LOUISIANA CROPS NEWSLETTER

Cotton, Corn, Soybeans, Sorghum, and Wheat

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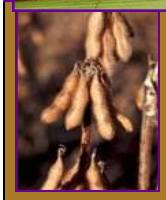


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LSU AgCenter Northeast Region Rolling Crops Field Tour – July 10, 2014, Winnsboro, LA

The LSU AgCenter will host a "Rolling Crops Field Tour" on Thursday, July 10, 2014. The tour will begin and end at the Macon Ridge Research Station in Winnsboro, LA. Registration starts at 11 a.m., and transport vans will depart the station at 11:30 a.m. The tour will travel to variety demonstration plots in West Carroll, Richland and Franklin parishes highlighting soybean, cotton and corn production and pest management. The tour will conclude with crop updates, an NRCS soils trailer demonstration, a sponsored dinner and door prize drawings. We hope you can join us. Please contact Tara Smith, tsmith@agcenter.lsu.edu or Donnie Miller, dmiller@agcenter.lsu.edu, for additional details.




Entomology Update

Sebe Brown and David Kerns: LSU AgCenter Entomologists

Cotton

Early season insect issues in cotton typically begin with thrips and this year is no exception. Thrips are beginning to appear in young cotton (1st to 4th true leaf) with tobacco thrips composing the primary species present with western and eastern flower thrips present at lower numbers. Adding to this issue, Syngenta has confirmed resistance to thiamethoxam, the active ingredient in Cruiser, Avicta Complete, Avicta Duo and Acceleron N seed treatments in four populations of tobacco thrips collected in the Mid-South. Therefore, cotton treated with thiamethoxam may not give adequate control of tobacco thrips populations in Louisiana, however; western flower thrips still appear to be susceptible. Based on limited data, resistance appears to be confined to thiamethoxam and has not been detected with imidacloprid.

Foliar treatments should be made when immature thrips are present and/or when large numbers of adults are present and damage is occurring. The presence of immature thrips often signifies that the insecticide seed treatment has lost is efficacy. Avoid spraying solely based on plant injury since the damage has already occurred. Below are some considerations when deciding what foliar insecticide to use.

Dimethoate:

Positives: Relatively inexpensive, good efficacy at high rates, less likely to flare spider mites and aphids than acephate

Negatives: Ineffective towards western flower thrips, less effective than acephate or bidrin when applied at lower rates

Acephate

Positives: Relatively inexpensive, effective towards western flower thrips

Negatives: May flare spider mites and aphids if present, may be weaker against tobacco thrips

Bidrin

Positives: Effective, less likely to flare spider mites and aphids than acephate

Negatives: Less flexibility with applications early season

Radiant

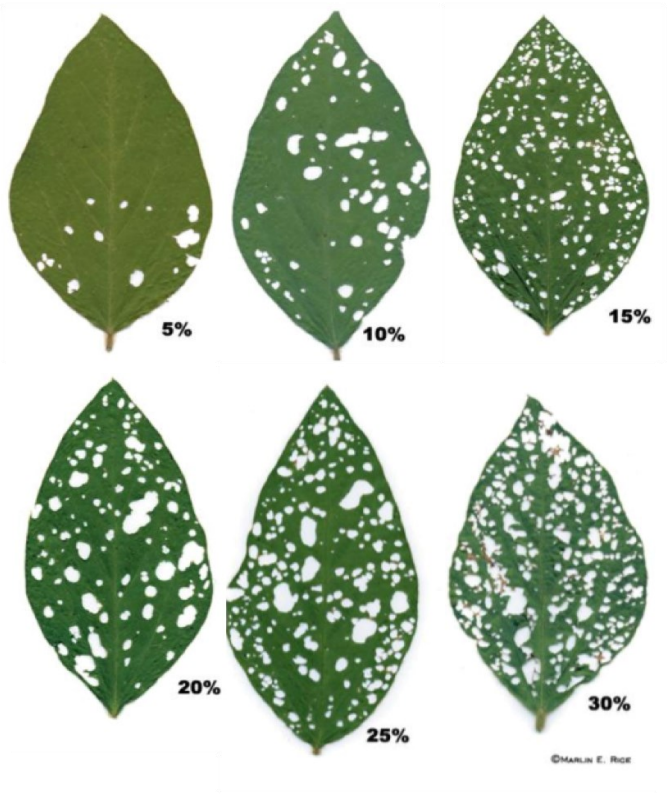
Positives: Effective, least likely to flare spider mites and aphids

Negatives: More expensive, requires adjuvant

Insecticide choice depends on a number of factors such as cost, impact on secondary pests and spectrum of thrips species present. If a foliar thrips treatment is justified, do not wait for a glyphosate application and only spray when necessary to avoid flaring spider mites and aphids.

Soybean

Insect issues in soybeans, thus far, have been limited to a few reports of corn earworm and thrips feeding on young beans V4-V6 in maturity. Soybeans, unlike cotton, can withstand a large amount of insect injury prior to R1 (bloom). Research over the past 20 years has determined that pre-bloom soybeans can withstand defoliation up to 30% and not result in a measurable yield loss. Therefore, defoliating insect numbers and damage often have to be very significant before an insecticide application is justified. Estimating defoliation levels can often be difficult leading many to over-assess the actual amount of leaf tissue removed from the plant. Below is a good illustration of defoliation percentages, in soybean, from Iowa State University Extension Service. These levels can be used throughout the season for management decisions.



Picture Courtesy of Iowa State Extension Service

Furthermore, Louisiana has the unfortunate distinction of having the highest levels of pyrethroid resistance in corn earworm populations in the United States. The use of a pyrethroid alone for corn earworm control is highly discouraged and may result in poor control regardless of insect instar. If an insecticide application is warranted, the use Prevathon, Belt+pyrethroid, Besiege or a pyrethroid+acephate will give adequate control of corn earworms in soybeans.

Thrips injury in soybeans is very rarely an issue that justifies and insecticide application. Insecticide seed treatments work well to keep soybeans protected and thrips numbers have to be extremely high to cause any significant yield loss.

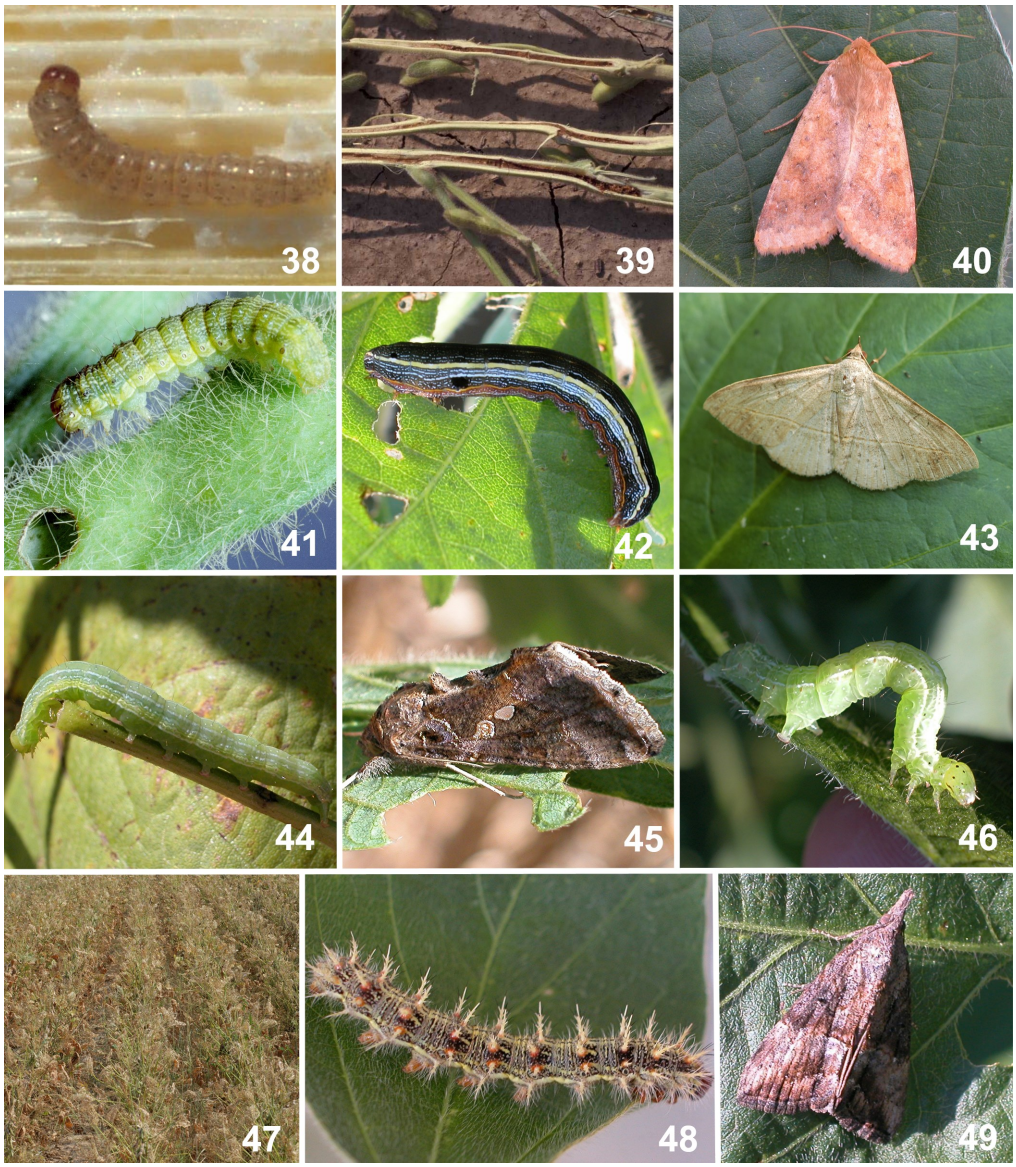
Corn

Insect issues have been minor in corn early season. A few fields had issues with below ground insects such as wireworms and rootworms; however these were primarily confined to reduced/no-till fields and fields with late or inadequate burn downs. Sugarcane beetle numbers were very low this year with the abnormally cold winter possibly slowing development and emergence, thus allowing the corn crop to grow past the susceptibility stage.

In larger (V8 – V12) non-Bt, refuge, corn instances of corn earworms infesting the whorl is increasing. Many of these fields have sporadic damage and with no fields reaching a treatment level of injury. Treatment of worms in the whorl is often not warranted and rarely needed.

Grain Sorghum

Louisiana received a section 18 for the use of Transform (sulfoxaflor) for sugarcane aphid control in sorghum grown for grain, forage or stover for the 2014 production season. Sulfoxaflor demonstrated excellent efficacy against white sugarcane aphid in research and on-farm trials around Louisiana and will provide a much needed tool for producers to combat this pest. Label specifications can be found here http://louisianacrops.com/2014/05/05/transform-granted-section-18-for-control-of-sugarcane-aphid-in-louisiana-sorghum-forage-grain-or-stover/. To date, we have not received any notification of sugarcane aphids infesting grain sorghum in Louisiana. Preliminary research conducted by the LSU AgCenter demonstrated satisfactory control of sugarcane aphids with insecticide seed treatments on young sorghum, however; once the insecticide seed treatment is exhausted, sorghum will become vulnerable to infestation. The white sugarcane aphid has been found, at treatment levels, in many sorghum fields in the Rio Grande Valley of Texas and Mexico since March. Producers and consultants in Louisiana should routinely scout sorghum fields for infestations of this pest since damaging levels can build rapidly and persist throughout the growing season.



For insect identification click on the link below:

http://www.lsuagcenter.com/en/crops_livestock/crops/soybeans/Insects/Online-Soybean-Insect-Identification-Guide.htm

Applicants Sought for 2014-2015 ASA DuPont Young Leader Program

The American Soybean Association (ASA) and DuPont are seeking applicants for the 2015 ASA DuPont Young Leader Program. For more than 30 years, the ASA DuPont Young Leader program has identified and developed grower leaders that truly shape the future of agriculture.

"The ASA DuPont Young Leader program has shaped not only the soybean industry but all of agriculture," said Ray Gaesser (Iowa), ASA President. "The program provides industry leading training in an environment that fosters collaboration between farmers throughout the U.S. Participants not only gain 'real-world' experience but build lifetime friendships. When the program started more than 30 years ago, it was a game changer, recognizing the importance of both women and young people in agriculture. We're grateful to DuPont for their continuing support of the program."

The ASA DuPont Young Leader program is a challenging and educational two-part training program. Phase I of the training will take place at the DuPont Pioneer headquarters in Johnston, Iowa, Nov. 18-21, 2014. The program continues Feb. 24-28, 2015 in Phoenix, Ariz., with training held in conjunction with the 20th annual Commodity Classic Convention and Trade Show.

The ASA DuPont Young Leader program offers the opportunity for participants to strengthen their natural leadership skills, expand their agricultural knowledge and develop strong peer relationships with other soybean growers from across the country.

Applications are being accepted online now! Interested applicants should click here for additional program information and to apply.

ASA, its 26 state affiliates including the Grain Farmers of Ontario and DuPont will work together to identify the top producers to represent their state as part of this program. One couple or individual per state will be selected to participate.

ASA represents all U.S. soybean farmers on domestic and international issues of importance to the soybean industry. ASA's advocacy efforts are made possible through voluntary farmer membership by farmers in 30 states where soybeans are grown.

For more information contact:

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Access this release online at SoyGrowers.com.

Soybean Growth and Development

Dry conditions throughout some of the state have delayed soybean planting. Most of Southwest Louisiana has not received any significant rainfall for the past two months. Many producers do not have enough moisture to germinate seed and are waiting for rains before planting. This will cause a large number of acres to be planted late. The growth and development of soybeans can be effected by delayed planting. Yield is basically determined by how much crop growth occurs and the proportion of the dry weight partitioned into reproductive matter. Obtaining optimum yield also depends on the process in which the crop proceeds through the normal phases of its life cycle culminating in maturity. Reduced yield may occur if certain critical developmental periods are not long enough.

Crop growth of any soybean variety will be influenced by environmental factors and the lengths of certain developmental periods. The most important environmental factor affecting growth is the interception of light by the crop canopy. Light interception enhances growth because the plant transfers light energy into chemical energy which is used to fix CO_2 from the atmosphere into carbohydrates. These carbohydrates are the basic energy source for plant growth.

Stresses, such as drought, can adversely affect crop growth. Whenever any stress occurs, plant growth can become limited, disrupting the relationship between leaf area index, light interception and crop growth rate. Drought stress affects growth mainly by restricting cell expansion and reducing photosynthesis. Crop growth will be limited even if light interception is optimal.

Severe stresses, such as drought, can reduce the amount of dry weight partitioned to the pods during pod filling, thus decreasing yield. Good yield depends on more than obtaining a high crop growth rate. The soybean crop must also pass through the normal developmental periods of its life cycle and have an adequate length for each one. Soybeans have two growth habits, determinate and indeterminate growth. The main distinguishing feature is that indeterminate soybeans continue main stem growth indefinitely after first flowering, whereas determinate soybeans terminate main stem growth shortly after first flowering.

Indeterminate varieties generally are classified as early maturity soybeans (Maturity Group IV or less), whereas determinate soybeans are generally in the late maturity groups (Maturity Groups V through VIII). The maturity classification for soybeans is based on the days from emergence to maturity for a specific maturity group in its area of adaptation and when planted at the optimal date.

The life cycle of soybeans is divided into two general categories, the vegetative period and the reproductive period. The vegetative period extends from emergence until first flowering, whereas the reproductive period lasts from first flowering until maturity. Definitions for developmental periods have been clarified by a system devised by W. R. Fehr and C. E. Caviness et al. 1971, two soybean breeders from Iowa State University and the University of Arkansas, respectively.

Neither vegetative nor reproductive developmental periods are characterized by exclusively vegetative or reproductive events. During the vegetative period, floral parts are initiated and develop within the bud. Assuming proper environmental conditions, these floral primordia eventually become developed flowers, at which time they emerge from the bud and can be seen. Appearance of the first flower signals the end of the vegetative period and the start of the reproductive period. In both indeterminate and determinate soybeans, considerable vegetative growth continues during the reproductive period.

Since the terminal apex of indeterminate soybeans continues vegetative growth after first flowering, more leaves and main stem growth occur throughout most of the reproductive period. The vegetative state of the terminal apex also maintains apical dominance over the main stem nodes during most of the life cycle. Thus little branching occurs in indeterminate soybeans, and most of the yield is produced by main stem pods.

In contrast, the terminal apex in determinate soybeans remains vegetative for only a short time after first flowering. A few days after appearance of the first flowers, the terminal apex will also bloom, terminating the growth of the main stem. This is why such soybeans are called determinate varieties. Vegetative growth does not stop in other parts of the plant, however. With flowering of the terminal apex, apical dominance is released and profuse branching is initiated from the lower main stem nodes until shortly after initiation of seed filling.

Length of the vegetative period has a large influence on the yield potential of determinate soybeans, since main stem growth terminates shortly after first flower. Indeterminate soybeans are less affected, since main stem growth continues after this event. Adequate time is needed to produce enough nodes for optimum pod production. Yield can be greatly affected by late planting. When planting late, populations should be adjusted higher to compensate for reduced vegetative growth.

There are many advantages to early planting. Germination and emergence are slower in cooler soil temperatures but soybean plants are less sensitive after first trifoliate (V1) producing about two nodes per week. Later planted soybeans simply cannot catch up with soybean node development of earlier planted soybeans. Earlier soybean planting increases crop yield potential by allowing plants to generate more stem nodes. Plants need to produce as many stem nodes as possible, simply because stem nodes are where the plant produces flowers, then pods, and ultimately seeds within those pods.

In order for plants to acquire carbon dioxide to produce dry matter, the stomates in the leaves must open, allowing water inside the leaf to escape and carbon dioxide to be taken in for photosynthesis. Crop water use includes evaporation loss directly from the soil, and water lost as transpiration from the leaves. Crop water use efficiency can be improved by reducing evaporative water losses. Early planting helps reduce water loss because the cooler soil and air temperatures in early plantings reduce water evaporation compared to temperatures in late May and early June plantings. Canopy closure earlier in the season reduces solar radiation on the soil surface, lessening soil water evaporation. Higher humidity in a closed canopy also minimizes soil water loss.

Earlier canopy closure will cover the ground sooner in the growing season, collecting nearly all of the incoming sunlight for use in photosynthesis. For highest yields, the soybean crop should collect as much of the available solar radiation as possible, simply because plants require the energy of sunlight to convert carbon dioxide into carbohydrates, protein, and lipids (oils). Later planted soybeans will not have the opportunity to collect as many hours of sunlight compared to earlier planted crops reducing yield potential. Remember the longest day is June 21, summer solstice.

In the future, planting dates could be slightly earlier. In some years higher yields have been recorded from earlier than our optimum plantings date. Earlier planting dates will result from varieties developed to provide sufficient vegetative growth under cooler soil temperatures and adverse conditions. Planting date studies continue to answer questions concerning the optimum planting dates. It appears many of the new varieties are not as photoperiod sensitive as older varieties; therefore, early planting has contributed to increased yields. Late planting dates are usually the most damaging to yields. Yield losses are quite variable but decline rapidly as soybeans are planted beyond the optimum planting dates.

For information on optimum planting date, and seeding rates go to the LSU AgCenter soybean website: http://www.lsuagcenter.com or contact your local County Extension Agent.

Upcoming Calendar of Events

May 21, Fruit and Vegetable Growers Field Day at the Botanic Gardens at Burden, Baton Rouge.

June 5, Nursery Industry Open House at the Hammond Research Station, Hammond.

June 17, Northeast Research Station Pest and Crop Production Field Day, St. Joseph.

June 21, Garden Fest at the Botanic Gardens at Burden, Baton Rouge.

June 25, 105th Rice Research Station Field Day, Crowley.

July 10, Northeast Region Field Crop Tour at the Macon Ridge Research Station, Winnsboro.

July 16, Sugarcane Field Day at the Sugar Research Station, St. Gabriel.

July 17, Dean Lee Research and Extension Center Field Day, Alexandria.

Aug. 7, Sweet Potato Field Day at the Sweet Potato Research Station, Chase.

Oct. 9, Landscape Horticulture Field Day at the Hammond Research Station, Hammond.

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

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Louisiana State University Agricultural Center

Louisiana Agricultural Experiment Station

Louisiana Cooperative Extension Service

LSU College of Agriculture

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