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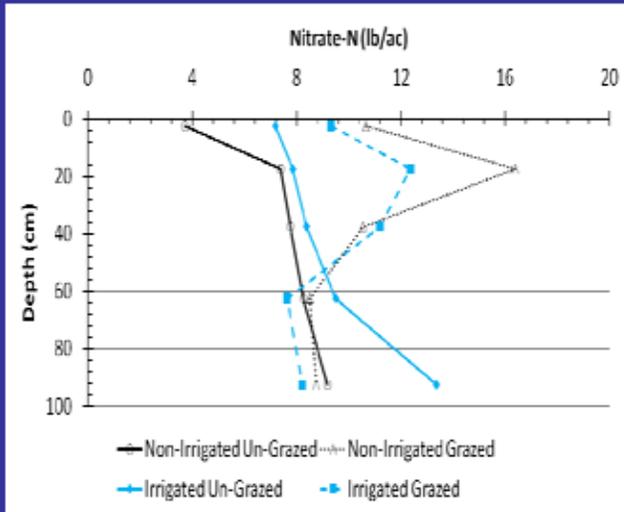
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“Agronomy Notes” is prepared by: Maria Gallo, Interim Chair and Y. Newman, Extension Forage Specialist (ycnew@ufl.edu); G. Anguelov (ganguelov@ufl.edu); J. Ferrell, Weed Specialist (jferrell@ufl.edu); F. Fishel, Pesticide Information Officer (weeddr@ufl.edu); K. Langeland, Aquatic Weed Specialist (gator8@ufl.edu); J. Marois, Extension Agronomist (jmarois@ufl.edu); B. Sellers, Extension Weed Specialist (sellersb@ufl.edu); and D. Wright, Extension Agronomist (wright@ufl.edu). Designed by Cynthia Hight (chight@ufl.edu.) The use of trade names does not constitute a guarantee or warrant of products named and does not signify approval to the exclusion of similar products.

# Cover Crops, Winter Grazing and Nutrient Availability

## Nitrate-N in soil profile of sod-based rotation after Bahia-Peanut and winter grazing before Cotton 2009, Marianna



We recommend cover crops prior to row crop production to protect soil from wind and water erosion, to store nutrients in the plants for later release for following crops and to ultimately increase yields or quality of following crops. Cattle can also have an impact on the amount of N, P, K, Ca, and Mg that is available to the following crop. The figure below shows the amount of nitrate N available in the soil down to almost a meter deep. Even though both areas had an oat and rye cover, cattle were recycling the above mentioned nutrients and from 2-4 times the amount of nitrates were available in the top 20 cm as from non-grazed areas that had the same amount of fertilizer applied. Likewise, irrigation will often leach nutrients through the soil profile and if more water is applied than the soil can absorb, it will move through the profile taking nutrients with it. Nitrates move with the soil solution and the irrigated non-grazed plots had a nitrate surge at 100 cm or lower out of the normal root zone of most agronomic crops meaning that it will ultimately end up in ground water. Therefore, livestock do aid in keeping nutrients in the upper root zone of the soil to be available for following crops.

Submitted by Extension Agronomists, North Florida REC, Quincy:  
Dr. David Wright, [dwright@ufl.edu](mailto:dwright@ufl.edu);  
Dr. James Marois, [jmarois@ufl.edu](mailto:jmarois@ufl.edu);  
Dr. Gueorgui Anguelov, [ganguelov@ufl.edu](mailto:ganguelov@ufl.edu)

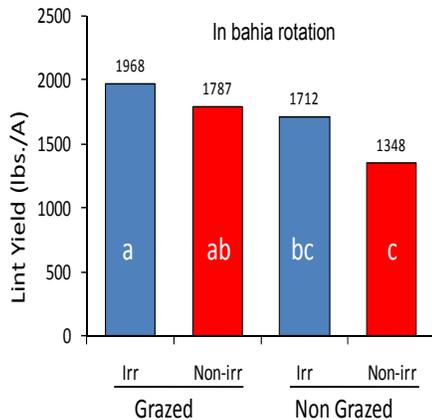
## Calendar

To follow the link, press "Ctrl" and put cursor over link, and "click."

- Feb. 4-15 [Florida State Fair](#), Tampa
- Feb. 7-8 [American Society of Agronomy Southern Branch](#), Orlando
- Feb. 17 [Strawberry Field Day](#), Gulf Coast REC, Noon - 5pm, Wimauma
- Feb. 24-26, 2010 [UF Water Institute Symposium](#), Gainesville
- May 3-6 [Aquatic Weed Control Short Course](#), Coral Springs
- May 5-7 [Florida Beef Cattle Short Course](#), UF Gainesville, Hilton UF
- July 12-16 [Greater Everglades Ecosystem Restoration Meeting](#), Naples
- Aug. 1-5 [Ecosystem Restoration Conference](#) (NCER), Baltimore, MD

# Impacts of Grazing Small Grain on Following Cotton Crop

Cotton Yield Response to Irrigation and Grazing (2008 Marianna)



With higher nitrate N in the soil where cattle graze small grain, we found that nitrates were higher in the cotton plant throughout the season and were higher than recommended in the vegetative stage indicating that the residual and applied N may have been too high with a potential for leaching. However, cotton yields were higher in 2008 where cattle had grazed small grain as compared to similarly treated plots that were not grazed as noted in the figure below. We need additional years of research to determine how much commercial N can be reduced on cotton where cattle have been grazed. This would be dependent on cattle number and size, soil type, soil moisture, how much N had been applied to small grain and other factors. Nitrogen can be reduced with recycling and probably by a third to one half without yield loss. Having a legume in the winter grazing could reduce that even further.

Submitted by the Extension Agronomists in the North Florida REC, Quincy:

Dr. David Wright, [dwright@ufl.edu](mailto:dwright@ufl.edu)  
Dr. James Marois, [jmarois@ufl.edu](mailto:jmarois@ufl.edu)  
Dr. Gueorgui Anguelov, [ganguelov@ufl.edu](mailto:ganguelov@ufl.edu)

## The 'ABCs' of Good Forage Establishment

The 'ABCs' of forage establishment refers to those basic practices that if closely followed should result in a successful pasture or hay field stand.

**A**= Adequate seeding depth. One of the most common mistakes when planting is to place the seed too deep whether it is sexual (such as bahiagrass) or vegetative material (sprigs or tops). The reserves contained in a seed or in the plant tissue of vegetative material are limited. If we plant too deep, the seed energy and reserves will be exhausted just in trying to make it to the soil surface. If seeds are placed at an adequate depth, the reserves will be enough for the plumule (future leaf) to reach the soil surface where it will start photosynthesis and new growth.

**B**= Balanced seeding rate. If the seeding rate is too low, the stand will be thin, slender and weedy. On the other hand, if the seeding rate is too high, there will be competition among the plants that you are trying to establish, in addition to prohibitive costs. You want to have enough seed to make up for some that will fall too deep in the soil, or will have unexpected conditions for germination.

**C**= Close seed-to-soil contact. The seed must absorb water from the soil after they are planted. If the seed has poor contact with the soil, it will delay the water absorption, or the seed will dry after absorbing water, resulting in faulty germination.

These are agronomic principles that, if followed, will help minimize stand establishment failure.

Dr. Yoana Newman  
Extension Forage Specialist  
[ycnew@ufl.edu](mailto:ycnew@ufl.edu)

# Mile-a-Minute: A New Weed in South Florida

A new weed was reported late last year near Homestead, FL. After several consultations and



Mile-a-Minute Weed

Photo: Ken Langeland

DNA analysis, it was determined that the plant is Mile-a-minute (*Mikania micrantha*).

**General description.** Mile-a-minute is a highly branched perennial vine. Leaves are opposite and heart-shaped, 2-5 inches long and 1-3 inches wide, and taper to an acute point. In Florida, it will likely flower in November and December, with seed set occurring primarily in December. Seeds are tufted, making them well-equipped for wind dispersal. For pictures of this plant, please see the DPI website at: <http://www.doacs.state.fl.us/pi/enpp/botany/mikania-micrantha.html>.

**How do I identify Mile-a-minute?** Identification of Mile-a-minute is complicated by two very similar species that are present in Florida. Climbing hempweed (*Mikania scandens*) is a very similar species to Mile-a-minute. Mile-a-minute tends to grow in disturbed habitats, has very rapid growth, and has pale green or yellow-green leaves with green petioles and white flowers. Climbing hempweed grows primarily in natural habitats, has medium green leaves with reddish petioles and pinkish flowers. A third species, Florida Keys hempvine (*Mikania cordifolia*), has hairy leaves and stems and larger flower heads compared to the other two species.

**What is its habitat?** Wet areas, forest borders, clearings, canal banks, rivers, roadsides, pastures, and other agricultural areas. Generally invades disturbed areas. This plant does not typically grow well in heavily shaded areas.

**Is it a problem?** Simply speaking, yes. Mile-a-minute is a major environmental and agricultural threat. Currently, it is recognized globally as a top 100 invasive species. It is a significant pest in plantation crop and commercial forests from West Africa, India, and through Southeast Asia and the Pacific Islands. It produces tens of thousands fine, wind-blown seeds that aid in its dispersal. It also reproduces asexually and can regenerate from small cuttings.

Growth of Mile-a-minute is quite rapid, and can grow at rates of at least 3 ft per week. This high rate of growth allows Mile-a-minute to smother existing vegetation quite quickly, thus reducing the light reception of desirable species.

**How is it controlled?** Mechanical control through cutting is not beneficial as it can quickly regrow from cuttings. Uprooting and digging, though very labor intensive, is the primary mechanical method for control. We are suggesting that all plant material be incinerated if plants are removed by hand.

Chemical control methods in Florida will likely include timely applications of glyphosate or triclopyr; must be applied prior to flowering. A 3% v/v solution of glyphosate in water or triclopyr at 1 to 2 pt/acre will likely be sufficient for control. Excellent control of Mile-a-minute in Australia has also been found with fluroxypyr (Vista) at 1 pt/acre. Frequent scouting of the infested and surrounding areas should be performed to treat any escapes or regrowth.

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**What do I do if I find this weed?** Since this weed shows growth reminiscent of Old World climbing fern that has invaded many natural areas in south Florida, it is imperative that control efforts on individual populations begin immediately. To date, at least eleven separate locations in the Homestead area have been identified, and with the wind-blown seeds, we are likely to find more. If this weed is found in south Florida, please contact Florida Division of Plant Industry at **888-397-1517**.

Dr. Brent Sellers, Extension Weed Specialist  
sellersb@ufl.edu  
Range Cattle REC, Ona

Dr. Ken Langeland, Aquatic Weed Specialist  
Center for Aquatic and Invasive Plants, Gainesville  
gator8@ufl.edu

## IFAS CEU Day-2010

**March 30, 2010**  
**8:30 a.m. - 4:00 p.m. EST**

An opportunity for licensed pesticide applicators to earn CEUs will be held March 30, 2010 from 8:30 to 4:00 EST. The event will be conducted via polycom from participating UF/IFAS county extension offices, several main campus sites and research and education centers. An applicator will be able to attend any or all of the 6 sections for pesticide licensing recertification credit. A total of 6 FDACS-approved CEUs are available for the entire day in the following categories:

- Agricultural Row Crop
- Agricultural Tree Crop
- Aquatic Pest Control
- Demonstration and Research
- Forrest Pest Control
- Natural Areas Weed Management
- Ornamental & Turf
- Private Applicator Agriculture
- Right-of-Way Pest Control
- Pest Control Operator-Lawn & Ornamental
- Limited Commercial Landscape Maintenance
- Limited Lawn & Ornamental Pest

Credit for Certified Crop Advisors has been applied for and is pending approval. If interested in attending, contact your local UF/IFAS county extension office or the UF/IFAS Pesticide Information Office at (352)-392-4721 or <http://pested.ifas.ufl.edu/>.

Dr. Fred Fishel  
Pesticide Information Director  
weeddr@ufl.edu