

## Aeschynomene <sup>1</sup>

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Aeschynomene is a warm-season annual legume adapted to moist sites throughout the state, but it is mainly grown in South Florida. Seed of two species are commercially available to producers:

*Aeschynomene americana*, also known as common aeschynomene, joint vetch or deer vetch, and a newly available species *Aeschynomene evenia*, which has no common name.



**Figure 1.** Common aeschynomene growing with Limpogras (*Hemarthria*).

*Aeschynomene americana*, or common aeschynomene, is a true annual that flowers and produces seed in the early fall. Plants usually die

after seed has matured, but the stand can be managed to re-seed and maintain itself in good production for several years after first establishment. Common aeschynomene has a high nutritive value and is very palatable to cattle and deer. It has been used in the cattle industry and for wildlife plantings for many years.

*Aeschynomene evenia* is a short-lived perennial. Plants stay green during the fall until frost. In South Florida during a mild winter, plants will live through the winter and put out new growth in the spring. It flowers and makes seed throughout the year.

*Aeschynomene evenia* has a characteristic smell. The nutritive value of *Aeschynomene evenia* is similar to common aeschynomene, but unlike common aeschynomene (deer vetch), it is **not** immediately palatable to cattle. Cattle need time to adapt to this legume and they will only graze small plants. Do not let evenia plants become large and stemmy, because cattle will not graze them and they simply become weeds. It has been observed that in a mixture of common aeschynomene and *Aeschynomene evenia*, deer grazed the common aeschynomene but did not graze the *Aeschynomene evenia*. Additional

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1. This document is SS-AGR-61, one of a series of the Agronomy Department, Florida Cooperative Extension Service, Institute of Food and Agricultural Sciences, University of Florida. Revised February 2006. This publication is also a part of the Florida Forage Handbook, an electronic publication of the Agronomy Department. For more information you may contact M.B. Adjei (mba@ufl.edu). Please visit the EDIS Website at <http://edis.ifas.ufl.edu>.
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experience with growing and utilizing *Aeschynomene evenia* is needed. The cultural practices recommended in this publication apply to common aeschynomene, but are believed to be approximately the same for *Aeschynomene evenia*.

## CULTURAL PRACTICES

### Site Selection

Aeschynomene grows best on moist, fertile soils. It is more tolerant of extremely wet conditions than of drought. Surface drainage is needed especially during establishment. Although well-established plants can withstand short periods of flooding, young plants (seedlings) can be injured or killed if plants are completely submerged in water. In general, aeschynomene is adapted to the moist flatwood areas throughout the state.

### Liming and Fertilization

If the soil pH is below 5.0, the site should be limed to raise the pH to between 5.5 and 6.0. Plant nutrients should be applied after a successful stand of seedlings has emerged. After the seedlings are 2 weeks old, fertilize with 30 lbs/A of  $P_2O_5$  and 60 lbs/A of  $K_2O$  if the soil tests are low or medium in these plant nutrients. Micronutrients are not generally recommended on land that has been fertilized for several years, unless poor plant growth and appropriate symptoms indicate a deficiency.

### Seeding Rate and Date

Seed of common aeschynomene may be bought with the hull removed (naked) or intact. There are approximately twice as many seed per pound when the hull has been removed compared to when the hull is attached. Seed with the hull removed may be planted at 5 to 8 lbs/A. If seeded with a precision planter on a clean-tilled seedbed, the lower seeding rate may be used. Broadcast seeding requires the higher seeding rate, especially when seed are broadcast on established pasture sod. Seed with the hull attached should be planted at the rate of 20 to 25 lbs/A. *Aeschynomene evenia* seed is also available with or without hulls.

Seeding date can be critical to successful establishment. Aeschynomene is usually planted in June when the summer rains start. It has been planted successfully in April and May when spring rainfall has been above normal. Try to plant to establish new stands or lightly disk old stands to encourage seed germination when the chances are greatest for continued good soil moisture. Stand failure of aeschynomene is mainly caused by inadequate soil moisture at or shortly after seeding.

The greatest chance for successful establishment occurs when plantings are made in June after a spring when rainfall has been greater than normal and the soil profile is saturated. When seedings are made prior to June 1 or the start of the summer rainy period, use seed with the hulls attached at the rate of 25 lbs/A. Immediate germination will range from 5 to 10%. If these seedlings die due to drought, there will be plenty of seed to germinate when the next rain comes. When planting after June 1, use seed with the hull removed, which may have an immediate germination as high as 90 to 95%. Use 5 lbs/A on a clean-tilled seedbed and 8 lbs/A on sod. A 50/50 mixture of seed with and without hulls can be used at all times of planting to provide security against establishment failures due to drought or short periods of excessive moisture.

### Inoculation

Inoculate seed with the proper bacteria (cowpea group) when aeschynomene is seeded into new land or into fields where a summer legume has never been grown. Inoculation of the seed is not required if aeschynomene or some other summer legume that requires the cowpea inoculant has been grown in the area to be planted.

### Overseeding Bahiagrass Pastures

Certain management practices should be followed to minimize competition of the bahiagrass with the aeschynomene seedlings and allow for successful establishment. These practices include: 1) burning excess bahiagrass in late winter if there is enough fuel to carry a fire; 2) no application of nitrogen during the spring preceding planting of the aeschynomene; 3) removal of excess bahiagrass before seeding by grazing close (2 to 4 inches); 4)

close grazing and chopping or disking are useful to reduce bahiagrass competition when soil moisture is plentiful; and 5) continued grazing after seeding until the aeschynomene seedlings are about 2 inches tall. Remove cattle before they graze the tops of the seedlings. Allow the aeschynomene plants to reach a height of 12 to 18 inches before grazing. If self re-seeding of the stand or seed production of common aeschynomene is contemplated, then cattle must be removed from pasture from mid- August through November of the year of establishment to allow the crop to flower and set seed. This kind of spelling is not required for evenia which flowers and seeds throughout the year. Chopping or light-disking of pasture in spring every couple of years promotes regeneration of aeschynomene from soil seed-bank reserve.

Various seeding methods and types of seeders can be used. Sod-seeding drills are useful and result in less soil moisture loss from the soil surface as compared to broadcast methods where light disking or chopping, seeding and rolling are used to obtain seed-to-soil contact. Regardless of the method used, seed should be placed at 1/2 to 3/4 inch deep.

## GRAZING MANAGEMENT

Rotational grazing is recommended when plants reach a height of 18 inches. A stocking rate of 2 to 5 animal units per acre has been suggested. Graze the plants back to about 8 to 14 inches and move to the next pasture. Maintaining a 14-inch stubble will allow for maximum regrowth and good seed production.

Aeschynomene provides much needed protein in July, August and September when perennial grasses are usually deficient in protein. Protein in leaves and young stems of aeschynomene will exceed 20%. Nursing calves that have common aeschynomene available will gain an extra 30 to 50 lbs compared to calves that have only perennial grass.

## MANAGEMENT OF AESCHYNOMENE EVENIA

*Aeschynomene evenia* must be grazed heavily so that it does not become the dominant plant in the pasture. Graze it hard early in the year once it is 18 to

24 inches tall. If left ungrazed, it will become woody and unpalatable and will shade the bahiagrass. Do not graze pure stands of *Aeschynomene evenia*; allow cattle to have access to grass as well as the *A. evenia*.

## HARVESTED FORAGE

Aeschynomene is best suited for grazing in a mixture with grass. Although some hay and silage have been made, neither process works very well. The plants are high in moisture and mucilaginous (sticky) which causes problems in handling fresh material. When dried, the leaves and small stems become very brittle, causing high losses in hay making.