Figure 1: Adult *Larra bicolor* feeding at *S. verticillata* flowers

Figure 2: Adult *L. bicolor* attacking a mole cricket

Figure 3: *L. bicolor* larva feeding externally on a tawny mole cricket

Poster by Aaron S. Weed and Dr. Howard Frank

This is a plot of the southern larraflower *Spermacoce verticillata* L.

What is southern larraflower?

Southern larraflower belongs to the coffee family (Rubiaceae) and is native to the tropical Americas. It ranges throughout Florida to Texas and south into Central and South America. The plant is shrublike in appearance and produces small clusters of white flowers (Figure 1). Flowering occurs all year in southern Florida, but flowering is restricted to the warmer months in the northern part of the plant's range. The leaves are opposite in arrangement except at the nodes where smaller leaves are in whorled arrangements.

Southern larraflower grows in most soils and must have at least partial light to survive. It requires disturbance to establish but will not survive when tall grasses and trees colonize. Constant mowing will keep the plant in the herbaceous stage and restricted to an area. Grazing mammals commonly disperse seeds.

Why is southern larraflower important?

Outside of the United States, *S. verticillata* is considered a forage plant and is also used as an herbal medicine for skin treatments. In the United States and Puerto Rico, this plant is very important because the plant's nectar is preferred by the mole cricket hunting wasp, *Larra bicolor* Fab. Mole crickets are serious pests of pasture grasses, and chemical control is too expensive and applications need to be limited around livestock. Establishing plots of southern larraflower into areas with pasture grass attracts *L. bicolor* and establishes local wasp populations that will likely provide permanent, area-wide mole cricket control and reduce or even eliminate the use of chemical pesticides.

What is *Larra bicolor?*

The wasp *L. bicolor* originated from South America and does not sting people unless continually bothered. Female wasps actively search for large nymph and adult mole crickets underground. Once in contact with a mole cricket, a *L. bicolor* female paralyzes the mole cricket and lays one egg on the underside of the pest mole cricket (Figure 2). After the egg hatches, the larva feeds externally on the mole cricket while the mole cricket is still alive (Figure 3). After a short period of feeding by the larva the mole cricket dies, and at this point the larva has consumed enough nutrition for pupation. The larva spins a cocoon, pupates in the surrounding soil, and eventually emerges as an adult a few weeks to a few months later depending on temperature.

L. bicolor adults feed on nectar from a narrow range of plants. The nectar from southern larraflower is preferred by the wasp and encourages local wasp populations. UF entomologists have recently planted southern larraflower in many areas of Florida to increase the statewide distribution of the wasp. Given time *L. bicolor* will continue to spread where pest mole crickets and plots of southern larraflower are located. As a result, a reduction in pest mole cricket populations will occur, and minimal mole cricket damage to pasture grasses is expected.

Reference

Francis JK. (2002). *Spermacoce verticillata* L. (Rubiaceae). *Institute of Tropical Forestry*, USDA, Forest Service. http://www.fs.fed.us/global/iitf/Spermacoce%20verticillata.pdf (18 April 2003).

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