CENTRAL
LIFE SCIENCES

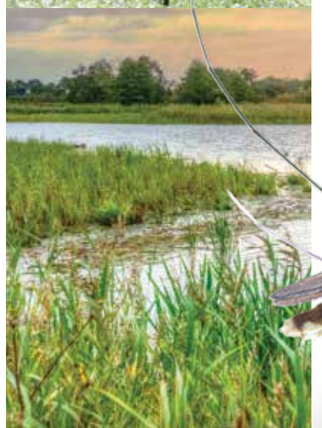
MOSQUITO CONTROL EVOLVED

FOURSTAR®

Naturally Occurring Bacteria.

Naturally Ending the Life Cycle.

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



PROTECT YOUR COMMUNITY IN AN ENVIRONMENTALLY RESPONSIBLE WAY

At Central Life Sciences, we strive to provide innovative mosquito control solutions that evolve to meet your needs. Many of our team members have worked in the field and walked in your shoes, and we know that every community has different challenges when it comes to controlling mosquitoes. That's why we're constantly developing new solutions in a variety of formulations, backed by science, and compatible with the most advanced application technology available.

This commitment to protecting the public health from mosquitoes and mosquito-borne diseases traces back to our founding as we pioneered the original insect growth regulator, (S)-methoprene, the active ingredient in our Altosid® mosquito larvicides. It continues to this day to include the innovative FourStar® microbial larvicides which contain naturally occurring bacteria as active ingredients that kill mosquito larvae before they become breeding biting adults. With several formulations of FourStar® microbials added to our evolving line of Altosid® larvicides and the dual-active control of Duplex™-G larvicide, Central Life Sciences offers the most comprehensive portfolio of trusted solutions that meet the needs of mosquito control professionals everywhere.

THIS IS MOSQUITO CONTROL EVOLVED.
EVOLVED BY INNOVATION.

INTEGRATED MOSQUITO MANAGEMENT PROGRAMS

The multifaceted approach to controlling mosquitoes in your area by understanding and exploiting the mosquitoes' own biology and behavior is known as Integrated Mosquito Management (IMM). A successful IMM program relies not only on specific control products, but also on the comprehensive strategy that provides the best results for your specific circumstances.

In essence, an Integrated Mosquito Management program consists of larval and adult mosquito surveillance, arboviral disease testing, source reduction, larvicide and adulticide applications, and public education.

SURVEILLANCE

Every good mosquito control program is ongoing and changes over time. Monitoring larval and adult mosquito populations consistently is essential to understanding mosquito population dynamics and determining the need for, and effectiveness of, any control measures. This surveillance, which also includes arboviral disease testing, is the foundation of an effective and dynamic IMM program.

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 landscapes, upgrading drainage systems, or approved ditching in marshlands. 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 when source reduction is not possible.

PRODUCT APPLICATION

While adulticide applications are often used as a last resort, either when the desired level of control has not been achieved or when an arbovirus has been detected and presents a risk to human or animal health, larvicide applications are frequently the preferred method of reducing mosquito populations in a community.

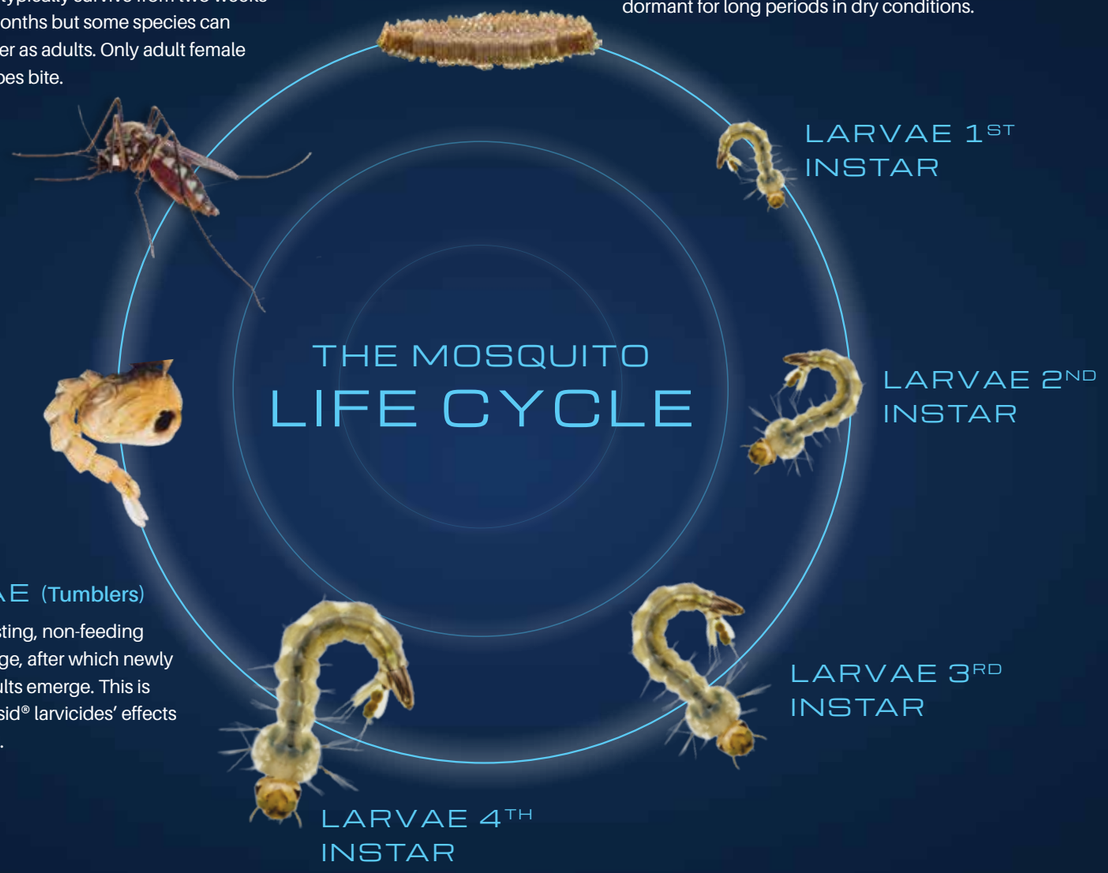
FourStar® larvicide formulations are a valuable resource for mosquito control professionals who desire microbial products with the added benefit of residual control. They are environmentally sound, target specific, and an ideal rotational product for preventing resistance to specific active ingredients.

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 around six days. Females typically survive from two weeks to four months but some species can overwinter as adults. Only adult female mosquitoes 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.



THE MOSQUITO LIFE CYCLE

PUPAE (Tumblers)

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

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 primarily 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.

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

Microbial combination (*Bsph/Bti*) provides extended residual control

Optimized delivery of the active ingredient to the target organism

DESIGNED TO LAST

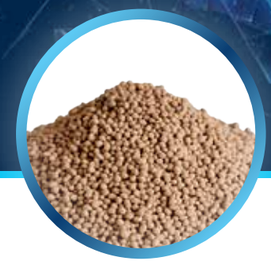
To enhance performance, FourStar® larvicides contain a dual-action release technology. This innovation regulates the release of active ingredient to the water surface as well as throughout the water column to ensure a long residual and maximum coverage. FourStar® granule larvicides are made with a consistent design to reduce 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 making them an ideal complement to drone/UAS applications. 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	SITES
45 Day Briquets-*Bsph/Bti* Combination	Up to 45 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.
90 Day Briquets-*Bsph/Bti* Combination	Up to 90 days	
180 Day Briquets-*Bsph/Bti* Combination	Up to 180 days	
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 needs.

BRIQUETS

GRANULES



FOURSTAR® BRIQUETS

Briquets Designed to Fit Specific Needs

This *Bsph/Bti* formulation is available in three different control durations of 45, 90 and 180 days. 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.

Features:

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

Benefits:

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

Application Rate:

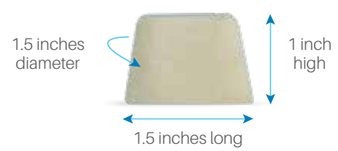
To control mosquito larvae, place one briquet in sites to cover up to 100 ft² of surface area. When mosquito populations are high, water is heavily polluted, and/or algae are abundant, double the application rate to two briquets per 100 ft².

FOURSTAR® 180 DAY BRIQUETS

SKU #100514297
6% *Bsph* | 1% *Bti*

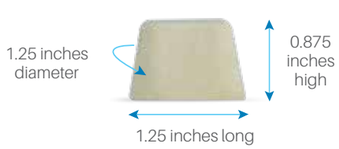
FOURSTAR® 90 DAY BRIQUETS

SKU #100514296
6% *Bsph* | 1% *Bti*



FOURSTAR® 45 DAY BRIQUETS

SKU #100514285
6% *Bsph* | 1% *Bti*



FOURSTAR® GRANULES

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

FourStar® CRG offers pre-flood application capabilities. 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 four 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
- Excellent UAS application characteristics

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 delivers effective larval control, designed for use in saltwater or freshwater habitats with vegetative canopy. The product features a high-density, spherical silica sand larvicide that provides excellent canopy penetration, minimal target drift, and more coverage per application, making it ideal for applications via drones/UAV technology. 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 four 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
- Large swath widths via drone application

FourStar® Bti CRG Benefits:

- Can be applied to pre-flood areas
- Wet/dry effectiveness reduces applications
- Controls *Aedes taeniorhynchus*
- Weight and size provide 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®

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

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