

# INSECTS AND WEEDS IN FOCUS

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## WEED CONTROL REDUCED IN DRY SPRING

Lost rains may mean poor weed control where fields were treated with herbicides requiring rain for activation. Most pre-emergence herbicides like Caparol or Cotoran require activation. Pre-emergence herbicides may lay on the soil surface for up to 30 days, but sunlight (UV) will usually destroy them over time. These herbicide compounds absorb energy and that energy will break down the chemical bonds in many compounds, rendering them useless for weed control.

We need "a little rainfall" to move the product slightly into the soil and to bind it to the soil particles. All we are doing is getting the herbicide slightly into the soil so that the direct light won't hit it and the breakdown of the herbicide. As little as one-half of an inch of rainfall is sometimes adequate to create this "barrier zone" just below the soil surface. PE herbicides are water soluble and it doesn't take much water to get them working. Once the herbicide is moved out of direct sunlight and is joined with the soil, we can say that the herbicide has been "activated." As such, an effective barrier is created that emerging weeds must grow through.

Ureas and triazines are herbicide materials that are taken up by the roots. We expect susceptible plants turn yellow and die. If the weed roots are real deep (chasing moisture) and/or have emerged from deeper seed placement, their seedling roots may never grow where the herbicide is (dry soil) and those weeds may not die. But when the herbicide is activated soon after planting, its small "feeder roots" will grow directly into

the wet barrier zone and seedling weeds are easily killed.

In a dry spring, we are dealing with several "disconnects" that hurt our herbicide protection programs. Weed rooting patterns, weed size, herbicide activation and herbicide breakdown are all at play. Later, soil microbes may further breakdown PE herbicides when the rains finally come. The good news is that we have not had to fight blowing sand yet this spring (because it didn't rain). The bad news is that we are seeing some poor weed control and will have to rely on post emergent weed control products for results.

Some producers started to work their land early this last winter and some of it was a little too wet, and it became cloddy. Weed seed that are inside of clods or under clods may never be in contact with the herbicide used. Planting in fields with marginal moisture also causes the producer to move a lot of soil (go deeper) "to get to" planting moisture. Some of that soil was not mellowed and was cloddy. Having had to break-out their pre-emerge treated zone (treflan/prowl PPI), there may be a need for follow-up treatments with Staple or other post directed products. **SDL**

## INSECT PESTS TO WATCH FOR

**Shade trees** - Fall webworms have been observed on ash. Datana caterpillars and forest tent caterpillars have been noticed on live oak. It is time for white marked tussock moth eggs to hatch and these caterpillars to attack live oak trees.

**Corn** - Reports of cutworms on corn have been received from east of Houston. Fall armyworm and corn earworm have been seen on corn along the lower Gulf Coast. The fall armyworm can be a serious pest due to their possible high numbers on individual corn plants. Chinch bug numbers are high in some fields. Only a few reports of southern corn rootworm have been received. Mexican corn rootworm eggs will be hatching soon.

**Sorghum** - Scout for yellow sugarcane aphids since this insect is expected to cause problems. Other

insects to consider now on sorghum include chinch bug, cutworms, and greenbug. White grubs were observed killing plants in San Patricio county. The grubs are deep in the soil and several plants are usually killed in a row.

**Cotton-** Scout fields for cutworms, aphids, thrips and saltmarsh caterpillars. Saltmarsh caterpillars could also crawl into fields from weed hosts. RDP

### FIRE ANT CONTROL LEAFLET

The revised "Texas Two-Step Do-It-Yourself Fire Ant Control" leaflet (L-5070) is now available. This revision includes updated lists of fire ant products, including the new fipronil bait. Diazinon and Dursban products are no longer listed as a result of their withdrawal from the marketplace in 2001 and 2002. Single copies can be obtained at no cost by calling (409) 845-6571. Electronic copies are available in pdf format at <http://agpublications.tamu.edu/pubs/ent/l5070.pdf>

RDP

### FIRE ANT CONTROL

The following information is from Bart Drees, Fire Ant Project Coordinator.

The Texas Department of Agriculture (November 30, 2001 memorandum from Phil Tham, Deputy Assistant Director for the Pesticide Program Division) has issued a 24(c) (Special Local Needs) registration for the "hopper blend" application of Amdro® or Siege® Pro plus Extinguish™ Professional Ant Bait.

Hydramethylnon (Amdro® or Siege® Pro) produces a quick reduction in ants within 2 to 6 weeks of treatment, but re-infestation may begin thereafter resulting in the need for perhaps two to four treatments per year to maintain control.

Methoprene (Extinguish™) bait produces a slow reduction of ants, characteristic of an Insect Growth Regulator (IGR). This type bait requires 2 to 6 months to achieve maximum suppression. However, the suppression achieved with the use of methoprene bait can last for a full year.

The "hopper blend" treatment provides the best of both products. Both products are cleared for use in pastures and rangelands. This treatment, can provide an economic savings by providing a more effective control profile than can be provided by applying either product alone. RDP

### FURADAN SECTION 18 STATUS ON COTTON

It would be an understatement to say the EPA would not prefer to grant Section 18 status for carbofuran (Furadan) use on cotton. Currently, there are many unanswered questions about the requirements and negotiations are under way with TDA. We expect approval in a few day. RDP

### NEW INSECTICIDES FOR COTTON

My aphid control tests in the past two season were not definitive due to short duration of aphid numbers; however, results of tests in the Rio Grande Valley and High Plains of Texas are provided below for your consideration.

Centric (Syngenta) and Intruder (Aventis CropScience) have received labels for certain cotton insect pests. They are labeled for aphids, thrips, tarnished plant bug, whiteflies and cotton fleahopper. Experiments across the cotton belt have shown these products to be effective against the listed pests. Both products are of neonicotinoid chemistry similar to (Provado, Admire, Gaucho, Trimax, Prescribe and others). Although we do not have firm costs for the products, use rates for aphids are expected to be in the \$5 - 6/acre range.

Table 1. Mean number of aphids per leaf on the first fully expanded leaf from the plant terminal, Weslaco, Texas, 2001.<sup>a</sup>

Treatment <sup>b</sup>	Rate	Number of aphids per leaf		
		1 DAT <sup>c</sup>	3DAT	6 DAT
Check		122.4 a	130.3 a	40.2 a
Phaser 3EC	1 qt.	36.8 bcde	36.8 b	7.5 cd
Leverage	3 oz.	25.8 cdef	28.2 bc	23.5 b
Bidrin 8EC	8 oz.	14.2 f	25.0 bcd	5.6 cd
Calypso 4SC	1.15 oz.	47.5 b	28.3 bc	11.3 c
Calypso 4SC	1.5 oz.	39.6 bcd	19.7 bcde	7.8 cd
Provado 1.6F	3.75 oz.	30.6 bcdef	15.5 cde	8.5 cd
Furadan 4F	8 oz.	15.3 f	13.0 cde	5.0 cd
Centric 40WG	2 oz.	41.4 bc	7.0 de	2.7 d
Centric 40WG	2.5 oz.	39.6 bcd	6.3 de	4.1 cd
Intruder 70WP	0.86 oz	22.4 def	1.65 e	2.3 d
Intruder 70WP	1.14 oz	19.5 ef	1.75 e	1.9 d

<sup>a</sup> Test conducted by A.N. Sparks, Jr. and J.W. Norman, Jr.

<sup>b</sup> Treatments were applied on 5/8 by CO<sub>2</sub> pressurized backpack sprayer, 3 TX5 hollow cone nozzles/row (1 over top, 2 on drops), 40 psi, and 10 gpa total volume.

<sup>c</sup> DAT = days after treatment

Table 2. Control of cotton aphids with various insecticides, RR2200, Rex Isom Farm, Idalou, Texas. 2000<sup>a</sup>

Treatment <sup>e</sup>	Formulated amount per acre	Average number of aphids per leaf <sup>b</sup>		
		0 DAT <sup>d</sup>	5 DAT	9 DAT
Centric 25WG	3.0 oz.	109.43 a	22.70 c	4.87 c
Intruder 70WP	1.1 oz.	105.73 a	1.30 c	0.30 c
Intruder 70 WP	2.3 oz.	147.90 a	3.35 c	0.53 c
Bidrin 8E	5.3 oz	156.83 a	142.47 bc	4.57 c
Bidrin 8E	8.0 oz	163.40 a	68.73 c	2.07 c
Capture 2E	4.0 oz	159.87 a	239.73 b	63.30 a
Centric 40WG	1.9 oz.	112.20 a	89.20 bc	3.70 c
Fulfill 50WG	2.7 oz.	126.47 a	117.40 bc	1.47 c
Furadan 4F	8.0 oz.	97.03 a	46.87 c	3.13 c
Provado 1.6F	3.8 oz	73.97 a	148.33 bc	12.93 bc
UTC	-----	125.83 a	402.00 a	41.87 ab
LSD(P=.10)		NS	152.465	30.965
P>F		0.1431	0.0082	0.0324

<sup>a</sup> Test conducted by B. Baugh, T. Doederlein and J. Leser.

<sup>b</sup> Average of total number of aphids on five top and bottom leaves per plot.

<sup>c</sup> Treatments were applied with a CO<sub>2</sub> backpack sprayer.

<sup>d</sup> DAT = days after treatment.

<sup>e</sup> Means in a column followed by the same letter are not significantly different by ANOVA (P = 0.10 LSD) RDP

### **AGGRESSIVE TREATMENT FOR BOLL WEEVILS**

Texas Boll Weevil Eradication officials remind South Texas/Winter Garden cotton growers of the treatment protocols for the zone in 2002.

Fields will be trapped at a density of one trap each tenth of a mile, except near overwintering habitats and along thoroughfares such as major highways and railways, where the density will be higher. A capture of one weevil in a trap will trigger the treatment of the field where the weevil was caught and all surrounding fields.

Program Director Charles Allen said the treatment criteria have been set at an aggressive level in an effort to bring the program closer to an end in the zone. RDP

### **HELP REDUCE AFLATOXIN IN COTTON SEED**

I have just finished sending a letter of support to EPA to extend the Experimental Use Permit (EUP) for AF 36 in South Texas. This atoxigenic stain will be needed to

treat approximately 2000 acres of cotton in South Texas from 2002-2005. The AF 36 is a non-toxic strain of Aspergillus flavus that does not produce aflatoxin. As a microbial pesticide it reduces the appearance of aflatoxin by displacing or crowding-out the toxic strains before they can colonize surface residues under the cotton canopy. When AF 36 is applied as a coating to wheat seed after the cotton is "laid-by", the AF 36 thrives and "takes-over" the soil surface, colonizing all the favorable sites before the toxic A. flavus strains can develop. With no place to grow, the incidence of aflatoxin is diminished to "almost clean values" in cotton seed where this management practice was employed. Dudley Smith, Mike Braverman, and Peter Cotty have all asked for letters of support because the EUP is to come under review 20 April 2002. Letters of support are best if they are hand-written, and address why we need AF 36. Be positive, brief, and tell the benefits. While the grain associations, ginners, and cotton industry representatives have already been contacted, letters from CEAs in cotton producing counties and key cotton producers would certainly be important and meaningful. E-mail may also be used - [opp-docket@epa.gov](mailto:opp-docket@epa.gov) and the top of the letter must include "Docket Control #PF-1076". I have forwarded this email to CEA's in D-11 and D-12. District Directors, cotton breeders, etc. This is important. Don't fail to respond to this one. The environmental groups may pick this one to oppose, and we really need cotton seed that is free or almost free of aflatoxin. Call me if you have questions. SDL

### **BOLLWORM/TOBACCO BUDWORM EGG IDENTIFICATION KITS AVAILABLE**

At some point during the cotton season we are likely to experience a change in species of worms in cotton, usually from bollworm to tobacco budworm. In the past this shift has generally not been observed until control failures occur with a pyrethroid insecticide (effective on bollworm but not very effective on tobacco budworm). By the time the situation is realized, caterpillars may cause considerable damage and control expense is often great.

Agdia Corporation has developed an effective test kit (Hel-ID) for identifying bollworm and budworm in the egg stage. It has been used in our area for the past few seasons. Although we have not observed widespread tobacco budworm infestations the past few seasons, I would urge you to consider using this test kit, especially around peak bloom, to determine caterpillar species by examining eggs. It will be critical to do so during moderate or greater egg lays.

Information on the kits can be obtained from Ms. Willye Bryan, Product Manager, Agdia Incorporated, 1-800-622-4342 or 517-393-2871. Her Fax number is 574-264-2153. RDP

## POISON CONTROL CENTER HOTLINE

The national poison control center hotline number is 1-800-222-1222. Callers dialing this number will be automatically linked to the closest poison center. The centers have information about pesticides, poisonous plants, bites, stings etc. Centers field calls on approximately 2.2 million suspected poisonings per year, mostly involving young children. Household cleaners and chemicals make up the bulk of poisonous substances in homes, though perfumes, medications, and spider and animal bites can also lead to poisoning.

Stickers and other promotional materials about the centers can be obtained by calling the toll-free number. This information would be useful for your safety program. RDP

## INDIVIDUALS IN AGRICULTURE

Henry A. Wallace (1888-1965) changed the face of agriculture. He began inbreeding and cross-breeding corn to improve yield years before earning his college degree in agriculture in 1910. By age 15 he had disproved the conventional agrarian wisdom that ear appearance (row uniformity, kernel shape and length) could predict yield. Wallace developed the first commercial hybrid corn in 1923, and in 1926 founded the first hybrid seed corn company, which became Pioneer Hi-Bred International. He was appointed the 11<sup>th</sup> U.S. Secretary of Agriculture in 1933 and later served in various governmental capacities. Henry A. was the son of a previous Secretary of Agriculture, Henry C. Wallace.

This information came from Issue 1, 2002, "DuPont Magazine" and "Century of Service - The first 100 years of the United States Department of Agriculture". RDP

## INTERESTING INSECTS

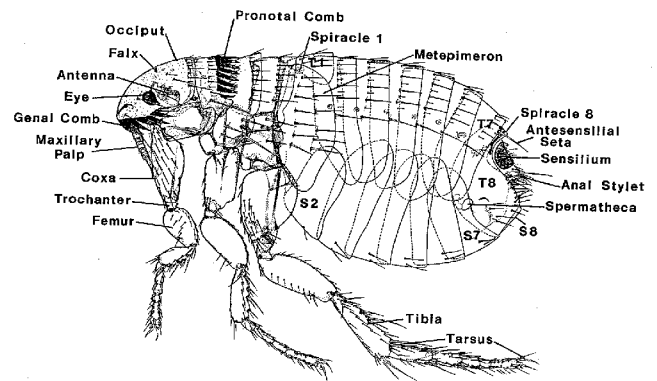
The 27<sup>th</sup> of 31 insect orders in this series is Siphonaptera (siphon = a tube; aptera = wingless). The order contains the fleas. They feed as adults (both sexes) on the blood of birds and mammals. A few species act as disease vectors, a few serve as the intermediate host of certain tapeworms; and a few burrow into the skin of their host. There are 2,300 species worldwide with 320 species in America north of Mexico.

A few species of fleas are worldwide in distribution and attack a wide range of hosts. However, most species are more or less restricted both as to type of host and geographic distribution. About 75% of all the species are parasites of rodents and about 5% are parasites of birds.

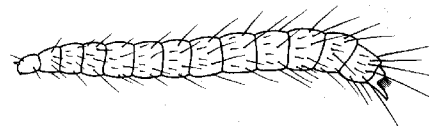
Flea eggs hatch into tiny, whitish, legless larvae, which are sparsely covered with bristly hairs. Flea larvae are quite active, but they are seldom seen because they hide in the nesting material of their host. They feed on organic material, including droplets of dried blood that have been passed by the adults during feeding, fecal material, and other productions of their host, and probably some plant material. When fully developed the larva spins a silken cocoon into which grains of sand and other debris are incorporated.

The most important disease transmitted by fleas is plague, or black death, an acute infectious disease caused by a bacillus bacteria. Three forms of plague occur in human beings: bubonic, pneumonic, and septocemic. The bubonic type is transmitted by fleas. Bubonic plague is a very serious disease because it often occurs in epidemic form and has a high mortality rate. Plague is primarily a disease of rodents and is spread from one rodent to another by fleas. Rodents thus serve as a reservoir for the disease. The disease in wild rodents is often called sylvatic plague. Fleas may transmit plague in three ways: (1) by regurgitation of the plague bacilli at the time of biting, a result of the blocking of the digestive tract by clumps of bacilli; (2) by infected feces of fleas being scratched into the skin; and (3) by the host ingesting an infected flea. Most plague transmission is by the first method.

Endemic typhus is a mild form of typhus caused by a *Rickettsia*. It is primarily a disease of rodents (chiefly rats), but may be transmitted to people by fleas and to some extent by body lice. RDP



Adult cat flea



Larva

4

View our newsletter earlier on the internet on the TPMA website (<http://www.tpma.org/>) by selecting "IPM newsletter" on the drop-down menu by going to "Coastal Bend" and "go". Another site is <http://agfacts.tamu.edu/~rparker>. Also pest management information is available at [www.txaac.org](http://www.txaac.org).

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