June. Corollas are purple green and 3-4 mm long. The calyx is slender, broadly ovate and about 1 mm long. Appearing from September through October, the round fruits are dark blue, 1 cm in diameter, with five to eight longitudinal grooves, and each fruit contains five seeds[3].

Habitat

P. amurense occurs in forested areas or along rivers, but it prefers sunny areas. It adapts easily to poor environmental conditions. It grows easily along streets and near houses, as well as other areas at low elevations[3].

Distribution

P. amurense occurs naturally in Hebei, eastern Inner Mongolia[3],and the three northeastern provinces, Heilongjiang, Jinlin, and Liaoning[3][63]. It is cultivated in Anhui[30], Fujian[35], Henan[25], Hubei[201], Hunan[126], Jiangsu[81], Ningxia[115], Shandong[8], Shanxi[39], Xinjiang[175], and Zhejiang provinces [153].

Economic Importance

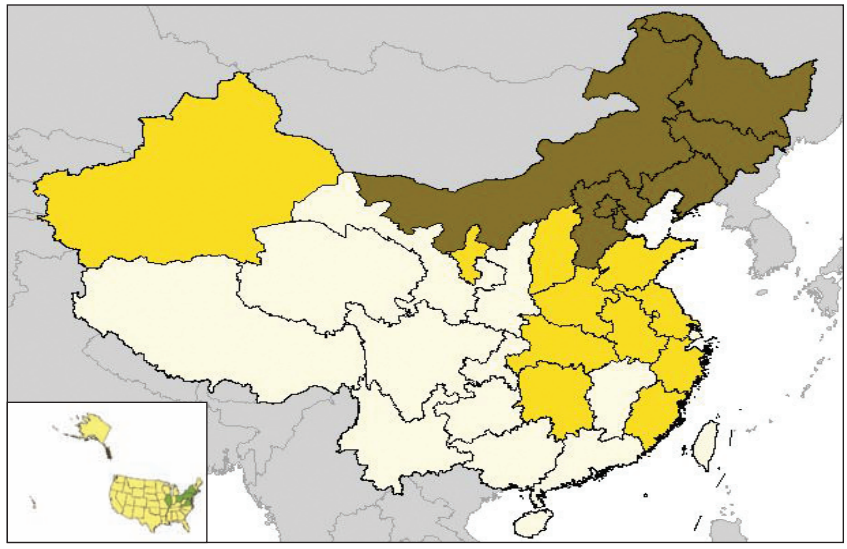
The bark is a good source of cork. The trunk can be used as timber for furniture and other decorative materials. Fruits are chemically useful in making dye, insecticide, soap, and lubricants. The inner layer of bark, known as *Huang Bo*, is medically useful [3].

Related Species

Similar to *P. amurense*, *P. chinense* Schneid can be distinguished by its brown hairy leaf rachis and petiole. Growing in the diverse woody forest of the adjacent areas of Hubei, Hunan and Sichuan provinces at elevations above 900 m [3].

Natural Enemies of *Phellodendron*

Four fungi and nine Lepidoptera were reported for the genus *Phellodendron.* Although all four fungi can infect *P.*



Fungi

Phylum	Family	Species	H. R.	Ref.
Basidiomycota	Coleosporiaceae	*Coleosporium phellodendri* Kom.	p	23
Anamorphic *Mycosphaerella*		*Cercospora phellodendri* P.K. Chi & C.K. Pai	p	23
Anamorphic Mycosphaerellaceae		*Ascochyta phellodendri* Kabát & Bubák	p	23
		Ascochyta pirina Pegl.	m	23

Arthropods

Order	Family	Species	H. R.	Ref.
Lepidoptera	Arctiidae	*Hyphantria cunea* (Drury)	p	41
	Geometridae	*Biston betularia* (Linnaeus)	p	138
	Lymantriidae	*Porthesia similis* (Fueszly)	p	65
			p	198
	Papilionidae	*Papilio bianor* Cramer	oo	203
		Papilio bianor kotoensis Sonan	p	203
		Papilio helenus Linnaeus	p	158
		Papilio maackii Ménétriès	p	203
	Pieridae	*Aporia hippia* (Bremer)	p	203
	Saturniidae	*Samia cynthia* (Drurvy)	p	207