

## FARM PEST CONTROL CATALOGUE

- ✓ Protecting animals
- ✓ Protecting feed
- ✓ Protecting buildings
- ✓ Protecting profits



## COUNT ON SYNGENTA INNOVATORS IN PEST CONTROL

Syngenta offers innovative solutions to help Pest Management Professionals solve any pest challenge. Our advanced products and best-in-class support work to give your customers a life uninterrupted by pests.

Pest control in and around the farm for livestock and food production is an important component of sustainable production, with very specific needs.

Pest control in and around the farm is key:

- **To improve the hygiene situation in farms.**
- **To improve farm production.**
- **To fulfill the stipulations of the authorities.**

# SAY NO TO PESTS PUTTING YOUR FARM AT RISK

Syngenta Professional Pest Management offers a comprehensive portfolio of products that can help you deliver a secure and healthy environment for your livestock.

## Residual Spray

-  **Tandem<sup>®</sup>**  
Insecticide
-  **Optigard<sup>®</sup> Flex**  
Liquid
-  **Demand<sup>®</sup> CS**  
Insecticide
-  **Advion<sup>®</sup> WDG**  
Insecticide
-  **Arilon<sup>®</sup>**  
Insecticide

## Baits

-  **Zyrox<sup>®</sup> Fly**  
Granular bait

## Space treatment

-  **Icon<sup>®</sup> EC**  
Insecticide
-  **Actellic<sup>®</sup> 50EC**  
Insecticide
-  **Pirilan<sup>®</sup> 50EC**  
Insecticide

## Rodenticide

-  **Klerat<sup>®</sup> Pellets**  
Rodenticide
-  **Klerat<sup>®</sup> Waxblocks**  
Rodenticide
-  **Talon<sup>®</sup> Waxblocks**  
Rodenticide
-  **Talon<sup>®</sup> Pellets**  
Rodenticide



PROFESSIONAL PEST MANAGEMENT

# FLIES





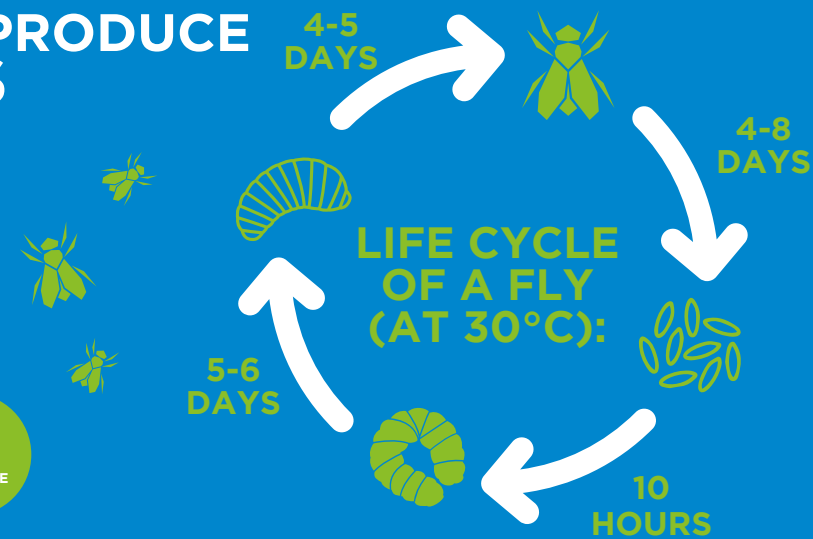
# ABOUT THE FLY

**Kingdom:** Animalia  
**Phylum:** Arthropoda  
**Class:** Insecta  
**Order:** Diptera  
**Section:** Schizophora  
**Family:** Muscidae  
**Genus:** *Musca*  
**Species:** *M. domestica*

 **A PAIR OF FLIES CAN PRODUCE SEVERAL MILLIONS OF FLIES A MONTH**

 **35°C FOR OPTIMUM REPRODUCTION**

**WHAT ATTRACTS FLIES?**



**IN TOTAL**  
**FROM EGG TO ADULT AT 30°C:**  
**9-11 DAYS (7 DAYS AT 35°C)**



# IMPACT OF FLIES

 +  = **191,010,000,000,000**  
MILLION OFFSPRING  
IN A SINGLE SEASON

**33%** for every 1°C increase  
in temperature between  
16°C and 35°C<sup>8</sup>  
7  
MORE FLIES  
HATCHING

## ON FARMS

POSE A RISK OF CHICK  
DEATH FROM SALMONELLA



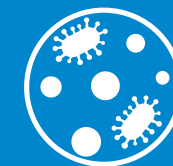
  | **NUISANCE TO POULTRY**  
| **STRESS** | **APPETITE**  
CAN CAUSE **WEIGHT LOSS**

**EGG PRODUCTION**  
AFFECTED BY FLY BACTERIA

## ON HUMANS

**FLIES SPREAD  
DISEASE**

CHOLERA  
**DYSENTERY**  
TUBERCULOSIS  
ETC.



OVER **300**  
**BACTERIA**  
SPECIES ON  
**FLIES**



# FLY MANAGEMENT TIPS:

The ability of housefly larvae to feed and develop in a wide range of decaying organic matter is important for recycling of nutrients in nature.

## TEMPERATURE & MOISTURE

KEEP THE  
MOISTURE  
CONTENT  
LOW 30%



PREVENT HIGH  
TEMPERATURE

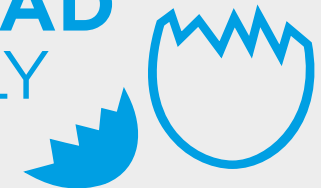


MAINTAIN  
WATER  
SYSTEM



## SANITATION

REMOVE **BROKEN  
EGGS & DEAD  
BIRDS** DAILY



 **KEEP THE FARM  
CLEAN AND TIDY**





# SYNGENTA FLY CONTROL SOLUTIONS IN FARMS



**Tandem**  
Insecticide



**Arilon**  
Insecticide

**Advion WDG**  
Insecticide



**Icon EC**  
Insecticide



**Actellic 50EC**  
Insecticide

**Pirilan 50EC**  
Insecticide



**Zyrox Fly**  
Granular bait





# Zyrox<sup>®</sup> Fly granular bait

## FLY CONTROL LIKE NO OTHER



Zyrox<sup>®</sup> Fly granular bait combines a novel chemistry (cyantraniliprole) for fly control with an attractive and easy to use formulation, to achieve reliable and effective results, *first time – every time.*



THE **MOST ATTRACTIVE** AND **LONGEST LASTING** FLY GRANULAR BAIT



UNIQUE MODE OF ACTION FOR **RESISTANCE** MANAGEMENT



EASY TO HANDLE **SAVES TIME**

## HOW TO APPLY

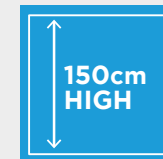
CAN BE USED



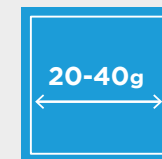
INDOOR



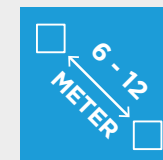
OUTDOOR



BEST TO HANG STATION



FILL VERTICAL BAIT STATION WITH BAIT



INTERVAL BAITING POINT



CHECK STATION EVERY WEEK



## Unique science stops fly activity

Ready to use bait Zyrox® Fly contains cyantraniliprole, an innovative active ingredient that disrupts muscle contraction in a fly. The fast speed of action paralyzes the fly and inhibits movement almost immediately after ingestion.



### Granular fly bait

- Highly attractive, proprietary bait formulation

### Insecticide class

- Anthranilic diamide

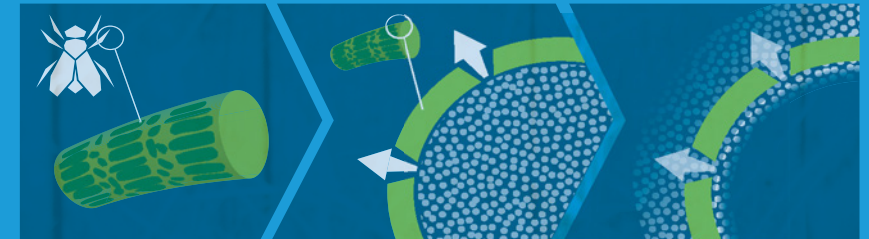
### Active ingredient

- 0.5% cyantraniliprole (CYNT)

### Mode of action

- Ryanodine receptor modulator
- Different mode of action comparing with pyrethroids and organo phosphate

Fig 1. Zyrox Fly mode of action



#### Phase 1: Exposure

Flies ingest the active ingredient in Zyrox.

#### Phase 2: Activation

The product binds to the ryanodine receptors in the fly's muscles and causes them to open.

#### Phase 3: Paralysis and Death of Flies

Calcium flows out of the open ryanodine receptors, depleting calcium needed for muscle contraction. The resulting muscle paralysis leads to insect death.

**New mode of action:** The unique active ingredient (cyantraniliprole) can be used as a powerful tool in a resistance management strategy.

**Time-efficient:** Zyrox® Fly can fill up to twice as many bait stations, compared to other baits – to help save time and money.

**Attractive option:** Zyrox® Fly is formulated to be highly attractive to flies and ensure effective control, even at a low rate of use.



# Zyrox<sup>®</sup> Method of Application



## Scatter Bait Application

### Place of Application

- Windowsills
- Tops of walls

### Tools

Use a bait station/tray per 10m<sup>2</sup> floor space

### Rate of Use

Application rate:  
1-2g/m<sup>2</sup>

### Method of application

Scatter product evenly in bait station/tray



## Bait Paint

### Place of Application

- Warm walls
- Pen partitions
- Posts
- Window frames
- Milk pipes
- Outside feeding troughs
- Paint hang boards or card

### Tools

Warm water – paint brush

### Rate of Use

1g/1ml of water

### Method of application

Spot paints



# Syngenta Fly Solutions Residual Spray

On all surfaces and resting areas of flies around animals.



## DUAL MODE OF ACTION DELIVERS BROAD SPECTRUM CONTROL

The simplicity of one product, with the versatility and breadth of two active ingredients. (11.6% Thiamethoxam 3.5% Lambda-cyhalothrin)

- Combines the power of two active ingredients from different chemical classes
- Broad spectrum control of a wide range of pests
- Outstanding performance Long residual activity on critical surfaces
- Can control insects resistant to insecticides such as pyrethroids



## TARGETED INSECT PEST CONTROL

Arilon®/AdvionWDG® is a versatile non-pyrethroid insecticide (20% indoxacarb).



**Peace of mind** - its MetaActive effect differentiates between target insects and non-target organisms



**Versatility** - can be used in commercial areas, including food-handling establishments, and in residential areas



**Reliable control** - powered by the trusted active ingredient indoxacarb to control a broad range of pests



**Convenience** - a non-repellent, non-pyrethroid and non-neonicotinoid formulation that can be applied as a spray or foam,



# Tandem®



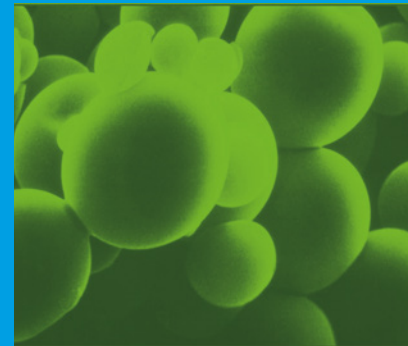
## The resistance breaking power of Thiamethoxam

Thiamethoxam complements the activity of the pyrethroid lambda-cyhalothrin. In cases when pyrethroid resistance may limit the activity of lambda-cyhalothrin, thiamethoxam is still fully active providing the peace of mind that control will be achieved whatever the situation.

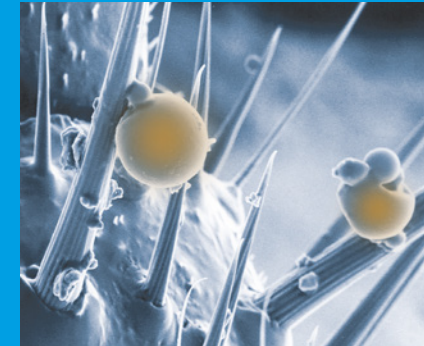
Tandem® provides quick knock down and long-lasting control of a broad range of pests both indoors and outdoors.

## The propriety ICAP™ technology from Syngenta

Tandem® features the proprietary iCAP™ technology.



The uniquely designed microcapsules deliver a controlled release for both immediate and long-lasting residual activity.



The microcapsules contained in Tandem® adhere to insects and easily passed to other insects for thorough control.



# Tandem® Method of Application:



Application as a spot, crack-and-crevice, void, banded spray or full yard treatment makes it flexible for technicians to use in any way needed.



**Rate of use:**

Low Infestation: 4ml/L  
High Infestation: 8ml/L

**Composition:**

11.6% Thiamethoxam  
3.5% Lambda-cyhalothrin

**Mode of action:**

Contact & Ingestion



# Arilon® / Advion®WDG



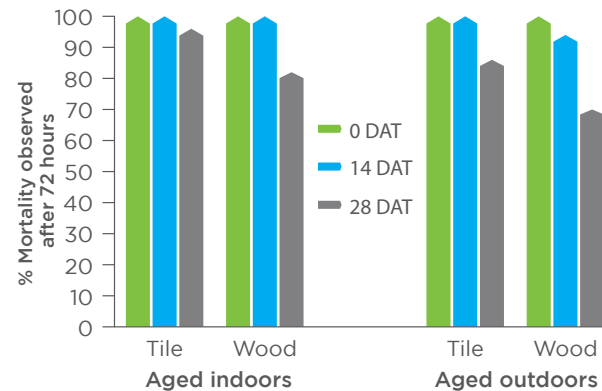
Arilon®/ Advion®WDG offers a new way to be more targeted in your approach to insect pest control.

In the trial below, the treated surfaces were aged indoors and outdoors for 0,14 and 28 days after treatment (DAT).

Then house flies were exposed to the treated surfaces with Arilon at 0.05% for 1 hour. The mortality was observed 72 hours later.

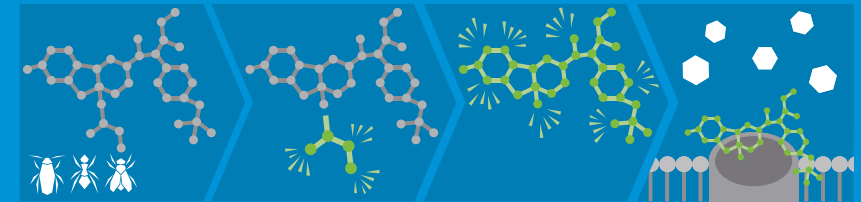
Arilon provided very good control of house flies for up to 28 days even on unpainted wood which is a challenging surface due to its porosity.

Long-term control of houseflies



## A formulation to fit your needs

- Arilon is supplied as a water dispersible granule that is easy and accurate to measure. It mixes readily with water, for application as a low-odor, nonclogging and non-staining spray.
- Convenient unit dose pack size enables quick dosing and easy mixing.
- Arilon is ideal for multi-pest control in IPM or resistance management programs
- Arilon: the alternative to pyrethroid resistance



### 1. Exposure

Pest comes into contact with Arilon.

### 2. Transformation.

Pest's enzymes transform indoxacarb.

### 3. Bioactivation

Resulting molecule is converted into the powerful bioactive form.

### 4. Control

Target site blocking of pest's nervous system leads to paralysis and death.



# Arilon<sup>®</sup> / Advion<sup>®</sup>WDG

## Method of Application:

- Long-lasting residual effect and optimal control of wide range of crawling and flying insects
- Can be used in combination with baits
- Favorable safety profile, approved for use in residential, commercial and food handling establishments

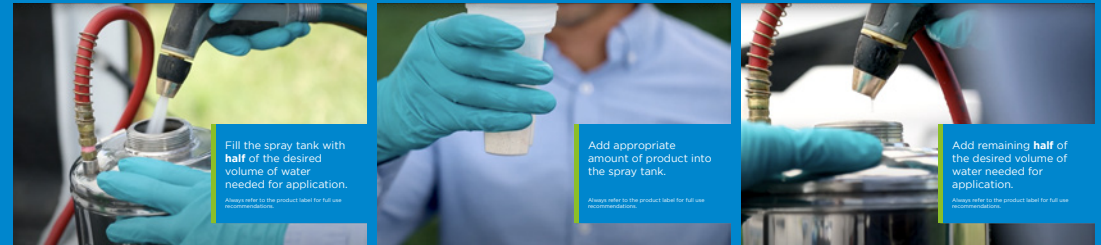
### Application Tips:

Versatile application indoors and outdoor . Outstanding performance against a wide variety of pests. ARILON<sup>®</sup>/ ADVION<sup>®</sup>WDG can be used to directly treat active pest infestations or as a routine preventative spray.

***Non-repellent - can be used in conjunction with ADVION and OPTIGARD gels***

## Mixing Tips

When mixing a dry formulation product in a handheld, backpack or power sprayer



For power sprayer tanks circulate the solution through the hose before applying, although not required it is recommended to pre-mix the solution in a separate service container before adding it into the spray tank. This will ensure the formulation is properly mixed and in suspension, which can help increase efficacy for quality control.



### Rate of use:

Low Infestation : 10g/4L

High Infestation : 20g/4L

**Composition:** 20% Indoxacarb

**Formulation:** Dry - Sprayable Water dispersible granule

**Mode of action:** Contact





# Space Spray Treatments

All open spaces away from the animals either thermal or cold fogging. Space spraying works best as part of an integrated resistance management program to reduce the overall mosquito population by killing both the biting and breeding adults and reducing the numbers of larvae reaching full development.



 **Icon<sup>®</sup>EC**  
Insecticide

A VERSATILE BROAD SPECTRUM  
INSECTICIDE FOR THE CONTROL OF  
PUBLIC HEALTH PESTS



 **Actellic<sup>®</sup>50EC**  **Pirilan<sup>®</sup>50EC**  
Insecticide      Insecticide

POWERFUL CONTROL OF  
DISEASE-CARRYING AND NUISANCE INSECTS



# ICON® EC



Icon®EC is a broad spectrum, non-systemic insecticide (Lambda-Cyhalothrin 2.5%), with contact, residual and stomach action that is ideally suited for thermal fogging or short residual applications against mosquitoes and public health pests

**Composition:** Emulsion concentrate (Lambda-Cyhalothrin 2.5%).

Lambda-cyhalothrin and its formulations have successfully completed the joint FAO/WHO specification scheme under new procedure: *WHO Specification 463/TC/EC/CS (2015)*

- Versatile formulation for vector control and management of public health pests
- Broad spectrum activity against public health pests, including those responsible for malaria and Dengue fever transmission
- Fast, efficient knock-down of insects
- Active at exceptionally low rates

## ICON® EC Methods of Application

Treatment	Diluent	Application rate	Application volume
<b>THERMAL FOG</b>			
Hand-held Vehicle-mounted	Kerosene or diesel oil	2-1g a.i./ha 2g a.i./ha	2 l/ha 5 l/ha
<b>COLD FOG</b>			
Aerosol ULV Hand-held or Vehicle-mounted	Kerosene or diesel oil	2-1g a.i./ha	0.5 l/ha

Vehicle-mounted

### Mixing Tips

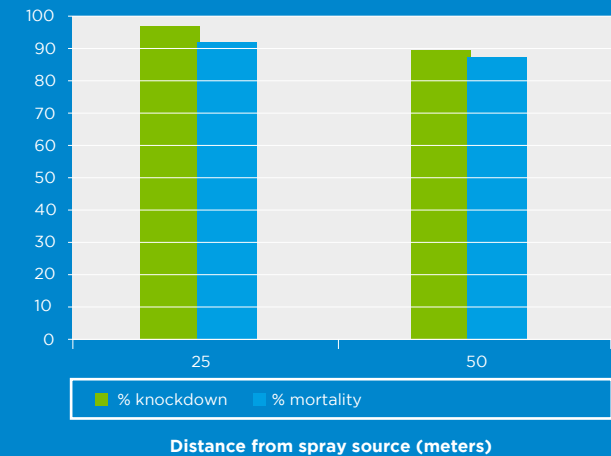
Prepare no more spray mixture than is needed for the immediate operation.

Add the measured quantity of concentrate to the appropriate diluent in the half-filled spray tank.

Maintain agitation while topping up.

Always stir the spray mixture well and apply within a few hours.

**Figure 4.** Percent knockdown and mortality of adult *Musca domestica* following an application of ICON EC applied via ULV at 2g ai/ha





# Actellic® 50EC / Pirilan® 50EC



- Actellic®50EC / Pirilan®50EC is a highly flexible organophosphate product contains, Pirimiphos Methyl
- Highly flexible tool for vector control as a residual treatment, space spray or larvicide
- Controls a wide range of disease-carrying and nuisance pests including flies.
- Effective against insects that are resistant to other organophosphate, pyrethroid, carbamate, and biological insecticides

## WHO Evaluation

- Actellic®50EC / Pirilan®50EC has been successfully evaluated by the WHO Pesticide Evaluation Scheme for its safety and effectiveness in vector control.



**Rate of use:** Low infestation 80ml/L  
High infestation 200ml/L

**Composition:** Emulsion concentrate  
(Pirimiphos- methyl 50%)

## Methods of Application

Target Pest and Situation	Application rate (Active Ingredient)	Diluent	Amount of Actellic 50EC / Pirilan 50EC per 1 litre of spray	Application Volume
<b>Thermal Fogging</b>				
Hand Held	100-200g/ha	Kerosene/ diesel	100-200ml	2 l/ha
Vehicle-Mounted			40-80m	5 l/ha
<b>Cold aerosol ULV: Flies</b>				
Ground	250g/ha	Kerosene/ diesel	1000ml	0.5 l/ha
Aerial	400g/ha		400ml	2 l/ha



PROFESSIONAL PEST MANAGEMENT

# LITTER BEETLE





# ABOUT THE LITTER BEETLE

<b>Kingdom:</b>	Animalia.
<b>Phylum:</b>	Arthropoda.
<b>Class:</b>	Insecta.
<b>Order:</b>	Coleoptera.
<b>Family:</b>	Tenebrionidae.
<b>Sub Family:</b>	Tenebrioninae.
<b>Genus:</b>	<i>Alphitobius</i> .
<b>Species:</b>	<i>A. diaperinus</i>

Darkling beetle (*Alphitobius diaperinus*) is the common name for a large family of beetles, Tenebrionidae.

There are an estimated 20,000 species and they are found all over the world and considered a pest of poultry sheds as they are capable of transmitting poultry diseases and parasites.

## Impact on Farms

Litter beetles can cause damage not only to the structure of farm facilities but, more importantly, to the animals themselves.

Darkling beetle can:

- Contaminate livestock / chicken feed, as they not only live and feed on animal feed but also in manure or any remaining feed which is mixed with urine and feces.
- Ruin the warehouse structure, buildings or cages. Darkling beetle usually lay eggs under building structure or in building cracks.
- Be a vector disease and source of several diseases' agents such as Acute leucosis.

## Beetle Management Tips

To reduce litter beetle populations, inspect your structures and use a trusted residual treatment to keep these pests at bay.

- Sanitation is the important key. Clean the stool at least once a week and do it more often during rainy season.
- Apply trusted treatment in the area where darkling beetle usually aggregate.
- Clean the cracks or crevices around the building if there are any, as darkling beetle might hide in these places.
- Proper maintenance & regular cleaning of poultry housing usually keeps the beetle under control, as it propagates in accumulated litter and droppings



# SYNGENTA LITTER BEETLE CONTROL SOLUTIONS IN FARMS



**Tandem**  
Insecticide

## The resistance breaking power of Thiamethoxam

- Thiamethoxam complements the activity of the pyrethroid lambda-cyhalothrin. In cases when pyrethroid resistance may limit the activity of lambda-cyhalothrin, thiamethoxam is still fully active providing the peace of mind that control will be achieved whatever the situation.
- Choose Tandem® so you can apply in more places, effectively control more pests.



**Demand<sup>CS</sup>**  
Insecticide

## KEEP LITTER BEETLES AT BAY

- Featuring the power of iCAP™ technology, Demand® CS easily adheres to pests' waxy cuticles as they travel along a treated surface, which helps ensure lasting control.
- Demand® CS insecticide offers up to 90 days of control of more than 30 pests including beetles.



**Optigard<sup>Flex</sup>**  
Liquid

## INCREASED CONTROL WITH SYSTEMIC ACTION

- Optigard® Flex is a new non-repellent insecticide that is active against pests by both contact and ingestion.
- Optigard® Flex liquid insecticide, with the active ingredient thiamethoxam 21.6%, goes beyond exterior walls, because pests go beyond exterior walls.



# Tandem<sup>®</sup>



APPLY IN MORE PLACES. CONTROL MORE PESTS.

Powered by two active ingredients, (lambda-cyhalothrin and thiamethoxam)



## FEATURES & BENEFITS

- Broad pest spectrum provides “cupboard to curb” control of more than 90 insects with a single product.
- Application flexibility allows Tandem<sup>®</sup> to be used indoors for residential and commercial areas and outdoors for perimeter or spot treatment for general pests, and full yard treatments for turf pests. Tandem<sup>®</sup> can also be used in food-handling establishments, as directed by the product label.
- Patented iCAP technology protects the active ingredient in various capsule sizes to ensure controlled release and durability against harsh environmental conditions.
- One product tackles a broad range of pests and eliminates the need to carry multiple products on a technician’s truck.
- Application as a spot, crack-and-crevice, void, banded spray or full yard treatment makes it flexible for technicians to use in any way needed.
- Controlled release of the active ingredient provides immediate and residual control lasting up to four months, giving customers a peace of mind and ensuring control will last through quarterly service protocols.



# Tandem<sup>®</sup> Method of Application:



**The simplicity of one product, with the versatility and breadth of two active ingredients.**

Tandem<sup>®</sup> insecticide provides immediate and residual control lasting up to four months for a wide range of pests both indoors and outdoors.

Application as a spot, crack-and-crevice, void, banded spray or full yard treatment makes it flexible for technicians to use in any way needed.



**Rate of use title:**

Low infestation 4ml/L

High infestation 8ml/L

**Composition:**

11.6% Thiamethoxam

3.5% Lambda Cyhalothrin





# Demand<sup>®</sup> CS



## FEATURES & BENEFITS

- Peace of mind - controlled release of the active ingredient provides outstanding fast knockdown and residual pest control for up to 90 days.
- Reliability - powerful active ingredient and proprietary formulation provide steadfast general and public health pest control so you can focus on growing your business.
- Reduced callbacks - active on a broad range of pests, Demand<sup>®</sup> CS provides excellent perimeter protection against general and nuisance pests.



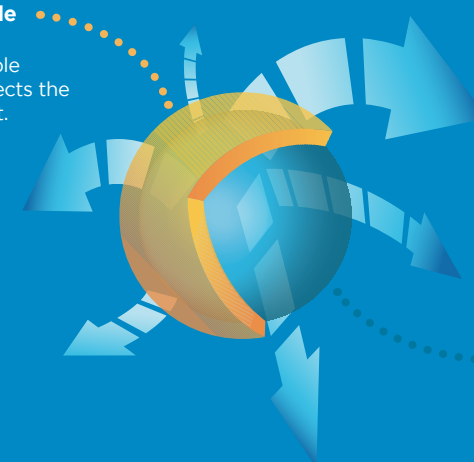
## Microencapsulation delivering long lasting control

This innovative water-based formulation is available in two strengths (either 25 or 100 grams/litre lambda-cyhalothrin) and is intended for dilution with water for application to surfaces using conventional compression sprayer equipment.

After application, the water evaporates to leave the microcapsules available on surfaces. The active ingredient remains protected from the environment within the microcapsules and this protection provides extended duration of effect, especially on challenging surfaces such as cement. In addition, the capsule size has been optimized so that insects moving over treated surfaces pick up microcapsules on their bodies. Once attached to the insects, the active ingredient rapidly moves out of the capsule and into the insect, providing a rapid knockdown effect followed by quick kill.

### Semi-permeable membrane

A semi-permeable membrane protects the active ingredient.



### Lambda-cyhalothrin

Once the capsule becomes attached to an insect, the lambda-cyhalothrin moves rapidly through the membrane into the insect.



# Demand<sup>®</sup> CS Method of Application:



Demand<sup>®</sup> CS is a proven pyrethroid residual insecticide. It is intended for directed applications to areas where beetles are active. With its iCAP technology formulation, Demand<sup>®</sup> CS makes achieving long-lasting residual control and excellent stability on difficult surfaces possible at rates lower than other products.

Once animals are removed from the area, Demand<sup>®</sup> CS insecticide can be applied to the walls and floors of a farm building at clean-out before animals are reintroduced. In addition, apply Demand<sup>®</sup> CS to horizontal and overhead areas of a farm facility to provide residual control against **darkling beetles**.



Lambda Cyhalothrin 2.5%

Low infestation 5 ml/L

High infestation 10 ml/L

## Tips for Application in Poultry Farms:

Applications should be made in areas of buildings where birds are not present. Because fresh litter can cover and deactivate insecticides, treat as soon as cleaning is done and wait as long as possible before introducing birds to give Demand<sup>®</sup> CS time to work on beetles.

### Total Clean-out

Remove old litter and wash and disinfect the house. Mix Demand<sup>®</sup> CS at the recommended rates and spray floors and footings, and along walls. Turn off ventilation and close doors to raise ammonia levels in the house and ensure that beetles are active. Wait one week or longer after treatment before adding new litter and introducing new birds.

### Partial Clean-out

Remove old surface litter, mix and level with ventilation to dry litter and top-dress as desired. Mix Demand<sup>®</sup> CS at the recommended rates and apply to litter and footings. Turn off ventilation and close doors to raise ammonia levels and ensure beetles contact the insecticide. Wait one week or longer after treatment before introducing new birds.

### Resistance Management

Demand<sup>®</sup> CS, a pyrethroid insecticide, works on the central nervous system of the beetles. With long-lasting residual control Demand<sup>®</sup> CS can reduce chemical rates and potential applicator and animal exposure over time.



# Optigard® Flex Liquid



## Dual Action Benefits

- Fast control
- Advance non-repellent insecticide
- Broad spectrum control
- Excellent efficacy against termites
- Approved for use in food handling establishments
- Easy to use
- For indoor and outdoor use
- Cost effective

## Powerful Mode of Action

Thiamethoxam, the active ingredient in Optigard® Flex, is a proprietary, non-repellent insecticide that offers both contact and ingestion activity against a wide range of economically important pests.

As a neonicotinoid it binds to the nicotinic acetylcholine receptors (nAChR) of the post-synaptic membrane of the insects' nerve and muscle cells. This eventually leads to the paralysis of the insects' muscles and death.

## Cost-Saving Control

This high-performance insecticide is ideal for Integrated Pest Management (IPM) programs. It allows Pest Control Operators (PCOs) to make more targeted applications, use less active ingredient, and have lower environmental impact.

With Optigard Flex, you have the flexibility to apply when it's needed and where it's needed. And, by using a backpack or handheld sprayer, you can leave behind higher-cost power sprayers and improve fuel efficiency without sacrificing treatment results.

### It all adds up to:

- Reduced equipment needs
- Fewer callbacks
- Lower fuel costs
- More satisfied customers
- More service visits per day
- Better word-of-mouth promotion



# Optigard® Flex Liquid Method of Application:



## Flexible Applications

The easy-to-use, water-based, suspension concentrate formulation readily disperses in water, has no odor, and is compatible with commonly used application equipment. It can be applied indoors and outdoors for greater flexibility and can be applied with liquid applicators, foam applicators, direct-injection systems and in-wall, fixed-tube delivery systems.

Effective as a zone treatment, general surface spray and crack-and-crevice application, providing flexibility for technicians and reducing the number of products needed to complete a treatment.

### Application Tip

*“Bedding under the feeders where >90% of the beetles and larvae hide.”*

### Indoor:

- Crack-and-crevice applications
- Spot treatments to non-exposure areas (i.e., under appliances, etc.)

### Outdoor:

- Perimeter spray
- Spot and zone treatments
- Crack-and-crevice application



**Rate of use:** Low infestation 2 ml/L  
High infestation 4 ml/L

**Composition:** Thiamethoxam 21.6%



PROFESSIONAL PEST MANAGEMENT

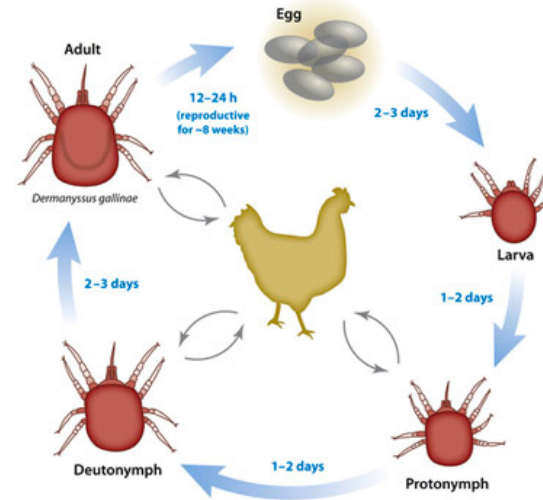
# RED MITE




# ABOUT THE RED MITE

**Kingdom:** Animalia.  
**Phylum:** Arthropoda.  
**Class:** Arachnida.  
**Sub Class:** Acari.  
**Order:** Mesostigmata.  
**Family:** Dermanyssidae.  
**Genus:** *Dermanyssus*.  
**Species:** *D. gallinae*

The poultry red mite, *D. gallinae* has been involved in the transmission of many pathogenic agents, responsible for serious diseases both in animals and humans.



The life cycle of the chicken mite, *Dermanyssus gallinae* (De Geer). Illustration from Sparagano et al. 2014.

 Sparagano OAE, et al. 2014. Annu. Rev. Entomol. 59:447-66

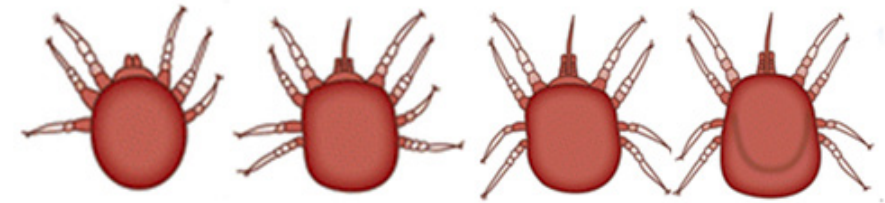


Illustration of the chicken mite, *Dermanyssus gallinae* (De Geer) at various life stages. Left to right- six-legged larva, and eight-legged protonymph, deutonymph, and adult. Illustration adapted from Sparagano et al. 2014.



# IMPACT ON FARMS

The mite is an active night bloodsucker of the spider family. During the day, the pest hides itself, making it difficult to find them in the barn. Mites are extremely prone to develop resistance.

Poultry red mite is the most devastating parasite of laying hens, not only in Europe, but worldwide. Research shows that the pest increases rates of anemia, mortality and disease susceptibility while negatively impacting both feed efficiency and poultry welfare.

## **Red Mite Management Tips:**

- Manually cleaning equipment and areas that poultry come into contact with (houses, roosts, nests, etc.) will help reduce mite populations.
- Regular air cycling & washing down of the poultry housing system.
- Monitoring signs on poultry to detect infestation and level of infestation is important



# SYNGENTA RED MITES CONTROL SOLUTIONS



 **Icon<sup>®</sup> EC**  
Insecticide



 **Actellic<sup>®</sup> 50EC**  
Insecticide

 **Pirilan<sup>®</sup> 50EC**  
Insecticide



 **Demand<sup>®</sup> CS**  
Insecticide



# Demand<sup>®</sup> CS

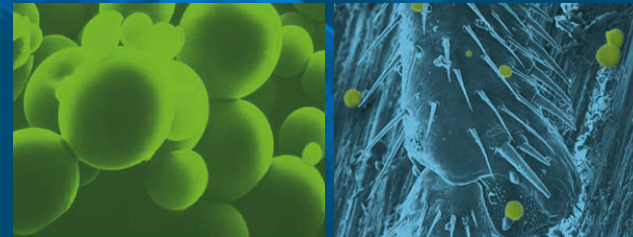


**CONDITIONS ARE UNPREDICTABLE.  
YOUR INSECTICIDE SHOULDN'T BE**



## Demand CS: The Power of iCAP Technology

Demand CS features iCAP™ technology, a unique formulation technology developed by Syngenta. Smaller microcaps release the active ingredient quickly for immediate control, while larger microcaps remain intact and release the active ingredient later for long-lasting, residual control. These multiple-sized microcaps with controlled release set iCAP technology apart from any other microcapsule formulation on the market.

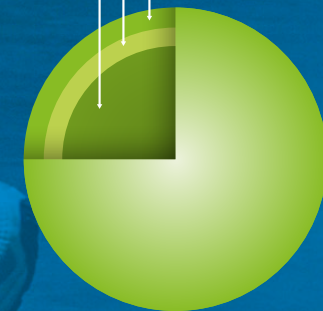


The microcaps shown in green adhere to insects and are easily passed to other insects for thorough control.

## The Makeup of a Microcap

The active ingredient in Demand CS is first encapsulated in a spongy polymer shell. Then, a smooth outer shell is applied to further protect the active ingredient from environmental conditions. This means the product is strong enough to maintain control between bi-monthly and quarterly service cycles, reducing the need to retreat customer properties.

- Smooth outer layer:** protects the active ingredient from sunlight and pH extremes
- Spongy inner layer:** controls release rate
- Active ingredient**





# Demand<sup>®</sup> CS Method of Application:

Demand<sup>®</sup> CS insecticide offers up to 90 days of control of more than 30 pests including ticks. Featuring the power of iCAP<sup>™</sup> technology, Demand<sup>®</sup> CS easily adheres to pests' waxy cuticles as they travel along a treated surface, which helps ensure lasting control.

## Application Tips:

Rate of use: Low Infestation: 5ml/L

High Infestation: 10ml/L

Composition: 2.5% lambda Cyhalothrin

Mode of action: Contact

Formulation: Capsule Suspension

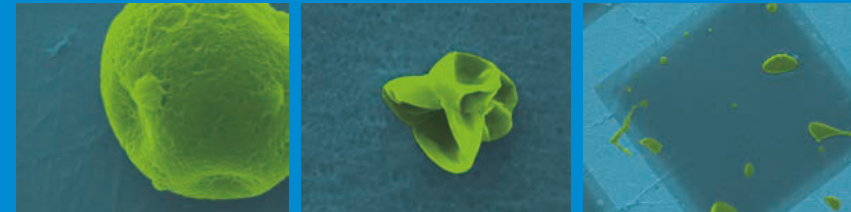
## Not All Microcaps are the Same

Microcaps can degrade prematurely from heat, UV light and pH extremes. Demand CS is made with durable microcaps to withstand the elements.



We tested various capsules under heat and pressure

**Demand CS** capsule remains intact under heat and pressure.



*All other capsules tested were affected by heat and pressure, they were either damaged, partially collapsed or fully collapsed.*



# Actellic® 50EC / Pirilan® 50EC



## A BROAD SPECTRUM INSECTICIDE FOR THE CONTROL OF PUBLIC HEALTH PESTS

Actellic® 50EC/ Pirilan®50EC with pirimiphosmethyl active ingredient, the ultimate effective solution against insects resistant to parathyroid, carbamates and other insecticides

Actellic®50EC / Pirilan® 50EC has an excellent human and environmental safety profile.

Actellic®50EC / Pirilan® 50EC presents no significant risk to spray operators, householders or the environment when used as directed.

Actellic®50EC / Pirilan® 50EC has been successfully evaluated by the WHO Pesticide Evaluation Scheme (WHOPES) and is recommended for use in vector control programs.

### Application Tips:

- Rate of use: Low Infestation: 80ml/L  
High Infestation: 200ml/L
- Composition: 50% Perimiphose methyl
- Formulation: Emulsion concentrate



## Pirimiphos-methyl Mode of Action

Pirimiphos-methyl blocks the enzymatic activity of acetylcholinesterase. This enzyme normally puts an end to the transmission of the nerve impulse at the synapse, causing the transmitter acetylcholine to dissociate into its ineffective components' choline + acetate. The blockade of this enzyme causes a state of constant excitation, which ends with a paralysis and subsequent death of the insect.



# Icon® EC



## FAST ACTING CONTROL OF PUBLIC HEALTH PESTS

Icon® EC is an emulsifiable concentrate (EC) formulation containing the insecticide, Lambda-Cyhalothrin. It is designed as a general-purpose insecticide for use both in vector control space spray programs and for general pest control of public health pests.

Icon® EC is a broad spectrum, non-systemic insecticide with contact, residual and stomach action that is ideally suited for thermal fogging or short residual applications against public health pests. Icon® EC has been successfully evaluated by the World Health Organisation Pesticide Evaluation Scheme (WHOPES)

### Application Tips:

Rate of use:      Low Infestation: 10ml/L  
                         High Infestation: 25ml/L  
Composition:    2.5% Lambda-Cyhalothrin  
Formulation:    Emulsifiable Concentrate  
Mode of Action: Contact



## Key Benefits

- Fast, efficient knock-down of insects
- Active at exceptionally low rates
- Can be used as part of a resistance management program alongside Actellic® EC/Pirilan® 50EC



PROFESSIONAL PEST MANAGEMENT

# RODENTS



# ABOUT THE RODENTS

**Kingdom:** Animalia.  
**Phylum:** Chordata.  
**Class:** Mammalia.  
**Unranked:** *Glires.*  
**Order:** *Rodentia.*



**About 50%**

of the short circuits on farms are associated with the presence of rodents



Rodents eat and contaminate feed,

**increasing feed costs**



They leave their feces and urine

**wherever**  
they are present.

## Rodents Facts:



They live in close **association with humans**



They consume **10% to 25%** of the food and feed produced worldwide

They transmit more than **26 pathogens** (CDC 2011)



A single pair of rodents can generate thousands of offspring in their lifetime **(1 year)**



# MAXIMIZING RODENTICIDE CONTROL

## Identify key signs of infestation

### Burrows and nests

- Common rat holes (House mouse 8cm diameter) are found outside around and under farm buildings. Mouse holes are smaller size (2cm diameter) and located indoors.
- Black rats and mice nest indoors using a variety of materials from around the farm.

### Runs and smears

- Rats take the same routes to and from their burrows and nests creating visible 'runs' in vegetation around farm buildings. Mice runs are less obvious.
- Rats, in particular, like to move with their bodies in contact with building walls resulting in visible greasy stains (or smears).

### Droppings

- The shape, distribution and age of droppings can indicate the nature and extent of an infestation.

### Footprints and tail marks

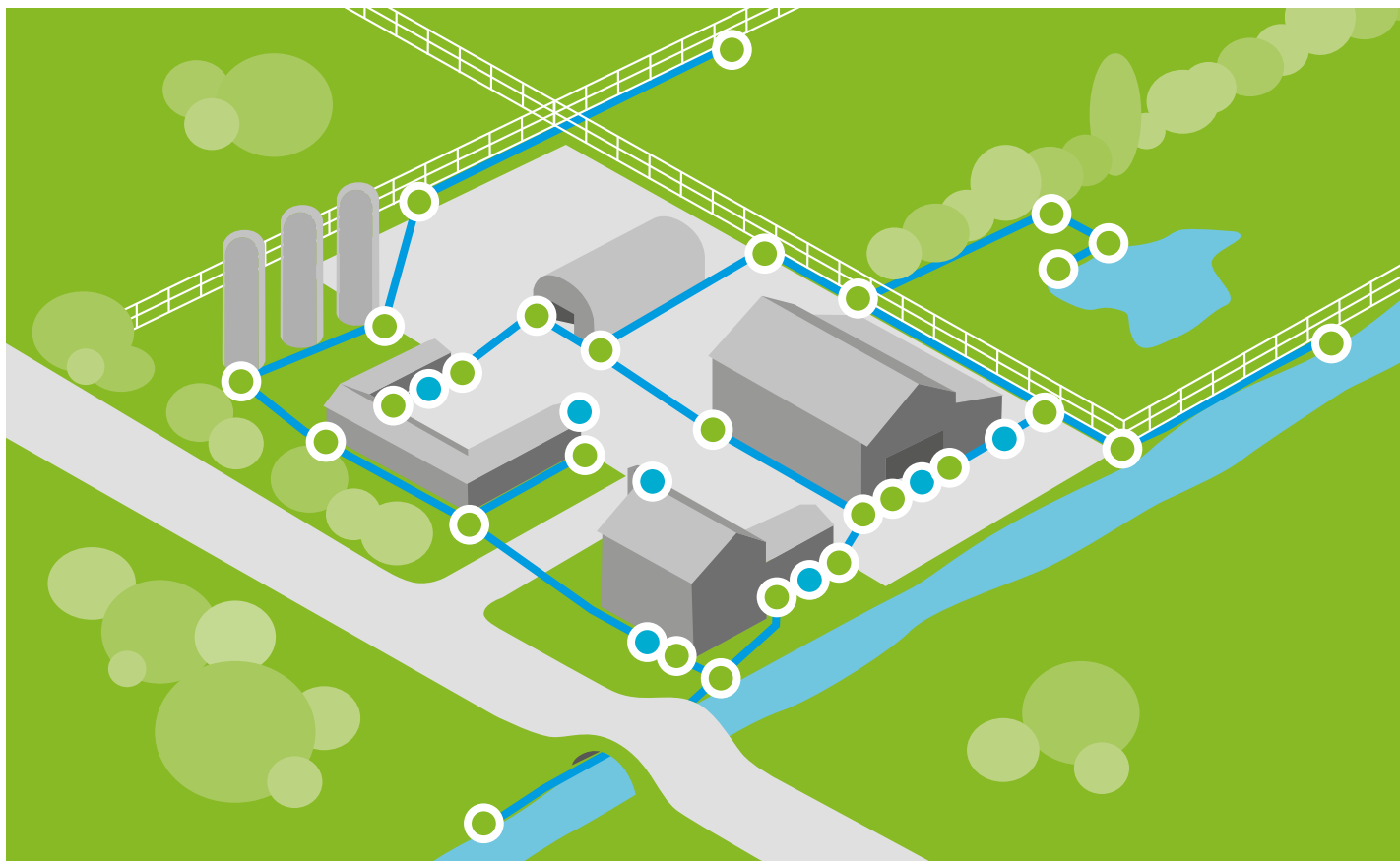
- Distinguished by 4 toes on the forefeet; 5 on the hind feet.

## Environmental Sanitation

- Cover waste bins properly
- Remove accumulation of material (waste) and vegetation around the house as rodents like to hide there
- Cut overhanging branches as rodents use it for entering the houses
- Prepare a band of gravel around the house as rats refuse to cross it
- Block any holes with meshing, nets or cement:
  - Electrical, water or telephone connections
  - Drains without grids
  - Rain water pipes
  - Stretches of open drains



# PLAN YOUR SITE FOR BAIT LOCATION



● Baiting point ● Potential entry points — Areas of rodent activity

- Survey the site, noting location of runs, droppings, signs of gnawing, burrows and potential entry points to buildings.
- Draft a site map and plan baiting points according to your findings.
- Rats are wary of new foods or feed locations so bait stations should be located where rats and mice feel safe to eat.
- Bait levels should be maintained and uptake monitored to gauge the level of infestation.





# SYNGENTA RODENT CONTROL SOLUTIONS IN FARMS



**Klerat Waxblocks** Rodenticide **Talon Waxblocks** Rodenticide

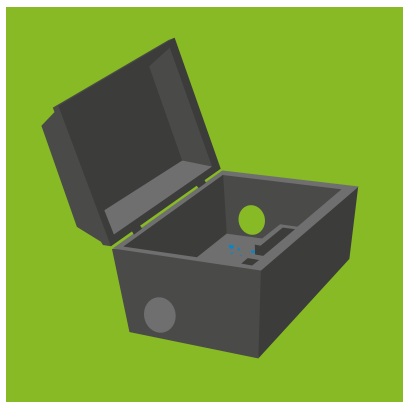
- Brodifacoum 0.005% (50ppm).
- Low infestation 20g/ bait station
- High infestation 60g/ bait station.
- 5-10 meter (for rats) 2-5 meter (for mice) between each bait station.



**Klerat Pellets** Rodenticide **Talon Pellets** Rodenticide

- Brodifacoum 0.005% (50ppm).
- Low infestation 20g/ bait station
- High infestation 60g/ bait station.
- 5-10 meter (for rats) 2-5 meter (for mice) between each bait station.

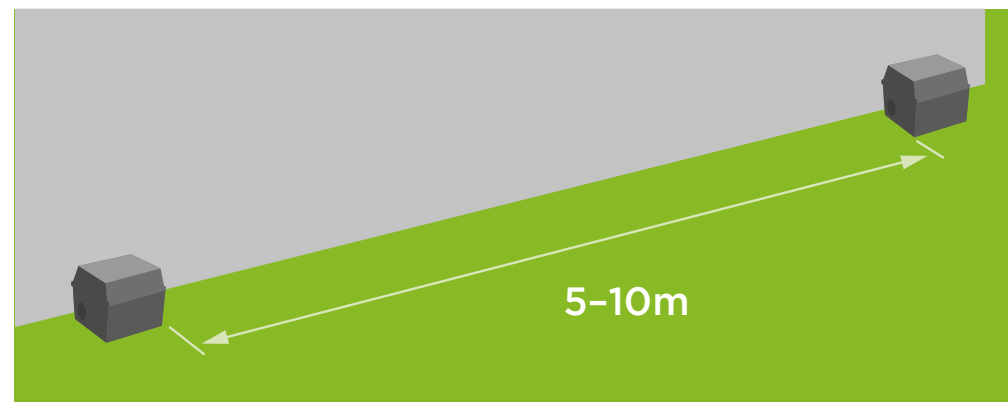
## Method of Application



### Apply In Bait Stations Only

- Risk of primary poisoning is reduced
- Greater safety for people and animals
- Best control of consumption

- Place the bait stations where you see signs of rodents
- Place the bait station along fence or wall every 5-10 ( for rats) 2-5 meter (for mice)



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USE BIOCIDES SAFELY ALWAYS READ THE LABEL AND PRODUCT INFORMATION BEFORE USE.

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