LOUISIANA CROPS NEWSLETTER

Cotton, Corn, Soybeans, Sorghum, and Wheat

Volume 5, Issue 06 June 2015

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Dr. Ronnie Levy

Dr. David Kerns

Sebe Brown

Dr. Randy R. Price

Dr. Clayton Hollier

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14TH ANNUAL DEAN LEE RESEARCH AND EXTENSION CENTER ROW CROP FIELD DAY

For Information regarding field day

Contact:
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LSU AgCenter
318-473-6590

July 9, 2015

8:30am Refreshments
State Evacuation Center

8:45am Field Tours
Dean Lee Res. & Ext. Cntr.

11:20am Program
State Evacuation Center

12:00pm Lunch
State Evacuation Center

2015 Dean Lee Research & Extension Center Field Day Program

Tour Stops and Speakers:

Integration of Cover Crops into Louisiana Production Systems
Disease Management Update
Dr. Josh Lofton, Asst. Professor, Agronomist
Dr. Trey Price, Asst. Professor, Extension Plant Pathologist

Soybean Seeding Rates
Dr. Ronnie Levy, Asst. Professor, Extension Soybean Specialist

Insect Management in Field Crops
Dr. Julien Beuzelin, Asst. Professor, Field Crops Entomologist
Dr. Jeff Davis, Assoc. Professor, Soybean Entomologist

Issues in Weed Management
Dr. Daniel Stephenson, Assoc. Professor, Weed Scientist/Specialist

Current Research and Issues in the Cotton and Corn Agronomy Program
Advances in Cotton Pest Management
Dr. Dan Fromme, Assoc. Professor, Extension Corn/Cotton Specialist
Dr. David Kerns, Assoc. Professor, Extension Entomologist

UAV Technologies in Agriculture
Dr. Randy Price, Asst. Professor, Extension Agricultural Engineer

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Soybean Growth Stages

Clayton Hollier, Professor, Department of Plant Pathology and Crop Physiology
Ronnie Levy, Assistant Professor, Soybean Specialist, Dean Lee Research Station

Lately we have received many questions concerning soybean disease management and determining soybean growth stages for timing applications. Hopefully, the information below will help answer some of these questions.

Appropriate application timing also is an important consideration with fungicide applications to soybean. **An automatic fungicide application at or near R1 is not currently recommended**. Ongoing research at LSU AgCenter may or may not result in modification of these recommendations in the future. According to results from many years of LSU research trials, fungicides have proven most efficacious when applied near the R3 stage. A second application may be considered at R5 as well. All applications should be based on disease presence and severity. Please refer to the list below on how to determine soybean growth stages.

Vx = Vegetative growth stages (prior to flowering). The number following indicates how many trifoliates are present.

R1 = 1st flower (one flower anywhere on the plant)

R2 = Full bloom (open flower on one of the upper two nodes)

R3 = Beginning pod (3/16" pod on one of the upper four nodes)

R4 = Full pod (3/4" pod on one of the upper four nodes)

R5 = Beginning seed (seed visible and 1/8" long in one pod on the upper four nodes)

R6 = Full seed (seeds completely fill one pod on the upper four nodes)

R7 = Beginning maturity (one mature pod in upper four nodes)

R8 = Full maturity (the majority of the pods on the plant are mature)

It is important to keep in mind that on indeterminate varieties (Group 3, Group 4, and some Group 5) flowering begins at the bottom of the plant and progresses upwards. Therefore, the more mature pods will be located near the bottom of the plant. For determinate varieties, flowering begins in the middle of the plant and progresses upwards and downwards almost simultaneously. In this case, relative maturity of pods will be similar throughout the plant. Nevertheless, **only consider the upper four nodes while staging soybean plants.**

In addition to application timing, coverage and spray volume also are key components. Proper nozzle selection to obtain smaller droplet sizes will enhance coverage and, in turn, efficacy. Most fungicide labels recommend a minimum of 10 gallons/A spray volume by ground and 5 gallons/A by air. Finally, avoid unnecessary or excessive applications of fungicides, and always follow label directions for the best results. For more information visit www.lsuagcenter.com or contact your local county agent, specialist, or nearest research station.

A Quick Outlook of the New Clean Water Act Rule

Naveen Adusumilli, PhD,
Economist - Water Policy, LSU AgCenter

The final "Waters of the United States" (WOTUS) rule was released by U.S. EPA and U.S. Army Corps on May 27, 2015. The rule declares jurisdiction over certain waters. The two newly created categories include tributaries and adjacent waters. As a result, the categories now include a) traditional navigable waters, b) interstate waters, c) territorial seas, d) tributaries to jurisdictional waters, and e) waters adjacent to jurisdictional waters. Wates that are exempt from clean water act jurisdiction are a) water filled depressions created in dryland due to mining or construction activity, b) Groundwater, c) Wastewater recycling structures constructed in dryland, and d) puddles. Those waters that are neither jurisdictional nor exempt ae evaluated using the significant nexus test. Waters having significant nexus are broadly identified as those that contribute flow to a traditional navigable waterway. However, there is still some ambiguity with the definition of significant nexus.

Below is the table that highlights some of the changes to the CWA final ruling

Subject	Old rule	Proposed rule	Final rule
Tributaries	Not defined	Waters that have ordinary high water mark, a bed and bank, and contribute flow	Exception added; wetlands and open waters without bed, bank and ordinary high water marks will be evaluated for adjacency
Jurisdictional waters based on their adjacency to tributaries	Includes wetlands adjacent to traditional navigable waters, interstate waters, the territorial seas, impoundments or tributaries	Includes all waters adjacent to jurisdictional waters, including waters in the riparian areas or floodplain or with surface or shallow subsurface connection to jurisdictional waters	Flood plain and riparian areas not defined, instead includes all waters adjacent to jurisdictional waters within a 100-ft and within 1,500 feet of the FEMA 100-ft floodplain
Ditches	Did not include ditches	Jurisdictional if constructed in waters in whole or in part	Jurisdictional only if ditches are a) ephemeral or intermittent and excavated in a tributary or constructed in order to relocate a tributary and b) ditches than drain wetlands
Isolated or Other waters		case-by-case significant nexus test	Only waters within a 4,000 of the ordinary high water a mark of a tributary can be subject to the significant nexus test
Lakes and Ponds		Identified as tributaries even without a bed and bank	Lakes and ponds that contribute flow to a traditional navigable water, interstate water, or the territorial seas but typically lack a bed and banks and ordinary high water considered adjacent but not a tributary.

The content in the table has been adapted from U.S. EPA publications.

Definitions:

Adjacency: those that are located within 1,500 feet of the ordinary high water mark and within the 100-year floodplain.
Ordinary High Water Mark: normal reach or water level during high-water season.

Entomology Update

Sebe Brown and David Kerns: LSU AgCenter Entomologists

Cotton

With Louisiana experiencing 90 degree temperatures and adequate moisture, much of the cotton has grown out of the thrips susceptibility stage (1-4 leaf cotton) and is beginning to put on squares. Square initiation results in an increased presence of a diverse cohort of plant bugs and below is an adult and immature guide to aid in identification of plant bugs in cotton.

Tarnished Plant Bug

Tarnished Plant Bug Adult: LSU AgCenter

Tarnished Plant Bug Nymph: LSU AgCenter

Tarnished plant bugs (TPB) are 1/4 inch long insects that vary in color from yellowish brown to green with black markings and a conspicuous triangle located on the dorsal (back) side. Nymphs resemble the adults in general body shape and color but do not have wings. Tarnished plant bugs damage cotton from pinhead square to final boll set. Larger square damage affecting anthers, stigma, and styles can cause fertilization problems and fruit shed. The Louisiana threshold for bloom to harvest is 2-3 TPB per 5 ft of black drop cloth, 10 TPB per 100 or sweeps or 10% dirty squares. Pre-bloom threshold levels are 10 -25 TPB per 100 sweeps.

Cotton Fleahopper

Cotton Fleahopper Adult: LSU AgCenter

Cotton Fleahopper Nymph: LSU AgCenter

Fleahoppers are small, 1/8 inch, insects that have an oval shaped, elongated body. These insects are yellow to green and resemble other Hemipteran true bugs and essentially look like a very small, green TPB. However, unlike TPB nymphs, fleahopper nymphs have dark spots on the hind legs.

Cotton should be scouted for fleahoppers the first three weeks of squaring. Detection can be difficult due to the flighty nature of these insects. Simply casting a shadow over the pest will often make them take flight. Louisiana pre-bloom thresholds for fleahoppers are 10 to 25 insects per 100 sweeps with pre-bloom treatment levels adjusted to maintain between 70 and 85% first position square retention.

However, scouting small cotton with a sweep net is difficult and produces questionable results. Additionally, detecting small fleahopper nymphs in a sweep net is difficult as well. A better technique is to simply examine the terminal of plants watching for adults taking flight and then examining the terminal very closely for small nymphs. Morning is the best time to scout for fleahoppers and if the wind is blowing, they take shelter in the plant canopy.

Clouded Plant Bug

Clouded Plant Bug Adult: University of Tennessee

Clouded Plant Bug Nymph: University of Tennessee

Clouded plant bugs (CPB) are 3/8 inch long insects that are characterized by a thickened first antennal segment and hind legs that are noticeably larger than the first two pairs. Adult CPB are generally brown in color with mottled patches of black, yellow or white. Nymphs are often greenish-yellow in color possessing red and white horizontally striped antennae. Larger nymphs can also be identified by a dark spot on the dorsal side of the abdomen. Clouded plant bugs are an occasional pest in Louisiana cotton with pre-bloom and bloom threshold levels being the same for tarnished plant bug but each CPB should counted as an equivalent to 1.5 TPB.

Injury by CPB is similar to TPB with square abscission, bloom injury and boll feeding (cat-facing) occurring mid to late season. As with other plant bugs, monitoring square retention and sweep net sampling prior to bloom should be used to determine levels of CPB infestations. Sampling for plant bugs from bloom until harvest is aided by the use of a drop cloth because this technique is more suitable for detecting nymphs.

Rapid Plant Bug

Rapid Plant Bug Adult: LSU AgCenter

Rapid Plant Bug Nymph: LSU AgCenter

Rapid plant bugs (RPB) are 3/10 inch long insects that occasionally infest cotton in Louisiana. Adults are often orange-black to yellow-black in color and are larger than other species of plant bugs encountered while sampling. Nymphs are often green with a red or yellow tint and have a dark band across the abdomen. The thorax and abdomen of immature RPBs lack dark spots that are typically found on TPB nymphs.

Injury by the RPB is often sporadic and may be confused with other plant bugs. However, due to this pests larger size, injury levels can be significanlty greater than other species of plant bugs encountered in cotton. Therefore, pre-bloom and bloom RPB threshold levels should be the same for tarnished plant bug but each RPB should counted as an equivalent to 2 TPB.

Grain Sorghum

Sugarcane aphid populations have been detected in grain sorghum fields around much of Louisiana. Scattered reports of treatment level populations are being detected with many of these fields being the first infested in South/Central Louisiana. Aphid infestations typically initiate on the edge of fields with infestations concentrating on lower leaves and moving up in the canopy. Insecticide applications targeting aphids should be initiated when aphid numbers reach 50 aphids per leaf infesting 20% of the field.

Sorghum midge populations thus far have been relatively low. Most of the grain sorghum planted with in the LSU AgCenter's recommended planting window (April 15 – May 15) will mature through the midge susceptibility window before damaging populations build in fields. However, sorghum with staggered maturity or later planted sorghum may require insecticide applications. Sorghum midge, like any other insect, should be scouted. Scouting for midge should be initiated when 20 to 30% of the field begins to flower. Lorsban applied at 1 pint/acre will provide control of low to medium populations of sorghum midge will also providing suppression of sugarcane aphids. Pyrethroid applications should be avoided if aphids are present.

Sugarcane aphid infestations on grain sorghum: LSU AgCenter

Sugarcane aphid injury to pre-boot sorghum: LSU AgCenter

Soybean

Insect issues in soybeans have been relatively minor in the previous weeks since the last newsletter. Scattered populations of green, southern green and brown stink bugs are being found in soybeans in the Northern portion of the state while redbanded stink bugs are increasing in soybeans in south Louisiana. Soybeans are not susceptible to stink bug injury until pod set (R3) and most of the stink bug populations found in young beans are transitory and will not cause any significant loss to yield.

Drift Research: Boom Height and Flowrate

By Randy R. Price

The LSU AgCenter has been doing drift research on ground sprayers to help address problems that can occur from the application of crop protection agents. Research is showing that setting the boom height to the correct height (20 inches of the crop surface for most sprayers) is crucial to helping reduce drift. Tests have shown that even in very low wind conditions (0.5 to 3 MPH) operating the boom height at 5 feet off the crop surface, instead of 20 inches, increased the number of drift able fines by more than 50%. In some cases, the drift able fines evaporated after travelling 10 feet from the crop edge, but in other cases the drift able fines did not evaporate and travelled more than 40 ft. into neighboring crops. With the highly variable environmental conditions available in Louisiana and the newer herbicide resistant crops coming in the future, operators should run boom heights at correct levels even on overly small fields or near field edges where obstacles may occur.

Other tests are also indicating that flow rates should also be closely monitored to help prevent drift. In tests with XR flat fans (common to sprayers in Louisiana) increasing the flowrate by only 0.7 GPA caused a 20 psi increase in boom pressure and created nearly 50% more drift able fines. Most operators only monitor flowrate and a less than 1 GPA difference doesn't seem like much, but this amount can lead to substantial changes in boom pressure. Always monitor flowrate closely and keep as close to the intended value as possible. A slight increase in this value can lead to large increases in boom pressures and drift able fines.

Upcoming Calendar of Events

July 1, 106th Rice Research Station Field Day, Crowley.

July 9, Dean Lee Research and Extension Center Field Day, Alexandria.

July 15, Sugarcane Field Day at the Sugar Research Station, St. Gabriel.

Oct. 8, Landscape Horticulture Field Day at the Hammond Research Station, Hammond.

Oct. 15, Beef Cattle and Forage Field Day at the Dean Lee Research and Extension Center, Alexandria.

Oct. 22-Nov. 8, AgMagic, an agricultural awareness exhibit for youth at the State Fair, Shreveport.

For additional calendar information on LSU AgCenter Parish and Statewide events, visit our website at www.lsuagcenter.com/calendar

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