



SYNOITA
Our Science ... Your Pest Solution

FLY CONTROL PROGRAMME



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THE IMPORTANCE

We are all familiar with flies and especially the common housefly. These pests invade our homes, are a nuisance and transmit diseases to both humans and animals. They feed on decaying organic matter, human/animal waste and moist food, picking up viruses and bacteria as they forage.

They regurgitate and excrete regularly, contaminating surfaces and the food they come into contact with. This insect can only ingest liquid food, so regurgitate saliva containing enzymes that enable the food to be liquefied. This is then sucked up by the proboscis or mouth part. Flyspeck on hanging surfaces, walls or ceilings are a useful indicator of resting places used by flies as well as the extent of the infestation.

Synvita® has a full range of fly control products that are registered under Act 36 of 1947. These products, when used in combination with each other and according to the directions for use on the label, will contribute to a successful integrated fly control programme.



PESTICIDE RESISTANCE MANAGEMENT

Synvita® has developed the most complete range of fly control products, using proven active ingredients that have been used successfully in integrated fly control programmes.

To preserve the life of the insecticides currently available to the industry it is not recommended that the same pesticide active ingredient be used in the control of both the larva and adult insect. This practice promotes the rapid development of resistance, especially when insect life cycles are short. The utilization of different classes of insecticides, when used correctly, plays an important roll in insect resistance management. The Synvita range has taken this into consideration and offers products whose active ingredients are derived from four different classes of pesticides namely: carbamates, biologicals, pyrethroids (both photolabile and residual) and benzoyl ureas (Insect Growth Regulators).



GUIDELINES AND INTERVENTIONS

- Identify and understand the biology of the fly and it's life cycle.
- Improve and continue good sanitation and hygiene practices.
- Training and supervision of staff members to ensure interventions are implemented correctly.
- Use of correct application equipment and nozzles.
- Read product labels and only use products for their intended use.
- Once acceptable levels of control have been achieved a maintenance cycle should be maintained.
- Larval control is critical - chemical, biological and/or physical interventions can lead to 80% reduction in adults.
- Surface spraying - coverage should be >90%.
- Space treatments - ULV spraying/fogging to reduce high adult challenge.
- Baits - Strategically placed in and around problem areas.

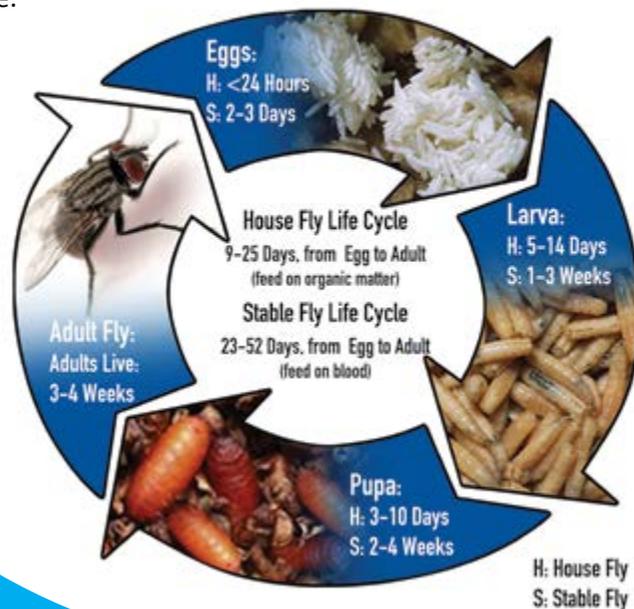


SITE INSPECTION AND SURVEY OF AREA

In order to implement a strategy it is important to understand the basic biology of the insect and conduct a survey of the problem area. Identifying potential breeding sites, poor sanitary and hygiene practices on or in the premises as well as the surrounding area. From this information one can then plan a sustainable long-term programme.

LIFE CYCLE

All flies undergo complete metamorphosis with egg, larva, pupa and adult stages in their development. The female house fly deposits her eggs in animal waste, decomposing vegetation, lawn cuttings and other moist organic materials. The larva hatches out (8-20 hours) and feeds on the nutrients in the substrate until it is ready to pupate. The adult fly will emerge from the pupa (2-6 days), dry its wings and commence flight. Under optimum summertime conditions the life cycle from egg to adult can take as little as seven days. Each female can lay several batches of eggs each containing 100 to 150 eggs. Without a viable control strategy this can become an insurmountable problem in a very short period of time.



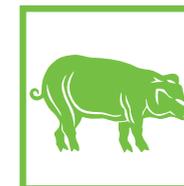
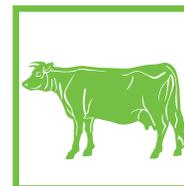
PHYSICAL AND CHEMICAL CONTROL OF BREEDING AREAS

The control of larvae in breeding sites should be given priority in any fly control programme. Effective control of larva can reduce the adult population by >80%.

Animal waste (manure) and decaying organic matter collected and laid in runs 1-1.5m high and 1-2m wide allow the contents to be more easily managed as it can be physically turned on a weekly cycle to ensure that the high temperatures generated in the core are moved to the outer area of the mound. These high temperatures are not conducive to larval development. Turning also ensures ventilation of the stack, thereby reducing the moisture content.

Alternatively, these runs can be covered with strong black plastic sheeting, which promotes very high temperatures within the stack that will kill the larva and pupa. It is important that the runs are totally covered and held in position by sand sausages or other means, denying access to fertile female flies to lay their eggs.

Often found in rural areas are Long Drops or Pit Latrine toilets that promote fly breeding. It is recommended that the organic matter be treated with a larvicide and all the internal surfaces of the structure with an adulticide surface spray. A closable lid or toilet seat would help considerably, as would a black north facing flue pipe. The convection current that results increases the airflow rate, extracting odours from the pit at the top of the flue thereby reducing the attractiveness as well as the moisture content in the organic waste.



Household refuse, garden refuse and decomposing organic matter should be placed in dust bins with lids or in bags. Alternatively, if refuse pits are used they should be divided into manageable sections and treated with a larvicide or covered by soil fill on a weekly cycle. Soil should be approximately 10 cm in depth to prevent newly hatched adults from reaching the surface.

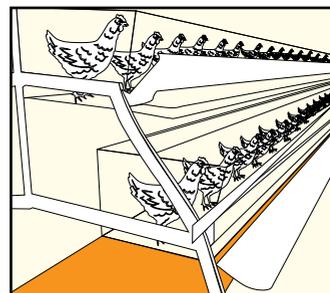
Should chemical control methods (larviciding) be employed, these smaller stacks and well-planned refuse and infill sites allow for the spray operator to cover the total surface area more easily and efficiently.

LARVICIDING

DIMILIN[®] (Diflubenzuron) is an insect growth regulator (IGR) formulated as a wettable powder or suspension concentrate that is applied to breeding areas via motorized, knapsack or compression sprayers. It is a chitin inhibitor and so interferes with the formation of the insect cuticle. This action prevents the larva developing into an adult.

IGR's registered as fly larvicides should be the product of choice before other insecticides are considered.

The use of biological control measures such as a predatory wasp should be encouraged. The parasite does not bother humans or animals in any way.



 Treat manure and organic waste with Dimilin[®] WP25.

SURFACE SPRAYING

The internal walls of buildings, undersides of open roofs, sheds and overhangs, support timbers, support beams, ceilings, verandas, eaves, door frames and window frames should be sprayed with a particulate surface spray. These formulations include wettable powders, wettable granules, capsule suspension and suspension concentrates and should be applied to absorbent surfaces (rough brick, rough concrete) using a flat fan 8002E or 8002 nozzles at between 2 and 3-bar pressure. Where surfaces are non-absorbent (painted), consideration should be given to using flat fan 8001E or 8001 nozzles.

The reason for using 8001 nozzles for spraying non-absorbent (painted) surfaces is to remove the problem of run-off. Although the throughput of the nozzle is half that of the 8002, the target dose is achieved by increasing the insecticide concentration in the wash by doubling both the dose per spray tank and the surface to be covered. The active ingredient deposit rate per m² therefore remains the same.



 Spray all recommended surfaces with DELTA[®] 7 WP.

Spraying should be carried out before to the “point of run off” with a minimum surface coverage >90%. Over application on the target surface will result in the product running off the surface and being deposited on the wall/floor junction or on the ground and will not be available to the flies when they alight on the target surfaces. These surface sprays should be applied to protected walls and other surfaces where flying insects alight. However, where external walls are sprayed, re-treatment will be necessary after rain as the insecticide deposits may have been washed off.

DELTA® 7 WP is a unique surface spray formulation developed to control a wide range of public health and stored product insect pests including those exhibiting potential resistance. The formulation is a wettable powder, which includes the very active residual pyrethroid Deltamethrin, combined with the resistance breaking synergist Piperonyl Butoxide. This combination in a particulate formulation offers a powerful tool in the search for better insect control especially where no resistance management programmes have been adopted in the past. The product has shown excellent residual properties and knockdown action on many surfaces, against a wide range of insect species tested.



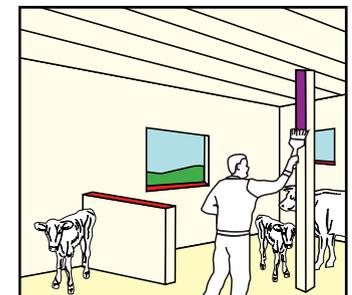
BAITS

Baits play a very valuable roll in fly control programmes. They are easy to use and do not require specialist equipment to apply to potential target areas. Most formulations include foods and/or attractants and some are greatly improved by using fly aggregation pheromones. These “attract and kill” products specifically target the insect in a selected area thereby reducing environmental contamination and destruction of beneficial insects.

SNAP® Fly Bait (Methomyl & Z-9 Tricozene). This yellow granular fly bait can be used in specific target areas to attract and kill adult flies. The product contains food attractants and its attractiveness is greatly enhanced using the fly aggregation pheromone Z-9 Tricozene. For safety reasons, a taste deterrent is included in the formulation to prevent accidental poisoning of humans and animals.

This highly effective, Ready-To-Use granular fly bait can be used as a dry scatter bait placed in specially designed bait containers, wet as a surface spray or “paint-on”. The product can be painted directly onto resting sites or onto boards that are vertically hung. Staining may result on some surfaces so it is recommended that a small test area be treated before applying to a large surface area. Alternatively, the bait can be sprinkled onto moistened cotton wool or sacking in a shallow container and positioned in rain protected areas where flies congregate. **SNAP®** has been scientifically proven to attract and kill flies quickly by both contact and stomach action.

Oral intake greatly improves the speed of kill and delays potential resistance development.



- Apply SNAP® as a paint-on.
- Apply SNAP® as a scatter bait.

TRAPS

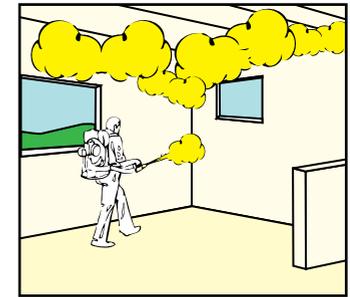
There are a variety of traps available in the market place for the catchment of adult flies. Unfortunately, flytraps alone cannot control high levels of infestation but can and should be incorporated into an integrated programme where additional physical, biological and chemical control methods are employed. Understanding the life cycle of the fly and the behavioral characteristics has resulted in the development of **Fly-Tac**, an extremely sticky, pressure sensitive adhesive tape.

Flies are contour flyers and investigate potential surfaces to land on in order to rest, copulate, regurgitate and defecate. They show strong preferences to narrow tape that is horizontally or vertically hung or looped especially under ceilings or well above the floor. This pressure sensitive adhesive tape offers an additional physical control method for adult flies that can be incorporated into an extensive pest management programme. In sensitive areas where insecticide usage is forbidden **Fly-Tac** provides a cost effective alternative. The content of this brochure should be adopted to control both the larval and adult stages of the fly life cycle in order to bring the insect challenge to a level of acceptability.



SPACE SPRAYS

NIMBUS® Space Spray (Pyrethrin & Piperonyl Butoxide) is a Ready-To-Use space spray kills insects in flight or as a direct contact spray. The product is applied using ultra low volume (ULV) or thermal fogging application equipment that produce aerosol droplets in the range of 10-30 microns. These droplets float and drift throughout the target space making contact with the insect either at rest or in flight. **NIMBUS**® contains natural Pyrethrin & the synergist Piperonyl Butoxide. Combined, these biological active ingredients are very effective knock down and kill agents. This type of application greatly assists in the reduction of the adult challenge and should be part of the insect pest management programme especially in and around animal houses, kennels, calf pens, dairies, stables, poultry and other high density breeding areas. Outside, this product can be applied to the target area using the prevailing wind. The air current allows the droplets to drift across the killing zone.



Use ULV or Thermal Fogging equipment for knock-down of adult flies with **NIMBUS**® Space Spray.



ECOMATIC® Metered Aerosol (Natural Pyrethrin & Piperonyl Butoxide) and **SYNMATIC**® Metered Aerosol (Synthetic Pyrethroids & Piperonyl Butoxide) have been developed and designed to operate in a **CIRRUS**® Metered Aerosol Dispenser.



These 280ml aerosols are suitable for an average sized room or kitchen (180m³) and will control adult flies for up to 30 days under continuous operation or up to 60 days when set for daytime/12hr use. The dispenser with it's accurate timing mechanism will ensure the firing of the aerosol every 15 minutes.

SUPERFAST® Aerosol contains three photolabile pyrethroids that have extremely good knockdown and kill properties against a wide range of insect pests including flies. The fourth active ingredient is the synergist Piperonyl Butoxide that increases the activity of the pyrethroids and plays a vital role in insecticide resistance management. The active ingredients inclusion rates are higher than those found in household aerosols resulting in improved performance.



Fly control failures are more often than not blamed on the insecticide rather than the application and implementation of a well-planned integrated programme. If hygiene standards are improved and the basics are followed correctly using multiple interventions, success is guaranteed in reducing the populations.

When control and acceptable levels are achieved within the insect population, a marked reduction in animal stress and reduced disease transmission will be observed, relating directly to operational profits.

Within households and human habitation the nuisance element, as well as communicable disease transmission associated with flies will also be greatly reduced allowing both adults and children to have more productive, healthy lives.





| Product Name | Active Ingredient | Formulation Type | Areas of Use | Dosage Rate |
|--|--|-----------------------|---|--|
| Dimilin® WP 25 <i>Larval Control</i> Insect Growth Regulator "IGR" | 250g/Kg Diflubenzuron (Chitin Inhibitor) | Wettable Powder (WP) | Manure & decaying matter. | Mix 40g of Dimilin® WP 25 to 5 litres of water and apply the solution to 10m ² of organic matter. Maintenance Application: Mix 20g of Dimilin® WP 25 to 5 litres of water and apply the solution to 10m ² of organic matter. Apply every 2-3 weeks. <i>Ensure that the top 100-150mm of organic matter is sufficiently wetted by this solution.</i> |
| SNAP® <i>Fly Bait</i> Adult Control | 10g/Kg Methomyl (Carbamate) 1g/Kg Z-9 Tricosene (Pheromone Attractant) | Granular Bait | Interior and exterior surfaces of dairies, piggeries, poultry houses and other animal houses where flies have access and are known to congregate. | Scatter Bait: Evenly scatter granules (200g per 50-100m ²). "Paint-On" (for heavily infested areas): Prepare a viscous solution of granules by mixing 500g of bait with 500ml of warm water. Paint a target area of 2-4 m ² . (Use prepared bait solution within 24 hours) Surface Spray: Once the fly population has been brought under control a maintenance solution can be prepared by mixing 500-1000g of granules to 10 liters of water and applied to areas where flies are known to congregate. (Use prepared bait solution within 24 hours) |
| NIMBUS® <i>Space Spray</i> | 5g/Kg Pyrethrin (Natural Pyrethrin) 40g/Kg Piperonyl Butoxide (Synergist) | Space Spray Treatment | Registered for use in sensitive areas such as food preparation areas, kitchens and grain storage areas. Around dairies, calve pens, piggeries, poultry houses etc. | To be applied through an Ultra Low Volume (ULV), thermal or misting machine at a dosage rate of 400ml per 1000m ³ . |
| SUPERFAST® <i>Aerosol</i> | 1,6g/Kg D-Phenothrin (Pyrethroid) 0,9g/Kg D-Trans allethrin (Pyrethroid) 0,9g/Kg D-Tetramethrin (Pyrethroid) 8g/Kg Piperonyl Butoxide (Synergist) | Space Spray Aerosol | In dairies, calve pens, piggeries, stables and other animal houses. For use in and around the home. | <i>For use as a contact spray:</i> Spray a 1-2 second burst at the insect. <i>For use as a space spray:</i> For an average sized room. Close all windows and doors. Commence spraying from furthest point of the room from the exit. Spray in a sweeping motion for 5 - 8 seconds while moving towards the exit. Vacate room for 15 minutes after spraying, leaving it closed. Ventilate room for 15 minutes before re-entering |
| DELTA 7 WP® | 70g/Kg Deltamethrin (Pyrethroid) 350g/Kg Piperonyl Butoxide (Synergist) | Wettable Powder (WP) | The exterior and interior surfaces of structures such as dairies, piggeries and poultry houses where flies are known to rest. Please note that surfaces exposed to rain or cleaning will require re-treatment. | Initial Application: Mix 35g to 5 Litres of water to spray 100m ² of surface area where flies are known to rest. Retreat every 4 weeks. Maintenance application: Mix 35g to 5 Litres of water to spray 125m ² of surface area. |



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