AgriLIFE EXTENSION
Texas A&M System

INSECTS AND WEEDS IN FOCUS

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GENERAL CONDITIONS

Good subsoil moisture is present throughout most of the Coastal Bend region, but wind has dried out the surface and in some limited cases has exposed planting seed to dry soil. Soil temperatures remain good for corn and sorghum but are on the cool side for cotton, especially in the more northerly areas of the Gulf Coast.

Insects to watch for on emerging crops include cutworm, chinch bug, southern corn rootworm, and on sorghum, yellow sugarcane aphid. I have seen no sign of cutworm moths around lights at night or caterpillars under weeds growing in the field. Incidentally, fields in which cutworms are most likely to be found are those that have an abundance of winter weeds. It would be advisable to search under these weeds to see if cutworms are present at this time as moths should have already laid eggs and the cutworms may be present. If cutworms are present it would be advisable to band an insecticide at planting. Fields which have been free of live vegetation for four to six weeks are much less likely to experience a cutworm problem. However, there have been cases in the past when cutworm moths have laid eggs fairly late resulting in small cutworms on seedlings. The black cutworm has been the species most often found this time in the season; whereas, on larger corn the pale-sided cutworm was found a few years ago cutting brace roots.

It is dangerous to speculate too much on chinch bug, southern corn rootworm, or yellow sugarcane aphid, but some points should be made. First, chinch bugs may not have started migration from their overwintering sites; I suspect they will be present in damaging numbers in some historically heavy fields. Hopefully they will not move into fields until sufficient size of the crop is achieved so larger numbers can be sustained without yield impact. There are some signs that the southern corn rootworm might end up causing damage to non-insecticide treated corn and sorghum. We have two field studies on corn and one on sorghum to measure the effectiveness of insecticide treated seed for control of southern corn rootworm and the other seed or seedling insect pests. In the case of yellow sugarcane aphid their numbers are unknown but at this time there is little johnsongrass on which they can develop for later movement into sorghum. We will initiate scouting for this aphid as well as the greenbug.


Chinch Bug


Southern Corn Rootworm


Yellow Sugarcane Aphid

RDP

ASSESSING THE ECONOMIC BENEFITS OF BOLL WEEVIL ERADICATION IN TEXAS

Recently, Dan Hanselka, Dean McCorkle, John Robinson, and Steven Klose, Texas AgriLife Extension Service, Department of Agricultural Economics, Texas A&M University; developed a poster which showed the impact of boll weevil eradication in 14 of the 16 zones in the State. The poster has been reduced to 8.5 X 11 inches and is attached to this newsletter.

RDP

THRIPS CONTROL ON COTTON

It is difficult to react quick enough to gain benefit by controlling thrips (never use the word "thrip" since there is no such animal) on cotton with a foliar applied insecticide compared with use of a systemic granular in-furrow or seed applied insecticide. We followed up on work done in Georgia where the at-plant insecticides were compared with and without foliar insecticide or where foliar insecticide was used alone. The entire report is available on pages 46-52 in the 2010 report titled, *Results of Insect Control Evaluations on Corn, Sorghum, Cotton, Pecans, & Pastures in Texas Coastal Bend Counties*. Vigor ratings and lint production for the various treatments follow.

Table 1. Vigor rating and lint production in cotton treated with systemic insecticide applied to seed or placed into the seed furrow compared with these treatments where foliar Orthene was applied, Hansen Farm, Matagorda County, TX, 2010.

Treatment (rate)	Orthene foliar[1/]	Vigor rating[2/] (29 DAP)[3/]	Lint yield lb/acre
Temik 15G (3.5 lb/acre)	No	1.5^{c}	798^{abc}
Temik 15G (3.5 lb/acre)	Yes	1.4^{c}	769^{abc}
Gaucho Grande 5FS (0.375 mg ai/seed)	No	1.9^{c}	852^{a}
Gaucho Grande 5FS (0.375 mg ai/seed)	Yes	1.4^{c}	870^{a}
Cruiser 5FS (0.34 mg ai/seed)	No	1.4^{c}	858^{a}
Cruiser 5FS (0.34 mg ai/seed)	Yes	1.5^{c}	826^{ab}
Orthene 97 (4.0 oz/acre)	Yes	2.6^{b}	700^{c}
Nontreated	No	3.9^{a}	746^{bc}

[1/]Orthene 97 (4.0 oz/acre) was applied on 4/22, 4/29, and 5/4 (16, 23 and 28 DAP, respectively).
[2/]Vigor ratings range from 1 = No damage up to 5 = severe stunting, cupped-up leaves, and uneven plant growth.
[3/]DAP = Days After Planting

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GRAIN SORGHUM PRODUCTION GUIDE FOR SOUTH AND CENTRAL TEXAS

A grain sorghum production guide for south and central Texas is now available through the United Sorghum Checkoff Program. Through the collaborative efforts of Texas AgriLife Extension Service and the USCP, the 175 page 3.5" x 6" pocket guide covers topics related to grain sorghum growth and development, hybrid selection, irrigation, planting, fertilization, insect management, weed control, diseases, harvesting, and budgets. This guide can be obtained by contacting the United Sorghum Checkoff Program at 806-687-8727 or jenna@sorghumcheckoff.com. Copies are also available through the Texas Grain Sorghum Association by contacting Kristin Heinemann-Utterback at Kristin@texassorghum.org.

DDF

CONTROL OF VOLUNTEER COTTON IN CORN

Texas corn producers have found controlling volunteer cotton (i.e. glyphosate tolerant cotton) to be extremely difficult with herbicides that are currently labeled in corn. In years when adequate rainfall is not received during the fall months following cotton harvest, subsequent germination of remaining cotton seed left in the field does not occur until the following season. Often these same fields are planted in corn the following year.

In 2010, one preemergence and two post emergence studies were conducted at Corpus Christi, Yoakum, Snook, and Etter, Texas to evaluate the efficacy of herbicides on the control of volunteer cotton in corn. Herbicide applications for the two post emergence studies were made at the one-two true leaf and at the five-six true leaf stages. The preemergence studies consisted of eleven different treatments and the two post emergence studies consisted of fifteen to twenty-one different treatments depending on the location. For the preemergence studies, efficacy of herbicides was based on final stand counts and on the percentage of plants that emerged that produced a hostable square (pinhead square). Post emergence studies, evaluations were based on percent control and on percent of surviving plants that produced a hostable square.

Final results of these studies are available under the soil and crop sciences section at http://coastalbend.tamu.edu.

Appreciation is expressed to Cotton Incorporated and the Texas Corn Producers Board for providing funding for the implementation of these studies.

DDF

EMPLOY MANAGEMENT PRACTICES TO AVOID WEED RESISTANCE

The easiest resistance management system to employ is the use of at least two different site of action herbicides in your weed management program. For example, if you are growing Roundup Ready Flex cotton, use residual herbicides such as Prowl H20, Treflan, Caparol, or Cotoran at or prior to planting to get a jump on early season weeds. Then, the use of Roundup in the system would not be conducive to the development of Roundup resistant weeds in the field. The use of only one herbicide continuously in a weed management program encourages the development of weed resistance. In addition, tillage at any time of the year can help to diffuse the possibility of herbicide resistant weed development .

DDF

INTERESTING INSECTS

The wheel bug is the most striking representative of the assassin bug family of insects. This large predator is named for the presence of a semicircular crest on the pronotum (area behind the head) that terminates in teeth that resembles a cogwheel. These large bugs range in length up to nearly 1.5 inches, are generally grey in color, and they have strong piercing mouthparts that can inflict a painful bite when molested. The species is common in this part of Texas and can be observed waiting on vegetation to prey on other arthropods. It is an insect to avoid handling carelessly as the bite has been described as being more painful than a wasp sting. One should realize, however, that it is considered highly beneficial especially on fruit and nut trees. It is abundant on pecan trees throughout south central Texas and the Gulf Coast .


Wheel Bug

RDP

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Pest Management information available at http://txaac.org/

TEXAS IPM
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Assessing the Economic Benefits of Boll Weevil Eradication in Texas

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The Texas A&M University System

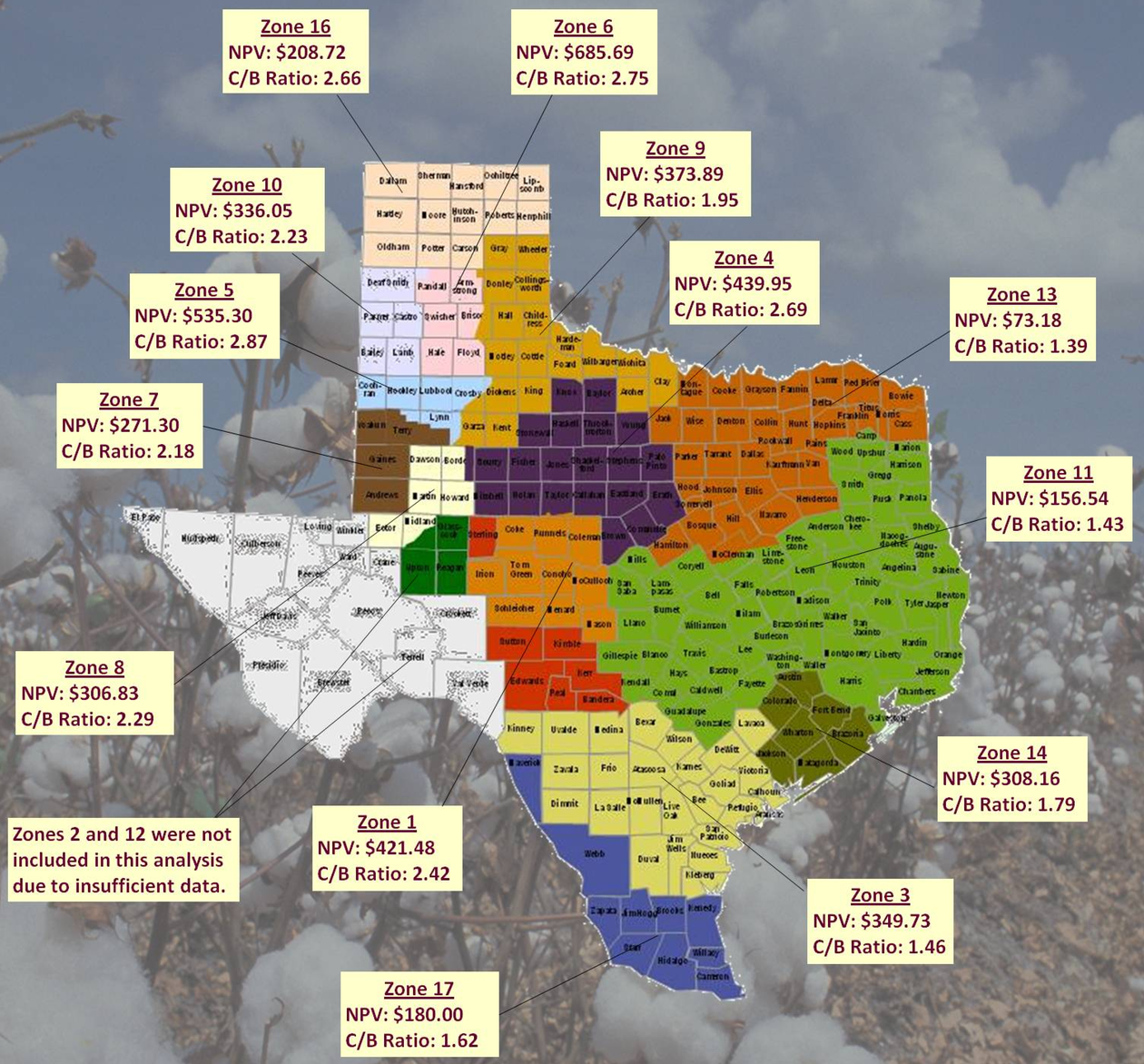
AgriLIFE EXTENSION
Texas A&M System

Problem Statement

- The boll weevil has been the most destructive insect pest of cotton in Texas and the U.S.
- Efforts to eradicate this insect from Texas have made significant strides and advancements over the last 10 years.
- However, given the large cotton acreage involved, the variation in agronomic factors across the state, warm climate, and other weather and environmental factors, eradication of the boll weevil in Texas has met many challenges.

Background and Importance of Work

- Previous studies on BWE economics in Texas were typically limited to areas of the state that were in the BWE program.
- With the Texas BWE program now including all cotton production in the state, this study is unique in that economic benefits were assessed for the vast majority of the State's cotton production.
- Given the public-private partnership supporting the Texas BWE program, a current assessment of the economic benefits to date is important for all stakeholders.



Data and Methods

- The economic impact of the Texas BWE program was measured in terms of the change in net cash flow to cotton producers in 14 of the 16 boll weevil eradication zones in Texas.
- The methodology involved quantifying a multi-year average boll weevil treatment cost and yield loss for each zone prior to the start of the BWE program. This formed a baseline prior to the eradication program.
- To assess the economic changes relative to the baseline, for each eradication zone, the baseline was compared to post-BWE program annual boll weevil yield losses, boll weevil program assessment fees, other boll weevil

Data and Methods continued

treatment costs, and harvesting and ginning costs associated with the changes in production.

- Annual insecticide cost savings, yield loss savings, BWE assessments, and other cost changes (e.g. the cost of harvesting and ginning additional production) were used to estimate growers' annual change in net cash flow resulting from BWE, net present value (NPV) of the cash flows, and cost-benefit ratios (C/B ratios).
- Data sources for the analysis include USDA-NASS, Beltwide Cotton Conference – Pest Loss database , USDA-ARS, and the Texas Boll Weevil Eradication Foundation.

Results

- The net present values per acre and cost benefit ratios for the 1996-2025 period are presented with a map illustrating the boll weevil eradication zones (center). Using a 5% discount rate, the NPVs range from a low of $73 per acre in zone 13 to a high of $685 in zone 6. Cost-benefit ratios ranged from a low of 1.39 in zone 13 to a high of 2.87 in zone 5. Variation in the NPV's and cost-benefit ratios across the state can be primarily attributed to differences in the level of productivity among the zones, and the amount of time an eradication zone has been in the program. Sensitivity analysis using higher discount rates (7.5% and 10%) found the results to be robust over this range of discount rates.
- As acreage in the BWE program has risen from 1.4 million in 1996,to 5.4 million in 2009, annual net benefits to producers statewide have increased from $20 million to more than $200 million (Table 1). This level of impact supports an additional 1,900 jobs.
- Cumulative net benefits to producers since 1996 are estimated at $1.9 billion.

Table 1. Texas BWE Acreage and Net Benefits (1996-2009)

	BWE Acres (Mill.)	Annual Benefits (Mill.)	Cumulative Benefits (Mill.)
1996	1.48	$20.60	$21
1997	1.11	$19.54	$40
1998	1.20	$32.84	$73
1999	3.89	-$47.65	$25
2000	4.27	$85.96	$111
2001	5.80	$142.02	$253
2002	5.66	$161.54	$415
2003	5.72	$183.56	$598
2004	6.18	$236.64	$835
2005	6.58	$228.12	$1,063
2006	7.06	$214.38	$1,278
2007	5.39	$220.83	$1,498
2008	5.46	$222.38	$1,721
2009	5.41	$210.37	$1,931