Chapter 53. Vector Control Program Services/Operations Policy and Procedures[1]

Contents:

53.001 Purpose

To recognize and apply a variety of control techniques that effectively minimize levels of mosquito infestation in Travis County in a manner that is safe, cost effective, responsive to citizen service demands, and least damaging to non-target organisms and the general environment.

53.002 Policy Statement

(a) To utilize mosquito control strategies deriving both from the routine monitoring, sampling, and assessment of known breeding and infested areas, as well as from site assessments carried out in response to citizen requests for service and assistance.

(b) Emphasis shall be on year-round source control (larviciding) efforts that shall include the use of both biological and chemical methods.

(c) As indicated in the control measure guidelines (attachment A) supplementary adulticiding (broadcast spraying) activities will be carried out during the warm weather months (April-November) associated with peak mosquito population levels.

(d) When chemical pesticides are employed, emphasis shall be on the use of those that are of low toxicity and of least persistence in the environment.

(e) All pesticides shall be used and handled strictly according to label instructions and applicable regulations and under the direction and control of trained personnel, with accurate record keeping on all site inspections and treatments.

(f) Pesticide use records will be available to any citizen upon his/her request, and will include at a minimum, the date, location, amount, and kind of pesticide employed.

(g) Educational activities shall include on-site consultations with private citizens as requested, as well as outreach to neighborhood organizations and the general public.

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[1] Chapter 53 was adopted by Travis County Commissioners Court on March 28, 1995 (Item 3).

(h) Notification to the public regarding broadcast spraying operations and other activities will be effected through the community/neighborhood outreach process and by seasonally issued public news releases.

53.003 Procedures

(a) Biology of Mosquitoes. Mosquitoes are vectors for a number of serious human and animal diseases, including malaria, yellow fever, encephalitis, dengue fever, and dog heartworm. Aside from their role in the transmission of disease, uncontrolled mosquito populations can represent a major impediment of the enjoyment of outdoor recreation activities. Mosquito control methods relate directly to certain special characteristics of their biology and behavior.

(1) Mosquitoes need water to breed. The quantity may be as little as that found in a tree knothole. Generally, it must be standing water as opposed to running water.

(2) Mosquitoes may concentrate in tall weeds and grass, brush, and in walls. However, they do not breed in these places.

(3) The life span of a mosquito may vary from two weeks to several months.

(4) Mosquitoes develop in four stages: egg, larva, pupa, and adult.

(5) The adult state can be reached in as short a time as five days under "ideal" conditions in very hot weather. Cooler weather can considerably prolong the time frame for full development.

(6) Only the female mosquito bites. This is for the female to gain the blood meal needed to lay viable eggs.

(7) Each female mosquito breeds several times in her lifetime and typically has several batches of eggs that number from 50 to 200.

(8) In urban areas, mosquitoes typically fly less than 200 yards from their hatching site. This is only far enough to obtain a blood meal.

(9) Mosquitoes survive cold weather in the egg or in adult forms.

(b) Site Assessment. The chosen mosquito control methodology derives primarily from the field assessment of conditions at the control site. Responses are made to citizen reports of local infestations or proactive monitoring visits are made to known and chronic problem spots. The site assessment may include:

(1) Sampling - larvae from a breeding area a/o adult specimens can be identified by subspecies. Periodic coordination with the Texas Department of Health Mosquito Surveillance Program is necessary.

(2) Black Jar Monitoring, Dipping, a/o Landing Counts - identify and count the number of larvae from sampling jars or in standing water areas,

a/o the number of biting mosquitoes per minute. (Refer to control measure guidelines)

(3) Complaint and Request Verification - contact citizen for input on site conditions.

(4) Check Seasonal and Historic Site File - look for trends, nearby problem spots, past sampling results, past applications of control methods.

(c) Control Methods. After the site assessment, a number of control measures may be deemed to be in order, as well as repeated monitoring visits. Control measure options include:

(1) Physical Improvements - Identify and seek correction of drainage problems, trash and tire accumulations, and overgrowths of vegetation. Consult with private property owners and communicate with public agencies as necessary. Refer situations that may require public health law enforcement action to the Program Supervisor who will report the information to the appropriate EHS Program or other agencies for follow-up.

(2) Larviciding. The application of biological or chemical agents to kill pre-adult mosquitoes (refer to control measure guidelines).

(A) Biological Agents - Generally used for chronic breeding areas where near term engineering solutions are not anticipated. Current options include the introduction of top-feeding minnows (e.g. Gambusia affinis) or BTI (Bacillus thuringiensis israelensis)

(B) Chemical Agents - To be used most often in shallow, more short term breeding (standing water) areas. In current use is Altosid, that contains an insect growth regulator formulated in slow release briquets. Also in use is lightweight diesel oil (the usual application rate is one tablespoon per 20 square feet).

(3) Broadcast Spraying. In the warm weather months, adulticiding operations will be necessary to adequately control burgeoning mosquito populations in citizen populated areas. In particular, the target mosquito population will consist of those that have escaped other control measures and those that migrate into the control area on an ongoing basis. Adulticiding will be carried out through the use of truck mounted ultra-low-volume (ULV) sprayer units that are specifically engineered and designed for municipal mosquito control operations. (Refer to control measure guidelines).

(A) Of those insecticides (i.e. active ingredients) that currently have EPA label approval for application as ULV aerosols by ground equipment, only the least toxic and least persistent in the environment will normally be used. These include resmethrin (LD 50 = 2500) and pyrethrin (LD 50 = 1500) based compounds. By policy, products containing active insecticide ingredients with an LD 50 of 1375 or less will not be used,

except in cases of declared public health emergency (e.g. malathion: LD 50 = 1375, naled: LD 50 = 430, fenthion: LD 50 = 190, and chlorpyrifos: LD 50 = 130).

(B) The timing of adulticiding operations will center around the pre-dawn mosquito activity peak, and will always follow on a site assessment having been done within the previous two weeks, except in cases of declared public health emergency. ULV spraying operations in residential areas will normally cease after 7 a.m.

(C) Upon receiving a written request from a citizen, the Department will cease ULV (broadcast) mosquito spraying operations within 200 yards of that citizen's address, except that a verbal or telephonic objection shall suffice for 30 days to allow time for the citizen to communicate to the Department in writing. Office and field files will be kept on broadcast spraying "objectors," and it will be reviewed and updated by March 31 of each calendar year. Citizens may remove their names from the "objectors" file at any time by indicating this in writing. In order for citizens within a 200 yard radius of an "objector" to receive ULV spraying service, the disagreement between the objecting and requesting citizens must be resolved by the citizens and the Department shall be notified of the resolution in writing. All written communications to the Department from citizens will be acknowledged by the Department in writing within 15 days of receipt.

(d) Follow-up Site Visits. To permit an accurate determination of treatment effectiveness, periodic follow-up visits shall be made to all sites where control measures have been taken. This will normally be done within five (5) working days.

(e) Education and Public Notification. In response to citizen requests, field consultations will be made with private property owners to assess the environmental conditions and to offer practical advice on measures that should be taken to control mosquitoes, as well as flies, other insects, and rodents.

(1) Program and Division field, supervisory, and management staff will also be available to meet and consult with neighborhood organizations and other community groups to address such issues on an area-wide basis. In neighborhoods where persistent mosquito infestations have been identified, this approach will be initiated by the Program or Division staff.

(2) Seasonally issued public news releases will be employed to advise the general public of the nature and scope of the Vector Control Program services and activities.

(f) Record Keeping. Program field staff log their activities sequentially on a daily basis by type and number (volume) on a standard form used by all Division field staff.

(1) More comprehensive information tracking is accomplished through the Division's Complaint and Request System (CRS) that provides a detailed record of dates, locations, and activities relating to the Program response to individual citizen calls for service. Vector Control will also record detailed information relating to control measures taken not in direct response to citizen calls, but proactively as resulting from regular site monitoring and assessments. The amount and kind of each pesticide or biological control used will be recorded in all cases and filed by street and subdivision address, giving a chronological control measure record by location.

(2) Site assessment information (see § 53.003(b)) is also to be specifically recorded and tracked by Program Staff and by location, date, and findings.

(3) Information from Vector Control Program Files will be available to interested parties on an as-requested basis and in a timely manner (normally within two working days).

(g) Staff Training. The Texas Department of Health has responsibility for certifying commercial and noncommercial applicators using pesticides for the control of insects and related pests of public health importance. Certification is required for applicators using restricted-use or state-limited-use pesticides and recommended otherwise. By policy, all Vector Control Program Field Staff shall be required to gain, and thereafter maintain, TDH certified status by July 1, 1991 or within six months of the effective date of their employment, whichever is later, and whether or not they handle restricted-use or state-limited-use pesticides. Vector Controllers shall also be required to demonstrate knowledge of TDH Certification course material to the satisfaction of the Program Supervisor on a yearly review basis after receiving certification. Program Field Staff shall likewise receive and acknowledge on at least an annual basis such training as is necessary for compliance with the Federal Insecticide, Fungicide, and Rodenticide Act and any other local, state, or Federal enacted and applicable law.

53.004 Definitions

(a) Regarding the "Control Measure Guidelines," definitions of "landing count," "black jar monitoring," and "dipping count" are as follows:

(1) landing count: For a period of time during the site assessment, the Vector Controller allows mosquitoes to land on his or her person. This is an estimated average count per minute that is taken over a period of at least several minutes.

(2) black jar monitoring: A glass jar painted black is left out in a secluded location, typically for a ten day period. The mosquito larvae are counted on the return visit. The jar is painted black to eliminate most glare and reflection, thereby making it more attractive to mosquitoes.

(3) dipping count: An immediate count of larvae in standing water areas is gained by counting the larvae picked up in a standard size ladle.

53.005 General Information

(a) The "Control Measure Guidelines" are designed to respond to a perceived need for quantifiable triggering scenarios for the application of pesticides. By policy, at least one of the three described infestation measurement approaches must be taken and documented before larviciding or ULV broadcast spraying. The Health Department believes the indicated trigger levels to be meaningful, but possibly subject to change as an expanding database is analyzed over time. Heretofore, the Department has not consistently tracked this information.

(b) Vector Control is now operating under the new services and operations policy. Please let me or Fred Rodgers know if you have more questions or comments.

53.006 Control Measure Guidelines (Attachment A)

(a) The application of chemical or biological mosquito control measures may follow upon the on-site field assessment, which may include:

(1) sampling (larvae a/o adults) for subspecies identification

(2) black jar (larvae) monitoring, dipping, or landing counts to measure infestation levels*

(3) citizen contact (and office records check) for background information and past history

(b) Determining the infestation level before employing control measures is of primary importance.

(c)

Mosquito Count **	Control Options
0	Continued Monitoring
1 to 3	Source Control Only
4 to 6	Source control. Also ULV spraying for second or more consecutive count in this range within past 30 days.
7 or more	Source Control. ULV Spraying

** landing count (per minute), black jar monitoring (larvae per jar), or dipping count (larvae per dip)