



# Agronomy Notes

Oct 2011

Volume 35:10

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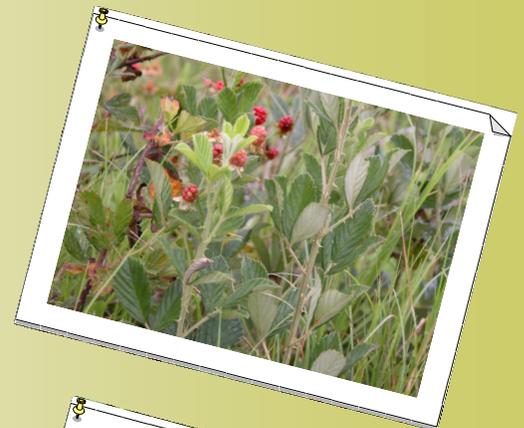
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“Agronomy Notes” is prepared by: Maria Gallo, Chair and Y. Newman, Extension Forage Specialist (ycnew@ufl.edu); J. Ferrel, Extension Weed Specialist (jferrel@ufl.edu); R. Schnell, Extension Cropping System Specialist (rschnell@ufl.edu); B. Sellers, Extension Weed Specialist (sellersb@ufl.edu); F. Fishel, Pesticide Information Officer (weeddr@ufl.edu); D.C. Odera, Extension Weed Specialist (dcodero@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.

## **Potassium Nutrition and Leafspot Disease in Cotton**

Potassium (K) is an important nutrient for cotton growth and development. Potassium deficiency symptoms in plants generally are evident on lower or older leaves due to translocation of the mobile nutrient to newly developed tissue. However, late-season potassium deficiency symptoms in cotton can be observed upper and lower plant canopy in the form of leafspot disease. The leaf spots are caused by fungal pathogens (*Stemphylium*, *Alternaria*, or *Cercospora*) that are able to attack weakened cell walls due to inadequate levels of potassium. Symptoms observed in the upper plant canopy are likely a result of increased K demand during peak periods of fruit set. Reproductive parts of the cotton plant appear to have priority over vegetative plant parts for carbohydrates and nutrients, limiting K movement to newer leaves. Severe cases can result in premature defoliation and could decrease yield. Generally, leafspot development is correlated with low levels of K in the soil and plant tissue. Petiole sap testing is a good way to determine K deficiency in cotton. Proper soil testing and fertilization is the best method for preventing K deficiency and onset of leafspot in cotton. However, dry weather can reduce uptake of K by plants even when soil K levels are adequate by limiting movement of K in soil. For sandy soils, split application of K is recommended, at planting and again at peak bloom (first four weeks of bloom). Foliar applications of K may be considered but must be made before the fourth week of bloom and before symptoms become severe. Fungicide sprays will likely not be effective since the underlying cause is K deficiency. Therefore, the best option for managing leafspot disease in cotton is through prevention. Sound fertility programs and favorable weather conditions are essential to avoid leafspot in cotton and we should focus on the factors we can control.



Close-up (top) and field view of cotton affected by leaf spot (bottom).

*Photos by Ronnie Schnell*

## **Startup Fertilizer for Winter Forage Legumes**

One of the benefits of growing winter legumes is that they fix nitrogen. Nitrogen fixation by legumes is an alternative to the increasing cost of N fertilization. When growing winter legumes, effective nodulation takes place within 4 weeks or one month after planting.

The implication is that during those first 3 to 4 weeks the plant relies mainly on the soil nutrients, included nitrogen, because the nodules are not fully functional. Fertilizing with small amounts of N and a complete fertilizer formula will help out the legume seedlings only during the first weeks. In the first couple of weeks after emergence, clovers develop a good root system that can take up the startup fertilizer while the nodules become functional.

What is considered a startup N fertilization? Anything under 20 to 25 lb N/acre. All other nutrients should be applied according to soil test recommendations.

Since legumes fix nitrogen, **N applications to established legumes is not recommended** because their N fixing nodules would shut down and become ineffective at fixing nitrogen. It is only during establishment that small additions of Nitrogen fertilizer will increase nodulation. In general, do not apply N fertilizer to legume stands, except low amounts during establishment, and follow with the recommended fertilization of other elements, specially phosphorus and micronutrients.



Legume seedlings and emerging root system that can benefit from startup N fertilization while nodules become functional.

*Photo by Yoana Newman*

## **Calendar of Events**

*To follow the link, press “Ctrl” and put cursor over link, and “click.”*

**Oct. 3-5 Southeast Herbicide Applicator Conference, Panama City Beach, FL**  
<http://conference.ifas.ufl.edu/sehac/index.html>

**Oct. 16-19 American Society of Agronomy Annual meeting, San Antonio, TX**  
<https://www.acsmeetings.org>

**Oct. 18-20 Sunbelt Ag Expo, Moultrie, GA**  
[info@subeltexpo.com](mailto:info@subeltexpo.com)

**Nov. 7 2011 Sugarcane Field Day, North FL REC, Quincy, FL**  
<http://gadsden.ifas.ufl.edu/>

## ***Fall: the ideal time for blackberry control***

Blackberry is a perennial weed in pastures all across Florida. This weed is problematic, not only because it deters grazing, but can severely injure a bull's reproductive organs through scratches and infection, greatly reducing his breeding performance. But like all weeds, most ranchers want to control blackberry in the spring along with everything else. Unfortunately, spring applications rarely work very well. Fall is a much better time to spray blackberry.

Why is fall best? Blackberry is a perennial. This means that the root system stores energy and gets bigger each year. It is from this root, not from seed, that blackberry emerges each year. In the spring, energy from this root system is moving upward to form new canes and leaves. If a herbicide is applied at this time, translocation of the herbicide to roots can be limited since all the energy is flowing away from the roots. But, after the canes and leaves are made and mature (late summer and fall), all the energy captured by the leaves flows back to the root system so it can increase in size and be prepared for the next season. Spraying in the fall, when the plant is nourishing the root/rhizome, will likely allow more herbicide to translocate underground.



Blackberry plant.

*Photo by Jason Ferrell*

Blackberry is a very difficult species to control. Spraying in the fall is not an instant recipe for success and more than one application will likely be necessary. But, numerous experiments have shown that control from fall applied herbicides is more common than when applied in the spring.

For more information and specific herbicide recommendations, see *Blackberry and Dewberry: biology and control* (<http://edis.ifas.ufl.edu/ag238>).

## Ragweed Parthenium

The occurrence and frequency of detection of ragweed parthenium (*Parthenium hysterophorus*) in the Everglades Agricultural Area (EAA) of south Florida has increased over the last several years. Ragweed parthenium is a herbaceous plant of tropical and subtropical environments in the Asteraceae (sunflower) family that can grow and flower throughout the year in the subtropical environment of south Florida. Its seedling forms a basal rosette with deep clefts on leaves. Mature ragweed parthenium plants are erect, much branched, with hairy stems and leaves. Flowers are small, white, and form a five-side disk shape. In the EAA, ragweed parthenium is commonly found along ditch and canal banks, field edges, roadsides, near buildings, and disturbed sites.

This weed species has been encroaching into adjacent sugarcane and vegetable fields where it is posing great risks to production especially of vegetables. Consequently, control of ragweed parthenium is very important in the EAA to forestall its spread into cultivated fields.



Figure 1. Parthenium

Photo by D. Calvin Odera .



Figure 2: Parthenium 12 hours after treatment..

Photo by D. Calvin Odera

Weed control in noncropland areas in the EAA associated with ragweed parthenium is usually achieved using non-selective herbicides, particularly glyphosate. However, lack of response of ragweed parthenium to glyphosate has been observed in the EAA and several areas in south Florida. It is not clear whether this is attributed to tolerance or resistance of ragweed parthenium to glyphosate. This necessitates the need for use of alternative burndown herbicides in combination with glyphosate for its control in noncropland areas. Sharpen, a new broadleaf herbicide can be tank-mixed with glyphosate to achieve control of ragweed parthenium populations that are not controlled by application of glyphosate alone. The labeled use rate of sharpen applied alone in noncropland areas is 2 to 4 and 4 to 6 fluid ounces per acre for weed sizes less than 6 inches and weed sizes greater than 6 inches, respectively. For accelerated burndown of ragweed parthenium in combination with glyphosate, sharpen should be applied at 1 to 2 fluid ounces per acre.

## ***USDA Releases 2009 Pesticide Data Summary***

USDA's Pesticide Data Program (PDP) annually tests a wide range of commodities in the U.S. food supply. PDP tests fresh and processed fruit and vegetables, grains, beef products, catfish, groundwater, and treated and untreated drinking water for pesticide residues. These data are important to ensure the implementation of the 1996 Food Quality Protection Act (FQPA) is followed. The FQPA requirements include stricter safety standards, especially for infants and children, and a complete reassessment of all existing pesticide tolerances. Twelve states participated in 2009, including Florida. Sound conclusions about the U.S. food supply can be drawn from the PDP results because these states represent all regions of the U.S. and more than half the population.



During 2009, PDP tested 13,244 samples for various insecticides, herbicides, and fungicides. Of the 13,244 total samples collected and analyzed, 10,792 were fresh and processed fruit and vegetables. The remaining samples consisted of organic lettuce, catfish, beef, rice, groundwater, and drinking water. For fresh fruit and vegetables, the percentage of total residue detections ranged from 0 to 3.2 percent with a mean of 1.5 percent. The percentage of total residue detections for all processed fruit and vegetables was approximately 0.02 percent.

The cover of the USDA Pesticide Data Program Annual Summary, Calendar Year 2009 report. The title "Pesticide Data Program" is prominently displayed in a bold, black font, with "Annual Summary, Calendar Year 2009" underneath it. The USDA logo is in the top left corner. Below the title, there are three images: a photograph of a laboratory with computer workstations, a close-up of a person's hands holding a mobile phone, and a photograph of a field of green crops. At the bottom, the text reads "Visit the program Web site at: [www.ams.usda.gov/pdp](http://www.ams.usda.gov/pdp)" and "May 2011".

PDP laboratory operations are designed to detect the smallest possible levels of pesticide residues possible, even when those levels are well below the safety margins established by EPA. It is important to note that the mere presence of a pesticide on food does not indicate the food is unsafe. For samples containing residues, the vast majority of the detections were well below established tolerances and/or action levels. Before allowing the use of a pesticide on food crops, EPA sets a tolerance, or maximum residue limit, which is the amount of pesticide residue allowed to remain in or on each treated food commodity. The reporting of residues present at levels below the established tolerance serves to ensure and verify the safety of the U.S. food supply.

Of all samples collected and analyzed, 69.7 percent were fresh fruits and vegetables, many of which are often eaten in a fresh, raw state. Health experts and the U.S. Food and Drug Administration agree washing fresh fruit and vegetables before eating is a healthful habit. Consumers can reduce pesticide residues, if they are present, by washing fruit and vegetables with cool or lukewarm tap water.

<http://www.ams.usda.gov/AMSv1.0/pdp>