

Japanese climbing fern (*Lygodium japonicum*)



LYGODIACEAE FAMILY

GROWTH HABIT

Japanese climbing fern (*Lygodium japonicum*) is a perennial vining fern that can reach up to 90 feet in length. **Sporulation** increases as the growing season progresses and peaks in October. The sterile **pinnae** may be opposite or alternate, triangular, bipinnately compound. The leaflets are many-lobed and have a long and slender terminal lobe. The fertile pinnae are like the sterile ones but are much lacier in appearance due to the slender, fingerlike lobes of the leaflets. **Spores** are produced in double rows of sporangia underneath the margins of fertile pinnae.

DISTRIBUTION IN FLORIDA

In all counties except Monroe and growing most densely in the north central part of the state.

Table 1. Herbicide options for Japanese climbing fern.
 Herbicides are expressed on a (% v/v) by product basis.
 The label is the law. Always refer to product label before use.

HERBICIDE ACTIVE INGREDIENTS	PRODUCT(S) ¹	Recommended Approach
		FOLIAR
GLYPHOSATE	ROUNDUP CUSTOM, RANGER PRO AND OTHERS	2-4%
METSULFURON	ESCORT	2 oz/A or (0.2 oz/gal) ²

NR= Not Recommended

¹Glyphosate and metsulfuron may also be tank mixed at the recommended rates.

²This is the equivalent of 5.6 grams of herbicide per gallon of water.

NOTES SECTION

Herbicide Notes for Japanese climbing fern

- Always consult the herbicide label for specific concentration recommendations. Foliar herbicide treatments are the only effective application method.
- Banded treatment of the lower four feet of climbing growth have not been effective for other Lygodium species and are not likely to work for Japanese climbing fern. Poodle cutting is still required to completely kill the climbing vines.
- Previous research indicates a very slight bump in control when the glyphosate product concentration is increased from 2 to 4%. However, it is minimal and not generally recommended.
- Metsulfuron is a dry flowable herbicide which is why it is not recommended in a % v/v manner. The extremely low use rate makes accurate mixing of small batches difficult.
- Tank mixing glyphosate with metsulfuron may sometimes improve efficacy. However, it will also increase the potential for non-target injury (see below).

Adjuvant Considerations: Surfactants are often required for foliar treatments to improve herbicide absorption. For any glyphosate treatment, a water conditioning agent can prevent a loss of efficacy due to hard water. A high quality non-ionic surfactant has been an effective adjuvant for both recommended herbicides.

Seasonality of Treatments: Japanese climbing fern is sensitive to frost. Treatments are generally most effective in the late summer and early fall. Spore production peaks in October so treatments should be applied prior to October to reduce spore production.

Specific Hydrologic Considerations: In upland sites, a 2% glyphosate treatment has been extremely effective. However, in wetland sites, new spore germination and recruitment over the summer may shorten the length of control achieved with a single treatment.

Specific Considerations for each Herbicide for Potential Non-Target Damage

- Glyphosate is nonselective and will injure or kill most other vegetation that is inadvertently treated. Poodle cutting climbing vines will completely control all climbing vines. Pulling vines off of other low growing plants before treatment is labor intensive but may reduce non-target damage.
- Metsulfuron is generally more selective than glyphosate on many species. However, native ferns are typically highly susceptible to it.

Retreatment Interval Consideration:

The length of time required for a new sporophyte to produce fertile leaflets with viable spores in uncertain. However, it is likely to occur by the fall of the second year. Given that the best herbicide treatments can provide at least twelve months of control, it is important to get upland sites on a three year monitoring/treatment rotation. This may be shortened to two years in wetlands, but land managers should monitor recovery to verify this.

Calculations for % v/v:

(Volumes must be in the same units, i.e., gallons, ounces, liters, etc).

$$\% \text{ v/v} = (\text{Volume of herbicide product} / \text{total herbicide plus carrier volume}) * 100\%$$

Reference Table for % v/v

% V/V	Ounces of herbicide to add for 1 gallon (128 oz) total mix size
0.25	0.32
0.5	0.64
1.0	1.28
2.0	2.56
5.0	6.4
10.0	12.8
20.0	25.6