

Goatweed Biology and Control in Pastures¹

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Goatweed (*Scoparia dulcis*), also referred to as sweet broom and licorice weed, is a perennial plant that is becoming a serious problem in pastures. A problematic weed in citrus groves for many years, goatweed now appears to be proliferating in improved pastures as the calls for its identification and control have increased greatly over the past couple of years. The spread of goatweed in Florida can be attributed to a number of things including prolific seed production, movement of seeds from citrus groves to pastures through mowing equipment or wildlife, and the tolerance of goatweed to several herbicides utilized in citrus groves and pastures. Goatweed is particularly dense in areas that have been overgrazed or previously harvested for sod.

Biology

Goatweed seedlings (Figure 1) are extremely small, with opposite or whorled leaves occurring in numbers of three or more on the same node. Leaves are light green, serrated and approximately 1.5 inches long by 1 inch wide (Figure 2). As the plants mature, leaves become linear with or without serrations. Leaves and stems contain small glands that emit an unpleasant odor when crushed. Stems are usually smooth, but sometimes have soft, fine hairs, and become woody with age. Flowers are white, about 3 to 5 mm long, and borne in the leaf axils (Figure 3). Seeds are extremely small and enclosed in a yellow-brown capsule (Figure 4). Perennial goatweed plants at the height of their maturing (Figure 5) look quite different from new seedlings because their leaves have become more linear, giving the plant a spindly appearance. Mature plants reach heights of 1 to 2.5 feet.



Figure 1. A goatweed seedling approximately 1 week after emergence.



Figure 2. Goatweed leaves are serrated and approximately 1.5 inches long by 1 inch wide. Young plants tend to be light green in color.



Figure 3. Goatweed flowers are white and are borne in the leaf axils.



Figure 4. Goatweed seeds are very small and are enclosed in yellow to brown capsules.



Figure 5. Mature goatweed plants have a more spindly appearance than seedlings. This is due to the linear leaves the plant develops as it matures.

Germination of goatweed occurs under light and high temperatures and is inhibited by acidic soils and drought. Since light is a requirement for germination, maintaining a thick grass sward will limit the number of germinating goatweed seeds in pastures. In most cases, goatweed invades areas in pastures where the grass has been killed by overgrazing or other pest problems.

Control

Goatweed is relatively tolerant to many of the herbicides utilized in citrus and pastures compared to other weed species. For example, 3 to 4 lbs per acre of glyphosate are needed to control this weed in citrus groves, whereas many other weeds can be controlled with less than 1 lb per acre. In bahiagrass pastures, 4 pints/acre of 2,4-D is needed for optimum control. In bermudagrass, stargrass, and limpograss metsulfuron (MSM60, others) at 0.3 oz/acre or Chaparral at 3 oz/acre provides good to excellent control of goatweed. The addition of 2 pt/acre 2,4-D to metsulfuron will increase control of goatweed, but 2,4-D should not be applied to limpograss during the summer growing season unless injury can be tolerated. Additionally, the addition of 2,4-D to metsulfuron has resulted in decreased control of 'Pensacola' bahiagrass. Repeated mowing does not control goatweed, and it is more difficult to control with herbicides if its stem has become woody. Although triclopyr (Remedy, others) and Pasturegard HL® provide good control of most woody species in pastures, these herbicides are not particularly effective on goatweed. While proper pasture management can go a long way in controlling this weed, herbicides with the prescribed amounts of 2,4-D, metsulfuron, or Chaparral will optimize goatweed control in most improved pastures.

¹This document is SS AGR 299, one of a series of the UF/IFAS Department of Agronomy. Original publication date February 2008. Revised February 2014 and April 2017. Visit the Ask IFAS website at <https://ask.ifas.ufl.edu/> for the currently supported version of this publication.

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