

AGRONOMY

UNIVERSITY OF
FLORIDA
IFAS EXTENSION

NOTES

Vol. 30:11

November 2006

DATES TO REMEMBER

November 6th: Sugarcane Field Day – Quincy, FL

IN THIS ISSUE

CORN

Corn Supplies 2

COTTON

Cotton Harvest 2

WEED CONTROL

Glyphosate Resistance is Growing 2

How Herbicides Work – 2,4-DB 2

New Herbicide Resistant Cotton on the Horizon..... 3

Wild Radish 3

MISCELLANEOUS

Soybean Rust Impacts in the U.S..... 4

Cover Crops 4

Restricted Use Pesticide Applicator CEU Program On-Line 4

Wheat Varieties for 2006/2007 5

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.

Corn Supplies

It is expected that corn stockpiles will be depleted in the U.S. by 2008 due to the high amount being used in ethanol production. With ethanol plants that are coming on line, almost 20% of the 2006 corn crop will be used for ethanol production and this number is expected to rise to 30% of the 2007 crop. Since Florida has not produced large acreages of corn since the late 1970's, we will either need to produce more corn or expect to pay higher prices to import it from the Midwest. It is expected that corn acreage will need to increase close to 10% over the next few years to meet the feed and biofuels demands for corn even though the crop will be the third largest on record. High oil prices will continue to drive the U.S. to a more "green" fuel that is produced from agricultural products and corn is the main ingredient with other crops like soybean not far behind.

David Wright

Cotton Harvest

Cotton should be harvested as quickly as possible after opening to maintain yield and quality. Cotton opening in November seldom contributes much to final yield since these late opening bolls were set too late in the season. Seldom is there a reason to wait after the first of November to defoliate cotton in Florida. Days are very short and very little picking weather is available after November 15.

David Wright

Glyphosate Resistance is Growing

For many years we believed that glyphosate resistance would not, or could not, occur.

More crop acreage was grown with Roundup Ready technology and weed control was better and easier than ever before. However, in 2000 horseweed was found in Delaware that was resistant to glyphosate. By 2001 it was found in 3 additional states and now a total of 14 states have confirmed glyphosate resistant horseweed.

Since the first glyphosate-resistant horseweed was found, it seems as if the flood-gates were opened and the number glyphosate-resistant weeds are growing. Glyphosate resistance to date includes 11 species world wide with 6 confirmed in USA and 2 others expected, but not confirmed. Those of significance to Florida are Palmer amaranth (Palmer pigweed), common ragweed, cocklebur*, and common lambsquarters*.

Glyphosate resistance has been found in Georgia, North and South Carolina, and Virginia. Since our production practices are similar to the states mentioned above, it is very possible that glyphosate resistance will also visit Florida. Therefore, it is imperative that we implement strategies that will reduce their development. The most beneficial practices include using herbicides with differing modes-of-action and implementing proper crop rotation. These factors alone will dramatically reduce the occurrence of herbicide resistance. In short, it is much easier to avoid the development of resistance than it is to manage weeds that are resistant.

*suspected of resistance, but not confirmed.

Jason Ferrell

How Herbicides Work – 2,4-DB

The herbicide 2,4-DB has been used for several decades for broadleaf control in

selected legume crops. Two popular commercial trade names for 2,4-DB include Buytrac and Butoxone, but several others are registered.

2,4-DB is classified as a growth regulating herbicide. It is applied postemergence, over the top of weeds and desirable vegetation where it is active on a wide range of annual broadleaf species. This herbicide is widely used in forage crops such as alfalfa, clover, and bird's foot trefoil. It is also used for broadleaf weed control in several legume crops including peanuts and soybeans. 2,4-DB is readily absorbed through the foliage and diffuses into leaf cells where it then moves throughout the entire plant.

Since 2,4-DB and 2,4-D are so closely related, how do legume plants tolerate applications of 2,4-DB but not 2,4-D? The answer lies in metabolism. When 2,4-DB enters into a susceptible plant, the herbicide is immediately converted to 2,4-D through a process called beta-oxidation. Once the 2,4-D has been formed, it imparts the herbicidal activity. However, legume plants lack the ability to convert 2,4-DB to 2,4-D through beta-oxidation, so the compound remains 2,4-DB, which does not possess herbicide activity.

Like other growth regulator herbicides, we do not know exactly how 2,4-DB affects plants. However, we do know that 2,4-DB causes uncontrolled growth, resulting in twisting of stems, curling of leaves and sometimes split stems. Some theorize that this herbicide acts like (mimics) the growth regulator auxin, but in such a way that the plant grows itself to death. Other researchers suggest that the cell walls loosen, allowing the cells to elongate and expand. Further work in this area has also

shown excess RNA and DNA biosynthesis, leading to the thought that this stimulates excess cell division.

In either theory, the bottom line is that some cells of the plant grow more rapidly than others. This results in cells that grow unevenly, with some cells/tissues getting crushed and destroyed in the process. The vascular system is disrupted, blocking water flow and sugar movement; ultimately leading to plant starvation and death.

2,4-DB has little to no soil activity and does not persist in the environment.

Greg MacDonald

New Herbicide Resistant Cotton on the Horizon

Due to the development of glyphosate resistant weeds in the cotton belt, Monsanto is moving forward with dicamba-resistant cotton. This technology is several years away from release, but it will likely give highly effective and reliable control to glyphosate-resistant weeds such as Palmer pigweed, cocklebur, ragweed and horseweed. This technology is expected to be coupled with BollGuard and Roundup Ready.

Jason Ferrell

Wild Radish

With cooler temperatures approaching, it is time to start thinking about wild radish control. Wild radish seed germinates when soil temperatures reach approximately 65 degrees and form a rosette on the soil surface (Figure 1). At this stage, 2,4-D is highly effective at rates as low as 1 pt/A.

Waiting to spray until yellow flowers appear make control much more difficult, require higher herbicides rates, and injury to winter forages (ryegrass, oats, etc) is much more likely. So start scouting fields every few weeks over the next month and be ready to spray for wild radish. Early intervention will provide better control, require less herbicide, lead to less injury, and allow more winter grazing.

Jason Ferrell

Figure 1. Wild radish in the rosette growth stage.



Soybean Rust Impacts in the U.S.

Soybean rust did not have a major impact on the soybean growing regions of the U.S. in 2006. However, it was found for the first time in October in the Corn Belt states and will become more of a problem in the future. Florida had 26 sentinel plots located from south Florida to Pensacola this year. Many of these plots became infected with soybean rust, but did not increase in severity due to the drought that was experienced from February through July. Spores were found at NFREC in Quincy in July and an epidemic occurred in non-fungicide plots in late September and October. Soybean rust was found on kudzu in Gadsden County each month of the year but conditions never

existed for widespread movement of spores. However, the Carolinas did experience rust on soybeans late in the season. It was thought to have been moved into the area by tropical storm Ernesto which moved over infected areas in Florida before hitting the Carolinas.

David Wright and Jim Marois

Cover Crops

Plant cover crops as soon as possible in November to get needed cover for next crop. Many cover crops are killed 4 weeks before planting in the spring and thick covers are needed for enhancing soil conditions. Cover crops can be used for grazing or for help in nitrogen production. If corn or cotton is to be planted, 3-5 pounds of crimson clover may be planted with the grass cover crops to reduce the nitrogen requirements and to help in decomposition of the grass cover crop roots.

David Wright

Restricted Use Pesticide Applicator CEU Program On-Line

Pesticide-related Continuing Education Credits (CEUs) for farm workers, landscape maintenance workers, nursery workers, and others are now available online! You can access the [Pesticide CEU courses](#) through the UF/IFAS Bookstore Web site.

The individual CEU pages feature a detailed description, list of approved categories, and ordering information for each product. The selection will continue to be updated, so check back for new courses.

Macromedia Flash Player is required for viewing the presentations. Visit the Pesticide

Information Office's [CEU Modules](#) page for information about downloading this free software. This page also provides contact information for the Pesticide Information Office in case you need technical assistance or want to give feedback.

These presentations were produced in cooperation with the Florida Department of Agriculture. There are currently 13 CEU modules available. Each module is narrated by an IFAS specialist and will take approximately 50 minutes for the average person to complete. One CEU has been approved for completing each module. A summary of those that are currently available is listed in the table.

Titles and approved categories of the CEU modules currently available through the IFAS/Extension Bookstore.

| Title | Categories Approved |
|---|---|
| Poisonous Plants in Pastures | Ag Row Crop, Private |
| The Value of Pesticides in Agricultural Crops in Florida | Ag Row Crop, Ag Tree Crop, Private |
| Understanding Agricultural Pesticide Licenses under FDACS | Core |
| Agricultural Crop Pest Control | Ag Tree Crop, Ag Row Crop, Forestry, Ornamental & Turf, Private |
| Pesticide Labeling | Core |
| Worker Protection Standard | Aerial, Ag Tree Crop, Ag Row Crop, Forestry, Ornamental & Turf, Soil & Greenhouse Fumigation, Private |

| | |
|--|--|
| Notice of Applications / Posting and Information Display under WPS | Aerial, Ag Tree Crop, Ag Row Crop, Forestry, Ornamental & Turf, Soil & Greenhouse Fumigation, Private |
| WPS Training | Aerial, Ag Tree Crop, Ag Row Crop, Forestry, Ornamental & Turf, Soil & Greenhouse Fumigation, Private |
| Agricultural Row Crop Pest Control – Application Equipment | Ag Row Crop, Private |
| Agricultural Application Equipment Calibration | Ag Row Crop, Private |
| Noxious Weeds in Florida | Ag Tree Crop, Ag Row Crop, Aquatic, Forestry, Natural Areas, Ornamental & Turf, Right-of-Way, Private, Commercial Lawn & Ornamental*, Limited Lawn & Ornamental*, Limited Landscape Maintenance* |
| Pesticide Formulations | Core |
| Pest Management and Pesticides – A Historical Perspective | Core |
| *Approved for Bureau of Entomology and Pest Control | |

Fred Fishel

Wheat Varieties for 2006/2007

Small grain prices are expected to be up some this coming year due to the lower than expected yields in some parts of the world.

This was an extremely dry year in Florida with lower than normal yields. More small grain acreage will be planted due to potential profits from some of the better

yielding varieties. Yield data can be found on line at www.griffin.uga.edu/swvt . Some of the better yielding wheat varieties for Florida are AGS 2000, which may need a fungicide, Pioneer 26R61, USG 3209, and a new one AGS 2060. The older varieties should be watched closely for disease and sprayed if needed.

David Wright and Ron Barnett

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.

Prepared by: J.M. Bennett, Chairman; J.A. Ferrell, Extension Agronomist (jaferrell@ifas.ufl.edu); F.M. Fishel, Pesticide Coordinator (weaddr@ifas.ufl.edu); C.R. Rainbolt, Extension Agronomist (crrainbolt@ifas.ufl.edu); B.A. Sellers, Extension Agronomist (sellersb@ifas.ufl.edu); D.L. Wright, Extension Agronomist (dlw@ifas.ufl.edu).