



Features . . .

Corn

Late Planted Corn Page 2

Cotton

Controlling Hardlock in Cotton Page 2

What is Cutout in Cotton? Page 2

Foliar Urea or Potassium on Cotton Page 3

Forage

Stubble Height: How Short is Too Short? Page 3

Weed Control

Conditional Registration of Midas[®] Page 4

Is \$10/gal Glyphosate Gone Forever? Page 5

Spiny Amaranth (spiny pigweed) Control in Pastures ... Page 6

Spiny Amaranth Pesticide Chart Page 7

Miscellaneous

Calendar Dates Page 7

Web Links

Check out these other UF IFAS newsletters:

Chemically Speaking

<http://www.pested.ifas.ufl.edu/newsletters/july2008/index.htm>

Entomology and Nematology News <http://entnews.ifas.ufl.edu/>

Myakka (Soils and Water Science) <http://soils.ifas.ufl.edu/>

[department/newsletters/spring08.pdf](http://soils.ifas.ufl.edu/department/newsletters/spring08.pdf)

Late Planted Corn



Be sure to select corn hybrids that have *Bt* as well as good disease resistance due to the amount of southern rust that has shown up already this year. If all other management is done right, the two biggest problems for late planted corn will be insects and disease. As high as corn prices are, it may pay to apply fungicides on corn near tassel time or even earlier on corn planted in June or July.

Dr. David Wright, Extension Agronomist

Controlling Hardlock in Cotton

According to our models, conditions in 2008 have made this a very different year compared to the past three to four years. Hardlock may be more of a problem. Cotton should benefit from applications of fungicides and insecticides. The application of pesticides that are important for hardlock control should be made during the months of July and August when cotton is blooming. Topsin M will not be available in August due to label restrictions but Headline is labeled and can be applied with an insecticide which has shown to be beneficial to yield.

Dr. David Wright, Extension Agronomist
North Florida REC, Quincy
wright@ufl.edu

James J. Marois, Plant Pathologist
North Florida REC, Quincy
jmarois@ufl.edu

What is Cutout in Cotton?

Cutout is when there is a marked decrease in growth, flowering, and boll retention in cotton. It is usually not a clearly defined event but occurs over a week to two week period. The best way to monitor this is to monitor nodes above the highest white flower. When you have only four to five *Nodes Above White Flower* (NAWF), this stage has been reached. Cutout is often noticeable since you will see many white blooms near the top of the plant when driving by the field. The NAWF declines by about one node for every week of bloom. However, this decline is affected by the use of growth regulator, fertility, and moisture.

If the plant is stressed before bloom, the plant may start out blooming at seven NAWF. However, if you get into a rainy period, this may stay at seven for several weeks. It normally takes four to five weeks of effective bloom to make a high yielding crop. Cotton will normally have an effective bloom period from early to mid July until the first week of September depending on planting date. These late blooms seldom contribute much to final yield. If NAWF is decreasing too rapidly, growers should attempt to determine the cause of the stress and alleviate it if possible. If cutout is due to a high boll load, this is good and will lead to early maturity and harvest. If cutout is due to water stress, or fertility, appropriate steps should be taken to keep the plants growing and setting fruit until an appropriate boll load is set. On some extremely fertile, moist soils, cutout may not occur until weeks past the effective bloom date (about 7-10 of September since it takes at least 60 days to mature a boll late in the fall). Defoliation should then be determined by the larger, earlier set bolls that will contribute most to final yield. Fields near cutout in the first week of August were either planted early or have some stress factor that needs attention.

Dr. David Wright, Extension Agronomist

Foliar Urea or Potassium on Cotton



Every year some cotton fields will begin looking yellow or show symptoms of potassium deficiency (K) sooner than the grower would like. Potassium deficiency can be the result of nematodes pruning roots and not being able to explore the soil for adequate nutrients. Cotton fields showing the described symptoms should be examined closely to determine if this is due to a heavy fruit load or other causes. Our research has shown that applications of nitrogen after the third week of bloom can actually cause a yield reduction if it has a good fruit load. The question is often asked how much urea can be applied without burning cotton leaves if urea is going to be applied?

Normally 10 lbs of urea can be dissolved in 5 gallons of water for aerial application. If cotton is to be sprayed with ground equipment, apply 1 lb of urea for each gallon of water i.e., add 15 lbs urea to 15 gallons of water if spray volume is 15 gallons per acre, or 20 lbs in 20 gallons for a spray volume of 20 gallons per acre. These higher rates can be safely applied without burn if the cotton has had plenty of water or is irrigated and is not under water stress. Liquid urea (23% N) can be used and diluted with water safely. If adequate N has been applied by ground applications during squaring or by the first week or two of bloom, foliar N should not be applied even if petioles show low N levels as these levels will decrease normally as the season progresses. Applications of N during August may keep the plant blooming and growing past the effective bloom date and interfere with defoliation and make harvest decisions more difficult. Likewise, foliar K applications are not as effective as soil applications applied in a timely manner. Foliar applications of macronutrients are a poor choice when large amounts are needed. Macronutrients are needed in 100 fold or more amounts than micronutrients.

Dr. David Wright, Extension Agronomist
North Florida REC, Quincy
wright@ufl.edu

Stubble Height: How Short is too Short?

The selection of a stubble height is one of the most important aspects in forage management. The stubble height left either at grazing or when cutting your hay field is a decision that will determine not only the productivity of your forage but more importantly, over time, its persistence.

If in doubt of whether you are grazing or cutting too short, always try to benefit the plant and go with the taller stubble. There are several growing conditions affecting plant growth such as rainfall/drought (soil moisture), moisture distribution, temperature, etc., and also plant factors (such as presence of underground reserve parts) that affect the way the plant recovers after being cut or grazed. It is the combination of these environmental and plant factors that guides the stubble height you need to leave behind.

For example, bahiagrass can take a lower stubble height (usually 2 inches) compared to most other species used in Florida because of its rhizome or subsurface stem that provides the energy to come back after it is defoliated. Bermudagrass should be cut or grazed to 4 inches, and some species, like Tifton 85 bermudagrass may even require an additional inch or two for better performance and less encroachment of weeds over time.

If you make a habit of using very low stubble height, you may not be allowing sufficient time for that plant to recover before the next cutting is due. By cutting too short or too frequently you are undermining the root system among other things. Under certain emergency conditions you may be forced to cut or graze at 'not an ideal height', just remember to provide additional time for the plant to recover. In such cases your frequency of grazing or cutting will be longer than usual.

Dr. Yoana Newman, Forage Specialist
ynew@ufl.edu

Conditional Registration of Midas[®]

The Florida Department of Agriculture and Consumer Services (FDACS) announced during July that Midas[®] soil fumigant is conditionally registered for use in Florida. Midas[®] is used to control pests in crops such as strawberries, fresh-market tomatoes, peppers and turf. Midas[®] originally received an *Experimental Use Permit* in Florida during 2006. In late 2007, the Environmental Protection Agency (EPA) had granted commercial registration of the product for one year. Its manufacturer, Arysta LifeScience, targets the sale of Midas[®] to serve as a methyl bromide replacement. Midas[®] is the first soil fumigant to receive EPA registration in 20 years. The Midas[®] active ingredient is iodomethane.



Fumigating the soil.

Photo: F. Fishel

In Florida conditional registration for Midas[®] is subject to the following:

1. The exclusive use and distribution of the Florida-specific labels for the three products. The three products are:

*Iodomethan Technical, EPA Reg. No. 66330-44

*Midas[®] 50:50, EPA Reg. No. 66330-57

*Midas[®] 98:2, EPA Reg. No. 66330-43

2. Arysta LifeScience will implement the distribution and use of the EPA accepted (June 4, 2008) labels for “Sale and Use in States Other Than Florida.” Distribution of these labels in all states contiguous to Florida will commence no later than August 15, 2008.

3. Arysta LifeScience commits to the adoption and faithful execution of the stewardship plan and training program for iodomethane/Midas[®] for Florida. Use or distribution in Florida of any iodomethane product not labeled for use in Florida by an applicator or distributor must be considered by Arysta LifeScience to constitute non-compliance with product use requirements and result in action by Arysta LifeScience to not allow further distribution or use by that applicator or distributor.

4. Arysta LifeScience agrees to initiate and complete ground water and air monitoring studies in Florida as outlined to FDACS. Acceptable final protocols for the studies must be submitted to FDACS for approval by August 25, 2008. The continued registration of iodomethane products will be reassessed based in part upon the progress and results of these studies.

5. Arysta LifeScience agrees to provide the analytical standard, technical material, and formulated product samples as requested by the FDACS Pesticide Laboratory Section.

6. Any unusual or adverse effects or incidents related to the use of these products in Florida must be reported by Arysta LifeScience to the FDACS Bureau of Compliance Monitoring.

7. At the expiration of the conditional registrations, FDACS will reassess these registrations and may extend, reissue, and/or modify the registrations upon notification of a valid extension/reissuance by the EPA.

Dr. Fred Fishel, Pesticide Information Officer
weeddr@ufl.edu



Warning sign in field.

Photo: F. Fishel



Is \$10/gal Glyphosate Gone Forever?

The Roundup brand of glyphosate was a standard for weed control for many years. However, the patent for glyphosate expired approximately 10 years ago and numerous manufactures began to distribute branded glyphosate products. Almost overnight the price of glyphosate fell to levels as low as \$10/gal. But, in 2008 the price of all glyphosate products rose sharply with the cheapest brands now costing near \$30/gal. This brings two questions:

#1 Why did prices increase so quickly?

#2 Will the prices ever return to \$10?

The key reason for the dramatic increase in glyphosate price was a shortage in global glyphosate supply. This shortage was caused by several reasons including increased Roundup Ready corn acreage in the Midwest, acceptance of Roundup Ready technology in Brazil, and closure of glyphosate manufacturing plants in China. Of all the glyphosate sold, there is only one production facility operating in the United States. *Conversely, China recently had as many as 13 glyphosate production facilities.* This means that a vast majority of the “post-patent” glyphosate brands were manufactured in China. The huge glyphosate production capacity of China was due, in part, to government programs. The Chinese government will subsidize certain industries as a means of ensuring a working public. For many years, factories that produced glyphosate received these subsidies. These economic incentives encouraged overproduction of glyphosate and further allowed low sales prices.

In 2007, the Chinese government chose to stop supporting the production of glyphosate. This led to a closure of several production facilities in China while the others dramatically increased price of future production. So, the radical increase in glyphosate price was due to global shortage caused by increased glyphosate use and decreased production capacity.

Will glyphosate cost ever return to \$10 per gallon? It is my prediction that we are likely to never see glyphosate sold this cheaply again. The demand for glyphosate is higher now than ever and I do not foresee this changing in the near future. Likewise, the government influenced over-production of glyphosate will likely not occur again either. For now, it seems as if we must prepare to pay higher prices for glyphosate.

Dr. Jason Ferrell
Extension Weed Specialist
jferrell@ufl.edu

“Agronomy Notes” is prepared by: J.M. Bennett, Chairman and Yoana Newman, Extension Forage Specialist (ycnew@ufl.edu); J. Ferrell, Extension Weed Specialist (jferrell@ufl.edu); F.M. Fishel, Pesticide Coordinator (weeddr@ifas.ufl.edu); J. Marois, Plant Pathologist (jmarois@ufl.edu); B. Sellers, Extension Weed Scientist (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.

Spiny Amaranth (Spiny Pigweed) Control in Pastures



Spiny Amaranth, or
"spiny pigweed"

Spiny amaranth (*Amaranthus spinosus*), also known as spiny pigweed, is very common throughout Florida. This summer annual species is often observed in pastures, particularly in bare ground areas (near feeding pens and water troughs). This weed seems to thrive in well-worn, highly compacted areas where stockings rates are high and desirable grasses are few. If left unchecked, spiny amaranth can eventually take over entire pastures, as seen in the photo below.



Sharp spines on the
stem deters grazing.

Spiny amaranth is particularly troublesome because sharp spines proliferate on the stem. This greatly deters grazing around the plant as animals avoid the sharp spines. Also, this weed is an abundant seed producer with well over 100,000 seeds per plant produced each year. Additionally, these seeds germinate throughout the warm summer months and each rainfall event results in another flush of spiny amaranth plants.

Because spiny amaranth seed germinates so frequently, any control measure will generally only last a few weeks before a new flush of seedlings overtake the area once again.



A pasture overgrown with spiny amaranth. Grazing is impeded due to the sharp spines, and the plant propagates quickly.

Photos: J. Ferrell and B. Sellers

The Pasture Weed Control Program at University of Florida has tested a couple of herbicides to determine if herbicides that provide soil residual activity can be used to provide long-term control of spiny amaranth. Conversely, if residual control can not be obtained, then low-cost options were tested to fit multiple applications during each season.

Control using Herbicides

The herbicides Telar (chlorsulfuron), Milestone and Forefront (both possessing aminopyralid as the active ingredient) have been shown to provide extensive residual control of some weeds. They were chosen to test control of spiny amaranth for an extended period of time since, in addition, these herbicides do not possess any grazing restrictions for beef or dairy animals.

It was observed that Telar and Milestone provided excellent spiny amaranth control at 1 month after treatment (Table 1), but by 3 months, multiple seedlings had germinated and had resumed growth in the treated area. Therefore, neither of these herbicides provided sufficient residual control.

Low rates of Forefront and Telar were effective on spiny amaranth (Table 2). For only a few dollars per acre, Telar can be used to manage this weed. Because long-term control will not be obtained, 2 or 3 applications per season should effectively manage spiny amaranth for the entire season.

The Institute of Food and Agricultural Sciences (IFAS) is an Equal Employment Opportunity-Affirmative Action Employer authorized to provide research, educational information and other services only to individuals and institutions that function without regard to race, color, sex, age, handicap or national origin. For information on obtaining other extension publications, contact your county Cooperative Extension Office. Florida Cooperative Extension Service/Institute of Food and Agricultural Sciences/University of Florida/Larry Arrington, Dean.

Although Telar is very effective on spiny amaranth, there are only few other weeds that will control. Other weeds like ragweed, coffeeweed, Mexican tea (Jerusalem oak), tropical soda apple, and thistle will not be controlled with Telar. However, Forefront (depending on the application rate) proved to be excellent in controlling each of these weeds. In summary, Telar is ideal for areas where spiny amaranth dominates but Forefront would be a better choice for areas that contain a mixture of different weeds.

Table 1. Control of spiny amaranth with Telar and Milestone

Herbicide	Rate	Spiny amaranth control (%)		\$/A
		1 MAT ¹	3 MAT	
Telar	0.5 oz/A	93	50	\$10
Telar	0.75 oz/A	95	60	\$15
Milestone	7 fl. oz/A	90	50	\$20

¹ Data collected at 1 and 3 “months after treatment” (MAT).

Table 2. Control of spiny amaranth with Telar and Milestone

Herbicide	Rate	Spiny amaranth control (%)	\$/A
		1 MAT ¹	
Telar	0.5 oz/A	95	\$10
Telar	0.3 oz/A	95	\$7
Telar	0.1 oz/A	94	\$3
Forefront	2 pt/A	91	\$15
Forefront	1.5 pt/A	89	\$11

¹ Data collected at 1 “month after treatment” (MAT).

Jason Ferrell
 Extension Weed Specialist
 jferrell@ufl.edu

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

Calendar Dates

Aug. 20-21

Forage Workers
 Marion County Extension Office, Ocala, FL

Oct. 14

Sunbelt Ag Expo
 Moultrie, GA

Nov. 5

2008 Florida Ag Expo
 Gulf Coast Research and Education Center in Balm, FL
 Visit <http://glafexpo.ifas.ufl.edu> or call Christine Cooley (813) 634-0000 x 3101 ccooley@ufl.edu

Nov. 11-14

Methyl Bromide Alternatives Conference
 Orlando, FL, <http://mbao.org/>