

Small-leaved climbing fern (*Lygodium microphyllum*)

LYGODIACEAE FAMILY



GROWTH HABIT
 Small-leaved climbing fern (*Lygodium microphyllum*) is a twining, wiry, vine that covers trees, shrubs and many herbaceous plants. **Rhizomes** are generally shallow, branched, black, and produce new stems at the tips. Leaflets are either non-fertile or fertile and deeply lobed with sporangia on the lower surface of the lobes. **Spores** are produced year-round in the sporangia and are wind dispersed.

DISTRIBUTION IN FLORIDA
 Found throughout the south and central peninsula but recently also found as far north as Jacksonville.

Table 1. Herbicide options for Small-Leaved 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)	FOLIAR
GLYPHOSATE	ROUNDUP CUSTOM, RANGER PRO, AND OTHERS	1.5-3%
METSULFURON	ESCORT XP, MSM60, OTHERS	2 oz/A
TRICLOPYR ACID	TRYCERA	1.5-2%
TRICLOPYR AMINE	GARLON 3A, ELEMENT 3A, AND OTHERS	2-3%
TRICLOPYR CHOLINE	VASTLAN	1.1-2.2%

NR= Not Recommended

NOTES SECTION

Herbicide Notes for Small-Leaved Climbing Fern: SLCF vines climbing above 6-8 feet cannot be safely controlled by backpack herbicide application and must be poodle cut. All vines above the poodle cut will die without further intervention. Foliar treatment is the only recommended approach for all SLCF cover below the poodle cut. Basal bark treatment is not effective. Glyphosate has been the primary herbicide used for SLCF control. For metsulfuron, only Escort XP has a Florida 24(c) special local need label for use in freshwater marshes (sloughs, wet prairies, and sawgrass marshes), mesic forest (flatwoods and hammocks), hydric forests (flatwoods, floodplains, hammocks, and swamps), Everglades tree islands, and Everglades prairie scrub. All three triclopyr formulations are labeled for use in aquatic and upland sites.

Adjuvant Considerations: All herbicides used for SLCF control require a surfactant for optimal performance. Additionally, for glyphosate, a water conditioning agent can prevent a loss of efficacy due to hard water.

Seasonality of Treatments: Treatments are generally effective throughout the year if plants are green and actively growing. However, SLCF often experiences brownout in the late winter and early spring due to cool, dry conditions. Therefore, treatments applied when the foliage is brown will not be effective. Additionally, the brown Lygodium moth biocontrol agent can result in defoliation and patch brownout in the spring. These patches will not be controlled if sprayed when moth defoliation has occurred. Finally, SLCF ground cover may become completely inundated during the wet season and these areas cannot be controlled with foliar treatments.

Specific Hydrologic Considerations: Treatment in the late spring and early summer just prior to the wet season can be extremely effective as recovery is slower in inundated areas. However, in high water conditions, leafy growth can persist underwater for a few weeks and will not be controlled if treated when plants are submersed.

Specific Considerations for each Herbicide for Potential Non-Target Damage:

- Glyphosate is non-selective and directed sprays are recommended. It has no soil residual activity and is safe around trees that do not have thin green bark.
- Metsulfuron is injurious to many trees and native ferns. Directed applications are recommended where possible.
- All triclopyr formulations in table one are labeled for use in aquatics. These should be used carefully when standing water is present due to in-water activity and the potential for non-target damage. Additionally, triclopyr has some soil residual activity. Do not overapply when treating SLCF around the base of trees or shrubs and keep it off the bark of saplings with thin green bark.

Retreatment Interval Consideration: While foliar treatments are generally effective in controlling topgrowth, very dense patches may result in incomplete coverage and some rhizome survival and regrowth. Additionally, spore germination following treatment may result in new sporophytes within 6 months. Ideally, monitoring sites for regrowth every 6 months is ideal. However, this is often not possible and monitoring and retreatment should occur within three years at most.

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