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IN THIS ISSUE

COTTON

Increasing Cotton Yields.....2

WEED CONTROL

Control of Woody Brush.....2

MISCELLANEOUS

Kudzu and Soybean Rust.....2

Summary of Aldicarb Rule Changes3

Select Crop Varieties Early.....5

Wheat Planting.....5

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Increasing Cotton Yields

Research over the past few seasons has shown that cotton yields are reduced by hardlock/boll rot. Through several years of investigations we found *Fusarium* to be the main organism involved in hardlocked bolls. With 4 years of study, we found that spraying fungicides and insecticides during the 8 weeks of bloom (July and August), we have been able to harvest from 200 to 700 lbs/A more lint as compared to the untreated. In many cases insecticides resulted in higher yields than fungicides even though no insect reached the threshold level necessary for treatment. This is because thrips and other insects are carrying the *Fusarium* and infect the boll on the day of pollination (white flower). Therefore, insects (both pests and beneficials) could be setting the crop up for hardlocked bolls.

It appears that treating cotton every two weeks starting at first bloom for 4 total applications could result in average yearly yield increases of 300-400 lbs/A of lint. Applications at these timings will also control stinkbugs and other pests that cause boll and square shed. There is only one fungicide currently labeled for application to control *Fusarium* hardlock, Topsin M. Applications of the fungicide may be made along with the insecticide application to help control hardlock as well as leaf diseases.

David Wright and Jim Marois

Control of Woody Brush

The coming of winter is often seen as a time to suspend weed control efforts. However, these months are ideal for performing some much needed brush control.

Persimmon, cherry, Chinese tallow and other “weedy” trees can often be found growing along fencerows. A foliar application of glyphosate (5 to 8% solution) made prior to leaf color change can be effective, but total coverage can be difficult and retreatment will often be necessary. Another procedure that is highly effective and more consistent than foliar application is basal treatment. Basal application combines the herbicide with a penetrant oil (not water) and

applies the mixture directly to the bark of a standing tree. This results in rapid uptake and loads a great deal of herbicide into the plant. However, it is important to use a basal oil or diesel fuel/herbicide mix; a herbicide/water solution will simply not work.

The basal application technique is for trees that are less than 6-inches in diameter and have smooth bark. It is important that the lower 12 to 18 inches of the stem be treated on all sides with the herbicide/oil mixture. Adequate coverage is essential, since treating only one side of the stem will result in controlling only half of the tree. Basal applications can be made any time of the year, but are most effective during the dormant season when leaves are not present. It must be noted that basal applications will not provide rapid control. Herbicide injury is often not observed for several weeks after treatment and total control may require several months. Additionally, basal treatment is not effective on older trees with thick bark. For older trees, other application techniques should be employed.

Herbicides that work best for basal application are triclopyr ester (Remedy, Garlon 4, Tahoe 4) and Chopper. A triclopyr product should be mixed with basal oil to form a 25% solution (1 quart of herbicide in 3 quarts of oil). This product is highly effective on most all woody brush, including Chinese privet. Chopper is a more potent herbicide and only requires the addition of 8 to 12 oz of herbicide per gallon of basal oil.

For more information on brush control, please reference *Herbicide Application Techniques for Woody Plant Control*, <http://edis.ifas.ufl.edu/AG245>.

Jason A. Ferrell

Kudzu and Soybean Rust

The Soil Conservation Service (SCS) promoted kudzu for erosion control during the 1930s and farmers were paid an incentive to plant kudzu as forage during the 1940s. However, because of its weedy tendencies, the SCS stopped recommending kudzu in the early 1950s. In the early days no herbicides were available to

control this weed, but livestock grazing kept it under control to some extent.

It has been estimated that there are over 7 million acres of kudzu in the Deep South with an average infestation size of ¼ acre. This means that there may be 30 million sites in the South. Kudzu vines are known to grow 1 foot per day and often grow more than 60 feet during the season. Livestock numbers have declined since the 1940s and 50s and kudzu patches have expanded rapidly and taken over fences and roadways.

Specific kudzu sites were monitored in 2005 and 2006 for presence of soybean rust. Monitoring was done primarily by the Department of Plant Industry in 2005 and by the University of Florida soybean rust team in 2006. We wanted to monitor the same sites and new sites both years to determine if rust was spreading and if we could detect higher levels of infection. We assumed rust would be limited to southern Florida during the winter months, but could move north quickly as the weather warmed. Eighty three specific kudzu sites were monitored for soybean rust in 2005 and 2006. Ten percent of the monitored sites were positive in 2005, and an additional 30% were positive in 2006. In general, weather conditions were not as conducive to spread in 2006 as in 2005 until late in the season when rainfall levels were higher and temperatures lower.

Soybean rust on kudzu is able to over-winter further north than expected due to plants being sheltered from harsh temperature conditions around houses, in culverts, or other sheltered places. The results of the surveys done in Florida in 2005 and 2006 indicate that soybean rust is becoming more widespread. It is expected that more sites will become infected in the future, especially in the coastal and south Florida areas. This may lead to a greater chance of rust spreading into the Midwest on storms that occur early in the season. There are no fungicides registered for controlling rust on kudzu.

Infected kudzu leaves are often found in shady areas out of direct sunlight early in the season. However, infection increases rapidly late in the

season when days get shorter and temperatures are cooler, and infected plants may be found in many different areas including areas that are exposed to extended periods of sunlight.

| Summary of Kudzu Sites Monitored in 2005-2006 | |
|---|-----------------|
| Infection Status | Number of Sites |
| Negative 2005, Negative 2006 | 47 |
| Negative 2005, Positive 2006 | 24 |
| Positive 2005, Positive 2006 | 9 |
| Positive 2005, Negative 2006 | 3 |

David Wright and Jim Marois

Summary of Aldicarb Rule Changes

Aldicarb is a granular carbamate insecticide applied to more than 400,000 acres of Florida citrus to manage citrus rust mite, whiteflies, citrus nematode, aphids, and citrus psyllid. The use of aldicarb has increased in importance as a result of the finding of citrus greening in the state, which is vectored by citrus psyllid.

Aldicarb is soluble in water and is readily absorbed into the roots and is transported throughout the plant. There are indications that aldicarb can be highly mobile in certain soil types, such as those with relatively high sand content and little organic matter, and its detection in groundwater demonstrates that leaching can occur. Aldicarb has high acute toxicity and carries the signal word, "DANGER POISON" on its label. Acute toxicity and groundwater contamination concerns are the criteria for its restricted use classification. Highly publicized incidents involving contaminated cucumbers and watermelons occurred in the mid 1980s. In those cases, misapplication led to adverse effects in people. For these reasons, there is a statewide stewardship rule regulated by the Florida Department of Agriculture and Consumer Services (FDACS) for aldicarb's use. Several amendments to the regulation have recently occurred.

Effectively immediately, the time period for application of aldicarb to citrus has been changed from the period January 1 – April 30 to the period November 15 – April 30. The rule states that the use of aldicarb on citrus is limited to one application per tree per use season.

Effectively immediately, there is no longer a 10-day delay between submission of a permit application and the earliest start date for the aldicarb application. The aldicarb application may be made as soon as the permit has been approved, but is still limited to the period November 15 – April 30.

Effectively immediately, when multiple application sites are submitted together, FDACS may reject selected application sites, if necessary, and approve the others. Each application site is now considered a separate permit, and the whole set of application sites will be assigned only one FDACS #. For applicators using paper forms, the “Application for Permit to Apply Aldicarb” has been modified so that only one application site may be listed on each form. When multiple paper forms are submitted together, the top part of the form (licensed applicator information) needs to be completed on only one form, and any additional forms just need to list the applicator’s name and the specific site information for each additional site.

Effectively July 1, 2007, drinking wells inside an application site or within the appropriate buffer zone (300 or 1,000 feet) around an application site must be identified with Global Positioning System (GPS) latitude and longitude coordinates in decimal degrees. Latitude and longitude coordinates must be accurate to at least five decimal places. Applicators are encouraged to begin reporting GPS coordinates as soon as possible. If GPS coordinates are provided, a verbal description of the well location is not necessary but may be provided if desired.

Effective July 1, 2007, application sites for all crops to which aldicarb is applied must be identified to the ¼ of ¼ section. This is in addition to the following information which must still be provided for each application site: county, township, range, section, and site/block

name or description. Paper forms have been modified to accommodate the change and applicators are encouraged to provide such section information as soon as possible.

Effective July 1, 2007, in order to reduce the buffer zone around cased drinking wells from 1,000 feet to 300 feet, cased well documentation must contain all of the following information: well location, casing depth, static water level at time of well completion (if not continuously cased to a depth of 100 feet or greater), and name of the water management district of Florida-Licensed well contractor that issued the document. Well location must be identified by county, range, township, and section; and, effective July 1, 2007, GPS latitude and longitude coordinates in decimal degrees to five decimal places are to be used.

The rule change clarifies that well location must be provided only for drinking wells that determine application setbacks based on the 300-foot and 1,000-foot setback requirements. The number of non-drinking wells within the application site must still be reported but no well location information needs to be reported for non-drinking wells, provided they are posted with a conspicuous warning notice stating “NOT FOR HUMAN CONSUMPTION.”

The rule now specifies that FDACS may deny permit applications that list application sites in areas determined by the department to be unsuitable for aldicarb application, based on a pattern of detections of aldicarb or aldicarb residues that exceed the Florida Department of Environmental Protection water quality standards in potable well water samples from that geographic area. Individuals may petition for the reversal of such determinations, and FDACS will review and evaluate such petitions. Petitioners must provide written permission to reverse the unsuitability determination from all property owners affected.

For information and obtaining permits, see <http://www.flaes.org/temik/index.html>.

Fred Fishel

Select Crop Varieties Early

Variety tests should be studied as soon as the data becomes available. The best varieties are often in short supply the first year or two that varieties are out. This has been true for peanuts and small grain in the past couple of years. Corn and cotton seed supplies have been good for the best varieties in the last few years. Check our website and websites of neighboring states for information

<http://www.griffin.peachnet.edu/swvt/> on row crop variety testing. It will be very important to look at variety test information for peanuts <http://edis.ifas.ufl.edu/AG247> during the coming year since the best varieties will be in short supply.

David Wright

Wheat Planting

Wheat prices have been higher this fall than at any time recently. This has led to an increased interest in planting. Since the wheat acreage has been low for the past several years, there will not be enough seed of the recommended varieties to go around. Be aware that if old varieties are planted, the disease resistance is not good and that fungicides will have to be used. Wheat can be planted from mid-November to mid-December with good results. Wheat should not be planted later since yields are usually reduced. This is because late planted wheat will not accumulate enough chill hours for proper head development and because diseases are much worse on late maturing varieties.

David Wright

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).