Tackling Fire Ants, after a Student Death, a Case Study for School IPM in Texas.

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Abstract

In September 2013, a middle school student died after numerous fire ant stings during a junior high football game in Corpus Christi, TX. Allergic reactions to fire ant stings are rare, but require quick thinking and proactive first aid work. Shortly after this, Texas A&M AgriLife Extension School IPM program team was contacted to assist in reviewing the districts’ IPM program, but also review the fire ant management program and make recommendations. The review came in two phases, one to assess the actual school IPM program under the TX Dept of Agriculture’s school IPM rules, and the second phase was to review the fire ant management protocols and develop a new treatment protocol for the entire district. Corpus Christi ISD is located on the Gulf coast of TX in a semi-urban area. The district boasts it covers 63 square miles and has 37 elementary schools, 11 middle schools, 7 high schools, and 3 special campuses, with a total student enrollment of 39,414. To manage this, the district has one IPM Coordinator and 2 pesticide applicators and was using coaches to help with reporting fire ant mounds. After several meetings and revisions to the fire ant management plan for CCISD, the district implemented an improved fire ant management program in spring 2014. The result was they spent less money, have had fewer calls and complaints about fire ants and the coaching staff is now using more land than the 1.5 acres they were using for games.

Fire Ant Management

Before Incident by CCISD

- Schedules monthly inspections, supplemented with inspections by coaches/teachers
- Coaches called by telephone to report fire ants on a football field
- 65% of the schools had fire ants
- Coaches/Teachers were not using proper application techniques
- Thresholds were set, but fire ants were not treated in many instances

After Incident Before Baiting Program

-Implemented a District wide fire ant baiting program for all campuses approximately 540.6 acres
- The baiting program utilized:
  1) Implemented a District wide fire ant baiting program for all campuses approximately 540.6 acres
  2) The baiting program utilized: Spring – Broadcast fire ant application (Extinguish Plus® chosen) Summer – Broadcast fire ant application (Advion® chosen) Fall – Broadcast fire ant application (Extinguish Plus® chosen) Single mound treatments if needed for hard to control mounds
- 3 Most applications are made to campuses after hours, or on weekends with the products identified in spreadsheet. Spreadsheet developed by Brett Bostian lists each campus, total acres, acetic acid fields and campus acres. Products and costs are listed in the spreadsheet as well.
- 4 Long residual fipronil granule (Top Choice® chosen), spread in February, is only utilized at the main competition sports complex, Cabaniss Field 6.9 acres.
- 5 All facilities are posted as required by Texas Department of Agriculture under the school IPM rules.

Impact – Results of new fire ant management program

The result since treating the entire campus:
- CCISD found the baiting approach to be extremely effective in reducing fire ants, and was pleased with the fire ant baiting program.
- CCISD spent less money per unit area of land for better fire ant management.
- After subsequent treatments with Extinguish Plus & Advice, calls and complaints about fire ants in the district have become very limited.
- The need for volunteers to check for fire ant mounds has disappeared since there was a significant decrease in visible & active ant mounds after the 1st application.
- The CCISD coaching staff is now using more land than the 1.5 acres they were using for games.
- CCISD Facilities and Maintenance Department has seen a greater than a 50% decrease in work orders for ants with many of the work orders being for ants other than fire ants.
- 316 work orders for fire ants from July 2012 – September 2013 (21/month)
- 285 work orders for ants September 2013 – February 2015 (< 15/month, 50% of which were on other ants not fire ants)

Additional consequences as a result of this incident:

Several districts changed their fire ant management practices—choosing to use baits on all campus property, not just athletic fields.
- Additional education for staff on fire ants, fire ant stings and first aid response.
- B4th Regular Session of Texas Legislature (2015)
- Four (4) Bills were introduced relating to the use of epinephrine auto-injectors on public and open-enrollment charter school campuses and off-campus school-sanctioned events.
- Excerpt from Bills: “may maintain at each campus a supply of anaphylaxis medicine, including an epinephrine auto-injector, that may be administered to a person on campus or at an off-campus school event experiencing an anaphylactic reaction, regardless of whether the medicine or auto-injector was prescribed for that person. For anaphylaxis medicine to satisfy this subsection, the medicine may not have an expiration date that has passed.”

Texas A&M AgriLife Extension (Cooperative Extension Response)

- Corpus Christi ISD contacted Extension Program Specialist for School IPM, Janet Hurley on September 13, 2013 for assistance with responding to parents, teachers and school administrators regarding their IPM program.
- CCISD was sent a copy of the AgriLife Extension publication Critique of CCISD Fire Ant Control Program by Dr. Paul Nester
- CCISD’s IPM program and reviewed their fire ant management protocols. This site audit was done in conjunction with a private firm who reviewed the District’s emergency response protocol as well.
- The audit result was as follows:
  - Education of CCISD employees about IPM program
  - Parent notification about IPM efforts
  - Distribute IPM program information district wide
  - Proper posting to visibly display efforts
  - Effective monitoring
  - Pest sighting logs can be good monitoring
  - Critiqued the present fire ant management effort
  - Recommended proactive fire ant management strategy
- After Ms. Hurley’s site visit, Dr. Paul Nester, Extension Program Specialist IPM and resident fire ant guru was asked to work with CCISD to review the District’s current practices and make recommendations for future efforts.

New Fire Ant Management Strategy for Corpus Christi Independent School District

1) Implemented a District wide fire ant baiting program for all campuses approximately 540.6 acres
2) The baiting program utilized:
  a) Spring – Broadcast fire ant application (Extinguish Plus® chosen)
  b) Summer – Broadcast fire ant application (Advion® chosen)
  c) Fall – Broadcast fire ant application (Extinguish Plus® chosen)
  d) Single mound treatments if needed for hard to control mounds
3) Most applications are made to campuses after hours, or on weekends with the products identified in spreadsheet. Spreadsheet developed by Brett Bostian lists each campus, total acres, acetic acid fields and campus acres. Products and costs are listed in the spreadsheet as well.
4) Long residual fipronil granule (Top Choice® chosen), spread in February, is only utilized at the main competition sports complex, Cabaniss Field 6.9 acres.
5) All facilities are posted as required by Texas Department of Agriculture under the school IPM rules.

Images provided by Wizzie Brown, Paul Nester, Mike Merchant, and Google Maps.

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Above Image was taken from Google Maps—you will notice the fire ant activity around the student field.