Austin County
5 Hr. CEU Conference

Four County Auction Center

Industry, Texas

December 13, 2024

TEXAS A&M AGRILIFE EXTENSION

5 HR CEU Conference

Friday, December 13, 2024
Four County Auction Center, Industry
Registration 12:30 p.m. - 1:00 p.m.
Program 1:00 p.m. - 6:30 p.m.

Speakers & Topics:

1:00pm - 1:10pm	**Welcome and Introductions** Bradley Rinn, *Chairman, Austin County Beef & Forage Committee*
1:10pm - 2:05pm	**Pesticide Laws and Regulations Update- LAWS & REGULATIONS** Dr. Don Renchie, *Agrilife Extension, Agriculture & Environmental Specialist*
2:05pm - 3:00pm	**Drift Management- DRIFT MANAGEMENT** Mrs. Rachel Walker, *Range & Pasture Specialist with Corteva*
3:00pm - 3:20pm	**Break**
3:20pm - 4:15pm	**Invora Herbicide Stewardship Training - LAWS & REGULATIONS** Dr. Stacy Hines, *Texas A&M AgriLife Extension, Rangeland Habitat Management Specialist*
4:15pm - 5:10pm	**Feral Hog Control & Updates- IPM** Mr. Jay Long, *Project Coordinator with Texas A&M Natural Resources Institute*
5:10pm - 5:30pm	**Break**
5:30pm - 6:25pm	**Dealing with Pasture Pest- GENERAL** Dr. Philip Shackelford, *Texas A&M AgriLife Extension, Regional Program Leader*
6:25pm - 6:35pm	**Wrap Up and Evaluation** Bradley Rinn, *Chairman, Austin County Beef & Forage Committee*

AUSTIN COUNTY
BEEF AND FORAGE COMMITTEE

Steve Blezinger

Curtis Brenner

Don Dryer

Richard Fry

Charles Goeke

Alfred Hall

Ricky Huff

William S. Jackson

Allen Kaminski

Jo Ed Lynn

Sarah Richardson

Bradley Rinn

Gregg Schubert

Dave Schulz

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CAPITAL FARM CREDIT

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TEXAS FARM BUREAU

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NOTES

TDA Q527
7/15

Texas Department of Agriculture
Pesticide Applicator Record

COMMISSIONER SID MILLER

Business/Applicator Name _____ **Address** _____

Application Date	Time Started	Name of the person for whom the application was made	Location of Land Treated	Site Treated	Wind Direction	Wind Velocity	Air Temp

Product Trade Name	EPA Registration Number	Target Pest	Rate of Product Per Unit	Method or Type of Equipment Used To Make Application	FAA "N" Number for Aerial Application Equipment:

Is Application Applied in Regulated County: □ Yes □ No	Regulated Herbicide Permit Number:

Licensed Applicator's Name and License Number	Non-licensed Applicator's Name Working Under Licensee	Total Acres or Volume of Area Treated	Total Volume of Spray Mix, Dust, Granules or Other Materials Applied Per Unit

Documentation used to verify training of non-licensed applicator (Mark Applicable Box)
□ Direct Supervisor Affidavit □WPS Handler Card □Signed & Dated Label

Application Date	Time Started	Name of the person for whom the application was made	Location of Land Treated	Site Treated	Wind Direction	Wind Velocity	Air Temp

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Notes

Notes

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Controlling Pasture Pests

Philip Shackelford, PhD.
Regional Program Leader ANR|4-H
Southeast Region

Texas A&M AgriLife Extension

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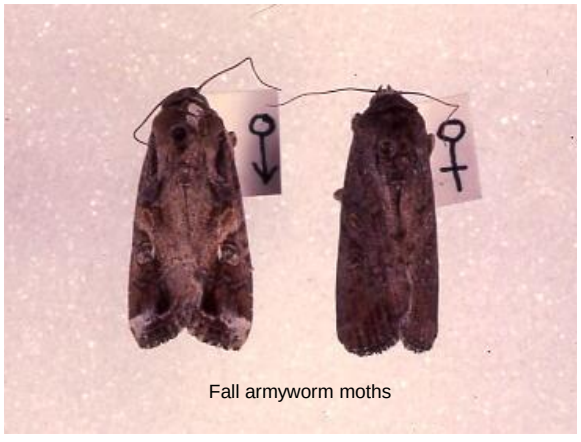
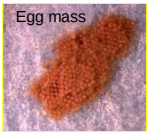

Fall armyworm moths

3

Life cycle of FAW



- 50 – 100 eggs/mass covered with grayish fuzz, eggs hatch 3-5 days
- Larval stages (6) take 14-28 days
- 85% food consumption in last instar (4 days)
- Pupate in soil (7-14 days)

4

Fall Armyworms

- Larvae feed for 2-3 weeks
- Full grown larvae 1 to 1 1/2 in.
- Final 2-3 days of feeding, eat 80% of the total foliage
- ½" worms can cause yield loss

5


Fall armyworm damage

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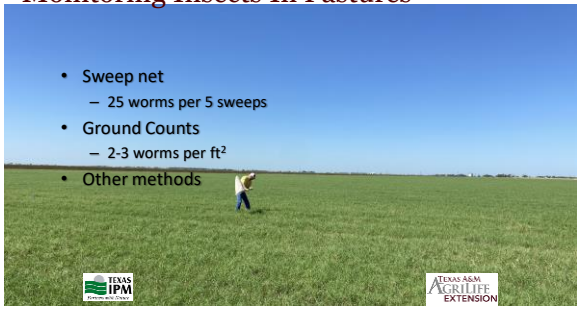
Monitoring Insects In Pastures



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Insecticides for armyworms

Class	Active ingredient	Trade names	Pre-grazing Interval (days)	Pre-harvest interval (days)
Pyrethroids	Cyfluthrin	Tombstone	0	0
	Beta-cyfluthrin	Baythroid XL, Sultrus	0	0
	Zeta-cypermethrin	Mustang, Mustang Maxx	When dry	0
	Lambda-cyhalothrin	Calvary, Firestone, Grizzly, Kendo, L – C Insecticide, Lambda T, Lambda-Cy, LambdaStar, Lamcap, Paradigm, Province, Ravage, Silencer, Warrior	0	7 for hay, 0 for forage
	Gamma-cyhalothrin	Declare	0	7
Benzoylureas	Diflubenzuron	Dimilin, Durant, Micromite, Unforgiven	0	1
	Methoxyfenozide	Intrepid, Invertid, Troubadour, TurnStyle, Zylo	0	7
Carbamates	Methomyl	Lannate, Nudrin	7	3
	Carbaryl	Sevin, Carbaryl	14	14
Diamide	Chlorantraniliprole	Vantacor (Prevathon)	0	0
Spinosyn	Spinosad	Blackhawk	When dry	3
Diamide + Pyrethroid	Chlorantraniliprole + Lambda-cyhalothrin	Besiege	0	7 for hay, 0 for forage

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Insecticide properties

Class	Active ingredient	Trade names	Properties
Pyrethroids	Cyfluthrin	Tombstone	• Fast acting • Short residual (3-5 days) • All worm sizes • Not rainfast • Contact only • Non-systemic • Inexpensive • Low toxicity • Broad spectrum
	Beta-cyfluthrin	Baythroid XL, Sultrus	
	Zeta-cypermethrin	Mustang, Mustang Maxx,	
	Lambda-cyhalothrin	Calvary, Firestone, Grizzly, Kendo, L – C Insecticide, Lambda T, Lambda-Cy, LambdaStar, Lamcap, Paradigm, Province, Ravage, Silencer, Warrior	
	Gamma-cyhalothrin	Declare	

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Class	Active ingredient	Trade names	Properties	
Benzoylureas	Diflubenzuron	Dimilin, Durant, Micromite, Unforgiven	• Slow acting (3-4 days) • Dimilin provides good residual (10-14 days) • Others provide decent residual (5-7 days) • Not rainfast • Diflubenzuron only small worms • Others get all sizes	• Must be eaten • Non-systemic • Inexpensive • Very low toxicity • Target specific
	Methoxyfenozide	Intrepid, Invertid, Troubadour, TurnStyle, Zylo		
Carbamate	Methomyl	Lannate, Nudrin	• Fast acting • Short residual (3-5 days) • All worm sizes • Not rainfast • Contact only • Non-systemic • Methomyl is highly toxic, Carbaryl is not very toxic • Moderately expensive • Broad spectrum	
	Carbaryl	Sevin, Carbaryl		

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Class	Active ingredient	Trade names	Properties
Diamide	Chlorantraniliprole	Vantacor (Prevathon)	• Fairly fast acting (several days) • Good residual (14-20+ days) • Rainfast • Must be eaten • All worm sizes • Translaminar systemic • Expensive • Very low toxicity • Target specific
Spinosyn	Spinosad	Blackhawk	• Fairly fast acting (several days) • Short residual (4-7 days) • Rainfast • Must be eaten • All worm sizes • Translaminar systemic • Expensive • Very low toxicity • Target specific
Diamide + Pyrethroid	Chlorantraniliprole + Lambda-cy	Besiege	See Vantacor but faster

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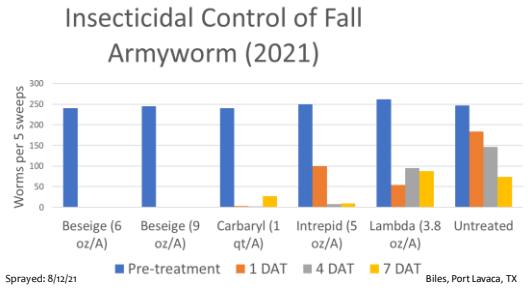

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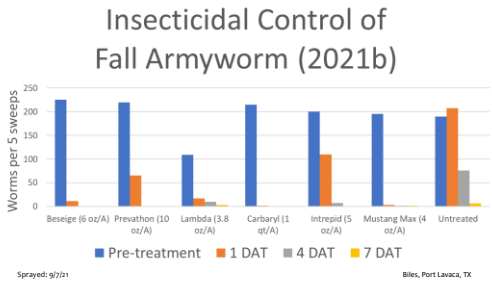

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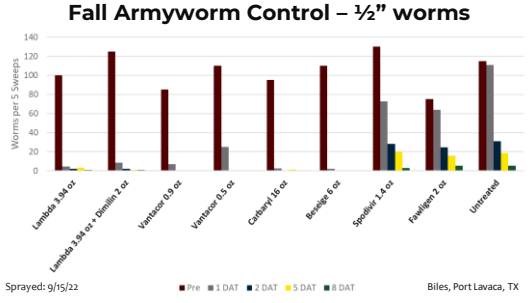

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Insect Management in Bermudagrass

- Fall Armyworm
  - Action Thresholds
    - Sweep Net
      - 25 worms / 5 sweeps
    - Visual
      - 2-3 / ft^2
  - Control
    - Pyrethroids
    - Vantacor
    - Shenzi
    - Besiege
    - Carbaryl
    - Intrepid

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Fall Armyworm Management Suggestions

- Cost of Treatment
  - Application: $4-8/A
  - Insecticide: $2-$15

	Rate	$ per Gallon	$ per acre
Beseige	4 oz/a	$ 300.00	$ 9.37
Vantacor	0.5 oz/a	$ 2,240.00	$ 8.75
Lambda-cyhalothrin	3.8 oz/a	$ 62.00	$ 1.84
Carbaryl	16 oz/a	$ 44.50	$ 5.56
Intrepid	4 oz/a	$ 237.00	$ 7.41

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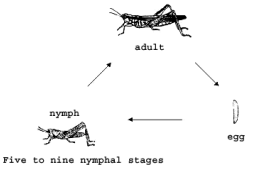
A Grasshoppers Life Cycle



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Grasshopper Fact

- It is estimated that 62 grasshoppers per square yard consume vegetation at the same rate as 2.5 animal units.
- 15-28 grasshoppers per square yard represents a severe infestation.

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Adult Grasshopper Infestation ratings as number/sq-yard

Infestation/sq-yd	Rating
0-2	Non-economic
Light	3 - 7
Threatening	8 - 14
Severe	15- 28
Biblical	>28

- If along the pasture margin, treat at ≥ 21 hoppers/sq-yd
- In the pasture, treat at ≥ 8 hoppers/sq-yd

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Insecticides for grasshoppers

Class	Active ingredient	Trade names	Pre-grazing interval (days)	Pre-harvest interval (days)	Properties
Pyrethroids	Cyfluthrin	Tombstone	0	0	Cheap, fast, not rainfast Short residual, will only kill what is in the field at the time
	Beta-cyfluthrin	Baythroid XL, Sultrus	0	0	
	Zeta-cypermethrin	Mustang, Mustang Maxx	When dry	0	
	Lambda-cyhalothrin	Calvary, Firestone, Grizzly, Kendo, L – C Insecticide, Lambda T, Lambda-Cy, LambdaStar, Lamcap, Paradigm, Province, Ravage, Silencer, Warrior	0	7 for hay, 0 for forage	
	Gamma-cyhalothrin	Declare	0	7	
Benzoylureas	Diflubenzuron	Dimilin, Durant, Micromite, Unforgiven	0	1	Cheap, decent residual, not rainfast, only kills small hoppers. Consider mixing with a pyrethroid
Carbamates	Carbaryl	Sevin, Carbaryl	14	14	Moderately expensive, not rainfast, short residual
Diamide	Chlorantraniliprole	Vantacor (Prevathon)	0	0	Expensive, little slow, long residual control, effective at low rates
Diamide + Pyrethroid	Chlorantraniliprole + Lambda-cyhalothrin	Besiege	0	7 for hay, 0 for forage	Expensive, fast acting, long residual control, effective at low rates

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Long Term Grasshopper Control Study

- Compare effectiveness of insecticides
- Compare cost of control
- Evaluate length of control
- Evaluate grass response

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Materials/Methods

Test years:	2006, 2008, 2010, 2012, 2014
Location:	Herbert Schumann Farm Austin County
Soil:	Sandy
Grass:	Coastal bermudagrass
Plot size:	30 acres
Sprayer:	TerraGator
Spray volume:	20 gpa
Nozzles/pressure	Flat fan, 20-25 psi
Survey method:	15-inch sweep net

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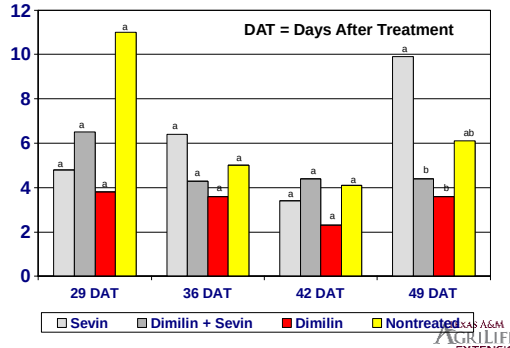
Grasshoppers per 5 sweeps, Austin Co., 2006



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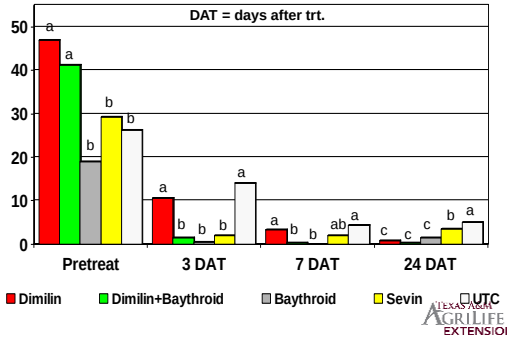
Grasshoppers per 5 sweeps Austin County, 2010



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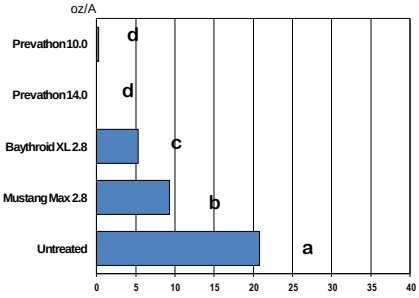
Grasshopper Control

number per 5 sweeps @ 28 DAT



Austin County, 2012

Philip Shackelford, CEA & Roy Parker, EE

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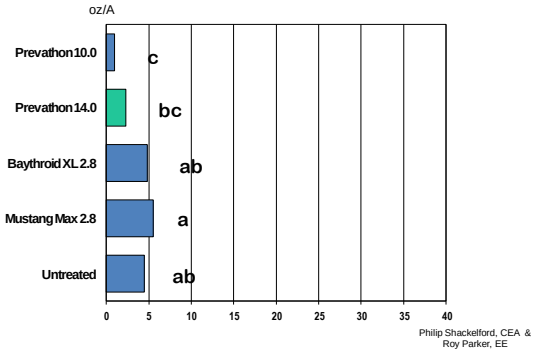
Grasshopper Control

number per 5 sweeps @ 122 DAT



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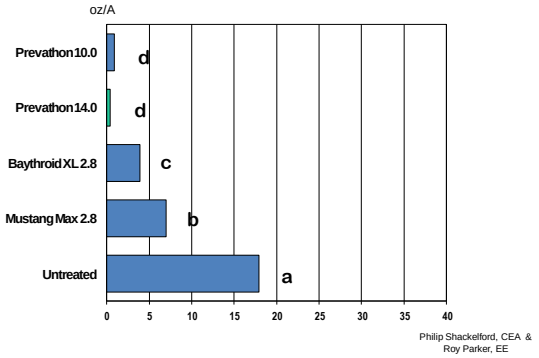
Grasshopper Control

number per 5 sweeps @ Post-treat avg.



Philip Shackelford, CEA & Roy Parker, EE

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Key things to consider

- How severe and widespread is the grasshopper problem?
  - If re-infestation is not a big concern, you can go cheap and use a pyrethroid or pyrethroid + Dimilin for a little added residual control if not rainy
  - If there is a substantial risk of re-infestation, use Vantacor or Besiege to get residual control of migrating hoppers.

Insecticide	Rate	Acres covered per gallon	$/gallon	$/acre
Besiege	4 fl-oz/ac	32.0	$290.00	$9.06
	6 fl-oz/ac	21.3		$13.62
	9 fl-oz/ac	14.2		$20.43
Lambda-Cy	3.8 fl-oz/ac	33.7	$80.00	$2.38
Carbaryl	32 fl-oz/ac	4.0	$44.00	$11.00
Dimilin	2 fl-oz/ac	64.0	$240.00	$3.75
Vantacor (Prevathon)	0.7 fl-oz/ac (8 fl-oz/ac)	45.7/qt (16/gal)	$450/qt	$9.84
	1.2 fl-oz/ac (14 fl-oz/ac)	26.7/qt (9.1/gal)		$16.88
	1.7 fl-oz/ac (20 fl-oz/ac)	18.8/qt (6.4/gal)		$23.90

Lambda Cy + Dimilin = $6.13/ac

Texas A&M AgriLife Extension

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The Red Imported Fire Ant,

Solenopsis invicta Buren (Hymenoptera: Formicidae)

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Federal and State Regulations:

USDA Quarantine and State's Agricultural Code

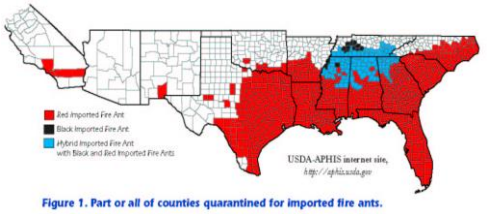

Figure 1. Part or all of counties quarantined for imported fire ants.

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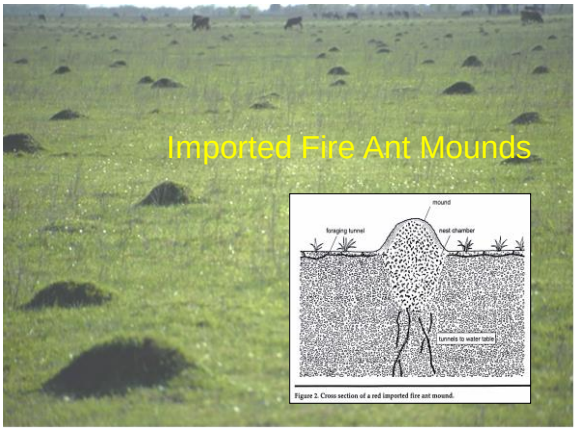

Figure 2. Cross section of a red imported fire ant mound.

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Mound Development

- 1-2 months (top)
- 6-9 months (right)

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Mating Flight

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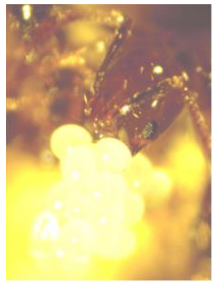
Oviposition - Egg laying



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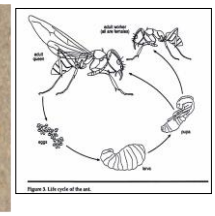
Caste Development and Life Stages



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Fire Ant Expenditures by Sector

Sector	Damages & Expenditures
Residential Households	$702,365,668
Electric and Communications*	$146,500,000
Agriculture	$90,572,032
Cemeteries	$63,922,406
Golf Courses	$47,294,894
Commercial Businesses	$45,898,370
Schools	$42,253,421
Airports	$26,620,789
Sod Producers	$13,371,468
Churches	$9,455,328
Multi-Family Households	$9,178,695
Nurseries	$5,524,861
Cities	$1,127,469
Institutions	$130,793
Total	$1,204,216,194

* Estimate taken from Teal, S., E. Segarra, W. Polk. " Spatial Economic Impacts of RIFA on Selected Economic Sectors of Texas: The Electrical and Communication Equipment Case," Department of Agricultural and Applied Economics, Texas Tech University, Lubbock, 1999.

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Impact on Hay Production

- Quick bale removal
- Dragging
- Disc-type cutters

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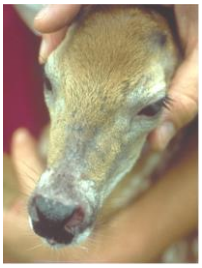
Impact of Livestock



- Recruitment to soft moist tissues
- Birth on an ant mound

Impact to Wildlife



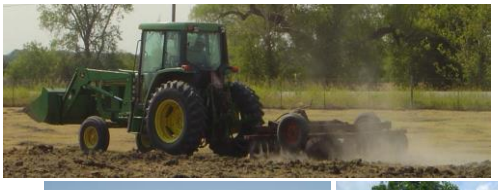

Impact on Quail

- Texas Quail Initiative Study
- Are fire ants the cause of quail decline?
- Areas treated with insecticide had a 60% survival rate for 21-day old chicks
- Untreated areas - 22% survival rate

Tall Fire Ant Mounds in Pastures

Mound height of 14.9 ± 2.0 (S.D.) inches; 25 inch max in "drag only" plots 1-4, Austin Co., TX, April 15, 2009

Ant Mound Dragging and Leveling



Methods and Materials

- Twenty 1-acre plots (208 by 208 ft square) were established
  - 5 treatments assigned to rows of 4 plots each (non-randomized) for the purpose of photographing effects of fire ant mound leveling impact.
- Treatments
  - Mound leveling only treatment in plots 1-4
  - Baited (Extinguish Plus) only plots 5-8
  - Untreated check plots 9-12
  - Baited (Extinguish Plus) and Leveled treatments in plots 13-16
  - Baited (Esteem) only plots a,b,c,d
  - Height of active red imported fire ant mounds were measured and counted
- Sub-plots were established in the center of each 1-acre plot by marking them with a metal re-bar pole and using a 82-ft tape measure affixed to it to provide a radius while documenting mounds while walking around the sub-plot circumference.

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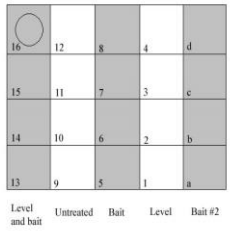
Fig. 1. Plot plan for four treatments (Bait = Extinguish® Plus; Bait #2 = Esteem® in a Austin Co., TX, cattle pasture indicating plot designations (numbers or letters) and ½-acre sub-plot for monitoring ant colonies in plot 16, April 2009.



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Mound Leveling compliments of H. R. Ueckert Co., Inc. Bellville, TX

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Results of Ant Mound Leveling

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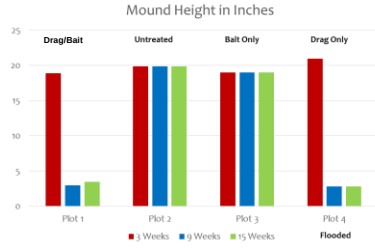

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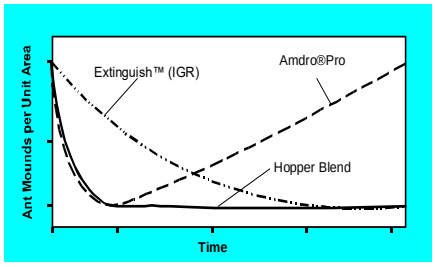
Treatment: The "Hopper Blend" Product (hydramethylnon plus methoprene)



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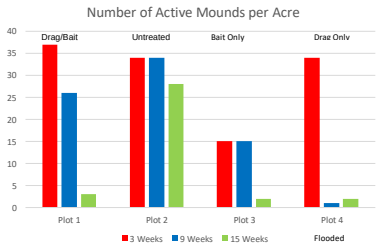

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Conclusions

- Leveling mounds improves aesthetic value of land and reduces field-working equipment damage, pesticide calibration problems, and field worker fatigue
- Ant bait products reduce or eliminate imported fire ant colonies, but do not necessarily eliminate tall, hardened mounds
- Flooding can reduce ant populations in leveled field areas

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Fire Ant Baits for use in Pastures

- **Advion Fire Ant Bait**

- **Fenced pastures, but only non-crop/non-grazed**
- **Active Ingredients:**
  - Indoxacarb
    - Direct toxicant, will kill whatever eats it
- **Application Rate:**
  - 1.5 lbs/ac
- **Cost:**
  - $325 / 25 lb bag
  - $19.50 / acre

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Fire Ant Baits for use in Pastures

- **Extinguish Professional**
- **Active Ingredients:**
  - Methoprene
    - IGR, will kill larvae and can sterilize the queen
- **Application Rate:**
  - 1.0 – 1.5 lbs/ac
- **Cost:**
  - $204 / 25 lb bag
  - $8.16 / acre (low rate)
  - $12.24 / acre (high rate)

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Fire Ant Baits for use in Pastures

- **Extinguish Plus**
- **Active Ingredients:**
  - Hydramethylnon
    - Direct toxicant to whatever eats it
  - Methoprene
    - IGR, will kill larvae and can sterilize the queen
- **Application Rate:**
  - 1.5 – 2.0 lbs/ac
- **Cost:**
  - $218 / 25 lb bag
  - $13.08 / acre (low rate)
  - $17.44 / acre (high rate)

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Fire Ant Baits for use in Pastures

- **Esteem Ant Bait**
- **Active Ingredients:**
  - Pyriproxifen
    - IGR, will kill larvae and can sterilize the queen
- **Application Rate:**
  - 1.0 – 2.0 lbs/ac
- **Cost:**
  - $302 / 25 lb bag
  - $12.08 / acre (low rate)
  - $24.16 / acre (high rate)

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Bermudagrass Stem Maggot

- Native to Asia
- First noticed in Georgia in 2010
- First noticed in Texas (Waller County) in 2012

Figure 6. The larva feeds inside the bermudagrass stem.

TEXAS A&M AGRILIFE EXTENSION

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Life Cycle

- The fly lays an egg on the bermudagrass leaf and the larva emerges approximately 2-3 days later.
- The larva bores into the upper portion of the tiller, feeding on the sap from the stem.
- Chlorosis (leaf yellowing) will be seen 1-3 days later.
- The mature larva will exit the stem and pupate in the soil for 7-10 days, after which the fly will emerge.
- Work done at the University of Georgia has shown the flies can live for approximately 18-20 days.
- Multiple overlapping generations during the season.

TEXAS A&M AGRILIFE EXTENSION

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Maggot inside bermudagrass stem

TEXAS A&M AGRILIFE EXTENSION

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Reasons for Concern

- Reduction in yield
  - Burrows into last node of stem where leaf emerges
  - If left untreated – up to 80% loss of tillers (new leaves)
- No systemic insecticides labeled for forages
- No preventative insecticide currently on the market

TEXAS A&M AGRILIFE EXTENSION

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Damage Symptoms

TEXAS A&M AGRILIFE EXTENSION

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Decision making & treatments

Value of Bermudagrass Hay	Value ($/lb)	Economic Injury Level	Economic Threshold (0.7 EIL)
$180/ton	0.09	16%	11%
$140/ton	0.07	21%	15%
$100/ton	0.05	28%	20%
$80/ton	0.04	34%	24%
$60/ton	0.03	46%	32%
$40/ton	0.02	69%	48%

Common sense: if neighboring pasture is infested and cut, in about 7 days emerging flies may move to your pasture

- Based application cost of $10/acre
  - Chemical + surfactant + application
- Rule of thumb: treat when 20% of stems show evidence of BGSM injury
- Treatment (2 opitons):
  - Cut the hay
    - Cut within a week
    - Spray 7 days after cutting
  - Insecticide
    - Pyrethroids are the only choice at this time
      - Will not affect the maggots
      - Kills the adults
    - Retreat in 7 days after first application

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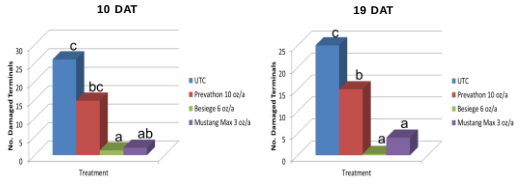
Bermudagrass stem maggot insecticide efficacy



Stephen Biles, Texas A&M AgriLife Extension

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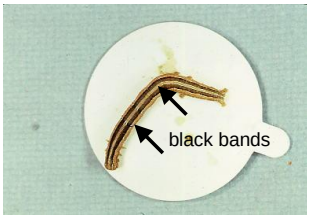
Striped Grass Looper

- Often found among fall armyworm infestations



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White grub & June beetle

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Common blister beetles

Wing covers soft and flexible

- Pronotum (thorax) narrower than head (elytra)
- Common species contain cantharadin – blisters skin
- Larvae feed on grasshopper eggs
- Potential problems in Alfalfa

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Desert termites

- Several species in Texas
- Prefer higher clay content soils
- Damage to green grass?
- Major damage by removal of surface debris
- Breakup chimneys & chemical treatment

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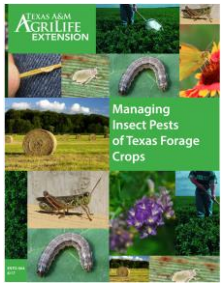
Questions



TEXAS A&M AGRILIFE EXTENSION