



## Whitehead Broom Control in Pastures

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Published in *The Florida Cattleman and Livestock Journal*, January 2020

Whitehead broom (*Spermacoce verticillata*; Figure 1), also known as shrubby false buttonweed or southern larraflower, is becoming problematic in south Florida pastures, hayfields, and rights-of-ways. The first recorded herbarium specimen dates back to 1956, so this plant species was likely introduced into Florida during the late 1940s or early 1950s. Since that time, it has increased in cover throughout central and south Florida and has become a serious problem in pastures and hayfields. To date, there are few options for control of this species.

Whitehead broom is a perennial plant with multiple branches that are capable of rooting at the nodes. Leaves are opposite, smooth, and almost linear tapering to a point at both ends. Multiple leaves are often present, giving a whorled appearance at the nodes. During the first year of growth, the stem is herbaceous and angled, but the angles round off and the stem turns woody with age. Flowers are white, small, and arranged in clusters at the upper nodes of each branch. The amount of seed production is currently unknown, but it is expected to be fairly high as evidenced by the number of flower clusters present on each plant.

Whitehead broom has been identified as an important nectar source for *Larra bicolor*, a crabonid wasp released as a biocontrol agent against the mole cricket. The mole cricket has historically been a significant pest related to bahiagrass decline, and substantial research efforts were committed to establish this beneficial wasp. The *Larra* wasp relies on nectar sources for its survival and since whitehead broom flowers thrive nearly year-round in central and south Florida, this plant was highly promoted over the last decade. It is possible that the promotion of this plant has led to the current levels of infestation being found in pastures and hayfields. However, it should be noted that natural movement of this plant has also been occurring as it has been documented in 49% of natural preserves in south Florida.

The first known case of whitehead broom becoming problematic in south Florida was on the I-75 corridor of Alligator Alley. Several attempts were made to control this infestation, but no herbicides were found to be effective. Since that time, several ranchers have indicated that whitehead broom has become problematic. Over the past 5-10 years we have observed whitehead broom infestations between 50 and 100% to occur in bermudagrass hayfields, bahiagrass pastures, and sod fields. Similar to the case in Alligator Alley, several attempts to

control whitehead broom have been unsuccessful, except in the bahiagrass pasture where 2 qt/A Velpar was applied during the rainy season.

We have tested several herbicides for whitehead broom control in pastures and hayfields. Remedy Ultra at 2 pt/A, Banvel at 2 qt/A, Weedmaster at 2 qt/A, Pasturegard HL at 2 qt/A, GrazonNext HL at 24 oz/A, and Telar at 1.0 oz/A provided less than 30% control thirty days after treatment. Although plants were initially injured by the herbicides, complete regrowth occurred by sixty days. Herbicides containing metsulfuron (Cimarron Plus at 1.25 oz/A or Cimarron Max applications containing 1 oz/A metsulfuron and 2 qt/A WeedMaster) provided greater than 40% control for two months following treatment. However, metsulfuron should only be applied to pastures that do not contain bahiagrass and long-term control has not been realized. We also attempted tankmixing high rates of Remedy Ultra (1 qt/A) with high rates of WeedMaster (2 qt/A); however, only 40-50% control was achieved with a broadcast application. The only selective herbicide that has provided greater than 80% control is Velpar. Recent research in Okeechobee indicated that the response of whitehead broom is nearly similar at 1 or 2 qt/A and provided 80 to 90% control. Even with this initial kill using Velpar, we observed plants regrowing from the root system within 3 months after treatment. Non-selective treatment with glyphosate has been shown to be effective in controlling this plant in Georgia, however, it is currently unknown if glyphosate will control this perennial plant in central and south Florida.

Since whitehead broom is an important nectar source for the Larra wasp, attempts to eradicate this plant would be unwise. However, since control options are limited, it is important to have a management plan in place. If whitehead broom is beginning to increase in an area, begin spot-

treatment with glyphosate (3% v/v) and retreat when new growth appears.

Mowing only provides temporary relief and is likely the cause of seed spread within and between pastures. If mowing is performed, be sure to clean the equipment before moving to areas that are not already infested. At this point in time, only Velpar at 1 qt/A provides good control of whitehead broom, but retreatment will be necessary.



**Figure 1.** Whitehead broom growing in a pasture. Note the opposite to whorled leaf arrangement, linear leaves, and clusters of white flowers at the nodes. Photograph by B. Sellers.