



**Naturally Occurring Bacteria.
Naturally Ending the Life Cycle.**

FourStar[®] Larvicide Microbials Offer Effective, Long-Term Mosquito Control.

FOURSTAR[®]

A person wearing a light-colored uniform, a hat, and gloves is standing in a swampy area, using a long-handled tool to clear vegetation. The background shows a dense forest with tall trees and lush greenery. The scene is reflected in the water.

PROTECT YOUR COMMUNITY IN AN ENVIRONMENTALLY RESPONSIBLE WAY

FOURSTAR®

At Central Life Sciences, we strive to provide innovative mosquito control that rises to meet your needs. Every community has different needs when it comes to controlling mosquitoes. That's why we're constantly searching for new solutions to help improve control protocols, and why we offer products in a variety of formulations.

Insect growth regulators (IGRs) have long played a key role in our highly successful and proven line of biorational products. Central Life Sciences carries the innovative FourStar® microbial larvicides. These microbials utilize naturally occurring bacteria as active ingredients to halt the mosquito life cycle. With a variety of FourStar® formulations, these products can work alongside multiple formulations of Altosid® larvicides to meet the varied needs of mosquito control professionals. Add to that the advanced formulations of Zenivex® adulticides and the solid performance of Mavrik® Perimeter and you have an excellent class of mosquito control products that can be relied upon year after year.

INTEGRATED MOSQUITO MANAGEMENT PROGRAMS



BIOLOGICAL CONTROL

Develop a multifaceted approach for controlling mosquitoes in your area. Exploit mosquitoes' own biology and behavior while using cost-effective, carefully timed larvicidal and high impact, low volume adulticidal applications. A successful integrated program not only relies on specific control products, but also a specific process.

WATER SAMPLING

Every good mosquito control program is an ongoing one. Monitoring larval and adult mosquito populations is essential to accurately estimate the need and effectiveness of control measures. Water sampling helps identify problem areas where you should concentrate your control efforts.

PRODUCT APPLICATION

With a variety of FourStar® larvicide formulations made for your mosquito control needs, it is important to rotate products to prevent resistance. Over time, mosquitoes can build a tolerance against a specific active ingredient, making it not as effective. Rotate the wide-ranging FourStar® microbial larvicide product variety to ensure the best results.

SOURCE REDUCTION

Because water is the critical element in the development of mosquitoes, managing standing water is essential. Reducing mosquito breeding sites can be as simple as clearing a street gutter or removing trash and old tires. It can be as major as reworking landscaping and approved ditching in marshland. While it is impossible to rectify every standing water problem, it is reassuring to know that FourStar® larvicides offer effective solutions to many mosquito control issues.

Adults

This is the only stage where the mosquito is terrestrial and able to fly. It emerges from the pupa stage as an active flier, looking for a mate. Males live only a short time after mating, usually six days. Females survive from two weeks to four months. Only adult female mosquitoes are able to bite.

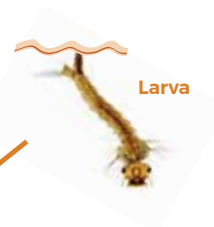


Eggs

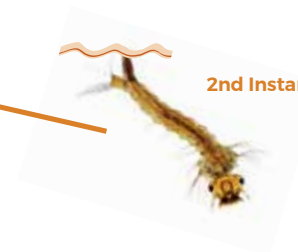
Mosquitoes lay their eggs on the surface of standing water or soil that periodically floods. In water, mosquito eggs hatch in just a few days or, in some cases, just a few hours, but can lie dormant for long periods in dry conditions.



Larva



2nd Instar



Larvae (Wrigglers or Wigglers)

This is the aquatic stage of the mosquito's life cycle where FourStar® larvicide formulations take effect. Larvae actively feed as they mature into the pupae stage. Mosquito larvae undergo four molts, or instars, during their development into pupae. It is in the first three instars that ingestion of FourStar® larvicide is fatal. Depending on temperature and conditions, a mosquito larva can develop into a pupa in as little as four days.

3rd Instar



4th Instar



Pupae (Tumblers)

This is a resting, non-feeding aquatic stage, after which newly formed adults emerge. This is where Altosid® larvicides' effects are evident.



THE MOSQUITO LIFE CYCLE

WHAT ARE FOURSTAR® LARVICIDES?

FourStar® larvicides are microbials that end mosquito larval development using the naturally occurring bacteria, *Bacillus sphaericus* (Bsph) and *Bacillus thuringiensis israelensis* (Bti). These active ingredients are inherent to soil and contain protein crystals that, when ingested, rupture the gut wall of the larvae causing larval death.



FourStar® larvicide products feature:

- Positive environmental profile
- The first microbial (Bsph/Bti) to offer extended residual
- Optimized delivery of the active ingredient to target



DESIGNED TO LAST

To enhance performance, FourStar® larvicides contain a dual-action release technology. This innovation regulates the release of active ingredient to the water surface as well as throughout the water column to ensure a long residual and maximum coverage. FourStar® granule larvicides are made with a consistent design to cut down on wear and tear and clogging of application equipment. These granules carry a weight that allows them to penetrate foliage, and their aerodynamic design cuts down on drift. With this optimized granule designed to better protect communities, you can have confidence FourStar® granules will go where they are intended to go.

FOURSTAR® LARVICIDE FORMULATIONS

FOURSTAR® FORMULATIONS

RESIDUALS

USES

45 Day Briquets-Bsph/Bti Combination

Up to 45 days

45 Day Bti-Only Briquets

Up to 45 days

90 Day Briquets-Bsph/Bti Combination

Up to 90 days

150 Day Bti-Only Briquets

Up to 150 days

180 Day Briquets-Bsph/Bti Combination

Up to 180 days

Standing water, areas frequented by humans, livestock and wildlife, storm drains, catch basins, underground drainage systems, storm water retention areas, ponds, and other potential mosquito breeding areas.

Multi-Brood Granules (MBG)

Up to 30 days

Floodwater, standing water, roadside ditches, irrigation ditches, pastures, salt marshes, catch basins, storm drains and areas in contact with humans, wildlife and aquatic life.

Controlled Release Granules (CRG)

Up to 60 days

Pre-flooding application, standing water, roadside ditches, irrigation ditches, catch basins and storm drains.

Bti Controlled Release Granules

Up to 40 days

Coastal areas, intermittent floodwater habitats, saltwater areas, sites with canopy vegetation and wet/dry accounts.

WSP (Water Soluble Pouches)

Up to 8 weeks

Catch basins, storm drains, unused swimming pools, gutters, drains, ponds, lagoons, irrigation ditches, and areas in contact with humans, wildlife, and aquatic life.

FOURSTAR® BRIQUETS



Briquets Designed to Fit Specific Needs

Choose from three briquet sizes and two different formulations with control durations of 45, 90 and 180 days with the Bsph/Bti formulation and 45 and 150 days with the Bti-only formulation. Briquets can be applied to standing water without fear of harming aquatic life as well as in areas frequented by humans, livestock and wildlife. They may also be applied to potential mosquito breeding areas prior to flooding. Wetting and drying will not reduce their effectiveness.

FourStar® Bsph/Bti Combination Briquets 45 Day, 90 Day, and 180 Day Features:



- Proven microbial active ingredients
- 6% Bsph and 1% Bti
- Long-term residual control
- Sustained release technology

FourStar® Bti-Only Briquets 45 Day and 150 Day Features:



- Long-term residual control with Bti
- Sustained release technology
- 7% Bti
- Ideal option for rotation plans

FOURSTAR® BRIQUETS BENEFITS

- Environmental compatibility alleviates community concern
- Reduced treatment frequency
- Savings on application labor cost

Application Rate:

To control mosquito larvae, place one briquet in sites to cover up to 100 ft² of surface area. When mosquito populations are high, water is heavily polluted, and/or algae are abundant, double the application rate to two briquets per 100 ft².



CHOOSING THE BRIQUET FOR YOU

We understand each community has different control needs and that mosquitoes attack in different places. That's why we've created three different briquet sizes with two different formulations to offer the right control for you. From 1.125 to 3 inches long, there are briquets that can be used in standing water, or can fit in narrow storm drains.

FourStar® 180 Day Briquets

SKU #100514297



**6% Bsph
1% Bti**

FourStar® 150 Day Briquets

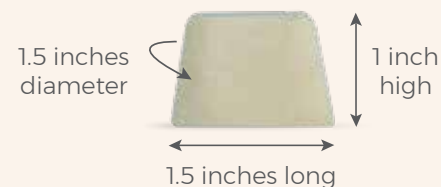
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7% Bti

FourStar® 90 Day Briquets

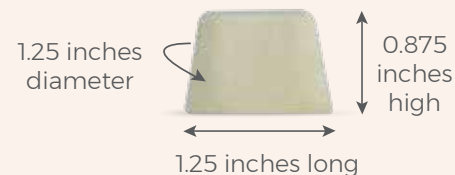
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**6% Bsph
1% Bti**

FourStar® 45 Day Briquets - Bsph and Bti

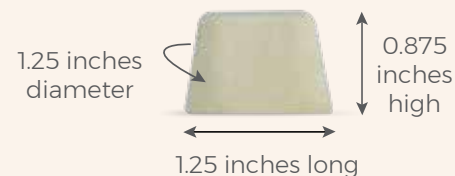
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**6% Bsph
1% Bti**

FourStar® 45 Day Briquets - Bti

SKU #100519560



7% Bti

FOURSTAR® GRANULES



FourStar® Multi-Brood Granule (MBG): Sand with Staying Power

FourStar® MBG is a heavy, high-density and sand-based larvicide with Bsph and Bti dual active ingredients. It is most effective in semi-permanent or permanent water habitats providing up to 4 weeks of residual. A dual action release technology in FourStar® MBG produces results within the first 48 hours of application for a quick and effective kill of mosquito larvae.

FourStar® MBG Features:

- High-density, spherical silica sand carrier
- Combination Bsph and Bti active ingredients
- Dual action flash release technology
- Bulk density at 65 lbs/ft³
- Up to 4 weeks residual
- Control of both floodwater species and Culex species

FourStar® MBG Benefits:

- Covers a wide range of mosquito species
- Heavier granule provides optimal vegetation penetration
- Long residual saves labor
- Dual active ingredients help prevent resistance development
- Granules are easy on equipment
- Expanded aerial application window
- Less target drift
- More coverage per application

Application Rate:

FourStar® MBG is approved for ground and aerial application at a minimum of 5 to 10 lbs per acre, up to 20 lbs per acre.





FOURSTAR® GRANULES

FourStar® Controlled Release Granule (CRG): When Timing Is Everything

FourStar® CRG is the first microbial granule to offer pre-flood application. That means it maintains effectiveness through wet and dry periods. A dual action controlled release technology in FourStar® CRG can kill larvae for up to 60 days and 4 floodings.

FourStar® CRG Features:

- High-density, spherical silica sand carrier
- 9 to 1 (9% Bsph / 1% Bti) combination active ingredients
- Dual action controlled release technology
- Bulk density of 51 lbs/ft³
- Up to 60 days control
- Effective in intermittent flood areas

FourStar® CRG Benefits:

- Can be applied to pre-flood areas
- Wet/dry effectiveness reduces applications
- Active ingredient ratio prevents resistance
- Weight provides optimal vegetation penetration
- Less target drift
- More coverage per application

Application Rate:

FourStar® CRG is approved for ground and aerial application at a minimum of 7.5 to 10 lbs per acre, up to 20 lbs per acre.

FourStar® Bti Controlled Release Granule (Bti CRG)

FourStar® Bti CRG is a heavy, high-density and sand-based larvicide designed for saltwater habitats with vegetative canopy. A dual action controlled release technology allows FourStar® Bti CRG to remain effective through wet and dry periods. It can kill larvae for up to 40 days and 4 floodings.

FourStar® Bti CRG Features:

- High-density, spherical silica sand carrier
- 10% Bti active ingredient
- Dual action controlled release technology
- Up to 40 days residual
- Effective in intermittent flood areas

FourStar® Bti CRG Benefits:

- Can be applied to pre-flood areas
- Wet/dry effectiveness reduces applications
- Controls *Aedes taeniorhynchus*
- Weight provides optimal vegetation penetration
- Less target drift
- More coverage per application

Application Rate:

FourStar® CRG is approved for ground and aerial application at a minimum of 7.5 to 10 lbs per acre, up to 20 lbs per acre.





FOURSTAR® WSP

FourStar® Granules in an Easy-to-Use Pack

FourStar® WSP is designed for applications in semi-permanent water sites such as catch basins, sewers and other urban water run-off areas. The multi-brood granules in each dissolving FourStar® water soluble packet (WSP) offer effective kill of mosquito larvae and can last for up to 8 weeks.

FourStar® WSP Features:

- 10 grams of multi-brood granules in each pouch
- 3-to-3 (3% Bsph / 3% Bti) combination active ingredients
- Dual action flash release technology
- Up to 8 weeks residual
- 400 10-gram pouches per case

FourStar® WSP Benefits:

- Dual active ingredients help prevent resistance development
- The small pouch fits in tight areas
- Easy to apply

Application Rate:

1 pouch per 50 ft². For larger sites apply 1 additional pouch per 50 ft². FourStar® WSP application rate is equivalent to 20 lbs / acre.

FOURSTAR[®]

To learn more about innovative FourStar larvicide microbials,
contact a Central Life Sciences sales representative,
or call 1-800-248-7763. Find additional information at
CentralMosquitoControl.com



Always read and follow label directions. FourStar is a registered trademark of B2E Microbials LLC. Mavrik is a registered trademark of Wellmark International. Central Life Sciences with design is a registered trademark of Central Garden & Pet Company.

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