

PEST ALERT

Florida Department of Agriculture and Consumer Services, Division of Plant Industry
 Charles H. Bronson, Commissioner of Agriculture

The Chinese creeper, bittervine or mile-a-minute, *Mikania micrantha*, an invasive vine new to the continental United States

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INTRODUCTION: *Mikania micrantha* Kunth, a vine in the Compositae (Asteraceae) was recently detected in Miami-Dade County by Keith Bradley of the Institute for Regional Conservation. Through further surveys, additional patches have been found, all within a 5.5 mi. swath through the Redlands area of Homestead. The populations have mostly been found in disturbed areas such as roadsides and woodlots, but at least one nursery is infested, as is one residential landscape. Most of the infestations are small, but a larger one, 100 ft. square, has been seen as well. This plant has not previously been reported to be established in the continental United States, although it is native in Puerto Rico (Liogier, 1997). It is a serious agricultural and environmental weed, particularly in the Old World tropics, and is included on the Noxious Weed Lists of the USDA and several states, including Florida.

TAXONOMY: *Mikania* is a genus of more than 400 species of perennial, herbaceous or semi-woody, twining vines, or less commonly shrubs, widely distributed in the tropics and subtropics, with all but nine native to the New World (Mabberley 1997). Two or three species are native to the eastern United States. It is a member of the tribe *Eupatorieae*, and the inflorescence is similar in general aspect to *Eupatorium* and its segregates. The leaves are opposite or rarely whorled, 3 – 7-nerved from the base, with delicate, stipule-like nodal appendages, rare in the Compositae (Adams 1972; Acevedo-Rodriguez 2005), between the petiole bases in some species. The inflorescences are long-stalked, terminal and axillary, complex panicles. The heads (capitulae) consist of four white or pinkish disc florets, subtended by four subequal phyllaries (involucral bracts) and usually a fifth distinct, subinvolucral bract. The achenes (cypselaes) are 4-10 ribbed, crowned with a pappus of 35-60 barbellate bristles (Liogier 1997). Many of the species are confusingly similar and difficult to positively identify.

IDENTIFICATION: *Mikania micrantha* is a perennial twining vine with terete or obscurely 4-6-angled stems that are glabrous or sparsely pubescent, at least at the nodes. The leaves are often yellow-green or pale green, 5-7-nerved from the base, glabrous or sparsely pubescent on both surfaces; the shape is cordate, triangular, or ovate, with a cordate to hastate base and an acuminate apex, and a coarsely toothed to subentire margin; they are 4-13 cm. long and 2 – 9 cm. wide. The nodal appendage is a membranous, irregularly toothed flap. The inflorescence branches are glabrous or nearly so. The flower heads are 4 -6 mm. long; the phyllaries are green below and whitish above, oblong to obovate, acute, glabrous or nearly so, 2 – 4 mm. long, and somewhat saccate at the base; the corollas are pure white. The achenes are black, 5-ribbed, sparsely glandular-dotted, 1.5 – 2 mm. long. The pappus consists of 30 - 32 white bristles.

SIMILAR SPECIES IN FLORIDA: Two species of *Mikania* are native to Florida, but some taxonomists recognize a third as well. The commonest and most widespread is the climbing hempvine, *M. scandens* (L.) Willd., found throughout the state. The Florida Keys hempvine, *M. cordifolia* (L.f.) Willd. is common in the central and southern peninsula, but less so in the northern part of the state. The three species of concern may be distinguished by means of the following key.

1. Flower heads 7 – 10 mm. long; stems distinctly 6-angled; achenes pale brown, without glandular dots, about 4 mm. long..... *Mikania cordifolia*

1. Flower heads 4 – 6 mm. long; stems terete or obscurely angled; achenes dark brown or black, with at least a few glandular dots, about 2 mm. long.

2. Leaves usually pale green or yellow green, without a hint of red; flowers white, the phyllaries glabrous or nearly so; inflorescence branches glabrous or nearly so; nodal appendage an irregularly toothed flap; pappus bristles numbering 30 – 32; plants growing rampantly in disturbed habitats*Mikania micrantha*

2. Leaves medium green, the petioles and stems often red or reddish; flowers pinkish, the phyllaries hairy with segmented hairs; inflorescence branches hairy; nodal appendage a low ridge with hairlike projections; pappus bristles numbering 38 – 40; plants of restrained growth in moist natural habitats.....*Mikania scandens*

DISTRIBUTION: *Mikania micrantha* is native to Mexico, Central and South America and the West Indies, but is seldom a weed in those areas. It has become naturalized widely in the Old World tropics, and is problematical in tropical Asia and the Pacific Islands, but it appears to be absent from tropical Africa, and is not yet a pest in Australia. It is a serious weed of newly planted plantation crops such as tea, coffee, cacao, coconuts and oil palms (Holm, *et al.* 1977), but it can be problematical in mature plantings as well. It grows rampantly, covering the crops with a dense mat of foliage, shading them and even causing breakage. It acts the same in disturbed forest. Photographs sent in by inspectors show growth reminiscent of the Old World climbing fern, *Lygodium microphyllum*. Potential range in the United States is not known, but it has been found at ca. 10,000 feet in the Bolivian Andes (Holm, *et al.* 1977), so it has some cold tolerance.

MEANS OF DISPERSAL: The achenes are crowned with a pappus of hairlike bristles, which act like a parachute, allowing the seeds to be widely dispersed by the wind. In addition, as the plant grows, it produces roots at the nodes, eventually making a dense patch that is difficult to remove manually or mechanically. Even small, detached pieces with only a single node can take root and start a new colony.

REFERENCES:

Acevedo-Rodriguez, P. 2005. *Vines and climbing plants of Puerto Rico and the Virgin Islands. Contributions from the U.S. National Herbarium 51: 1-483.*

Adams, C.D. 1972. *Flowering plants of Jamaica. University of the West Indies, Mona, Jamaica. 848 pp.*

Holm, L.G. et al. 1977. *The world's worst weeds. The University Press of Hawaii, Honolulu. 609 pp.*

Liogier, H.A. 1997. *Mikania in, Descriptive flora of Puerto Rico and adjacent islands 5: 317 – 322.*

Mabberley, D.J. 1997. *The plant-book. Cambridge University Press, Cambridge. 858 pp.*

More information on *Mikania micrantha*:
(<http://fl-dpi.com/enpp/botany/mikania-micrantha.html>)



Figure 1. *Mikania micrantha*, showing the vining habit, typical triangular-ovate leaves with yellow-green coloration, and mature inflorescences. Photo credit: <http://www.hear.org/Pier/imagepages/singles/mimicp11.htm>



Figure 2. Nodal appendage of *Mikania micrantha*. This is a delicate, irregularly toothed flap similar to an interpetiolar stipule. Photo credit: Patti Anderson, DPI



Figure 3. Inflorescence of *Mikania micrantha*, showing the glabrous inflorescence branches. Photo credit: <http://www.hear.org/Pier/imagepages/singles/mimicp11.htm>



Figure 4. Close-up of part of the inflorescence of *Mikania micrantha*, showing the glabrous phyllaries and inflorescence branches. From a herbarium specimen. Photo credit: Patti Anderson, DPI



Figure 5. A severe infestation of *Mikania micrantha*, reminiscent of the Old World climbing fern (*Lygodium microphyllum*). Photo credit: www.hear.org/Pier/imagepages/singles/mimicp11.htm



Figure 6. Mass of *Mikania micrantha* in full bloom at a nursery in Miami-Dade County. Photo credit: Stephen Beidler



Figure 7. The pappus of *Mikania micrantha* crowning the mature achenes. This structure allows the “seeds” to be dispersed by the wind. Photo credit: www.spc.int/lrd/mikania/Mikania_micrantha.htm