

# Biology and Management of Whitehead Broom in Pastures<sup>1</sup>

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Whitehead broom (*Spermacoce verticillata*; Figure 1), also known as shrubby false buttonweed or southern larraflower, is becoming problematic in south Florida pastures, hay-fields, and rights-of-way. With the first recorded herbarium specimen dating back to 1956, this plant was likely introduced to Florida during the late 1940s or early 1950s. Since this time, it has increased in range throughout central and south Florida and has become a serious problem. To date, there are few options to control 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. Small white flowers are arranged in clusters at the upper nodes of each branch. The level of seed production is currently unknown, but it is expected to be fairly high based on the number of flower clusters present on each plant.



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.

Credits: Brent Sellers, UF/IFAS

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 that has contributed to bahiagrass decline. As a result, significant research efforts were made to establish this beneficial wasp. The *Larra* wasp relies on nectar sources for its survival. Since whitehead broom flowers nearly year-round in

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central and south Florida, the plant was highly promoted during the last decade. It is possible that the promotion of this plant has led to the current levels of infestation found in pastures and hayfields. However, it should also 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.

Whitehead broom was first identified as a problem in south Florida on the I-75 corridor of Alligator Alley. Several attempts were made to control this infestation, but no herbicides were effective. Since this time, several ranchers have also indicated that whitehead broom has become problematic. Over the past five years, whitehead broom infestations between 50 and 100% in bermudagrass hayfields, bahiagrass pastures, and sod fields have been observed. Attempts to control the plant have been largely unsuccessful, except for one in a bahiagrass pasture where 2 qt/A hexazinone (Velpar, Tide Hexar, etc.) were applied during the summer when rain was common.

We have tested several herbicides for whitehead broom control in pastures and hayfields (Table 1). Remedy Ultra, Banvel, Weedmaster, Pasturegard HL, GrazonNext HL, and Telar provided less than 40% control 30 days after treatment. Although plants were initially injured by the herbicides, complete regrowth occurred by 60 days. Herbicides containing metsulfuron (Cimarron Plus at 1.25 oz/A and Cimarron Max (0.6 oz/A metsulfuron and 2 qt/A Weedmaster)) provided more than 40% control for two months following treatment. However, metsulfuron should only be applied to pastures that do not contain bahiagrass with the understanding that long-term control has not been satisfactory. The only selective herbicide that has provided more than 80% control is hexazinone at 1 or 2 qt/A. Even with this initial kill using hexazinone, we observed plants regrowing from the root system within three months after treatment. Non-selective treatment with glyphosate (1 to 3% solution as a spot-treatment; unpublished data) has been shown to be effective in controlling this plant.

Attempts to eradicate this plant would be unwise because whitehead broom is an important nectar source for the *Larrea* wasp. However, it is important to have a management plan in place due to limited control options. 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 it is likely the cause of seed spread within and between pastures. Mowing equipment must be cleaned before being used in infestation-free areas. At this point in time, only Velpar at 1 or 2 qt/A provides good control of whitehead broom. Retreatment will likely be necessary.

Table 1. Response of whitehead broom to herbicide applications at 30 and 365 days after treatment (DAT).

Treatment	Active Ingredient(s)	Rate (oz/A)	30 DAT	365 DAT
			——% Control——	
Remedy Ultra	Triclopyr	32	0	0
Banvel	Dicamba	64	38	3
Weedmaster	Dicamba + 2,4-D	64	11	0
Pasturegard HL	Triclopyr + fluroxypyr	64	38	0
Telar	Chlorsulfuron	1.33	18	0
Cimarron Max <sup>1</sup>	Metsulfuron + dicamba + 2,4-D	0.6 + 64	46	10
Cimarron Plus	Metsulfuron + chlorsulfuron	1.25	45	5
GrazonNext HL	Aminopyralid + 2,4-D	34	10	0
Velpar	Hexazinone	32	80	-
Velpar	Hexazinone	64	85	0

<sup>1</sup> Cimarron Max is sold as a packaged container with Cimarron (metsulfuron) and Weedmaster (dicamba + 2,4-D).