Draft Aerial Adulticide Applications of ReMoa Tri® Triple-Action Insecticide

STANDARD OPERATING PROCEDURE (SOP) FOR THE U.S.A.

Version 1.1 | March 2024

**What is ReMoa Tri®?**

ReMoa Tri is a triple mode-of-action adulticide to provide operational control of both susceptible and permethrin-resistant mosquitoes. It is currently labeled for non-crop applications.

**What is an Aerial Adulticide Application?**

Aerial adulticide applications are used to treat large areas, quickly and efficiently, when nuisance and disease-carrying mosquitoes are present. Routine aerial applications result in greater coverage and can reduce labor costs associated with truck-mounted treatments.

**Aerial Adulticide Application of ReMoa Tri**

Based on your program needs, aerial applications can be completed with fixed wing or rotary aircraft over non-crop areas to control mosquitoes. Aerial applications of ReMoa Tri can also be used to control permethrin resistant *Aedes* and *Culex* mosquitoes. ReMoa Tri can be applied as an Ultra-Low Volume (ULV), nonthermal aerosol spray (cold fog) in mosquito adulticiding programs involving outdoor residential, urban, industrial, and recreational areas, to control adult mosquitoes.

Do not apply more than 1.018 fl oz of ReMoa Tri per acre in any two-day period. Do not make more than 30 applications per site per year (For a maximum rate 30.54 fl oz of ReMoa Tri per acre per year). Before making the first application in a season, consult with the State or Tribal agency with primary responsibility for pesticide regulation to determine if other regulatory requirements exist. To delay insecticide resistance, avoid application of more than 30 applications and consecutive sprays of ReMoa Tri or other insecticides of the same class in a year.

**Application Rate and Spray Volume**

ReMoa Tri may be applied at rates of 0.33 to 1.02 fluid ounces per acre by fixed wing or rotary aircraft equipped with suitable ULV application equipment.

Recommended application rate for susceptible mosquitoes:

* Apply at 0.34 oz/acre – 0.66 oz/acre

Recommended application rate for permethrin-resistant mosquitoes:

* Apply at 0.67 oz/acre – 1.02 oz/acre

|  |  |  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Flow Rate Based on a 1000-Foot Swath Width** | | | | | | | | | | |
|  | **Application Rate (lbs. a.i./Acre)** | | | | **Application Rate (fl. oz./Acre)** | **Speed (mph)** | **Final Flow Rates (fl. oz./min)** | | | |
| **Fenpropathrin** | **Abamectin** | **C8910** | **ReMoa Tri** | | **Undiluted** | **Diluted (1:0.5)** | **Diluted (1:1)** | **Diluted (1:2)** |
| **Low Rate** | 0.0008​ | 0.0003​ | 0.0002​​ | 0.34​ | | 60 | 41.21 | 61.82 | 82.42 | 123.64 |
| 70 | 48.08 | 72.12 | 96.16 | 144.24 |
| 80 | 54.95 | 82.42 | 109.90 | 164.85 |
| 90 | 61.82 | 92.73 | 123.64 | 185.45 |
| **Mid-Rate** | 0.00157 | 0.00059​ | 0.00039​ | 0.67​ | | 60 | 81.21 | 121.82 | 162.42 | 243.64 |
| 70 | 94.75 | 142.12 | 189.49 | 284.24 |
| 80 | 108.28 | 162.42 | 216.57 | 324.85 |
| 90 | 121.82 | 182.73 | 243.64 | 365.45 |
| **High Rate** | 0.00239 | 0.00089 | 0.0006​ | 1.018 | | 60 | 123.39 | 185.09 | 246.79 | 370.18 |
| 70 | 143.96 | 215.94 | 287.92 | 431.88 |
| 80 | 164.53 | 246.79 | 329.05 | 493.58 |
| 90 | 185.09 | 277.64 | 370.18 | 555.27 |

*Table 1: Flow Rates based on* *1000 ft. swath.*

**Spray Equipment and Droplet Size**

Any spray equipment used to apply this product must produce the correct specified droplet size. Atomizing this product correctly is important to ensure an effective application and to avoid undesired effects, such as droplets falling too quickly or drifting in an unexpected pattern.

Spray equipment must be adjusted so that the volume median diameter (VMD) is less than 60 microns (Dv 0.5 ≤ 60 μm) and that 90% of the spray volume is contained in droplets smaller than 115 microns (Dv 0.9 < 115 μm). Application equipment must be tested at least annually to confirm that pressure at the nozzle and nozzle flow rate(s) are properly calibrated. Droplet size should be confirmed by collecting droplets on rotating slides and measuring them on a compound scope using an ocular micrometer or droplet analysis software such as ADrop™. The spread factor of ReMoa Tri is 0.67.

The spray system should be inspected before each application to identify any replacements on worn parts or unexpected changes. Similar to other adulticides, ReMoa Tri is noncorrosive to application systems.

**Equipment Types**

Each aircraft and spray system configuration can offer advantages and disadvantages. However, the final setup used must be within label requirements and produce an acceptable droplet spectrum.

|  |  |
| --- | --- |
| **Equipment Type** | **Atomizer Type** |
| Helicopter | Micronair AU6539 (electric) |
| Fixed Winged Aircraft | Micronair AU4000 (wind-driven) |

*Table 2: Example Aerial Equipment Setups*

**Application Preparation**

ReMoa Tri is a "Ready-to-Use" (RTU) oil-based product and does not require dilution or agitation. However, when applications do require dilution, the product can only be diluted with the manufacturer’s ReMoa Diluent™. Due to the unique properties of ReMoa Tri, other water or oil diluents cannot be used. ReMoa Tri should not be diluted more than 1:2 (product: diluent), refer to Table 1.

**Application Process**

An aerial application should be planned with swath, offset, and spray blocks determined before spray on. Spraying should begin at the downwind end of the block and successive spray passes should be made moving upwind with each pass. Spray routes will need to be customized for each target spray block.

Offsetting flight lines may be necessary to account for wind conditions and geography. The offset for a spray application is determined by finding the distance where the peak spray cloud concentration hits the spray block. For a given spray block the offset should be from the middle of the target site. Offsets depend on the wind speed above ground, flight altitude, and flight speed.

Create an optimum swath when possible. An optimum swath width can be achieved when ReMoa Tri is applied from an aircraft that is flying perpendicular to the wind direction.

Align the spray nozzles to ensure even distribution of the spray cloud throughout the target area.

**Equipment Cleanup**

After use, equipment should be immediately cleaned with proper flushing of the entire system. ReMoa Tri should be removed from the system when not in use and stored in a cool, dry place.

Spray systems can be flushed after an application using a standard ULV flush fluid.