



# Annual Program Report 2005



## Customer Service



## Research



## Surveillance

## Education

---

**Anastasia Mosquito Control District  
of  
St. Johns County, Florida**

# Annual Program Report, 2005

## Table of Contents

Mission & Goals.....	1
A letter from the Chairperson of the Board of Commissioners.....	2
A note from the District Director.....	3
Report from the Board of Commissioners.....	4
Board of Commissioners and appointed officers.....	5
Personnel.....	6
Customer/Professional Service	
1. Service requests and operations summary .....	7-9
2. Customer Satisfaction.....	10
3. Professional Service.....	11
Surveillance	
1. Mosquito Population.....	12-13
2. Environmental parameters.....	12-13
3. Arbovirus.....	14
Operation Control	
1. Source reduction/tire removal.....	15
2. Larvicides and larval control.....	16
Adult Control	
1. Adulticides.....	17
2. Adult Control Programs.....	18
3. Personal Protection.....	19
Education	
1. Public education.....	20-21
2. Publications.....	22
3. Continuing education.....	23-24
Research	
1. Mosquito magnets as barrier treatment.....	25
2. Pesticide & hand fogger evaluation.....	25
3. Resistance testing.....	25
Aerial Application.....	26
Administrative & Supply Service	
1. Budget.....	27
2. Fund.....	27
3. Personnel.....	27
4. Awards.....	27
5. Policy.....	27
6. Insurance.....	27
7. Contracts.....	27
8. Organization Chart.....	27
9. Equipment and Facility.....	27
10. Inventory.....	27
11. Safety.....	27
12. Repair and Maintenance.....	27
Appendix	
1. Financial report.....	28
2. Chemical inventory.....	29
Committee & contributors	
Acknowledgements	

## **Mission & Goals**

To serve and protect the St. Johns County residents through the prevention and control of mosquitoes and mosquito-borne diseases.

To reduce/control both pestiferous and disease-carrying mosquito populations to a low threshold using a variety of methods (Integrated Pest Management) to minimize potential impacts on people and the environment.

To become recognized as one of the leading mosquito control districts.

January 12, 2006

Dear Board Members and All Employees:

Thanks for giving me the opportunity to serve the Board, the employees and the taxpayers as the Chairman, Board of Commissioners of Anastasia Mosquito Control District, St. Johns County in 2005. As the Chairperson, I have spent a lot of time with the District Director, Administrative Office Staff, District Attorney, and Chief of Finance about AMCD's business in 2005. We held a total of 16 board meetings, including 4 special meetings for a District Director evaluation (January 27, 2005), selection of a new Director (June 2, 2005), a final public hearing for the budget (September 22, 2005), and financial management (November 3, 2005). Under the Board's direction and leadership, and the Administrative Staff and all the employee's efforts and support, our AMCD had a fruitful and wonderful year and we have accomplished a lot, for example:

The Board approved to conduct a customer satisfaction survey in order to improve AMCD's service & quality. AMCD used 26 full time employees (it was 37 in 2003-2004) and less tax money to provide a good service in 2005.

AMCD paid more attention to mosquito population and mosquito-borne disease surveillance program. In 2005, 86 sentinel chickens have been tested positive for WNV, EEE, and HJ, 2 horses positive for WNV, and 1 pool of mosquitoes tested positive for EEE. However, we do not have any human cases. This indicates that AMCD did a good job.

AMCD enhanced public education & employee training, created & hired an Education Specialist, conducted public education more than 100 times at various locations such as: festivals, community events, local associations, clubs & organizations, and held open house and consultation meetings. Our board members and district staff organized 2 workshops, 2 symposiums, and 2 collaborative meetings for AMCA and FMCA. AMCD made many presentations with many organizations. In addition, the Board created an education fund and AMCD provided 8 training classes for employees.

The Board approved a collaborating research contract with USDA's Mosquito & Fly Unit. AMCD received \$8,000 in grant funds from Black Flag Company and Navy, and many technical samples and some equipment. AMCD conducted several applied research projects, such as mosquito magnet, hand fogger, and pesticide resistance.

AMCD has conducted a successful aerial application when the WN virus was present in a large number of sentinel chickens and at emergency situations. So far, AMCD received only 3 negative complaints about the aerial spraying.

Administrative office staff now is in good shape after a completed change. Within 1 year, we appointed a new Director and 1<sup>st</sup> time evaluated the former Director and the new Director's performances. The Board revised the AMCD's mission and goals, and approved the next 5 years' work plan emphases. The Board brought the financial and business management back to AMCD's office and hired a new accountant.

The Board made several new policies such as: computer policy, employee continuing education, research agreement and rule, and employee informed consent.

Overall, currently, AMCD is in good shape and I am confident that we can provide the best service for our taxpayers. Please support our new Chairman and AMCD office staff and employees to reach our goals. Thanks for your support.

Sincerely,

Mrs. Emily B. Hummel, Chair, 2005

### **Note from the District Director**

Anastasia Mosquito Control District (AMCD) of St. Johns County, Florida is a special independent district and a professional service organization. Our employees are required to hold an active Public Health Pest Control License issued by the Department of Agricultural and Consumer Service (DACS). Also, all licensed employees are required to have continuing education credits (CEU) to keep their knowledge about mosquito control current.

AMCD is governed by the Board of Commissioners. Five members of the Board are elected by local residents. The Board of Commissioners elects a Chair, Vice Chair, and Secretary-Treasurer annually. The Board hires a Director to run the AMCD business and daily operation, an Attorney and an Auditor/CPA to advise the Board about legal items and financial analysis. The Board of Commissioners sets the policy and makes major decisions, and the Director implements the Board's policy and decisions.

The programs are a guideline for AMCD's daily operation. We are all here to support the programs. On May 12, the Board of Commissioners' meeting revised our AMCD's mission and goals, and approved the program catalogues, including Customer /Professional Service, Surveillance, Education, Operation Control, Research, Aerial, and Administrative and Supply Service. Also, the Board of Commissioners decided to conduct AMCD's program review in early 2006 and hopes to improve our programs' service and make sure we are doing what is in the best interest of the taxpayers.

In 2005, the Board of Commissioners and all employees worked very hard to conduct each of our programs. We accomplished a significant level in customer service, surveillance, public education and employee continuing education in spite of changes in administration and management. AMCD currently is doing well and we have lined up a good plan for the future. "Thank you" to all the board members and employees for your support and service to the AMCD's programs.

This is the first year of the AMCD's annual program report. Our annual comprehensive financial report is also available. As a taxing authority, we welcome suggestions and promote participation from the citizens of St. Johns county or any concerned party.

Dr. Rui-De Xue, District Director

## **Report From the Board of Commissioners**

The year 2005 has seen extremely significant changes at the Anastasia Mosquito Control District. New Board members Mrs. Barbara Bosanko and Mrs. Rita Cornwell were seated in January, joining current Commissioners Mrs. Mary Willis, Mrs. Emily Hummel, and Mrs. Beth Bowen, thus comprising the first all-female Board since AMCD's inception in 1948. The new Board adopted a Handbook for Commissioners that had been developed during 2004, detailing the duties and responsibilities of Board members.

During 2005, AMCD made a smooth transition to GASB-34, the new governmental accounting system. The Board also reviewed all AMCD insurance policies and found that in some instances, the District was over-insured. Some coverages were dropped and others reduced, resulting in a substantial savings to the taxpayers.

Commissioners held special meetings to update job descriptions and salary ranges, and they also developed and implemented a director evaluation process, the first time this had been done at AMCD. Throughout the year, Commissioners represented AMCD at state meetings - the Dodd Short Courses in Gainesville and the Florida Mosquito Control Association's Spring and Fall meetings. These conferences give Commissioners the opportunity to keep abreast of the newest methods of mosquito control, allowing for interaction and information sharing with personnel and Commissioners from other districts.

With the resignation of AMCD's Director, Steve McEvoy in April, the Board of Commissioners began a nationwide search to find a new Director, and in June, Dr. Ruide Xue, AMCD's entomologist, was hired. Dr. Xue has developed a five-year plan for AMCD, and his vision and foresight signal a new direction for the District. A new position of Education/Public Relations Specialist was created so that AMCD could better educate and interact with the citizens that we serve. The District ended its contracts with the accounting firm of McGhin, Calhoun and Sundeman and hired its own accountant to perform all financial and accounting tasks in-house.

In September, the Board voted to purchase 25 acres of land at a cost of \$1,250,000, with monies coming from AMCD's reserve funds. The property is located just south of the Agricultural Center near the intersection of S.R.16 and I-95. This location is ideal for the centralization of AMCD, and its' size meets FAA requirements for a helicopter landing pad, thus allowing for aerial operations in the future. Plans for 2006 include the re-zoning and development of a site plan for the property.

In September, the Board voted to reduce AMCD's 2006 millage rate to 0.1550, a reduction of 22% from the 2005 rate. This follows decreases of 12% in 2005 and 8% in 2004; AMCD was the only government entity in St. Johns County that voted for decreases in its tax rate the last two years.

The Anastasia Mosquito Control District strives to provide the best protection possible for the safety and well-being of county residents, while employing control methods that have the least impact on our environment. We are constantly searching for better ways to do our job and providing taxpayers with the best service at the lowest cost.

Commissioner Beth R. Bowen 1-17-06

**Board of Commissioners & Appointed Officers**

Mrs. Emily B. Hummel, Chairperson  
Mrs. Barbara H. Bosanko, Vice Chairperson  
Mrs. Rita J. Cornwell, Secretary-Treasurer  
Mrs. Beth R. Bowen, Commissioner  
Mrs. Mary T. Willis, Commissioner



***Appointed Officers by the Board***

Dr. Rui-De Xue, District Director  
Mr. Geoff Dobson, District Attorney  
Mr. John Sundeman, District Chief of Finance

**Personell:**

***Full time employees:***

Allen, Jr. John	Inspector/Sprayer I I
Bear, Jimmy	Inspector/Sprayer III
Bolduc, Jacque	Inspector/Sprayer II
Boone, John	NW Supervisor
Daniel, Kenneth	Administrative Office Assistant (Hired 9/26, 2005)
Gaines Marcia	Base Supervisor
Griggs, Milton	Inspector/Sprayer II
Hendricks, Cathy	Inspector/Sprayer II
Hockla William	Inspector/Sprayer II
Kendrick, Patrick	Inspector/Sprayer II
LeBlanc, Gina	Education Specialist (Hired 9/26, 2005)
Mills, Michael	Inspector/Sprayer II
Price, Vincent	Inspector/Sprayer II
Scanzani, Elaine	Inspector/Sprayer II
Schneider, Edward	Inspector/Sprayer I
Smith Loren	Inspector/Sprayer II
Smith Michael	PV Supervisor
Solana, Steven	Inspector/Sprayer II
Steele, Steven	Inspector/Sprayer I (Hired 11/1,2005)
Strickland, David	Inspector/Sprayer III
Taylor, David	SW Supervisor
Tedford, Brooke	Accountant (Hired 12/12/2005)
Weaver, Richard	VCMS Coordinator
Wells, Eugene	Mechanic
Whatley, Paul	Inspector/Sprayer II
Wynn, James	Mechanic
Xue, Rui-De	Director/Entomologist

***Full time employees (Contributions in 2005)***

Hersey, John	Mechanic (retired 2/28,2005)
Leonard, Judith	Office Specialist (left 2/28/2005)
McEvoy, Steve	Director (left 4/14/2005)
Newmans, Chris	Inspector/Sprayer II (Left 10/14,2005)
Santoro, Alex	Biological Technician (Left 12/16/2005)
Woodburn, Melissa	Administrative Office Assistant (Left 9/9,2005)

***Seasonal & part time employees (6 months or night time only)***

Adams, Nadine	Seasonal Inspector
Bach, Meri	Seasonal Inspector
Burgenstock, William	Seasonal/Lab Assistant
Diamond, Rachel	Lab Assistant (1 week)
Downey, Tom	Seasonal Inspector
Hoyt Nicole	Part time receptionist
Kriener, Michelle	Seasonal Inspector
Lockhart, Quentin	Part time fogger
Parker, Dudley	Part time fogger (3 months)
Rasmussen, John	Part time fogger
Ray, Jessica	Part time fogger (1 month)
Spurlock, Michael	Part time fogger
Traugh, Allen	Part time fogger
Wells, Joseph	Part time fogger



## Customer & Professional Service

### I. Service Requests

All service requests are entered into the Vector Control Management System, which is a database used by the district to keep track of all service requests, chemical use and employee time records.

Most service requests are called in, some are received by the Inspector/Sprayers while on their route, others are received via e-mail, no matter how a service request is received it is entered into the computer and is assigned to an Inspector/Sprayer for that area. Each Inspector/Sprayer has a Pocket Computer assigned to them. This allows them to view the service request in the field.

Service requests are taken care of as soon as possible. The Inspector/Sprayer will go to a service request and check the area for standing water and containers that may be holding water. If it is standing water that is causing the problem, the Inspector/Sprayer will treat the area as needed. If it is containers that are causing the mosquito problem, the Inspector/Sprayer will empty the container if it is not too large. If they are not able to empty the container they will put a pesticide in to stop the mosquitoes from breeding for a short time and let the owner know what is causing the mosquito problem and what they can do to help eliminate the problem. The Inspector/Sprayer will always try to speak to someone about the mosquito problem they are having. If no one is home they will leave a door hanger to explain what they found and recommend prevention tips.

If the service request is for Adulticiding (fogging), the area will be checked for standing water and a landing rate count will be done. A landing rate count is where the Inspector/Sprayer will stand for one minute and count how many mosquitoes land on them, we need five or more in a minute to justify adulticiding.

Adulticiding is done between 3:00 am to 6:00 am or in the evenings from 6:00pm to 10:00 pm. Unless the person requests to speak to the Inspector/Sprayer, they may not be aware that we have taken care of their request.

State law requires that we have justification before adulticiding. Service requests are part of our justification process for adulticiding. They also help to give us an idea of what is going on in different areas of the county.



# OPERATIONS SUMMARY

## ACTIVITY SUMMARY

<u>Operation</u>	<u>Hours</u>
Administrative	7451.8
Adulticide	2031.2
Assist	963.3
Building Main.	3621.0
Calib	11.0
Chemical	96.1
Chicken Survey	2678.5
Dry Ice	2.3
Equip. Maint.	682.4
Field Exp.	230.7
Filling Truck	260.8
Gas	78.4
Grounds Work	1410.5
Hand Fog	15.2
Identify	748.1
Insectary	126.1
Inspect	10940.5
Inventory	505.1
Lab Experiment	51.1
Larvicide	3776.3
Light Traps	1458.7
Mech. Veh./Equ. Main.	1402.9
Meeting	3598.2
Molecular	87.0
Mosquito Pool	11.5
Office	3816.3
Other	1433.9
Pickle Jar Trap	195.2
Public Relation	565.9
Special Project	791.7
Supervisory	4010.6
Tire	103.6
Trails	20.2
Training	1331.4
Travel	1521.5
Vehicle Maint.	492.8
Water	68.5
<u>XCL Fog</u>	10.0
Total Work	356600.
Annual Leave	2978.0
Holiday	2592.0
<u>Sick Leave</u>	1846.2
Total Leave	7416.2
Total Hours	64016

### Larvicides Used and Averages

Material	Amount	Area Treated	Times treated
Agnique MMF	10.28gal.	20.57acres	11
Altosid Briquets	34121brq.	78.22 acres	354
Altosid XR Ext.	320brq.	1.47 acres	6
Aquabac(200G)	2136lb.	109254.33 acres	80
AquabacXT Biolarv.	1232gal.	198816.71 acres	1674
Mosquito larv.G	83.77gal.	28.60 acres	67
Vectobac G	452lb.	76.17 acres	21
Vectolex CG Biologic	160lb.	28.67 acres	4
Zoecon Altosid XR-G	1675lb	279.83 acres	65

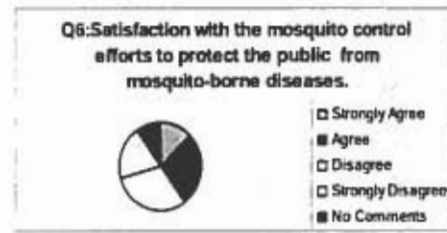
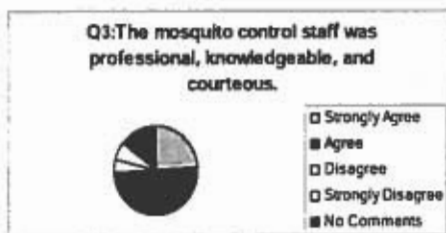
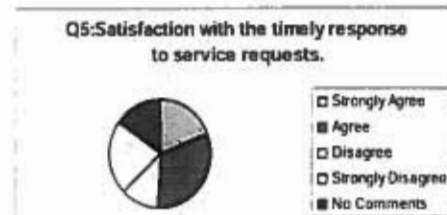
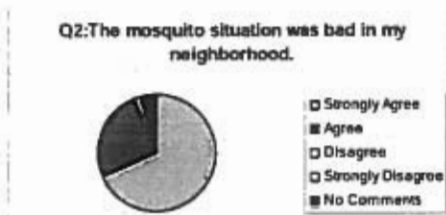
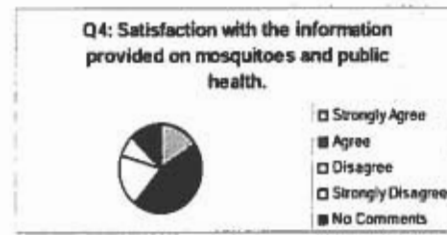
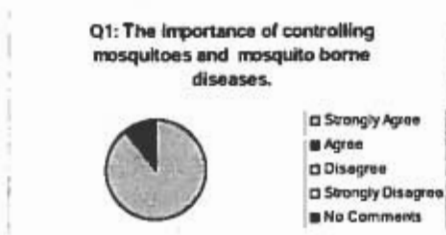
### Adulticides Used and Averages

Material	Amount	Area Treated	Times treated
Aqua-Reslin	352.85gal.	420641.23acres	406
Fyfanon	769.73brq.	135003.98acres	153
GB1111	83.77brq.	28.6 acres	67
Permanone 31-66	.01lb.	8.5 acres	4

## 2. Customer Satisfaction

In 2005, a customer service satisfaction survey was sent out for the very first time. The survey consisted of six questions, which dealt with the mosquito population, our mosquito control staff, the efforts we make in order to control mosquito-borne diseases, the information we provide and the timely response to service requests.

Two hundred surveys were sent out to random customers from our database of service requests. Of the two hundred surveys sent out, One hundred and nine were returned completed. The overall results of the survey indicated that public education and timely response to service requests needed improvement. 27% of this sample were not satisfied with the information provided to them, 34% were not satisfied with the timely response to their service request and 50% were not satisfied with our efforts to control mosquito-borne diseases.



**Q1:** 89% Strongly Agree, 8% Agree, 1% Disagree, and 2% No Comments

**Q2:** 68% Strongly Agree, 26% Agree, 1% Strongly Disagree and 5% No Comments

**Q3:** 50% Agree, 24% Strongly Agree, 7% Strongly Disagree, 5% Disagree and 14% No Comments

**Q4:** 44% Agree, 16% Strongly Agree, 19% Disagree, 8% Strongly Disagree and 13% No Comments

**Q5:** 32% Agree, 19% Strongly Agree, 22% Strongly Disagree, 12% Disagree and 15% No Comments

**Q6:** 30% Disagree, 20% Strongly Disagree, 27% Agree, 13% Strongly Agree and 10% No Comments

### **3. Professional Service**

The Anastasia Mosquito Control District works in cooperation with a number of related professional agencies. Those listed below briefly describes the work association AMCD has with each:

AMCA (American Mosquito Control Association): Dr. Xue organized a symposium titled "Enhancing mosquito control pesticides" at the annual meeting in Vancouver, Canada; April 1-7, 2005. Dr. Xue reviewed three manuscripts for the Journal of AMCA.

FMCA (Florida Mosquito Control Association): Mr. Boone served the Board as Northeast Regional Representative and co-instructor at the FMCA "DODD" Short Courses. Dr. Xue and Mrs. Bowen organized a symposium titled "New Methods/Techniques for Mosquito Control" for the FMCA Annual Meeting at Duck Key, November 13-16, 2005. Dr. Xue and Dr. Ceilk edited the proceeding of the Arbovirus Surveillance and Mosquito Control Workshop.

ESA (Entomological Society of America): Dr. Xue reviewed two manuscripts for the Journal of Medical Entomology.

SOVE (Society for Vector Ecology): Dr. Xue submitted two posters about "Arbovirus surveillance" at the SOVE International Meeting and reviewed two manuscripts for the Journal of Vector Ecology.

FASD (Florida Association of Special Districts): AMCD (Anastasia Mosquito Control District) is a member. Dr. Xue attended the association Annual Meeting in June 2005, St. Augustine, Florida.

USDA (United States Department of Agriculture): The AMCD Board approved a collaborating contract for research about GIS & Mosquito Populations and Mosquito-Borne Disease Surveillance. The AMCD also cooperated with the USDA in a study about Mosquito Traps and Attractants, Toxic Baits, Repellent projects and Employee Training/workshop projects.

UF (University of Florida): St. Johns County Extension Office. The AMCD cooperated with UF's Extension Office to conduct public education and employee training.

UF/IFAS/MFREC (Mid-Florida Research and Education Center): Dr. Xue cooperated with Dr. Ali with a study of Mosquito and Midge Ecology, Control and the Evaluation of Pesticides and Repellants.

UF/IFAS/FMEL (Florida Medical Entomology Laboratory): Several scientists gave presentations at AMCD's workshops and helped with employee training and research projects.

UF Whitney Laboratory: The laboratory cooperated with Arbovirus test projects and employee training.

East Flagler Mosquito Control District: The District cooperated with Arbovirus projects.

Jacksonville Mosquito Control Division: AMCD cooperated with Jacksonville mosquito control about pesticides test and arbovirus surveillance.

FAMU/HEREC (Public Health Entomology Research & Education Center): Dr. Xue cooperated with Dr. Zong to check the residue and efficacy of pesticides and pesticide residue at AMCD locations.

DACS (Department of Agriculture and Consumer Services): The AMCD has operational contract with DACS. DACS provided training for AMCD employees and made several powerpoint presentations at AMCD workshops.

DOH (Department of Health) Tampa Laboratory: The AMCD cooperates with the lab to conduct County-wide Arbovirus surveillance.

NAVY/CDVE (Center for Disease & Vector Ecology) at Jacksonville Florida: The AMCD cooperated with Dr. Walker to test pesticides and application equipment.

ABC (American Biophysical Corporation): Dr. Xue cooperated with Dr. Grant to conduct a "Mosquito Magnet" and insect attractant study.

Black Flag Fogger Company: Dr. Xue cooperated with Mr. Coltharp to conduct hand fogger and insecticide evaluations.

## Surveillance

### 1. Mosquito population

Surveillance is an important part of what we do here at AMCD. The information we gather is used to direct our efforts, to justify chemical usage, and to determine if what we are doing is in fact working.

We currently have Inspectors from each station take a landing rate count at 189 sites throughout our county. The Inspector goes to pre determined sites and counts how many mosquitoes land on them in a one minute period. This together with other information helps us determine if an area needs to be fogged. We also set out 52 CDC Light traps every week. The attractant used is Octenol and the light on the trap. The Mosquitoes are counted and identified and the data is another part of the formula we use to determine if an area needs to be fogged. We set 3 Pickle Jar traps every week, one at St. Ambrose Church Rd, Allens Farm, and one near the Base on Pope Rd. We also set them by request in other areas. The attractant used is Dry Ice. The Mosquitoes are frozen then counted and some are used for pooling to determine if any virus is present. Our Inspectors Dip in ditches and other bodies of water to determine if any larvae are present. This is how we know where to direct our efforts to keep the larvae from becoming adults.

### 2. Environmental Parameters

We have 65 Rain Gauge locations throughout the county. The Inspectors log the amount of total rainfall in his or her area each time a landing rate is taken. This information helps us predict when and where a hatch is going to take place. We have 2 tide gauge locations that are on the intercoastal waterway. This helps us determine when a higher tide than normal has occurred so we can help prevent the hatch of salt marsh mosquitoes.



Top is a Pickle jar trap and below it is a CDC light trap

Cathy Hendricks is dipping for larvae

Greg Griggs is taking a landing rate

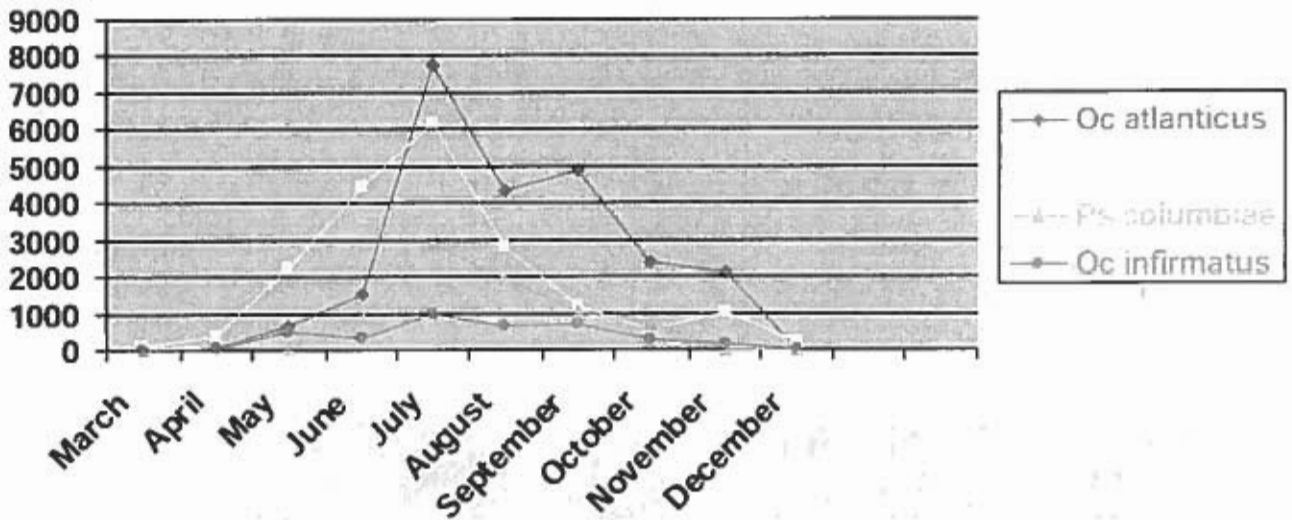
Rain gauge

## Mosquito Population and Rain Data in St. Johns County 2005

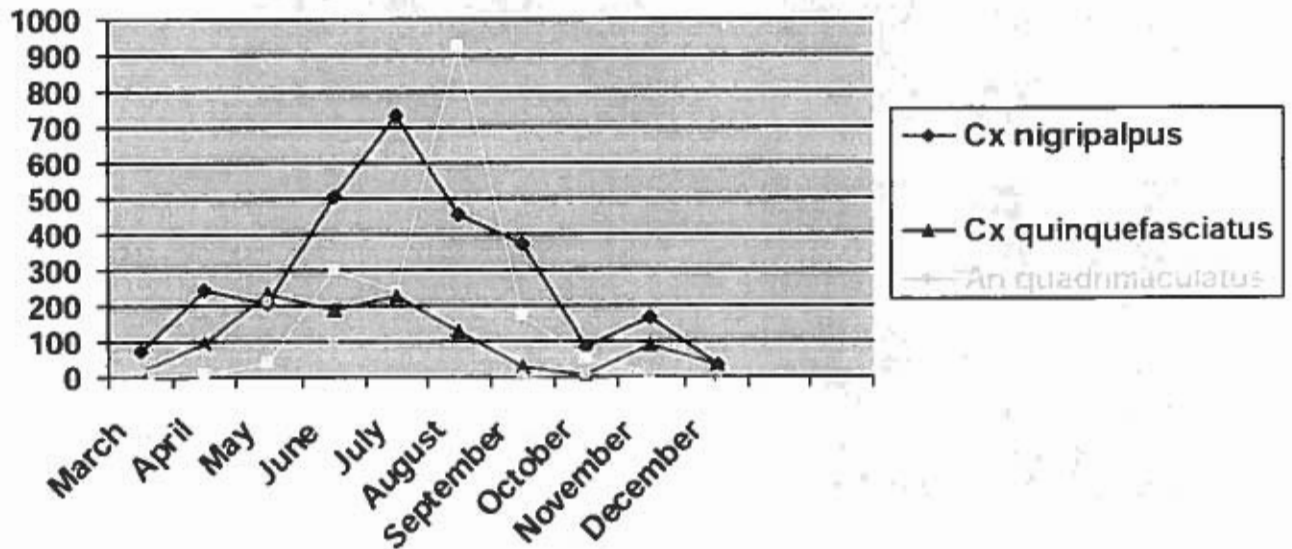
	Totals	Yearly average per site
Light Traps (52traps).....	62,183.....	1196
Landing Rate (189 sites).....	18,185.....	96
Rain (65 sites).....	3,947.2".....	60.73"
	<b>Totals</b>	
Pickle Jar traps.....		145814
Larvae.....		8235

The final data for larvae, light traps, landing rate, and rain is taken from the VCMS.

### Top 1-4 Species trapped



### Top 5-8 Species trapped



### 3. Arbovirus:

The following Arboviruses in St. Johns County are: West Nile virus (WN), Eastern Equine Encephalitis virus (EEE), St. Louis Encephalitis virus (SLE), Highland J virus (HJ) and California Group virus. Our main method of surveillance was using sentinel chickens and mosquito pooling. Other information was collected from different resources.

- a. **Sentinel chickens:** The purpose of the sentinel chicken surveillance is to monitor the level of transmission of disease to the sentinel animals. Chicken flocks (60 in 10 sites: 6 in each site) are placed throughout the county and bled weekly (every Monday) from April until the end of fall (late November or early December). From December to late March, only 5 chicken sites were continued the bleeding. The blood is tested for viruses at the state laboratory in Tampa. The laboratory reports the results every Friday and the results provide information about virus transmission levels. In 2005, 47 sentinel chickens in 9 sites of a total of 10 sites have been tested positive for WNV, 33 sentinel chickens in 9 sites were positive for EEE, and 9 chickens were positive for HJ virus. The seasonal distribution of Arboviruses in St. Johns County is shown in Fig. A and B. Five chickens from homeowners were tested positive for WNV, and 3 suspected positive for EEE. Also, two horses were tested positive for WNV.
  
- b. **Mosquito Pooling:** The purpose of mosquito pooling is to test mosquitoes for arboviruses. Mosquitoes are trapped by dry ice-baited pickle jar traps at 3 different permanent locations and several removable locations in the county. The traps were set up every Monday and collected Tuesday. The mosquito species were identified and 50 mosquitoes were placed in each tube. The specimens contained in tubes were sent to the State Laboratory in Tampa on dry ice, where two different types of tests were performed to test if the mosquitoes were carrying viruses. Several species of mosquitoes were tested in our laboratory for EEE only and the positive samples were sent to the State laboratory for confirmation. We have sent numerous samples of 10 different species, so far, only Ocleratatus atlanticus has been confirmed with carrying the EEE virus.

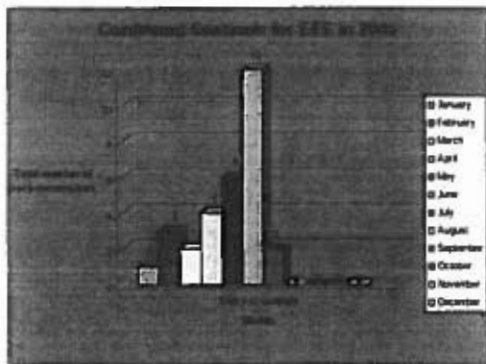


Figure A

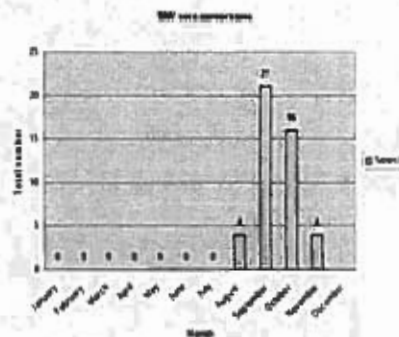


Figure B



## Source Reduction/Tire Removal

### 1. Operation Control

Source reduction in mosquito control means reducing stagnant water sources/sites which adult mosquitoes lay their eggs in. Source reduction is an important aspect of control for Anastasia Mosquito Control District because controlling the mosquito population starts with limiting or reducing the number of eggs, larvae or pupae from developing into an adult.

There are several factors that allow AMCD to determine the areas that need source reduction such as: customer contact, service requests, and surveillance. In 2005, 1,443 service requests were received, many of which dealt with source reduction.

AMCD deals with source reduction through customer education. When a service request is made, an inspector/sprayer will go out to the site, survey the property for places mosquitoes would breed in, inform the customer and then implement a plan of action. For example, the inspector/sprayer may witness old tires or a bird bath that contains mosquito larvae. After such determination, if the customer is home, the inspector/sprayer makes the customer aware of the fact that mosquitoes will lay their eggs in anything that holds water. For the homeowner/renter this means that mosquitoes will lay their eggs and go through their life cycle in common every day containers that are kept outside and hold water such as: kiddie pools, tires, vases, buckets, pet bowls, jars, toys, boats, bird baths, bromeliads, pitcher plants etc. The inspector/sprayer also makes them aware of the knowledge that by simply emptying the water from these containers, they can reduce the population of mosquitoes. If a customer is not at home, an assessment is made and a door hanger that explains where the mosquitoes are coming from and how they can prevent growing mosquitoes in their own yards, is left.

Another way AMCD deals with source reduction is through their tire removal program. Upon receiving service requests, inspector/sprayers go out to the sites and remove any old tires free of charge. In 2005, 1,453 tires were collected which aided in our effort of source reduction since tires are a perfect breeding habitat for mosquitoes.

Mosquitoes breed in tires



Mosquitoes breed in kiddie pools

## 2.Larvicides and Larval Control

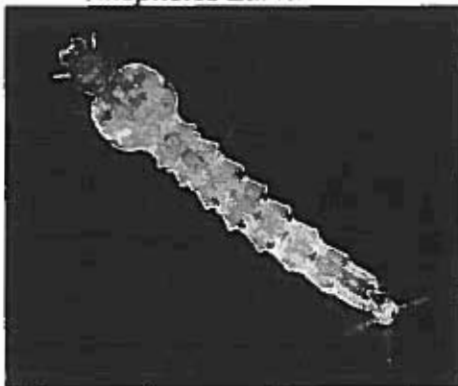
St Johns County is approximately 609 square miles, which is equal to 389,760 acres. In the year of 2005 the district treated 305,000 acres, some of which were repeatedly treated for larval control . The acres treated are all sites that breed mosquitoes and are accessible. These sites contain/are different types of habitats such as: Salt marshes, Fresh water swamps, ditches, artificial containers, flooded pastures and yards.

The acreage is continually monitored by assessing common hatching sites for the mosquito larvae, rainfall amount, temperature and the tide gauge. After assessment and confirmation of larvae, the acreage is treated. The District has an arsenal of different equipment and Larvicides at its disposal in which is used in order to treat with.

The following equipment is used: ATV, trucks, back pack blowers, airboat, hand foggers and a dipper. The equipment used is based on the particular habitat. A variety of larvicides are used as well: Altosid, Golden Bear, Agnique, Bacillus thuringiensis israeliensis and Mosquito fish. Altosid is a contact larvicide, which is absorbed through the exoskeleton and inhibits the growth of the larvae. Golden Bear and Agnique are surface larvicides which creates a film and prevents the larvae from breathing through their siphon. BTI is a form of bio-control: bacteria which releases toxins, is ingested by the mosquito larvae and kills them. Mosquito fish is another form of bio-control. These fish, which are known to consume hundreds of larvae are transplanted into sites that have a high population of larvae. The above larvicides are environmentally safe and have proven effective.

As the District becomes larger due to development, it is becoming increasingly more important for mapping and species identification due to increases in accessibility so that larviciding will not only be more effective but more efficient.

*Anopheles Larva*



*Vincent Price larviciding*



## Adult Control

### 1. Adulticides

In 2005 the AMCD utilized FYFANON ULV (Malathion) and AQUA-RESLIN (Permethrin) in ground application equipment. Materials were applied using variable speed monitoring pumps, high pressure nozzle systems, truck mounted and operated in areas of the county accessible to vehicles.

FYFANON (Malathion) a petroleum based liquid organophosphate is applied as a concentrate. The material is broken into micron size droplets and introduced into the air. Malathion is a cholinesterase inhibitor that kills mosquitoes by contact as they are exposed to the fog cloud.

#### FYFANON use for 2005

153 treatments  
135, 003.98 acres treated  
769.73 gallons of Malathion applied

AQUA-RESLIN (Permethrin) a concentrated liquid product is mixed nine parts water to one part concentrate, applied in ground application equipment. The material is broken into micron size droplets and introduced into the air. Aqua-Reslin kills mosquitoes by contact as they are exposed to the fog cloud.

#### AQUA-RESLIN use for 2005

406 treatments  
420, 641.23 acres treated  
3, 175.65 gallons mixed material applied

#### Totals for 2005

559 treatments  
2,031.2 application hours  
555, 645.21 acres treated  
3, 945.38 gallons material applied

## 2. Adult Control Program

Part of the District's mission is to protect the citizens from biting mosquitoes. In being true to the mission, adulticide materials are used where adult mosquitoes are found in numbers large enough to justify treatment.

### Program

- Insecticides are dispersed from vehicle mounted equipment in areas accessible by vehicles.
- Industry standard surveillance methods are used to determine the necessity for adulticide missions. State regulations demand the documentation of surveillance data.
- Service requests for spraying, adult mosquito light trap collections, landing rate count numbers, current weather and rain gauge data are compiled to schedule areas for treatment.
- Landing rate count and rain gauge stations are monitored Monday, Wednesday and Friday.
- Adult mosquito light traps are set weekly.
- Service requests from citizens are downloaded daily into a computer database and off-loaded to area substation inspector sprayers in the proper locations.
- The District optimizes the adulticiding effort by matching the effort to the problem, understanding all the options and delineating the treatment area. Treatment schemes are selected that will provide the maximum control for the situation.
- In addition to vehicle mounted equipment, the District also uses hand held adulticiding equipment to treat small "back yard" areas not accessible from the road.

### Future Plans for the program

Future goals include reviewing new insecticides for adult mosquito control, developing new control methods (toxic baits) and barrier spray applications to reduce pesticide applications.

District Adulticiding vehicle.



### 3. Personal Protection

Protection against mosquito bites is promoted through public education. We strongly promoted the 5 D's of Prevention:

- Avoid going outdoors at DUSK & DAWN when mosquitoes are most active.
- To protect against bites, DRESS so that your skin is covered with clothing.
- Apply mosquito repellent containing DEET to bare skin and clothing.
- Empty containers and DRAIN stagnant water.

In addition, at many of our educational events we handed out repellent with deet.

*Repellent with Deet offers protection where it is applied.*



*Wear long sleeve shirts and pants when outdoors to protect against mosquitoes.*



## Education

### 1. Public Education:

#### a. Teaching & Judging events:

January 24-27, 2005. John Boone. Teaching introduction of mosquito control, Dodd Short Course, Gainesville, FL.

April 29, 2005. Dr. Xue, Mr. Baer, Ms. Santoro, Mr. Hockla: "Mosquito biology and prevention", Murray Middle School

December 6, 2005. Mrs. LeBlanc and Mr. Strickland. Science fair judge, Murray Middle School

#### b. Demonstrations, Displays, Radio & News interviews and Events:

##### April

19<sup>th</sup>-Fox News "Mosquito Prevention & Control"

20<sup>th</sup>-Ch. 12 "Mosquito Prevention & Control"

Radio interview with Al Brennan: Mrs. Gaines

##### May

26-27<sup>th</sup>- St. John's Library: Southeast branch: Mosquito display "Prevention & Control": Dr. Xue, Miss Alexandra Santoro and Mr. Jacque Bolduc (Approx. 200 visitors)

28<sup>th</sup>-Anastasia Square: Mosquito display "Prevention & Control": Mrs. Kay Gaines and Mrs. Meri Bach (Approx. 100 visitors)

28<sup>th</sup>-Downtown festival: Mosquito display "Prevention & Control": Mr. Jacque Bolduc and Mr. Steve Steele (Approx. 200 visitors)

Radio interview with Al Brennan: Mrs. Gaines

##### June

25<sup>th</sup>-Open House

Radio interview with Al Brennan: Mrs. Gaines

##### July

29<sup>th</sup>- Walmart display "Mosquito prevention and control," Mr. Hockla, Miss. Santoro, Mr. Weaver and Mr. Hendrick

Radio interview with Al Brennan: Mrs. Gaines

##### August

5<sup>th</sup>- Walmart display "Mosquito prevention and control," Mr. Hockla, Miss. Santoro, Mr. Weaver and Mr. Hendrick

Radio interview with Al Brennan: Mrs. Gaines

##### September

10<sup>th</sup>-The tenth Annual Senior Expo (Ponce De Leon Mall)

Radio interview with Al Brennan: Mrs. Gaines

##### October

15<sup>th</sup>-Cracker Day (Fairgrounds)

22<sup>nd</sup>-Ancient City Kids' Day

Fox 30 & Ch. 4: Interview with Mrs. LeBlanc

Ch. 12: Interview with Miss. Santoro

Radio interview with Al Brennan: Mrs. Gaines

##### November

2<sup>nd</sup>-3<sup>rd</sup>-Northrup Grumman Health Fair

14<sup>th</sup>-20<sup>th</sup>-County Fair (Fairgrounds)

Radio interview with Al Brennan: Mrs. Gaines

##### December

3<sup>rd</sup>-Christmas Parade

14<sup>th</sup>-Radio interview with Al Brennan: Mrs. Gaines and Mrs. LeBlanc



**c. Presentations for local associations & clubs:**

- January 10, 2005. Rui-De Xue, "Mosquito control does not really affect honey bees." Northeast Florida Honey Bee Keeper Association, Agricultural Center.
- April 21, 2005. Alex Santoro, Mosquito biology & control, Commodores Club Homeowner Association.
- April 21, 2005. Rui-De Xue, Storm water mosquito management, *ibid*.
- \*May 25, 2005. Dr. Barnard gave a seminar about CDC trap and GIS. AMCD.
- \*June 23, 2005. Collaborative meeting with DOH about EEE prevention and control. AMCD.
- June 24, 2005. The AMCD's Consultation Meeting. Mrs. Hummel, Mrs. Willis, Mr. Sundeman, Mr. Leahy, and Dr. Xue gave presentations.
- July 19. Report on the salt marsh mosquito management symposium, Guana River Park (Marsh Management Sub-committee).
- July 27, 2005. Rui-De Xue, AMCD's programs and service, Kiwanis Club.
- July 27, 2005. Alex Santoro, Mosquito-borne diseases and prevention, Kiwanis Club.
- August 3, Presentations at Westminster Woods HOA.
- August 10, 2005. Rui-de Xue, Alex Santoro. AMCD's programs & mosquito-borne diseases and control, Southern Grove HOA.
- August 16. Alex Santoro, Kay Gaines, Pat. Kendrick gave presentations about personal protection at Coquina Crossing HOA.
- October 13, 2005. Rui-De Xue. AMCD's program and service, Women Voters.
- October 13, 2005. Gina LeBlanc. Mosquito biology and control. Women Voters.
- December 19, 2005. Rui-De Xue. AMCD's programs and service, Alliance for Natural Living.
- December 19, 2005. Gina LeBlanc. Mosquito biology and prevention, Alliance for Natural Living.

**d. Newspaper articles:**

April 17, 2005. St. Augustine Record, "8 Chickens positive for encephalitis."

June 3, 2005. St. Augustine Record, "Experts concerned after 13 chickens in county found to have potentially deadly virus."

June 12, 2005. St. Augustine Record, "Mosquito Board considers purchase of robot helicopter."

July 27, 2005. St. Augustine Record, "Officials worried about increase in disease."

August 7, 2005. St. Augustine Record, "Swarms cause a stink in north part of county."

August 26, 2005. St. Augustine Record, "West Nile virus seen in County."

September 29, 2005. "West Nile spraying starts today."

October 18, 2005. St. Augustine Record, "County steps up mosquito control."

November 27, 2005. St. Augustine Record, "Mosquito control buys land for \$1.25 million without appraisal."

## 2. Publications:

### a. Magazines & Newsletters:

Xue, R.D. & M. Doyle. 2005. Evaluation of upstream point treatment in flowing water ditches by AQUABAC (*Bacillus thuringiensis* var. *israelensis*) against *Culex quinquesfasciatus*, J. Am. Mosq. Control Assoc. 21(2):234-235.

Xue, R.D., A. Ali, & D.R. Barnard. 2005. Effects of forced egg-retention in *Aedes albopictus* on adult survival and reproduction following application of DEET as an oviposition deterrent. Journal of Vector Ecology, 30:45-48.

Xue, R.D. & D.R. Barnard. 2005. Attraction, feeding, and repellency response in mutant strains of *Aedes aegypti*. J. Am. Mosq. Control Assoc. 21:263-267.

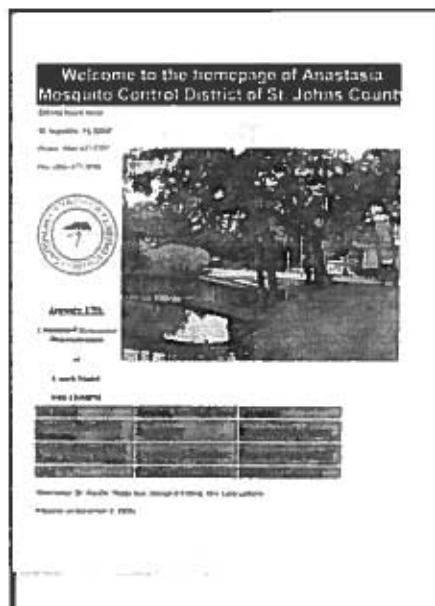
Xue, R.D., D. Kline, A. Grant. 2005. Mosquito magnets as barrier treatments against salt marsh mosquitoes around residential houses in marsh area (abstract). Technical Bulletin of the FMCA, 6: 33.

LeBlanc, G. 2005. *Mosquito Talk*, newsletter

### b. Web page

The web page was established in 2003. It is updated on a biweekly basis. The web page contains a multitude of information such as: mosquito biology, mosquito-borne diseases, mosquito habitat, surveillance, prevention & control, operations, services, Research & Education, District information, links, contact & employment information and Information Sheets & Digest.

AMCD's web page  
[www.anastasiamcd.org](http://www.anastasiamcd.org)





### **3. Continuing Education:**

#### **a. Classes:**

Feb 16-17, 2005 Employee training class: (Poisonous bites, Commissioner overview, UF extension office's program overview, FRS program overview, Aqueslin, larvicides, Altosid, honey bee, VCMS, & Safety issues).

March 3, 2005 Rui-De Xue. LRC & CDC traps (presentation) for all employees. AMCD.

March 22-24, 2005 "The 2<sup>nd</sup> Arbovirus surveillance and mosquito control workshop."

March 29, 2005 Alex Santoro. Sentinel chicken program training for all employees.

May 5-6, 2005 New employee training.

June 2-3, 2005 New employee training.

October 27, 2005 Employee training (4 presentations and Mr. English gave demos about new equipment).

November 30, 2005 Employee training (4 presentations).

December 9, 2005 Employee training (4 presentations).

#### **b. Symposium, workshops & Professional Meetings:**

January 26, 2005. Overview of USDA programs and visiting USDA laboratory, (Commissioners, Mrs. Bowen, Mrs. Hummel, Mrs. Willis attended).

Feb 3, 2005. Collaborative Meeting with USDA, St. Johns County's GIS Department about Mosquitoes and Arbovirus Surveillance by GIS (Dr. Xue and Dr. Barnard, Organizers).

March 22-24, 2005. 2<sup>nd</sup> Arbovirus Surveillance and mosquito Control Workshop (Dr. Xue & Dr. Kline, Organizers).

April 1-7, 2005. Symposium: Enhancing Mosquito Control Without Pesticides, 71<sup>st</sup> Annual Meeting of the American Mosquito Control Association, Vancouver, Canada (Dr. Xue & Dr. Kline, Organizers).

June 24, 2005. Consultation meeting. Holiday Inn

July 14, 2005. Marsh mosquito management symposium, AMCD, St. Augustine, FL. (Dr. Xue & Dr. Kline, Organizers).

November 13-16, 2005. Symposium: New Methods/Techniques for Mosquito Control, Duck Key, FL, Florida Mosquito Control Association. (Dr. Xue and Mrs. Bowen, Organizers).

#### **c. Presentations at Professional Meetings:**

February 3, 2005. Beth Bowen. AMCD research purpose and project overview. Research Collaborating Meeting with USDA, St. Johns County Department GIS.

February 3, 2005. Rui-De Xue. What we need from GIS for our surveillance program? Ibid.

February 3, 2005. Kay Gaines, VCMS and GIS connection, ibid.

February 3, 2005. Alex Santoro. Arbovirus surveillance. Ibid.

February 15-17, 2005. Rui-De Xue, D. Kline, & A. Grant. Mosquito magnets as barrier treatments against salt marsh mosquitoes around residential houses in marsh area (poster). 5<sup>th</sup> Workshop on Salt Marsh Management & Research, Cocoa Beach, FL.

March 22-24, 2005. Rui-De Xue, Adult mosquito control using toxic baits, 2<sup>nd</sup> Arbovirus Surveillance & Mosquito Control Workshop, AMCD, St. Augustine, FL.

March 22-24, 2005. Alex Santoro, St. Johns County's Arbovirus Surveillance, *ibid.*

March 22-24, 2005. John Boone, Update about adulticides-malathion & aquareslin formulation & application, *ibid.*

March 22-24, 2005. Beth Bowen, Overview of AMCD's research program, *ibid.*

April 1-7, 2005. Rui-De Xue, Toxic baits and bait stations against adult mosquitoes, symposium paper, 71<sup>st</sup> Annual Meeting of the AMCA, Vancouver, Canada.

July 14, 2005. Rui-De Xue, Salt marsh mosquito composition & seasonal activity in St. Johns County, FL, Salt Marsh Mosquito Management Symposium, AMCD, St. Augustine, FL.

July 14, 2005. Mike Smith, Breeding sites & GIS for salt marsh mosquitoes in St. Johns County, Salt Marsh Mosquito Management Symposium, AMCD, St. Augustine, FL.

July 14, 2005. Alex Santoro, Mosquito magnets as barrier treatments against salt marsh mosquitoes in Anastasia Island. AMCD, St. Augustine, FL.

October 2-7, 2005. Rui-De Xue & Alex Santoro. Does area development affect foci change of EEE in St. Johns County, Florida? (poster). 4<sup>th</sup> International Congress of Vector Ecology, Reno, Florida.

October 2-7, 2005. A. Ali, Rui-De Xue, D. Barnard. Effects of sublethal exposure to boric acid sugar bait on adult survival, host-seeking and blood-feeding behavior, and reproduction of *Aedes albopictus* (Diptera: Culicidae) (poster). 4<sup>th</sup> International Congress of Vector Ecology, Reno, Nevada.

November 13-16, 2005. Rui-De Xue, Evaluation of adulticides against mosquitoes on plant leaves, a new bioassay method. 77<sup>th</sup> Annual Meeting of the Florida Mosquito Control Association, Duck Key, FL.

November 13-16, 2005. VCMS application in Anastasia Mosquito Control District, St. John County, *ibid.*

November 13-16, 2005. Alex Santoro, Evaluation of mosquito magnets as barrier treatment to protect residents near marsh areas, *ibid.*

November 13-16, 2005. John Boone. Mosquito composition & dynamics in Northwest EEE foci area, St. Johns County. *Ibid.*

November 12, 2005. Rui-De Xue. Arbovirus workshops and salt marsh mosquito management. FMCA's Board meeting.

## Research

The research in AMCD is applied research. The purpose of our research is to improve the efficacy of existing mosquito control methods and to develop new techniques, which will allow us to reduce operational costs. In 2005, we had the following 3 projects:

1. Mosquito Magnets as Barrier Treatments: This was a continued project in Marsh Creek, St. Augustine Beach. The purpose was to provide protection to residents in the salt marsh areas against mosquito and sand fly bites, and provide new alternatives and environmentally friendly methods for mosquito control. An area that consisted of approximately 1,000 acres was divided into 2 parts (1 for treatment and another part for control). Eight mosquito magnets were used in the front of the marsh areas in the treated part. The treatment part and control part was rotated. Landing rate count was conducted at each testing site for 1 min. A pickle jar trap baited with dry ice was set up in the center of each part after a 3- day post treatment. A total of 70,555 mosquitoes with 17 species caught (fresh water breeding mosquitoes were in greater numbers than salt water breeding mosquitoes). Total of 9,056,800 sand flies were collected. One trap was for control and another trap was for treatment. The mosquito magnet treatments significantly reduced LRC and the number of mosquitoes caught by pickle jar traps in 2004 and 2005. Also, the treatments reduced the service requests from the subdivision.
2. Evaluation of hand foggers against West Nile mosquitoes: Fifteen posts with 30 cages of mosquitoes (15 cages of *Culex nigripalpus* and 15 cages *Culex quinquefasciatus*). A total of 3 lines were set up. Two lines were used for each replication based on wind direction. Each line had 5 posts with 1 cage per post. The distance between any 2 posts was 25 feet. The mosquito cages were attached to the posts about 3-4 feet above the ground. A spray technician operated a black flag bug fogger downwind of the test site allowing the spray/fog to move in the direction of the wind. The distance from the spray technician to the first post was about 25 feet. The spraying time from beginning to end was about 60 seconds. Each species of mosquitoes and each of the pesticide applications was tested in 3 separate replications. The mosquito cages post-treatment were brought to the laboratory. The number of knockdown mosquitoes in each cage at 15 minutes post-treatment and dead number of mosquitoes in cages at 6 hours post-treatment were checked and recorded. The results showed that sumithrin at 0.2% caused a greater KD number of *Culex quinquefasciatus* at 15 minutes post-treatment than 0.2% resmethrin did, but 1/3 of the KD mosquitoes recovered at 6 hrs. post-treatment. *Culex nigripalpus* mosquitoes were more sensitive at 0.2% resmethrin than 0.2% sumithrin. Sumithrin at 0.15% caused a lower number of dead mosquitoes than 0.2% sumithrin. In conclusion, the application rates of both insecticides were too low for the field application against laboratory-reared WN vector mosquitoes. (Refer to Figure B)
3. Resistance Test: CDC bottle bioassay methods were used and field-collected *Culex quinquefasciatus* from the Island and N.W. area (S.R. 16) were tested for malathion and permethrin. The results showed that the species of field-collected *Culex quinquefasciatus* mosquitoes were much less sensitive than the same species of laboratory-reared mosquitoes. The mosquitoes in these areas had a high resistance level for malathion but still sensitive to permethrin. (Refer to Figure A)



Figure A



Figure B

## Aerial Application

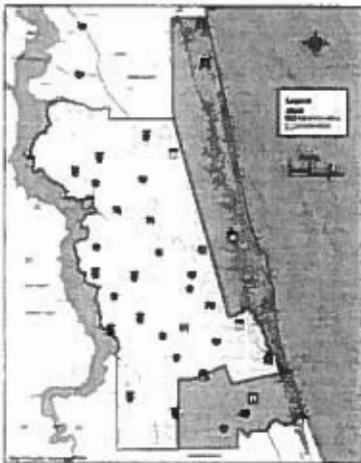
On September 29, 2005 starting at 7:30 p.m. Clarke Mosquito Control did an aerial spray for the West Nile Virus and mosquito control at the request of Anastasia Mosquito Control District. AMCD had a contract with Clarke Mosquito Control for aerial spraying during emergency situations. Approximately, 240,000 acres were treated within 4 hours. The decision to spray was based on several factors: the high number of sentinel chickens that tested positive for the West Nile Virus in one week (some sites had 50% of the flock that tested positive), the high number of service requests and the results of our mosquito population surveillance data.

Clarke Mosquito Control sprayed using 5 aircrafts and a chemical called Dibrom which has been used in past years. The Dibrom was applied at 0.66oz per acre. This chemical is highly effective in killing flying mosquitoes, and poses no serious danger to humans (based on CDC's 2004 study), and easily breaks down (2-4 hours).

Anastasia Mosquito Control informed the public, local beekeeper association, department of agriculture and all people on the "Do not fog list" by: phone, local newspaper, flyers or the Radio Station. In addition, live interviews were done by TV News Stations channel 4 and 12.

To test the effectiveness of the spray a test done at a residents home in the spray area by placing five (5) cages with fifteen (15) mosquitoes in each cage in the front yard about ten (10) feet apart and placing two (2) cages in the back yard to test the effectiveness of the spray. The front yard of the home was open with no vegetation coverage. The back yard was covered with a tree canopy. They were placed in the yard before the spray took place. The next morning after the aerial spray, the cages were collected and all of the mosquitoes were dead.

Aerial spraying enabled us to cover large areas of the county not readily accessible by trucks. It helped us to prevent any human cases of WNV and prevented the spread of EEE and WNV among the animal population in St. Johns County. The overall public was pleased and we received a total of only 3 complaints. In conclusion, aerial application proved highly successful in reducing the mosquito population and controlling the spread of the above mosquito-borne diseases.



Map of St. Johns county with outlined spray areas.



King-Air planes for Dibrom application.

1. **Budget:** Our FY is from October 1 to September 30. Budget for 05-06 cost is \$3,024,050 (local fund \$2,987,050 and state fund \$37,000). Reserves: \$3,517,050. Budget summary: Total revenue and cash balances: \$6,842,100. Total expenditures, cont. & reserves: \$6,842,100. Our mileage rate was reduced 12% compared to FY 04-05.
2. **Fund:** State Fund \$37,000, contract fund from Black Flag Fogger \$6000 and Navy \$2000.
3. **Personnel:** District Director, Mr. Steve McEvoy resigned, effective April 14, 2005. Dr. Xue was appointed as Acting Director April 14, 2005 and District Director June 2, 2005. Office Specialist, Mrs. Judith Leonard (Feb 28, 2005), Administrative Office Assistant, Mrs. Melissa Woodburn (September 9, 2005) resigned. Biological Technician, Mrs. Alex. Santoro (December 16, 2005), Mr. Chris Newman (October 14, 2005) resigned and Mechanic, Mr. Ed Hersey retired Feb 28, 2005. Mr. Jimmy Baer's title was adjusted from supervisor to Inspector/sprayer III on July 1, 2005. Mr. Weaver replaced Mrs. Gaines as VCMS Coordinator in September, 2005. Mr. Ken Daniel replaced Mrs. Woodburn's position September 26, 2005. Mrs. Gina LeBlanc was hired as Education & Public Relation Specialist September 26, 2005. Mr. Steve Steele replaced Mr. Newman's position as Inspector/Sprayer I effective November 1, 2005. Mrs. Brooke Tedford was hired as Accountant from December 12, 2005.
4. **Awards:** Mr. Richard Weaver, Mr. Paul Whatley, Mr. Mike Mills, Mr. Steve Solana, and Ms. Cathy Hendricks get bonuses (\$1,000 per person). Mr. Ed Hersey received the Sherrie Yarberry Award from FMCA in November, 2005. Dr. Rui-De Xue was awarded outstanding employee in 2005. Mrs. Elaine Scanzani, Mr. Jacque Bolduc, Mr. Chris Newman, Mr. Loren Smith, Mr. Mike Mills, and Mr. Paul Whatley have been promoted from Inspector/Sprayer I to II. Mr. David Taylor was promoted from Assistant Supervisor to Supervisor. Mrs. Kay Gaines was promoted from VCMS Coordinator to Supervisor. All employees received 4% cost of living raise.
5. **Policy:** Renewed district purchase policy and open bid procedure, renewed district vehicle policy for surplus. Established computer policy, research policy, continuing education policy, and new employee consent forms.
6. **Insurance:** Terminated all contracts regarding pest control, cancelled flood insurance, and reduced the insurance coverage for old vehicles.
7. **Contracts:** Finished Black Flag Fogger contracts and made a \$6,000 grant fund. Approved financial and accounting contract with MCS in March and terminated the contract effective January 6, 2006.
8. **Organization Chart:** The title of Director of Finance and Account was changed to Chief in September and terminated on January 6, 2006. SW area was separated from Base Station and became SW Station in April, 2005.
9. **Equipment & Facility:** Bought 3 new trucks and 1 old truck burned at Conch Island, 9 old trucks were approved for surplus. One surplus truck was called back to replace the burned truck. Arbovirus laboratory was built up and started to run the EEE test. District purchased 25 acres on October 28, 2005 for future plan and development.
10. **Inventory:** Conducted monthly tire, chemical inventories and annual equipment inventories.
11. **Safety:** Safety committee held 6 meetings about district safety issues. All equipment and facility have signs and markings for safety reasons. Administrative building and work area at the Base station had installed security equipment, and 2 story buildings had installed security bars on all windows.
12. **Repair & Maintenance:** Mechanics and other employees repaired numerous trucks, built 2 fogger units for other mosquito control districts and 3 units for AMCD. Repaired several computers and installed overhead projector for classroom.

ANASTASIA MOSQUITO CONTROL DISTRICT  
 OF ST. JOHNS COUNTY  
 CONSOLIDATED FINANCIAL STATEMENTS -- LOCAL FUND(\$) - 2005

	2005
REVENUE	3622456
EXPENDITURES	3716674
EXCESS or (DEFICIT)	-94218
BEGINNING CASH BALANCES	4290491
ACCRUALCASH ADJUSTMENT	-40671
ENDING CASH BALANCES	4155602
RESERVES:	
CONTINGENCY	285600
FUTURE CAPITAL OUTLAY	1626682
SICK/VACATION LEAVE	5000
ENDING CASH BALANCES	2238320
TOTAL RESERVES	4155602

ANASTASIA MOSQUITO CONTROL DISTRICT  
 OF ST. JOHNS COUNTY  
 CONSOLIDATED FINANCIAL STATEMENTS -- STATE I FUND -- 2005

	2005
REVENUE	37246
EXPENDITURES	43874
EXCESS or (DEFICIT)	-6628
BEGINNING CASH BALANCES	20220
ACCRUALCASH ADJUSTMENT	0
ENDING CASH BALANCES	13592
RESERVES:	
CONTINGENCY	750
FUTURE CAPITAL OUTLAY	0
SICK/VACATION LEAVE	0
ENDING CASH BALANCES	12842
TOTAL RESERVES	13592

**CHEMICAL AND INSECTICIDE SUMMARY:  
A RUNNING TOTAL BY MONTHS**

KIND OF CHEMICAL <small>(indicate lbs. or gals.)</small>	1ST QTR			2ND QTR			3RD QTR			4TH QTR		
	TOTAL	TOTAL	TOTAL	TOTAL	TOTAL	TOTAL	TOTAL	TOTAL	TOTAL	TOTAL	TOTAL	
	AMOUNT	AMOUNT	AMOUNT	AMOUNT	AMOUNT	AMOUNT	AMOUNT	AMOUNT	AMOUNT	AMOUNT	AMOUNT	
	JANUARY	FEBRUARY	MARCH	APRIL	MAY	JUNE	JULY	AUGUST	SEPT	OCTOBER	NOVEMBER	DECEMBER
AGNQUE MMF OZS.	\$884.12	\$884.12	\$1,692.80	\$1,692.80	\$1,692.80	\$1,766.40	\$1,766.40	\$1,698.69	\$1,560.32	\$1,560.32	\$1,560.32	\$1,560.32
ALTOSID BRIQUETS EA.	\$19,122.74	\$19,122.74	\$26,653.54	\$22,603.13	\$20,607.50	\$19,326.22	\$16,204.01	\$35,717.33	\$31,139.38	\$27,014.66	\$22,936.00	\$22,654.00
ALTOSID PELLETS LBS.										\$0.00	\$0.00	\$0.00
ALTOSID XR BRIQUETS EA.	\$854.40	\$854.40	\$854.40	\$854.40	\$13.35	\$13.35		\$0.00		\$0.00	\$0.00	\$0.00
ALTOSID XRG GRANULES LBS.	\$3,245.70	\$3,203.82	\$15,516.00	\$12,528.00	\$12,204.00	\$12,204.00	\$12,204.00	\$26,604.00	\$25,236.00	\$24,264.00	\$23,976.00	\$23,976.00
AQUA-RESLIN OZS.	\$84,573.07	\$84,573.07	\$84,573.07	\$84,321.97	\$82,671.68	\$70,419.13	\$52,145.86	\$113,316.55	\$97,371.21	\$85,234.33	\$83,131.41	\$83,131.41
B.L.I. AQUABAC LIQUID OZS	\$7,230.40	\$7,141.60	\$4,839.60	\$8,990.80	\$6,602.96	\$8,193.04	\$12,102.48	\$16,604.22	\$20,501.60	\$14,503.34	\$13,659.20	\$13,348.60
B.T.J AQUA BAC 200 G LBS.	\$1,486.00	\$1,476.00	\$3,020.00	\$1,240.00	\$1,090.00	\$4,360.00	\$4,220.00	\$4,042.00	\$5,065.00	\$4,793.75	\$3,997.50	\$3,997.50
B.L.I. VECTOBAC GRAN LBS	\$1,263.60	\$1,263.60	\$1,170.00	\$1,076.40	\$1,076.40	\$1,074.06	\$1,000.35	\$865.80	\$795.60	\$748.80	\$748.80	\$748.80
B.L.I. VECTOLEX GRANS LBS	\$776.00	\$776.00	\$776.00	\$776.00	\$776.00	\$194.00	\$194.00	\$0.00		\$0.00	\$0.00	\$0.00
B.L.I. PELLETS LBS.										\$0.00	\$0.00	\$0.00
DIESEL OIL GALS.	\$1,085.91	\$1,091.37	\$1,091.37	\$1,080.36	\$1,059.38	\$1,059.38	\$1,059.38	\$1,059.38	\$1,059.38	\$1,059.38	\$1,059.38	\$1,059.38
FYFANON 95% GALS.	\$59,590.00	\$60,040.00	\$60,040.00	\$59,815.00	\$59,263.75	\$57,317.50	\$54,370.00	\$51,838.75	\$106,112.50	\$88,675.00	\$88,073.13	\$87,758.13
GASOLINE GALS.	\$7,346.91	\$5,641.43	\$5,509.16	\$5,827.74	\$4,191.18	\$330.15	\$5,187.32	\$5,444.36	\$7,872.74	\$7,849.44	\$8,198.71	\$6,679.42
GOLDEN BEAR GALS.	\$231.00	\$231.00	\$231.00	\$231.00	\$231.00	\$231.00	\$231.00	\$231.00	\$219.00	\$219.00	\$168.00	\$168.00
MOSQ LARV GB-1111 GALS.	\$1,197.00	\$1,197.00	\$1,187.63	\$972.00	\$915.75	\$848.50	\$797.63	\$750.75	\$720.75	\$705.75	\$705.75	\$705.75
PERMANONE MIX GALS.	\$494.32	\$494.32	\$494.32	\$494.32	\$494.32	\$494.32	\$494.32	\$494.32	\$494.32	\$494.32	\$494.32	\$494.32
<b>TOTAL =</b>	<b>\$189,381.17</b>	<b>\$187,990.47</b>	<b>\$207,648.91</b>	<b>\$202,503.92</b>	<b>\$182,890.07</b>	<b>\$182,831.05</b>	<b>\$161,976.75</b>	<b>\$258,667.15</b>	<b>\$298,147.80</b>	<b>\$257,122.09</b>	<b>248,708.52</b>	<b>\$246,281.63</b>

## **Committee & Contributors for Annual Program Reports**

Committee Chair: Dr. Rui-De Xue, District Director

Editor: Mrs. Gina LeBlanc, Education Specialist

Members: Mrs. Beth Bowen, Commissioner

Mr. John Boone, NW Supervisor

Mrs. Kay Gaines, Base Supervisor

Mr. Richard Weaver, VCMS Coordinator

Mr. Bill Hockla, Inspect II

Contributors: Mr. David Taylor, SW Supervisor

Mr. Mike Smith, PV Supervisor

Mr. Ken Daniel, Administrative Office Assistant

Mrs. Brooke Tedford, Accountant

## **Acknowledgments:**

We thank all members of the Board of Commissioners, the District Attorney, the Director/Chief of Finance and Accounting, all employees, all outside contractors, and cooperative organizations and agencies for helping AMCD's programs in 2005 be a success. We also thank USDA/ARS/ Center for Medical, Agricultural, and Veterinary Entomology, Mosquito & Fly Unit who gave us their support for workshops, symposiums, lectures, and research, The Department of Agricultural & Consumer Service who provided partial funding, The State Department of Health, Tampa Laboratory who helped to test arboviruses, local residents who allowed us to use their property to conduct surveillance and experiments, and The American Biophysical Company for the support with mosquito magnets, pickle jar traps, and a numerous number of mosquito attractants and lastly, to the Black Flag Fogger Company who partially funded the applied research projects.



