



Imperium™

Soar above

with Imperium


Your aerial advantage against mosquitoes

- // Superior efficacy with low application rates
- // All-crop tolerance
- // Noncorrosive



Imperium-

your aerial advantage against resistant mosquitoes



Bayer invests in innovative solutions, ongoing research, training, and education to help Mosquito Control Professionals around the globe fight against mosquitoes that may carry disease. From our innovation comes vital solutions like Imperium, an aerial insecticide that utilizes patented formulation technology* to deliver superior efficacy with low application rates, reduced impact and an all-crop tolerance.

Imperium is also the first and only Type II pyrethroid (Deltamethrin) registered in the United States for wide area mosquito control. Deltamethrin has been proven to effectively control mosquitoes resistant to other pyrethroids.

**United States Patent #9,497,971*



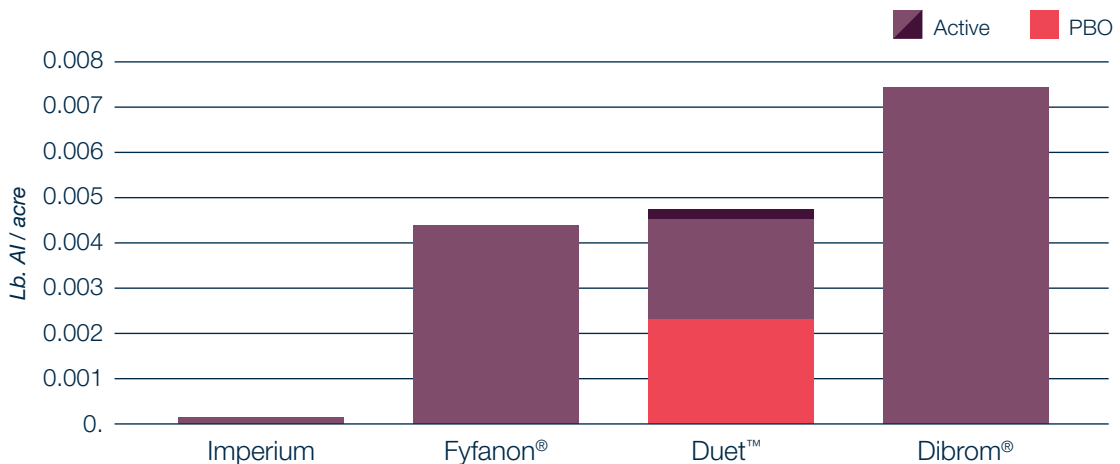
Superior efficacy with low application rates

Compared to the competition, Imperium provides excellent control and knockdown using low application rates – up to 80 times less active ingredient than other products. This significantly reduces the amount of pesticide released into the environment.

- // Superior efficacy for better mosquito suppression
- // Kills mosquitoes in as few as 10-15 minutes
- // Proven effectiveness against resistant and hard-to-kill mosquito species
- // No knockdown recovery
- // Lowest application rate (0.00045 to 0.00134 lb. per acre) vs. competitive products
- // Fully developed and validated Aerial Model

Pounds of active ingredient/acre/treatment

Mid-label rate, ULV application for adult mosquito control



EPA registered use rates

Uses up to 80 times less active ingredient than competitive products.





*A nickel's weight of AI protects 3 city blocks**

actual size



**As compared to competitors that require
as much as 80x more active ingredient.*



Low impact, noncorrosive

In the public health sector, safety is a top priority. Some competitive products, like Dibrom, are corrosive and can cause irreversible eye and skin damage. Because Imperium is noncorrosive and has no PBO and no VOCs, it provides peace of mind with reduced impact for applicators, the public and the environment.

- // Active ingredient is highly absorptive and becomes immobile in soil
- // Low odor, no visible residue
- // Deltamethrin has been evaluated and approved for mosquito control by WHOPES (World Health Organization Pesticide Evaluation Scheme)
- // Water-based formulation
- // No Piperonyl Butoxide (PBO) or other synergist
- // No Volatile Organic Compounds (VOCs) that may have short- and long-term adverse health effects
- // Noncorrosive – low impact and easier on equipment



Flexible use, all-crop tolerance

Imperium is labeled for application over any and all crops including range and pasture lands. This gives you the flexibility to control mosquitoes in a wide variety of environments.

Imperium commands control

Efficacy – Stanislaus, CA

Culex quinquefasciatus – fixed-wing aircraft // 100 ft. altitude

Reference: OE16USAVKVEFM4

| Application Rates (lb./acre) | Distance from Spray Path (ft.) | % Knockdown ^A | % Mortality ^A |
|------------------------------|--------------------------------|--------------------------|--------------------------|
| 0.00089 | 900 | 100.0 | 100.0 |
| 80 oz./min | 1100 | 100.0 | 100.0 |
| 600 ft. swath | 1300 | 100.0 | 100.0 |
| UTC1 = 0 | ----- | 0.0 | 1.1 |
| 0.00134 | 950 | 100.0 | 100.0 |
| 80 oz./min | 1150 | 100.0 | 100.0 |
| 400 ft. swath | 1350 | 100.0 | 100.0 |
| UTC2 = 0 | ----- | 0.6 | 1.2 |

Efficacy – Jefferson County, TX

Culex quinquefasciatus – fixed-wing aircraft // 200 ft. altitude

Reference: OE16USAVKVEFM5

| Application Rates (lb./acre) | Distance from Spray Path (ft.) | % Knockdown ^A | % Mortality ^A |
|------------------------------|--------------------------------|--------------------------|--------------------------|
| 0.00089 | 6500 | 100.0 | 100.0 |
| 62 oz./min | 6700 | 98.5 | 100.0 |
| 500 ft. swath | 6900 | 100.0 | 100.0 |
| UTC1 = 0 | ----- | 0.0 | 0.8 |
| 0.00134 | 7000 | 96.6 | 100.0 |
| 89 oz./min | 7200 | 96.4 | 99.3 |
| 500 ft. swath | 7400 | 99.3 | 100.0 |
| UTC2 = 0 | ----- | 0.0 | 0.0 |

Efficacy – Calcasieu Parish, LA

Anopheles quadrimaculatus – fixed-wing aircraft // 250 ft. altitude

Reference: OE16USAVKVEFM3

| Application Rates (lb./acre) | Distance from Spray Path (ft.) | % Knockdown ^A | % Mortality ^A |
|------------------------------|--------------------------------|--------------------------|--------------------------|
| 0.00089 | 10,500 | 98.7 | 100.0 |
| 238 oz./min | 10,700 | 97.1 | 100.0 |
| 1,000 ft. swath | 10,900 | 98.6 | 100.0 |
| UTC1 = 0 | ----- | 0.6 | 2.5 |
| 0.00134 | 10,000 | 100.0 | 100.0 |
| 356 oz./min | 10,200 | 100.0 | 100.0 |
| 1,000 ft. swath | 10,400 | 99.3 | 100.0 |
| UTC2 = 0 | ----- | 1.9 | 2.5 |

All trials were conducted under EPA experimental use permit with spray blocks being approximately 10 acres per trial.

Efficacy – Pasco County, FL

Aedes aegypti – fixed-wing // 300 ft. altitude

Reference: OE16USAVKVEFM1

| Application Rates (lb./acre) | Distance from Spray Path (ft.) | % Knockdown ^A | % Mortality ^A |
|--------------------------------|--------------------------------|--------------------------|--------------------------|
| 0.00089 | 3350 | 100.0 | 100.0 |
| 1.5 gal./min. 950 ft. swath | 3550 | 99.3 | 100.0 |
| | 3750 | 100.0 | 100.0 |
| UTC1 = 0 | ----- | 2.3 | 1.5 |
| 0.00134 | 3450 | 98.1 | 100.0 |
| 1.5 gal./min. 630 ft. swath | 3650 | 99.3 | 100.0 |
| | 3850 | 98.6 | 100.0 |
| UTC2 = 0 | ----- | 2.0 | 1.3 |

Efficacy – Manatee County, FL

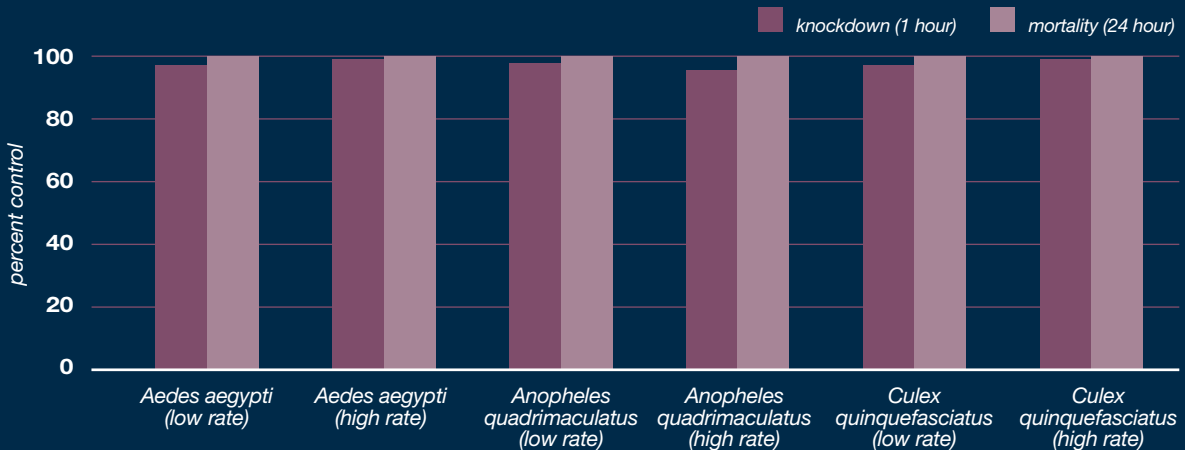
Aedes aegypti – rotary aircraft // 90 ft. altitude

Reference: OE16USAVKVEFM2

| Application Rates (lb./acre) | Distance from Spray Path (ft.) | % Knockdown ^A | % Mortality ^A |
|------------------------------|--------------------------------|--------------------------|--------------------------|
| 0.00089 | 1100 | 99.4 | 100.0 |
| 84 oz./min 600 ft. swath | 1300 | 99.4 | 100.0 |
| | 1500 | 100.0 | 100.0 |
| UTC1 = 0 | ----- | 0.7 | 0.7 |
| 0.00134 | 1100 | 98.7 | 100.0 |
| 127 oz./min 600 ft. swath | 1300 | 100.0 | 100.0 |
| | 1500 | 99.4 | 100.0 |
| UTC2 = 0 | ----- | 0.7 | 0.7 |

Imperium Aerial GLP Trial Summary

Reference: OE16USAVKV



All trials were conducted under EPA experimental use permit with spray blocks being approximately 10 acres per trial.



Science for a **better life**

ALWAYS READ AND FOLLOW LABEL INSTRUCTIONS.

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