



NOTICE OF SPECIAL WORK SESSION AGENDA  
LANCASTER CITY COUNCIL  
MUNICIPAL CENTER CITY COUNCIL CHAMBERS  
211 N. HENRY STREET, LANCASTER, TEXAS



Monday, August 1, 2016 - 7:00 PM

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**DEFINITIONS:**

**Written Briefing:** Items that generally do not require a presentation or discussion by the staff or Council. On these items, the staff is seeking consent from the Council or providing information in a written format.

**Verbal Briefing:** These items do not require extensive written background information or are an update on items previously discussed by the Council.

**Regular Item:** These items generally require discussion between the Council and staff, boards, commissions, or consultants. These items may be accompanied by a formal presentation followed by discussion and direction to the staff.

**[Public comment will not be accepted during Work Session unless Council determines otherwise.]**

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**Regular Items:**

1. Discuss and consider a Resolution authorizing the City Manager or designee to undertake mosquito abatement methods; providing for the City Manager or designee to authorize and enter into an interlocal agreement with Dallas County for Aerial Spraying in the 2015-2016 and 2016-2017 Vector Seasons if promulgated by the Dallas County Judge.
2. Receive a presentation and discuss the Fiscal Year 2016-2017 proposed budget.

**ADJOURNMENT**

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**EXECUTIVE SESSION:** The City Council reserves the right to convene into executive session on any posted agenda item pursuant to Section 551.071(2) of the Texas Government Code to seek legal advice concerning such subject.

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**ACCESSIBILITY STATEMENT:** Meetings of the City Council are held in municipal facilities are wheelchair-accessible. For sign interpretive services, call the City Secretary's office, 972-218-1311, or TDD 1-800-735-2989, at least 72 hours prior to the meeting. Reasonable accommodation will be made to assist your needs.

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**PURSUANT TO SECTION 30.06 PENAL CODE (TRESPASS BY HOLDER WITH A CONCEALED HANDGUN), A PERSON LICENSED UNDER SUBCHAPTER H, CHAPTER 411, GOVERNMENT CODE (HANDGUN LICENSING LAW), MAY NOT ENTER THIS PROPERTY WITH A CONCEALED HANDGUN.**

**CONFORME A LA SECCION 30.06 DEL CODIGO PENAL (TRASPASAR PORTANDO ARMAS DE FUEGO CON LICENCIA) PERSONAS CON LICENCIA BAJO DEL SUB-CAPITULO 411, CODIGO DEL**

GOBIERNO (LEY DE PORTAR ARMAS), NO DEBEN ENTRAR A ESTA PROPIEDAD PORTANDO UN ARMA DE FUEGO OCULTADA.

PURSUANT TO SECTION 30.07 PENAL CODE (TRESPASS BY HOLDER WITH AN OPENLY CARRIED HANDGUN), A PERSON LICENSED UNDER SUBCHAPTER H, CHAPTER 411, GOVERNMENT CODE (HANDGUN LICENSING LAW), MAY NOT ENTER THIS PROPERTY WITH A HANDGUN THAT IS CARRIED OPENLY.

CONFORME A LA SECCION 30.07 DEL CODIGO PENAL (TRASPASAR PORTANDO ARMAS DE FUEGO AL AIRE LIBRE CON LICENCIA) PERSONAS CON LICENCIA BAJO DEL SUB-CAPITULO H, CAPITULO 411, CODIGO DE GOBIERNO (LEY DE PORTAR ARMAS), NO DEBEN ENTRAR A ESTA PROPIEDAD PORTANDO UN ARMA DE FUEGO AL AIRE LIBRE.

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**Certificate**

**I hereby certify the above Notice of Meeting was posted at the Lancaster City Hall on July 28, 2016 @ 9:45 p.m. and copies thereof were provided to the Mayor, Mayor Pro-Tempore, Deputy Mayor Pro-Tempore and Council members.**



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Sorangel O. Arenas  
City Secretary

## LANCASTER CITY COUNCIL

### City Council Work Session

Item 1.

**Meeting Date:** 08/01/2016

**Policy Statement:** This request supports the City Council 2016-2017 Policy Agenda.

**Goal(s):** Healthy, Safe & Vibrant Community

**Submitted by:** Rona Stringfellow, Assistant City Manager

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#### **Agenda Caption:**

Discuss and consider a Resolution authorizing the City Manager or designee to undertake mosquito abatement methods; providing for the City Manager or designee to authorize and enter into an interlocal agreement with Dallas County for Aerial Spraying in the 2015-2016 and 2016-2017 Vector Seasons if promulgated by the Dallas County Judge.

#### **Background:**

The City of Lancaster has an interlocal agreement currently with Dallas County for ground spraying and vector control. In the past few weeks, several positive results have prompted ground spraying in the areas of McCormick and most recently in the area of Pierson Street. Several other communities have experienced positive test traps for West Nile Virus, as well. As such, Dallas County member cities have been working closely with County Officials in monitoring the situation. Dallas County's epidemiologist has requested that cities prepare for the possibility of aerial spraying and sought concurrence from member cities should the situation escalate.

#### **Operational Considerations:**

This resolution will allow the City to participate in aerial spraying in a timely manner if the Dallas County Judge recommends spraying.

#### **Legal Considerations:**

The City Attorney will approve the resolution as to form.

#### **Public Information Considerations:**

The City will continue to inform the public of potential West Nile Virus threats and abatement measures through the City website and other communication avenues.

#### **Fiscal Impact:**

There are potential costs for mosquito spraying by Dallas County dependent on the size of the area to be sprayed and member city participation. The current rate is **\$1.69 per acre** using the chemical Duet (0.8 oz/acre application rate).

#### **Options/Alternatives:**

1. Council may adopt the resolution.
2. Council may deny the resolution.

**Recommendation:**

Staff recommends approval of the resolution as presented.

**Attachments**

Resolution

Duet Resource

Duet Adulicide (English, Spanish, Vietnamese)

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**RESOLUTION NO.**

**A RESOLUTION OF THE CITY OF LANCASTER, TEXAS, AUTHORIZING THE CITY MANAGER OR DESIGNEE TO UNDERTAKE MOSQUITO ABATEMENT METHODS; PROVIDING FOR THE CITY MANAGER OR DESIGNEE TO AUTHORIZE AND ENTER INTO AN INTERLOCAL AGREEMENT WITH DALLAS COUNTY FOR AERIAL SPRAYING IN THE 2016-2017 VECTOR SEASONS IF PROMULGATED BY THE DALLAS COUNTY JUDGE; PROVIDING FOR PUBLICATION; AND PROVIDING AN EFFECTIVE DATE.**

**WHEREAS**, the vector index in Dallas County for vector borne infections could rise and result in an extreme outbreak of West Nile Virus, and;

**WHEREAS**, the Dallas County judge may recommend that action be taken to initiate aerial spraying activities to reduce the mosquito population which carries the disease, and;

**WHEREAS**, the City of Lancaster does not possess adequate facilities to effectuate aerial spraying, and;

**WHEREAS**, the City of Lancaster has determined that extraordinary measures may be required to alleviate the suffering of people and to protect or rehabilitate property.

**NOW, THEREFORE, BE IT RESOLVED BY THE CITY COUNCIL OF THE CITY OF LANCASTER, TEXAS:**

**SECTION 1.** That the City Council hereby authorizes the City Manager to enter into a contingent aerial spraying contract in an amount not to exceed \$215,000 with Dallas County.

**DULY PASSED** and approved by the City Council of the City of Lancaster, Texas, on this the 8th day of August, 2016

**ATTEST:**

**APPROVED:**

\_\_\_\_\_  
Sorangel O. Arenas, City Secretary

\_\_\_\_\_  
Marcus E. Knight, Mayor

**APPROVED AS TO FORM:**

\_\_\_\_\_  
Robert E. Hager, City Attorney



# DUET™

## DUAL-ACTION EFFICACY

### Adulticide for Mosquito Control

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Delivers more control of natural mosquito populations

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Versatile in a range of operational conditions

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Effective even at lower rates of application

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# TWO ACTIVE INGREDIENTS FOR GREATER STRENGTH AND VERSATILITY

**Duet**,™ an advanced dual-action mosquito adulticide, combines the proven efficacy of Sumithrin® (the active ingredient found in Anvil®) plus the exceptional knock-down of prallethrin. Together, these two active ingredients provide you a unique, effective and faster way to control mosquitoes.

## DUET'S BENEFITS >>

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**Delivers more control** of natural mosquito populations

**Versatile** in a range of operational conditions

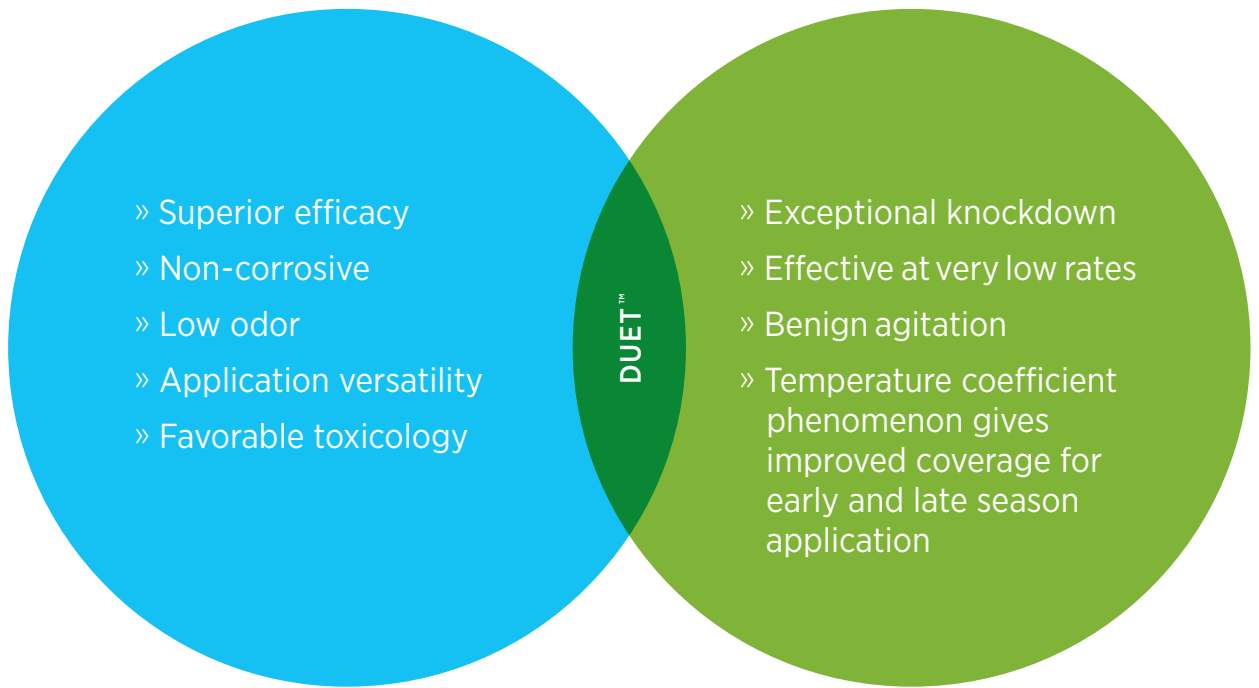
**Effective** at even low rates of application

## SUMITHRIN

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## PRALLETHRIN

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### Stronger and Faster

With the combination of Sumithrin and prallethrin, Duet effectively controls more mosquitoes more quickly. Duet has a faster knockdown than other products. In addition, despite its potent combination of active ingredients, Duet has approximately the same toxicity profile as Anvil®. This offers increased efficacy with the *same low toxicity*.

### Biodegradable

More than a generation ago, scientists created synthetic pyrethroids, which emulate naturally occurring pyrethrins, found in chrysanthemum flowers. Two of these synthetic pyrethroids — Sumithrin and prallethrin (brand name ETOC®) — kill mosquitoes effectively, yet biodegrade rapidly in the presence of sunlight and/or microorganisms. The two actives with the synergist piperonyl butoxide (PBO) yield superior performance for mosquito control.

### Active Ingredients:

**Prallethrin** (1%)  
(RS)-2-methyl-4-oxo-3-(2-propynyl) cyclopent-2-enyl-(1RS)-cis, transchrysanthemate

**Sumithrin** (5%)  
3-Phenoxybenzyl-(1RS, 3RS; 1RS, 3SR)-2, 2-dimethyl-3-(2-methylprop-1-enyl) cyclopropanecarboxylate

**Piperonyl Butoxide** (5%)

**Other Ingredients** (89%)



# BENIGN AGITATION: EXCELLENT KNOCKDOWN AND GREATER CONTROL

Field trial and cage observations have shown that **Duet™ causes benign agitation — a non-biting excitation of mosquitoes.** This has the potential to draw mosquitoes from a resting state, causing more of them to come in contact with droplets and increase efficacy. As a result, you can have greater control on a larger percentage of the total mosquito population.

## **Benign Agitation Studies Prove Duet's Effectiveness**

In laboratory studies,\* benign agitation was demonstrated by looking at the active ingredients in Duet, separately.

Ultra low volume (ULV) droplets were introduced into a wind tunnel. The response of resting mosquitoes was video recorded and movement/flight pattern observed before, during, and after exposure. Mosquitoes exposed to insecticides moved faster when sprayed. Prallethrin produced increased flight activity during spray while Sumithrin (the other active ingredient in Duet) produced increased activity during the post-spray period.

In another study\*\* that showed the formulated product of Duet increases the percentage of resting mosquitoes to take flight post spray, it was also demonstrated that mosquitoes remain in flight longer than with competitive formulations.

The bottom line: With Duet, more resting mosquitoes take flight to come in contact with more droplets, thus improving the efficacy of the application.

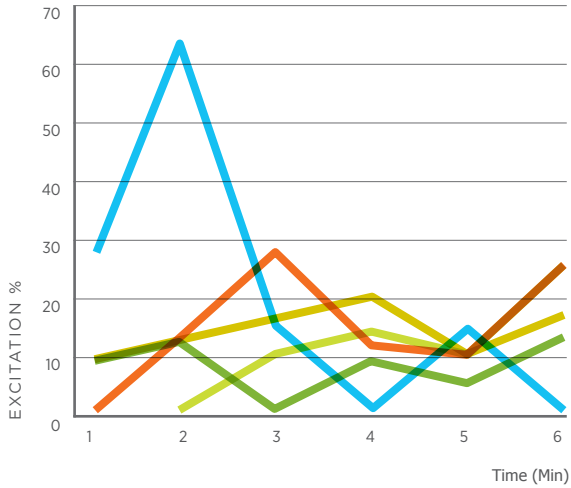
\*Study by Gary G. Clark and Sandra A. Allan of the CMAVE, USDA, Gainesville, FL; Miriam F. Cooperband with APHIS, USDA, Otis ANGB, MA, and William Jany, Clarke. Tests conducted with female *Culex quinquefasciatus* using a range of adulticides with different active ingredients.

\*\*Work by Gary Benzon, Benzon Research, Carlisle, PA.

**Key:**

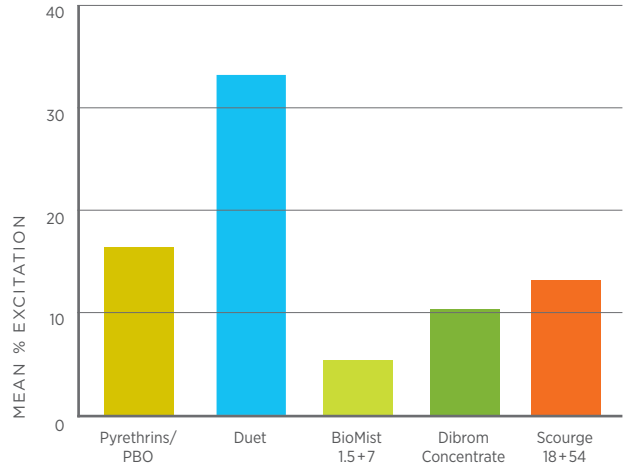
- Duet™
- Py / PBO
- Dibrom Concentrate
- Scourge
- BioMist

**Excitation Over Time**



Source: G. Benzon, Benzon Research, Carlisle, PA.

**5 Minutes After Exposure**



Source: Dr. Hajime Hirai, Sumi World, 1997

**Comparative Insecticidal Activity**

COMPOUND	LD50 (µG / INSECT) MOSQUITO <sup>2</sup>
Prallethrin	0.0032
Pyrethrins	0.022

<sup>2</sup> *Culex pipiens pallens*, female adult

Prallethrin exhibits high killing activity against mosquitoes compared to pyrethrins.

We believe that an important part of being an environmental steward is product rotation. Product rotation maximizes the effectiveness of every program by preventing cross-resistance.

To help select products for rotation in your program, visit [clarke.com/mosquitocontrolproducts](http://clarke.com/mosquitocontrolproducts) to view our full line of product offerings.



# PROFILE OF AN ADVANCED ADULTICIDE OPTION

## Product Density

ACTIVE INGREDIENT	SUMITHRIN	PRALLETHRIN	DUET
Specific Gravity	1.060	1.03	.87
Molecular Weight	350.5	300.4	—
Viscosity	—	—	13.4CP @24 C
Vapor Pressure	1.4 x 10 <sup>-7</sup> mm/Hg @21.4°C	3.5 x 10 <sup>-5</sup> mm/Hg @21.4°C	—

## Toxicology

STUDY	SUMITHRIN	PRALLETHRIN
96 Hr Acute Flow Through LC50 Rainbow Trout	17 µg/l	12 µg/l
96 Hr Acute Flow Through LC50 Bluegill	18 µg/l	22 µg/l
48 Hr Acute EC 50 <i>Daphnia magna</i>	4.3 µg/l	6.2 µg/l
Honey Bee 48 Hr Acute Contact LD50	0.064 µg/bee	0.028 µg/bee
Acute Oral LC50 Bobwhite Quail	2510 mg/kg	1171 mg/kg

## Acute Toxicology

SPECIES	DUET
Oral LD50 (rats)	> 5000 mg/kg
Dermal LD50 (rats)	> 5000 mg/kg
Eye Irritation (rabbits)	Minimal irritation
Inhalation LC50 (rats)	> 2.04 mg/l
Skin Sensitization (guinea pig)	Negative

## Environmental Toxicity

**In Sunlight:** The active ingredients in Duet™ are photolabile. The molecules easily decompose in the presence of sunlight. The half-lives of Sumithrin and prallethrin in water in the presence of light range from 9.1 to 13.9 hours. The degradation products of Sumithrin and prallethrin are non-persistent. Moderately rapid aerobic and anaerobic soil degradation was found in the absence of sunlight.

**In Soil:** Sumithrin and prallethrin are not readily transported from the site of application. Neither Sumithrin nor prallethrin bioaccumulates.

## Eco-Tier™ Ranking:

The Clarke Eco-Tier™ Index offers three tiers of products, equipment and services ranked by their impact on the environment. Duet is ranked as an “Advanced” product.



# CAGED TRIAL RESULTS

## SUPERIOR KNOCKDOWN AND CONTROL

### Initial Field Research

Initial field research for Duet™ has demonstrated excellent results. Tests were conducted involving the following species:

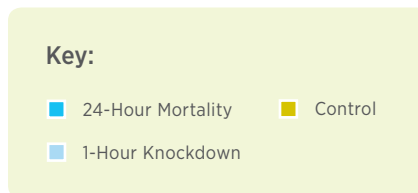
**Michigan:** *An. punctipennis*, *Oc. trivittatus* and *Ae. vexans*

**Florida:** *Oc. taeniorhynchus*

**Illinois:** *Coq. perturbans*, *Oc. trivittatus* and *Culex restuans*

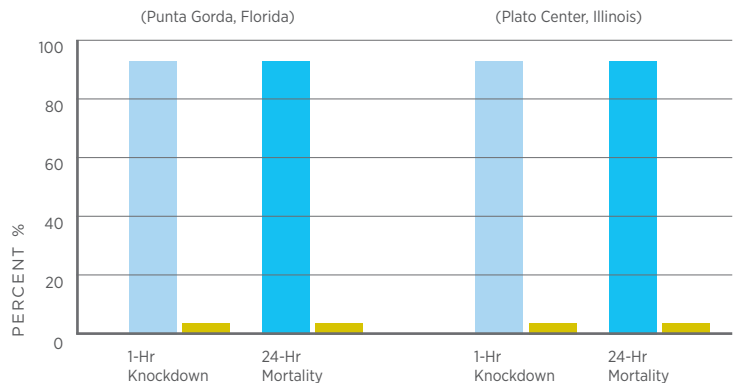
### Protocols:

- » Mosquitoes collected via CO<sub>2</sub> baited ABC traps
- » Mouth-aspirate mosquitoes
- » Cages placed @100-200' intervals
- » 10 min. exposure then transferred to holding cages
- » Mosquitoes fed 10% sugar-water solution
- » Monitor knockdown @1-Hr, and 24-Hr mortality
- » Controls handled same as treated mosquitoes



### Duet Ground ULV @150'

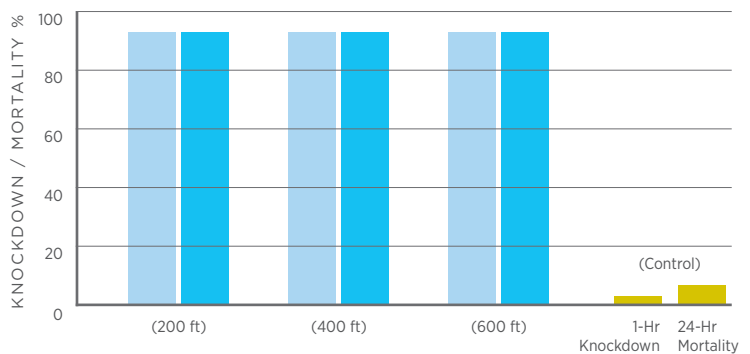
Rate: 0.41 oz/acre rate



### Duet ULV at Long Distances

Location: Saginaw, MI – 9/1/06

Rate: 0.0012 ai/acre Sumithrin and 0.0003 lbs/acre prallethrin



Even at distances up to 600ft from the spray nozzle, Duet demonstrates superior knockdown and control.

# APPLICATION METHODS OPTIMIZED FOR YOUR EQUIPMENT

Duet™ has been proven effective whether applied by air or ground (truck, ATV, backpack). Optimized for all standard ULV application equipment and nozzles, Duet is non-corroding to your application apparatus.

## Applying Duet by Air

Aerial applications can be completed with fixed wing or rotary aircraft. Based on your program needs, Duet can be applied at a range of .41 to 1.23 fl. oz/acre. Droplet VMD (volume median diameter) should be optimized between 25–30 microns. In wind tunnel atomization studies, Duet has shown to effectively produce this droplet size range when sprayed through equipment that has been correctly calibrated.

### To Optimize Your Aerial Application:



### Select the Proper Nozzle

Refer to the table to achieve the optimized less-than-30-micron droplet VMD. Some of the best nozzles for Duet usage are rotary (e.g. Beecomist or Micronair). Note that flat fan nozzles require orientation 130 degrees into the wind, and may not produce droplets within the desired spectrum when aircraft travel below 170 mph.

AIRCRAFT TYPE	NOZZLE TYPE	SIZE	ANGLE
Fixed wing	Flat fan	80-110° small orifice 005-04	135° forward
Fixed wing	Micronair Nozzles** AU5000*	Standard cage mesh	Straight back
Fixed wing	Beecomist*	10, 20 or 40 µm screen	Straight back
Rotary wing	Micronair Nozzles** AU5000*	Standard cage mesh	Straight back
Rotary wing	Beecomist*	40 µm screen	Straight back

\* Adjust RPM of nozzles to deliver the appropriate droplet spectrum required for your application.

\*\* AU 4,000, AU 5,000, AU 6,600 brushless

**Note:** Data is for general information only. Actual droplet size will depend on the application conditions and factors such as nozzle and atomizer condition. Always calibrate sprayers to ensure required dosage rate and conditions are met. **As always, read and follow label directions.**

2



### Calibration Process

#### To adjust your spray system for proper flow rate:

- » Determine the number of acres per minute your aircraft will treat by using the first formula shown.
- » Select the Duet™ labeled flow rate (in ounces per acre) required for your needs.
- » Using the second formula, multiply the figures derived from the two steps above to determine the proper Calibration Flow.

$$\frac{\text{Swath} \times \text{Speed}}{495} = \text{Acres} / \text{Min}$$

$$\left( \frac{\text{Acres}}{\text{Min}} \right) \left( \frac{\text{Oz}}{\text{Acre}} \right) = \frac{\text{Oz}}{\text{Min}}$$

↓

Calibration Flow

PRALLETHRIN	SUMITHRIN	PBO	FLOW RATES
0.00072 lbs. Al/acre	0.0036 lbs. Al/acre	0.0036 lbs. Al/acre	1.23 fl. oz/acre
0.00044 lbs. Al/acre	0.0022 lbs. Al/acre	0.0022 lbs. Al/acre	0.75 fl. oz/acre
0.00036 lbs. Al/acre	0.0018 lbs. Al/acre	0.0018 lbs. Al/acre	0.61 fl. oz/acre
0.00024 lbs. Al/acre	0.0012 lbs. Al/acre	0.0012 lbs. Al/acre	0.41 fl. oz/acre

3

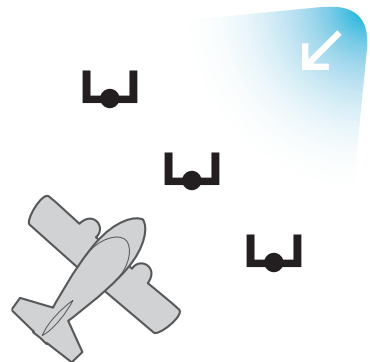


### Droplet Dynamics

Droplet VMD should be optimized between 25-30 microns to achieve maximum performance. Confirm the droplet size by placing slide impingers with Teflon coated slides as described in the diagram. Droplets on slides can be measured using a compound microscope with a mechanical stage and an ocular micrometer. Starting at one end of the slide, measure each droplet as they pass through the eyepiece micrometer. The expected spread factor for Duet is 0.59 (minimum of 200 droplets collected). Use this factor until the actual spread factor is determined.

#### To Determine Appropriate Offset:

- » Place droplet collectors 50 ft apart and 90 degrees to the wind direction.
- » Fly directly into wind over slides at 75 ft. Spray for 15 seconds after passing over slide collectors.
- » Wait 10 minutes after application for upwind droplets to reach collectors.



## Duet™ By Ground

Duet should be applied using ULV spray equipment capable of producing ULV spray droplets with a VMD of 8-30 microns.

### Use the Following Guidelines, Assuming a 300ft Swath:

Fl. oz/acre	* Flow rates in fluid oz/min at truck speeds of:			
DUET	5 MPH	10 MPH	15 MPH	20 MPH
1.23 oz/acre	3.7 oz	7.4 oz	11.2 oz	14.9 oz
0.75 oz/acre	2.3 oz	4.6 oz	6.8 oz	9.1 oz
0.61 oz/acre	1.9 oz	3.7 oz	5.6 oz	7.4 oz
0.41 oz/acre	1.2 oz	2.5 oz	3.7 oz	5.0 oz

\*Assumes a 300 ft spray swath

### To Optimize Your Ground Application:

To achieve maximum performance, droplet VMD should be optimized between 10-20 microns. Droplet spectrum may be determined by using the hot-wire method using a DCIII (AIMS) unit that measures and calculates VMD or MMD for oil-based liquids. Application equipment must be tested at least annually to confirm that pressure at the nozzle and nozzle flow rate(s) are properly calibrated.

### Standard Droplet Collection:

- » Use Teflon-coated microscope slide
- » Attach slide to 3'—4' rod
- » Stand 10'—25' downwind from nozzle
- » Distance is dependent on sprayer velocity
- » Higher velocity of sprayer = further distance from nozzle (not to exceed 25')
- » Swing rod (with coated slide facing the insecticide) once rapidly in a baseball swing/diagonal motion toward the sprayer, through the spray cloud

### Standard Droplet Measurement:

- » Use a compound microscope equipped with a mechanical stage and an ocular micrometer placed in the eyepiece.
- » Starting at one end of the slide, measure each droplet as they pass through the eyepiece micrometer.
- » A minimum of 200 droplets should be measured to obtain an adequate sample.
- » Spread factor for Duet: 0.59.

### ENVIRONMENTAL CONDITIONS FOR AIR AND GROUND APPLICATION

Duet should be applied when conditions are favorable for ULV applications. Favorable application conditions occur when the atmosphere at application height to immediately above ground level is stable. This condition is characteristic of an inversion, which occurs when temperatures increase with height. Stability is also influenced by solar radiation and heat exchange between air, soil and vegetation. As a result, favorable conditions for ULV applications usually occur prior to sunrise and after dusk. Duet has been shown to have a negative temperature coefficient. This means it is extremely effective, early and late season when temperatures are between 50°-65° F and most mosquitoes are active.

# FREQUENTLY ASKED QUESTIONS

**Q: What is prallethrin and how did it come into use as a mosquito adulticide?**

A: Prallethrin was developed in the 1980s as an alternative to pyrethrins. It was first registered for use with the U.S. EPA in 1995. Since then, it has been in use in pest control products throughout the world.

**Q: Does Duet™ pose a health risk to community residents?**

A: All products involve a balance between risks and benefits. The active ingredients in Duet have been carefully tested. Duet is registered for ground and aerial applications in outdoor residential and recreational areas.

**Q: Does the combination of prallethrin and Sumithrin in Duet increase toxicity?**

A: No. Duet has the same toxicology profile as Anvil®.

**Q: How does Duet break down in the environment?**

A: Duet's active ingredients break down rapidly in sunlight into carbon dioxide and water vapor.

**Q: What is Sumithrin, and how does it impact mosquitoes?**

A: Sumithrin, best known in the Anvil formulation, is an active ingredient used for adult mosquito control. A synthetic pyrethroid, Sumithrin replicates the mosquito controlling properties of pyrethrin, derived from chrysanthemum plants. It has been widely used in mosquito control since 1975, and in the Anvil formulation has been used in every major mosquito control effort in the U.S. since 1999. Both prallethrin and Sumithrin interrupt the sodium channel complex in mosquito nerve axons.

**Q: Is adult control effective?**

A: Generally, spraying for adult mosquitoes is highly effective at killing adult mosquitoes on the wing. With Duet, the dual-active formulation provides excellent control among commonly controlled mosquitoes even at low application rates.

**Q: How much Duet is typically applied?**

A: Duet is applied in very low dosages, from less than half an ounce to a little more than one ounce of formulated product per acre (.41 to 1.23 fl oz/ac). In lay terms, approximately a teaspoon of formulated product treats an area the size of a football field.





# Clarke

## GLOBAL HEADQUARTERS

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Phone: 1.800.323.5727 Fax: 1.630.443.3070

[www.clarke.com](http://www.clarke.com)

Clarke is a global environmental products and services company. Each year, Clarke helps make communities around the world more livable, safe and comfortable by pioneering, developing and delivering environmentally responsible disease prevention and habitat management solutions. In 2008, Clarke founded The Clarke Cares Foundation, a non-profit created to provide disease prevention support for communities with critical needs.

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Join us in reducing paper usage by sharing this brochure with someone else.

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## Duet® Adulticide FAQs

### **What is Duet?**

Duet is the name of a public health mosquito control product. It has two active ingredients: Sumithrin and Prallethrin. They are formulated to mimic the insect-killing (insecticidal) properties of natural substances called “pyrethrins” in chrysanthemum flowers. Duet was registered by the U.S. EPA in 1995 to help control adult mosquito populations that may transmit disease.

### **Does Duet pose a health risk to humans?**

When applied as indicated on the label for adult mosquito control, Duet does not endanger human health.

Prior to registering a product, the EPA evaluates products thoroughly to be sure there is a “reasonable certainty of no harm” to humans, animals and the environment from their use. Duet and its ingredients have passed rigorous tests required by the EPA and has been approved for use in ground and aerial application in outdoor residential and recreational areas and other similar areas.

### **Will application of this product harm my children and/or pets? Can they be outdoors during the application?**

Duet is applied at extremely low dosage rates – less than an ounce per acre. An acre is equivalent to approximately a football field. Such low rates mean there is very low exposure even if present during or immediately after the application is made; this level of exposure is far less than the amount necessary to pose a health concern.

People and pets can be outdoors during the application; there are no re-entry restrictions or limitations for Duet. If you choose to remain indoors, the spray (mist) will dissipate quickly through the treatment area (in 5-30 minutes, depending on weather conditions). The low application rate and wide area dispersal of the spray ensure that exposures are minimal.

### **Will this chemical harm the finish on my car and/or house? Do I need to rinse off outdoor toys?**

No. The ingredients of Duet are not corrosive or staining and therefore should cause no chemical harm to the finish of a car and/or house and there is no need to wash off outdoor toys.

### **Do I need to close my doors and windows during the applications?**

No. It is not necessary to close doors or windows. The spray will dissipate from the treated area quickly (within 5-30 minutes).

**I have an air conditioner. Should I turn it off if spraying is scheduled in my area?**

No. There is no need to take any precautions with air conditioning systems.

**Do vegetables and fruits need to be harvested before the spraying? Or is there a certain amount of time I need to wait? Is rinsing with water sufficient?**

No. Duet will not deposit in significant amounts. Residues will degrade quickly on exposure to sunlight. It is good common sense to rinse all fruits and vegetables with water prior to eating as a precautionary measure.

**Do I need to cover my fish pond prior to a spraying?**

No. The spraying should not pose a risk for a healthy pond.

**Do horses and livestock need to be sheltered during the application?**

No. Horses and livestock should not be adversely affected by applications of Duet. This product has low mammalian toxicity and its ingredients are commonly used in livestock pest management products.

**How does Duet affect non-target insects?**

Because of the manner in which Duet is applied and the time of day it is applied, it should not affect beneficial insects, like bees and butterflies. Duet is applied in small droplets, which break down quickly in the environment. Since the product must hit a mosquito while it is in flight to have an effect, it is sprayed at night when mosquitoes are actively flying and when other insects, such as bees and butterflies, are not active.

However, Duet is an insecticide and may be toxic upon direct exposure to bees active outside the hive. Beekeepers can protect their bees by sheltering the hives during the spraying operations.

**How does Duet affect the environment?**

The U.S. EPA has determined that Duet can be applied by truck or aircraft in residential and recreational areas, including vegetation surrounding parks, woodlands, swamps, marshes, overgrown areas and golf courses without undue risk to the environment. Duet may be toxic to some aquatic organisms, including fish and invertebrates; however the small amount of product and the manner in which it is applied greatly reduces this risk.

**How is Duet applied?**

Generally, Duet is applied at an ultra low volume in an extremely fine mist of tiny drops, where the average droplet size is 17 microns – smaller than the size of a pinpoint. It can be applied via ground (truck or backpack) or from the air.

**How much is typically applied?**

Duet is applied in very low dosages, from less than half an ounce to a little more than one ounce of formulated product per acre (.43 to 1.28 fl oz/ac). This current application will use a dosage rate of .8 fl oz/ac. This is approximately a tablespoon of formulated product to treat an area the size of a football field.

**Will this eliminate our mosquito population?**

No, this will not completely eliminate all mosquitoes. Killing adult mosquitoes (adulticiding) – or spraying – helps to control the size of mosquito populations and prevent the spread of disease. Mosquito populations are constantly dying off and regenerating, and adulticiding will not eliminate all of the adult mosquitoes in the community. Adulticiding is needed because source reduction (reducing unnecessary standing water), surveillance and larviciding (killing the mosquito population at the larval stage) alone are not enough to control mosquito populations.

Duet is effective in controlling disease-spreading mosquitoes. A specific problem area is identified and treated, but the spraying in this targeted area is not reaching an entire habitat of mosquitoes. Sometimes mosquitoes move into the spray zone from outside of it after it is treated, which is called “reinfestation” (i.e., they drift in on wind currents from areas that have not been treated). When mosquito reinfestation occurs, additional sprayings may need to be considered to control the spread of mosquitoes that transmit West Nile Virus. Effectively controlling an adult mosquito population through spraying also depends on a number of external factors, including timing, the level of reinfestation, methodology used during the application and weather conditions.



## Duet® Adulticida Preguntas Frecuentes

### **¿Qué es Duet?**

Duet es el nombre de un producto de salud pública para controlar mosquitos. Tiene dos ingredientes activos: Fenotrina y Praletrina. Están formulados para imitar las propiedades para matar insectos (insecticidas) de sustancias naturales de los crisantemos llamadas "piretrinas". Duet fue registrado en Estados Unidos por la Agencia de Protección Ambiental (EPA por sus siglas en inglés) en 1995 para ayudar a controlar la población de mosquitos adultos que pudieran transmitir enfermedades.

### **¿Es Duet peligroso para humanos?**

Cuando se aplica de acuerdo a las indicaciones en la etiqueta para controlar mosquitos adultos Duet no representa ningún peligro a la salud humana.

Antes de registrar un producto, la EPA hace evaluaciones estrictas para asegurar de que al usarse dicho producto exista una "certeza razonable de no ocasionar daño" a humanos, animales y el medio ambiente. Duet y sus ingredientes han pasado pruebas rigurosas requeridas por la EPA y ha sido aprobado para usarse tanto en tierra como en aire y para interiores de residencias, áreas recreativas y otras áreas similares.

### **¿El uso de este producto puede lastimar a mis hijos y/o mascotas? ¿Pueden ambos permanecer afuera durante la aplicación?**

Duet se aplica en dosis extremadamente pequeñas - menos de una libra por acre. Un acre equivale a un campo de fútbol aproximadamente. Esta concentración tan baja significa que la exposición es mínima, aún durante o inmediatamente después de aplicado el producto; este nivel de exposición es mucho menor que la cantidad necesaria para ser un problema de salud.

La gente y sus mascotas pueden estar afuera durante la aplicación; Duet no tiene ninguna restricción o limitación para volver a entrar. Si desea permanecer fuera, el rocío (la neblina) se disipará rápidamente por toda el área tratada (en 5 a 30 minutos, dependiendo de las condiciones climatológicas). Por su baja concentración y el área de dispersión amplia del rocío, la exposición al producto es ínfima.

### **¿Este químico puede dañar el acabado de mi automóvil y/o casa? ¿Debo enjuagar los juguetes del patio o jardín?**

No. Los ingredientes de Duet no son corrosivos ni manchan y por lo tanto no deben causar ningún daño químico al acabado de una automóvil y/o casa, y no hay necesidad de enjuagar juegos del patio o jardín.

### **¿Necesito cerrar mis puertas y ventanas durante la aplicación?**

No. No es necesario cerrar puertas o ventanas. El rocío se disipará rápidamente del área tratada (en 5 a 30 minutos).

**Tengo aire acondicionado. ¿Debo apagarlo si hay una fumigación programada en mi área?**

No. No es necesario tomar ninguna precaución con los sistemas de aire acondicionado.

**¿Debo recolectar frutas y verduras antes de la fumigación? ¿O debo esperar por algún tiempo específico? ¿Es suficiente enjuagar con agua?**

No. Duet dejará una cantidad de residuos mínima. Los residuos se degradarán rápidamente al estar expuestos a la luz del sol. Es recomendable enjuagar frutas y verduras con agua antes de consumirlas como medida de precaución.

**¿Debo de cubrir mi estanque de peces antes de la fumigación?**

No. La fumigación no representa ningún riesgo a la salud del estanque.

**¿Debo de resguardar caballos y ganados durante la aplicación?**

No. No habrá ningún efecto adverso en caballos y ganado por la aplicación de Duet. Este producto es de baja toxicidad para mamíferos, y sus ingredientes se encuentran comúnmente en productos de control de pestes para ganado.

**¿Cómo afecta Duet a insectos que están fuera de su rango?**

Por la forma en que Duet se aplica y la hora del día, no debería afectar a insectos benéficos, como abejas y mariposas. Duet se aplica en gotas pequeñas, las cuales se descomponen rápidamente en el ambiente. Para surtir efecto, este producto debe hacer contacto con el mosquito mientras vuela por lo que se rocía por la noche cuando los mosquitos están activamente volando y cuando otros insectos, como abejas y mariposas, no están activos.

Sin embargo, Duet es un insecticida y puede ser tóxico si existe una exposición directa con las abejas que estén fuera de sus colmenas. Los apicultores pueden proteger a sus abejas resguardando las colmenas durante las operaciones de fumigación.

**¿Cómo afecta Duet al medio ambiente?**

La EPA de los Estados Unidos ha determinado que Duet puede ser aplicado usando un camión o por aeroplano en áreas residenciales y recreativas, incluyendo vegetación alrededor de parques, bosques, pantanos, marismas, zonas de maleza y campos de golf sin causar ningún riesgo indebido al medio ambiente. Duet puede ser tóxico para ciertos organismos acuáticos, incluyendo peces e invertebrados; sin embargo, por ser muy pequeña la cantidad de producto que se aplica, el riesgo se reduce enormemente.

**¿Cómo se aplica Duet?**

Generalmente, Duet se aplica en un volumen ultra-bajo, como una neblina de gotas extremadamente finas donde el tamaño de una gota promedio es de 17 micras - mas pequeño que la punta de un alfiler. Puede ser aplicado por tierra (con un camión o una mochila) o desde el aire.

### **¿Qué cantidad de aplica típicamente?**

Duet se aplica en dosis muy bajas, desde menos de media onza hasta un poco más de una onza de producto formulado por acre (.43 a 1.28 fl oz/ac). La aplicación actual utilizará una dosis de destino de .8 fl oz/ac. Este es aproximadamente una cucharada de producto formulado para dar tratamiento a una área de el tamaño de un campo de fútbol.

### **¿Esto eliminará la población de mosquitos?**

No, esto no eliminará por completo a los mosquitos. Matar mosquitos adultos (adulticidio) - o fumigación - ayuda a controlar el tamaño de la población de mosquitos y previene la propagación de enfermedades. La población de mosquitos está muriendo y regenerándose constantemente, y el adulticidio no elimina a todos los mosquitos de la comunidad. El adulticidio es necesario por que la reducción de fuentes (reducción de agua estancada innecesaria), vigilancia y larvicidio (matar a la población de mosquitos es un estado larvario) por si solo no es suficiente para controlar la población de mosquitos.

Duet es efectivo para controlar mosquitos que propagan enfermedades. Se identifica una zona problemática y se trata, pero la fumigación en esta zona objetivo no llega a todo el hábitat de los mosquitos. Algunas veces los mosquitos se mueven dentro de una zona de fumigación desde otra área, lo cual se conoce como "reinfestación" (e.g., son traídos por corrientes de viento desde otras áreas que no han sido tratadas). Es posible que sea necesario considerar aplicar otra fumigación cuando ocurre una reinfestación de mosquitos para controlar la propagación de mosquitos que transmiten el virus West Nile. Controlar la población de mosquitos de forma efectiva a través de fumigación también depende de un número de factores externos, incluyendo el momento de la aplicación, el nivel de reinfestación, la metodología usada durante la aplicación y las condiciones climatológicas.



## Sản phẩm diệt muỗi Duet® Những câu hỏi thường gặp

### **Duet là gì?**

Duet là tên của một tổ chức về sản phẩm kiểm soát muỗi. Có hai thành phần chính: Sumithrin và Prallethrin. Chúng được xây dựng để bắt chước tính chất diệt côn trùng của các hợp chất tự nhiên gọi là “pyrethrins” trong hoa cúc. Duet được đăng ký bởi Cục Quản Lý Môi Trường của Mỹ vào năm 1995 để giúp Việt kiểm soát số lượng muỗi trưởng thành có thể truyền bệnh.

### **Duet gây ra những rủi ro về sức khỏe gì ở con người?**

Khi sử dụng giống như được ghi trên nhãn sản của phẩm kiểm soát muỗi trưởng thành, Duet không gây nguy hiểm cho sức khỏe con người.

Trước khi đăng ký một sản phẩm, Cục Quản Lý Môi Trường tính toán một cách đầy đủ để đảm bảo sản phẩm ở một mức hợp lý không gây hại cho con người, động vật và môi trường sống từ những lần sử dụng. Duet và các thành phần của nó đã vượt qua được bài kiểm tra nghiêm ngặt của Cục Quản Lý Môi Trường và được phê duyệt để sử dụng trên mặt đất cũng như trên không tại khu dân cư, khu vực giải trí ngoài trời và các vùng tương tự.

### **Sản phẩm này có gây hại cho trẻ em hay thú nuôi hay không? Họ có thể ra ngoài khi sản phẩm được sử dụng hay không?**

Duet được dùng ở mức liều lượng cực kỳ thấp – ít hơn một ounce mỗi héc-tac. Một héc-ta tương đương với gần một sân bóng đá. Liều lượng thấp như vậy nghĩa là chúng ta tiếp xúc rất ít, thậm chí nếu có mặt trong hoặc ngay sau khi sản phẩm được sử dụng; mức độ phơi nhiễm là ít hơn so với số lượng sản phẩm cần thiết để có thể gây ra nhưng vấn đề về sức khỏe.

Con người và vật nuôi có thể ở ngoài trong khi sản phẩm được sử dụng; không có sự giới hạn về việc này hay hạn chế dành cho Duet. Nếu bạn chọn ở lại trong nhà, bộ phun(sương mù) sẽ tiêu tan một cách nhanh chóng thông qua các khu vực điều trị (từ 5-30 phút, tùy thuộc vào điều kiện thời tiết). Liều lượng thấp và sự phân tán trên diện rộng đảm bảo tối thiểu hóa khả năng phơi nhiễm.

### **Những chất hóa học này có gây hại cho xe hay nhà của tôi không? Tôi có cần rửa sạch những đồ ngoài trời không?**

Không. Các thành phần của Duet không ăn mòn hoặc nhuộm màu do đó không gây hại về phương diện hóa học cho xe và nhà và chúng ta không cần phải rửa sạch những đồ ngoài trời này.

### **Tôi có cần phải đóng cửa ra vào cũng như cửa sổ khi sản phẩm được sử dụng hay không?**



Không. Không cần thiết phải đóng cửa ra vào hoặc cửa sổ. Sản phẩm sẽ tiêu tan nhanh chóng (trong vòng 5-30 phút) từ khu vực được điều trị.

**Tôi có một cái máy lạnh. Tôi có cần phải tắt nó khi việc phun được thực hiện trong khu vực của tôi không?**

Không. Không cần phải làm bất cứ biện pháp phòng ngừa nào với hệ thống điều hòa không khí.

**Rau và hoa quả có cần phải thu hoạch trước khi phun không? Hay tôi phải chờ một khoảng thời gian? Rửa bằng nước thôi đã đủ chưa?**

Không. Duet sẽ không lắng cặn nhiều. Chất cặn sẽ giảm nhanh khi tiếp xúc với ánh sáng mặt trời. Tốt nhất là nên rửa sạch rau và hoa quả trước khi ăn như là một biện pháp phòng ngừa.

**Tôi có cần đập hồ cá lại khi phun hay không?**

Không. Việc phun không gây ra nguy hại nào đến hồ cá.

**Ngựa và gia súc có nên được che lại trong suốt tiến trình không?**

Không. Ngựa và gia súc không bị tác động xấu bởi các sản phẩm của Duet. Sản phẩm này có độc tính thấp đối với động vật có vú và thành phần của nó thường được sử dụng trong các sản phẩm quản lý dịch hại vật nuôi

**Duet tác động đến các côn trùng khác như thế nào?**

Bởi vì cách thức mà Duet được áp dụng và thời gian trong ngày nó được áp dụng, nó không ảnh hưởng đến côn trùng có ích, như ong và bướm. Duet được phun bằng các giọt nước nhỏ, nó vỡ tan một cách nhanh chóng trong môi trường. Vì sản phẩm phải chạm vào một con muỗi trong khi nó đang bay để có hiệu lực, sản phẩm được phun vào ban đêm khi con muỗi đang tích cực bay và khi côn trùng khác, như ong, bướm, không hoạt động.

Tuy nhiên, Duet là một loại thuốc trừ sâu và có thể gây độc khi tiếp xúc trực tiếp với loài ong hoạt động bên ngoài tổ. Những người nuôi ong có thể bảo vệ những con ong của họ bằng cách che đậy cho các tổ ong trong suốt giai đoạn phun.

**Duet ảnh hưởng đến môi trường như thế nào?**

Cục quản lý môi trường của Mỹ ( EPA) đã quyết định rằng Duet có thể được áp dụng bằng xe tải hoặc máy bay trong các khu vực dân cư và những khu vui chơi giải trí, bao gồm cả thảm thực vật xung quanh công viên, rừng rậm, đầm lầy, khu vực phát triển quá mức và sân golf mà gây rủi ro không đáng kể đối với môi trường. Duet có thể gây độc cho một số sinh vật dưới nước, bao gồm cả cá và động vật không xương; Tuy nhiên số lượng nhỏ sản phẩm và cách thức mà nó được áp dụng làm giảm đáng kể nguy cơ này.

### **Duet được dùng như thế nào?**

Nói chung, Duet được áp dụng tại một khối lượng cực thấp trong một lần phun sương cực nhỏ, nơi có kích thước các giọt nước trung bình là 17 micron - nhỏ hơn so với kích thước của một pinpoint. Nó có thể được áp dụng thông qua mặt đất (xe tải hoặc ba lô) hoặc từ không khí.

### **Sử dụng một cách thông thường thì cần bao nhiêu ?**

Duet được dùng ở liều lượng rất thấp, từ ít hơn một nửa ounce một chút đến nhiều hơn một ounce một chút của sản phẩm cho mỗi héc-ta (0,43-1,28 fl oz / ac). Ứng dụng hiện tại này sẽ sử dụng một liều lượng là 0,8 fl oz / héc-ta. Đây là khoảng một muỗng canh sản phẩm bào chế để sử dụng cho một khu vực có kích thước của một sân bóng đá.

### **Liệu sản phẩm này có diệt được quần thể muỗi không?**

Không, sản phẩm này sẽ không hoàn toàn loại bỏ tất cả muỗi. Giết muỗi trưởng thành (adulticiding) - hoặc phun - giúp kiểm soát kích thước của quần thể muỗi và ngăn chặn sự lây lan của bệnh. Quần thể muỗi được liên tục chết đi và tái sinh, và việc này sẽ không loại bỏ tất cả những con muỗi trưởng thành trong cộng đồng. Giết muỗi trưởng thành là cần thiết vì việc cắt giảm nguồn phát sinh (giảm những vũng nước đọng không cần thiết), giám sát và "larviciding" (giết chết quần thể muỗi ở giai đoạn ấu trùng) một cách đơn lẻ là không đủ để kiểm soát quần thể muỗi.

Duet có hiệu quả trong việc kiểm soát những con muỗi gây bệnh. Một khu vực cụ thể có vấn đề được xác định và điều trị, nhưng việc phun rải ở khu vực mục tiêu này không đạt đến toàn bộ môi trường sống của muỗi. Đôi khi muỗi di chuyển vào khu vực phun từ bên ngoài sau khi khu vực được xử lý, được gọi là "tái xâm chiếm" (tức là, muỗi bay vào từ luồng gió ở các khu vực chưa được xử lý). Khi hiện tượng này xảy ra, những đợt phun bổ sung có thể cần phải được xem xét để kiểm soát sự lây lan của muỗi có mang virus West Nile. Kiểm soát một cách có hiệu quả một số lượng muỗi trưởng thành thông qua việc phun thuốc cũng phụ thuộc vào một số yếu tố bên ngoài, bao gồm cả thời gian, mức độ "tái xâm chiếm", phương pháp được sử dụng trong các lần phun và điều kiện thời tiết.

## LANCASTER CITY COUNCIL

### City Council Work Session

Item 2.

**Meeting Date:** 08/01/2016

**Policy Statement:** This request supports the City Council 2016-2017 Policy Agenda

**Goal(s):** Financially Sound, City Government

**Submitted by:** Opal Mauldin-Robertson, City Manager

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### **Agenda Caption:**

Receive a presentation and discuss the Fiscal Year 2016-2017 proposed budget.

### **Background:**

The City Manager will present an overview of the proposed FY 2016-2017 municipal budget for all funds. A detailed budget notebook will be provided to Council at the meeting.

The following is the budget work session and meeting schedule:

- August 8, 2016: Regular Meeting – Record vote on Tax Rate, Budget Schedule
- August 15, 2016: Work Session – Proposed Budget
- August 18, 2016: Budget Town Hall Meeting, 6:30 p.m. at the Recreation Center
- August 22, 2016: Regular Meeting (1st Public Hearing) – Tax Rate, Budget, PID's
- August 27, 2016: Budget Town Hall Meeting, 9:00 a.m. at the Recreation Center
- August 29, 2016: Special Meeting (2nd Public Hearing) –Tax Rate, Budget, PID's Service Plan
- September 12, 2016: Regular Meeting – Budget Adoption, Tax Rate Adoption