

2012 WEST NILE VIRUS OUTBREAK

MOSQUITO-BORNE DISEASE SURVEILLANCE & CONTROL

AUGUST 6, 2012

- Garland adheres to the U. S. Centers for Disease Control and Texas Department of State Health Services recommended mosquito surveillance and control methodology.
- All staff members are licensed through the Texas
 Department of Agriculture to purchase and apply
 insecticides for public protection. Licensure requires
 annual classroom training of the staff.
- In a typical year, 0.5 Health Specialist FTE and a seasonal service worker are budgeted for the program, along with \$3,700 for chemical supplies.

In 2012:

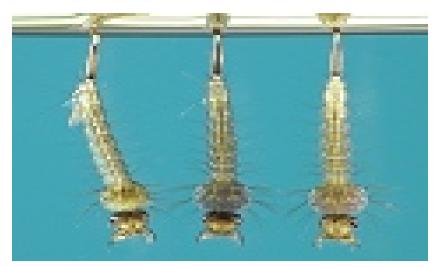
- City Management added \$12,000 in emergency funding to the Health Department budget to purchase an additional spray unit.
- Became the first municipality in Metroplex to receive emergency mosquito control funding from the State of Texas - \$4,900 to purchase insecticide and larvicide.

- After ten years of testing and over 32,000 mosquito samples, the Health Department has found WNV in only one mosquito species, *Culex quinquefasciatus*, (the southern house mosquito).
- Garland's mosquito control activities are directed at the female "quinks" – she is the target species.
- The female "quinks" is a timid, night-time feeder that prefers an avian blood meal, but will feed on humans and other mammals.
- She lays her eggs in stagnant, organic-rich water and does not travel far from her hatch site.



- Staff uses citizen calls as the sentinel for activity efforts.
- High numbers of mosquito landings, dead birds and stagnant water sites (swimming pools) are all used in the surveillance effort.
- Dead birds are not collected for study.

- Each citizen call is logged and responded to by staff.
- GHD uses two agents for larviciding:
 - Vectolex® (B. sphaericus)
 - Agnique®
- Both chemicals are non-toxic and environmentally safe.
- Larviciding of stagnant water is the most effective mosquito control activity.







STAGNENT WATER

- Treating stagnant water is a year round activity.
- ❖ 358 stagnant pools have been treated and subsequently abated this YTD.
- Abatement costs are recovered through lien process.

- Mosquito traps are selective for "quinks" and other "container breeders".
- The females that are trapped are lured to a bucket of stagnant, organic-rich water.
- The trapped female mosquito is perfect for virus testing she will have just had a blood meal prior to entering the trap to lay her eggs.





MOSQUITOES TESTED FOR VIRUS ACTIVITY

2005 - 3,883

2006 - 3,366

2007 - 4,365

2008 - 4,782

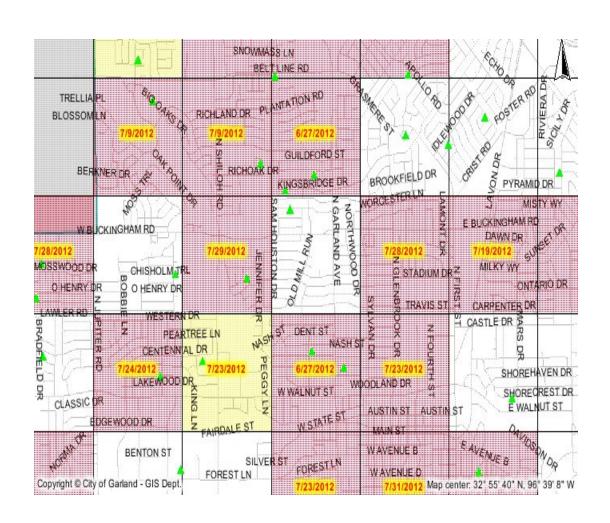
2009 - 4,978

2010 - 4,635

2011 - 2,371

2012 - 3,877 (through July 31)

Spraying Information available at www.garlandtx.gov





In 2002, with the first WNV found in a mosquito, the Health Department became a controller of disease-carrying mosquitoes and not a manager of nuisance species.

A grid is sprayed when:

- •The number of female *Culex quinquefasciatus* is greater than 100 in one trap on one night
- A confirmed or probable WNV or SLE case in human
- A confirmed WNV or SLE in a mosquito or bird specimen
- A cluster of dead blue jays and/or crows is reported

Miles of roadway sprayed:

2006 - 268

2007 - 187

2008 - 166

2009 - 236

2010 - 72

2011 - 32

2012 - 366 (through July 31)

* Truck operated at night or early morning to reduce human & beneficial insect exposure and the time of highest "quinks" activity.





- spraying Aqualuer 20-20 ® or Envion 30-30 ®
- active chemical agent in Aqualuer and Envion is permethrin
- Mixed with water it is applied at 6.0 ounces per minute with the truck driving at 10 mph



 An estimated 5/100ths of a teaspoon of active agent in a microscopic mist lands on a typical residential lot (1/4 acre)

WNV Activity

<u>Year</u>	+Mosquito	<u>+Human</u>
2002	6	0
2003	34	4
2004	28	1
2005	32	5
2006	14	11
2007	12	2
2008	0	2
2009	13	1
2010	0	0
2011	0	2
2012 (through Augu	st 6) 38	10

MOSQUITO CONTROL What can citizens do?

- While outdoors in the evening, wear light-colored, long sleeve clothing, and use an insect repellent containing DEET.
- Eliminate any standing water on your property, such as birdbaths (clean them twice per week), pet water dishes, clogged rain gutters, stored tires, and buckets. Containers that can hold an inch or two of water can breed mosquitoes.
- Report any standing water that you are not able to eliminate yourself to the Health Department.

