



US Environmental Protection Agency Office of Pesticide Programs

Fact Sheet

***Bacillus sphaericus* 2362, serotype H5a5b, strain ABTS 1743 (PC Code 119803)**

Summary text

This pesticide active ingredient is a naturally occurring bacterium that is found in the United States and throughout the world. It kills mosquito larvae when the larvae ingest the bacterial spores in moist or wet areas such as lakes, coasts, streams, swamps, and drainage ditches.

I. Description of the Active Ingredient

Bacillus sphaericus 2362, serotype H5a5b was isolated in 1981 from an adult blackfly in Nigeria and subsequently obtained in the United States. The *Bacillus sphaericus* 2362, serotype H5a5b first registered in 1991 was subsequently given the pesticide active ingredient designation *Bacillus sphaericus* 2362, serotype H5a5b, strain ABTS 1743. Spores of this bacterium contain a protein that damages and paralyzes the gut of mosquito larvae that ingest the spores, thus starving the larvae.

II. Use Sites, Target Pests, and Application Methods

Use Sites: Habitats where mosquitoes live and lay eggs, such as storm water and drainage systems, marine and coastal areas, freshwater bodies such as lakes and streams, water that collects in discarded tires, and certain crop sites such as rice fields. Pesticides containing *Bacillus sphaericus* 2362, serotype H5a5b, strain ABTS 1743, are not registered for use in or on treated or finished drinking water for human consumption.

Target pests: Specific kinds of mosquitoes, including some that transmit diseases such as encephalitis.

Application Methods: Granules or powders that contain the active ingredient are mixed with water and other substances, and then sprayed from the air or from the ground. Pesticide products containing this *Bacillus sphaericus* remain active for one to four weeks after spraying. The length of time varies, depending primarily on the species of mosquito larvae, environmental conditions, water quality, and exact form of the granules.

III. Assessing Risks to Human Health

Based on extensive testing, no harmful effects are expected to occur to the public when pesticide products with this active ingredient are applied according to label directions. Because there is the potential for skin and eye irritation, applicators are warned to avoid

direct contact with the granules or a concentrated spray mix.

IV. Assessing Risks to the Environment

Various tests revealed no expected harm to non-target organisms.

V. Regulatory Information

Bacillus sphaericus 2362, serotype H5a5b, strain ABTS 1743 was registered (approved for sale) as an active ingredient in 1991. As of March 2013, there were 4 registered pesticide products (one manufacturing use and 3 end-use products) containing *Bacillus sphaericus* 2362, serotype H5a5b, strain ABTS 1743 as the active ingredient.

VI. Products Directed Against Public Health Pests

EPA defines a public health pest as any organism that can cause or transmit human disease, or can cause human discomfort or injury. Examples include mosquitoes, ticks, and rats. To help protect the public's health, EPA requires registrants of products used against public health pests to demonstrate that the product meets specific standards for effectiveness as well as for safety. The pesticide products currently registered with *Bacillus sphaericus* 2362, serotype H5a5b, strain ABTS 1743 as the active ingredient have met these stringent standards.

VII. Producer Information

Valent Biosciences Corporation
870 Technology Way
Libertyville, IL 60048

VIII. Additional Contact Information

Communications and Registration Liaison
Biopesticides and Pollution Prevention Division (7511P) Office of Pesticide Programs
Environmental Protection Agency
1200 Pennsylvania Avenue, NW Washington, D.C. 20460
http://www.epa.gov/oppbppd1/biopesticides/contacts_bppd.htm



US Environmental Protection Agency Office of Pesticide Programs

Fact Sheet

***Bacillus sphaericus* 2362, serotype H5a5b, strain AM614 (PC Code 119804)**

Summary text

This pesticide active ingredient is a naturally occurring bacterium that is found in the United States and throughout the world. It kills mosquito larvae when the larvae ingest the bacterial spores in moist or wet areas such as lakes, coasts, streams, swamps, and drainage ditches.

I. Description of the Active Ingredient

Bacillus sphaericus 2362, serotype H5a5b was isolated in 1981 from an adult blackfly in Nigeria and subsequently obtained in the United States. The *Bacillus sphaericus* 2362, serotype H5a5b first registered in 2008 was subsequently given the pesticide active ingredient designation *Bacillus sphaericus* 2362, serotype H5a5b, strain AM614. Spores of this bacterium contain a protein that damages and paralyzes the gut of mosquito larvae that ingest the spores, thus starving the larvae.

II. Use Sites, Target Pests, and Application Methods

Use Sites:

Habitats where mosquitoes live and lay eggs, such as storm water and drainage systems, marine and coastal areas, freshwater bodies such as lakes and streams, water that collects in discarded tires, and certain crop sites such as rice fields. Pesticides containing *Bacillus sphaericus* 2362, serotype H5a5b, strain AM614, are not registered for use in or on treated or finished drinking water for human consumption.

Target pests: Specific kinds of mosquitoes, including some that transmit diseases such as encephalitis.

Application Methods: Granules or powders that contain the active ingredient are mixed with water and other substances, and then sprayed from the air or from the ground. Briquettes or granules are applied by hand. Pesticide products containing this *Bacillus sphaericus* remain active for one to four weeks after spraying. The length of time varies, depending primarily on the species of mosquito larvae, environmental conditions, water quality, and exact form of the granules.

III. Assessing Risks to Human Health

Based on extensive testing, no harmful effects are expected to occur to the public when pesticide products with this active ingredient are applied according to label directions.

Because there is the potential for skin and eye irritation, applicators are warned to avoid direct contact with the granules or a concentrated spray mix.

IV. Assessing Risks to the Environment

Various tests revealed no expected harm to non-target organisms.

V. Regulatory Information

Bacillus sphaericus 2362, serotype H5a5b, strain AM614 was registered (approved for sale) as an active ingredient in 2008. As of March 2013, there were 6 registered pesticide products (one technical and five end-use products) containing *Bacillus sphaericus* 2362, serotype H5a5b, strain AM614 as the active ingredient.

VI. Products Directed Against Public Health Pests

EPA defines a public health pest as any organism that can cause or transmit human disease, or can cause human discomfort or injury. Examples include mosquitoes, ticks, and rats. To help protect the public's health, EPA requires registrants of products used against public health pests to demonstrate that the product meets specific standards for effectiveness as well as for safety. The pesticide products currently registered with *Bacillus sphaericus* 2362, serotype H5a5b, strain AM614 as the active ingredient have met these stringent standards.

VII. Producer Information

Advanced Microbiologics, LLC
1801 North Gale Road
Mitchell, SD 57301

VIII. Additional Contact Information

Communications and Registration Liaison
Biopesticides and Pollution Prevention Division (7511P) Office of Pesticide Programs
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http://www.epa.gov/oppbppd1/biopesticides/contacts_bppd.htm