GUIDELINES FOR ULTRA-LOW VOLUME APPLICATION AND HANDLING OF PESTICIDES FOR ADULT MOSQUITO CONTROL

The Utah Mosquito Abatement Association (UMAA) recognizes that adult mosquito control (as specifically Ultra Low Volume (ULV) adulticidal applications) is necessary when larval control has not been effective or operationally feasible. The UMAA asserts that habitat management/larvicidal control is preferred over any routine public exposure to pesticides as from adult mosquito control. Mosquito abatement districts/control programs will strive to affect larval reduction via source management and/or biological control and larval abating when legally and environmentally justified.

The general public may perceive mosquito/vector control as simply the periodic or regular application of adulticidal agents from a vehicle-mounted machine, and/or as by aircraft. Such a perception may not be associated with those actual mosquito/vector problems of the moment. Especially where such practices may already have been established, it is essential to inform the public as per the true and full scope of the science of modern mosquito/vector control.

Each member agency that performs adulticiding is encouraged to use the following guidelines when establishing their own procedures for adult mosquito/vector control program.

I. **Define the problem**

A. Data on local mosquito/vector populations should be collected and maintained in such a manner as to include representative species, and sources of adult populations.

B. Verify and delineate the real extent of the problem through conventional surveillance techniques, such as: trapping, field observations, careful interpretation of public information, and vector-borne disease determination.

C. It is important to establish thresholds, limits that when determined through surveillance are a trigger to do adulticiding.

- Examples of thresholds are: number of nuisance/vector mosquitoes in a trap; service request from a land owner that you have worked with in the past and has a known good judgment of mosquito numbers; field technicians reporting on biting rate; a disease positive sentinel chicken; positive mosquito ‘pools’, a horse with diagnosed or suspected WNV, etc.
- Each agency will have its own unique thresholds based on geography, mosquito species, citizen expectation, demographics, etc.

D. It is important to take into consideration that early intervention through adulticiding can play an important part in preventing or reducing the severity of a mosquito-borne disease epidemic.

II. **Equipment**

A. Choice of equipment, as most regionally applicable.

B. Proper and documented calibration. Flow rate and droplet size.

C. Regular preventive maintenance.

III. **Adulticides**

A. Selection of an adulticide should be determined by careful evaluation of label restrictions and potential efficacy. Relative cost and possible local public perceptions/apprehension must be considered.

B. Storage, mixing, loading and container disposal requisites must be followed, as displayed upon the label.

IV. **Personnel**

A. All persons involved with the application of public health adulticides should possess a current Utah State Department of Agriculture non commercial applicator's license. Even though, only restricted use pesticides require the applicator to have a pesticide applicators license, it is preferred that personnel have the added knowledge that comes from obtaining a non-commercial pesticides applicators license.

B. Each agency may have supplemental training and precautionary procedures that are applicable to local circumstances. In any case, the label of the product must be strictly followed.

C. All personnel applying adulticides and their supervisor(s) should have a thorough knowledge of the information contained in the label of the adulticide to be used.

V. **Deployment**

The safe and effective field deployment of ULV adulticides requires numerous considerations.

A. Meteorological factors as per the label of the product being used.

B. The time of application should occur at optimal mosquito/vector activity and minimal probable exposure to the public and non-target organisms. Most adulticide

products are highly toxic to bees exposed to direct treatment on blooming crops or weeds. Applications should be timed to provide the maximum possible interval between treatment and the next period of bee activity. The environmental hazard section of the label must be followed.

C. Technicians should be trained in the terrain, non-targets, movement of people, etc. in the areas to be adulticided.

D. No spray zones/lists. In unique circumstances, there may be areas within a spray block that need to be excluded. Examples of reasons for exclusion may be: a citizen that has a compromised immune system or severe allergy; organic farming/gardening; bee hives; federal wildlife preserve, etc.

- An off set of spaying can be established for no spray areas in terms of feet, a street or other recognizable boundary.
- Any no spray zones must be clearly communicated to all adulticiding technicians.
- The presence of vector-borne disease(s) in a no spray zone may require a temporary change to no spray zones.

VI. **Documentation**

A. A minimum of written documentation should be made at the time of application, and there after maintained on all aspects of the adulticidal program. Specific information that should be recorded includes, but is not limited to:

1. Date/Time
2. Adulticide used
3. Personnel doing spraying
4. Spray Equipment used
5. Location
6. Amount of adulticide used
7. Acreage treated
8. Wind speed
9. Temperature

B. Verification of Efficacy. When possible it is important to do surveillance following adulticiding applications to verify that the procedures, equipment and product being used are meeting performance expectations. This can help access application rates and resistance management.

VII. **Risk Management**

A. The label must be strictly followed.

B. Personnel operating or supervising the use of any ULV machine must be thoroughly trained and versed in the safe and prudent use of the same, as well as, those vehicles and accessories to be used in the course of their field deployment.

C. Contingency procedures for equipment failures/emergencies. Things to consider:

1. Spill cleanup guidelines
2. In case of a suspected/reported non-target exposure or kill, where specimens can be tested.
3. Automobile accident procedures if it involves an adulticide spray unit.
4. Backup spray equipment.

D. High visibility features such as strobe lights, emergency flashers or reflective slow vehicle signs should be used while spraying.

VIII. **Public Interface**

Effective public relations with the community(s) served are vital to the successful operation of any mosquito/vector control program regardless of the level of organization or operational efficacy of the same.

A. A vigorous and ongoing public relations/education program should be functionally in place. Versatility is essential.

B. All personnel involved in the adulticidal program should be prepared to address problems and communicate, courteously but effectively, when under immediate public scrutiny or duress.

IX. **Legal Concerns**

A. By way of contingency planning, a general course of action should be developed for successfully addressing any claims of personal injury or property damage as pursuant to any adulticidal procedures.

B. Adequate liability insurance should be maintained at all times.

C. In circumstances involving contracts/agreements with any private contractor, the mosquito/vector abatement district/entity should first acquire a hold harmless agreement, signed contract and certificate of insurance from the contractor.