

# Japanese Hop



## Background, Life History

Japanese hop (*Humulus japonicus*) is an herbaceous, usually annual vine. Native to Eastern Asia, it was originally imported to the United States in the late 1800s for use in Asian medicine and as an ornamental vine. Within Missouri, Japanese hop is found most commonly in the Missouri and Mississippi river corridors, but it is increasing its range within certain stream and river floodplains. It is able to out-compete established vegetation in areas with exposed moist soil. Potential invaded habitats include bottomland prairies, stream banks, ditches, roadsides, railroads, pastures and moist, open, disturbed areas. It prefers direct sunlight and does not tolerate heavy shade. However, it can invade bottomland forest when natural openings allow sufficient light.

Japanese hop spreads by seed dispersed by wind, water, machinery and animals. Seed begins to germinate in early spring and continues throughout the growing season if ample moisture and sunlight are available. The first frost kills the vines, which quickly wither away, leaving behind an abundance of seed for the following year. Individual vines twine counter-clockwise. Short, sharp downward pointing prickles enable them to climb trees to heights of 10 feet. Opposite leaves are 2 to 5 inches long, palmately divided (typically with 5 to 7 lobes), toothed, and occur on long leaf stems (petioles) up to 8 inches. The leaves are rough and can cause dermatitis. Male and female flowers occur on separate plants and bloom in July and August. Male flowers are small, greenish-yellow and occur in branched panicles. Pale green female flowers develop on drooping, cone-like structures with overlapping scales called hops. Round seeds are mottled light and dark brown,  $\frac{1}{8}$  inch in diameter and mature in September.



Chris Evans, River to River, CWWA, Bugwood.org

## Impacts

With large quantities of seed deposited every year, many thousands of hop plants per acre may be produced. Following germination in early spring, Japanese hop grows rapidly and can eventually form a blanket of vegetation four feet thick, smothering existing native vegetation. Climbing vines can break and pull down small trees and shrubs with the potential to displace native stream bank and floodplain vegetation.



Chris Evans, River to River, CWMA, Bugwood.org

Vines lengthen and twine along the ground and climb small shrubs and trees, smothering existing vegetation.



Chris Evans, River to River, CWMA, Bugwood.org

Sharp, downward pointing prickles can make controlling Japanese hop difficult.



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Japanese hop is readily identified by the opposite, toothed, palmately divided (typically 5 lobed) leaves.

## Control

In areas with light infestation, manual removal can work well within moist soil in early spring when the root system is small. The entire root and plant must be removed and taken off-site to prevent regrowth. Repeated pulling/digging should continue until dieback in fall when new plants cease to emerge.

In areas with heavier infestations or in newly established tree plantings, a pre-emergent herbicide containing sulfometuron methyl (Oust® XP) applied in mid-March generally causes minimal or no damage to other perennial vegetation eliminating the need to rescue desirable vegetation from an established hop infestation. Application of a pre-emergent herbicide followed by a foliar application of glyphosate or metsulfuron applied prior to seed production (mid-April to August) may provide the most effective control. Subsequent applications will be necessary to control germinating plants throughout the season to prevent seed production.

Mowing/cutting is also effective when started in early spring and continued until dieback in fall. The location of plants within wet soils and amongst trees may hinder mowing control efforts.

Reports indicate that after three consecutive years of control efforts that prevent seed production, the seed bank is normally exhausted. In areas with the potential

for recolonization, such as stream banks, continued monitoring will be needed until the upstream seed source is eliminated.

## Native Look-alikes

Native bur cucumber (*Sicyos angulatus*) lacks prickles and has tendrils, and the leaves have much less pronounced lobes. Virginia creeper (*Parthenocissus quinquefolia*) and several cinquefoil (*Potentilla*) species have a sprawling growth habit; however, the leaves are deeply divided into five leaflets and the plants lack prickles.

## Identifying Japanese Hop

- Sprawling, twining, climbing vines
- Opposite, palmately divided leaves, typically with 5 to 7 lobes, rough to touch
- Inconspicuous green flowers, with male and female flowers on separate plants
- Female flowers borne on a drooping cone-like structure with overlapping scales
- Short, sharp downward pointing prickles on stem

## For Additional Information

[dnr.state.md.us/forests/pdfs/jhopsreport.pdf](http://dnr.state.md.us/forests/pdfs/jhopsreport.pdf)  
[nps.gov/plants/ALIEN/fact/huja1.htm](http://nps.gov/plants/ALIEN/fact/huja1.htm)

[mdc.mo.gov](http://mdc.mo.gov)

For more information or to report a population, contact your local Missouri Department of Conservation office, e-mail [WildlifeDivision@mdc.mo.gov](mailto:WildlifeDivision@mdc.mo.gov), or write:

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**Missouri Department of Conservation**  
**Invasive Species Coordinator**  
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