



AN ANTICIMEX COMPANY

THE MOST COMMON PESTS IN FMCG

Know your enemy and learn about the main pests
that affect food retail and production facilities



PREFACE

Flick offers pest prevention and control services to the leading FMCG companies in Australia and New Zealand. As a result, we know the importance of pest control in the sector, given that it can lead to economic, reputation and customer losses, and can even result in the closure of the establishment or chain.

Food retailers and producers are subject to strict policies, rules, regulations and health and safety laws to ensure that the foods they sell, especially fresh or pre-cooked foods, meet the highest quality standards.

One of the most important food hygiene standards is to ensure that foods are free of organisms and bacteria that cause disease when consumed. This is why it's essential that all food retailers and producers strictly follow correct hygiene practices – especially those employees who handle fresh products – including preventing cross-contamination and the presence of pests.

Food retailers and producers attract pests, since they contain a large quantity of food products, both fresh and packaged.

There are several types of pests that can be found in food retail and production facilities. The most common are rodents such as rats and mice, as well as cockroaches, flies, and other insects in stored products. All of them constitute a great danger, not only because their presence can have a serious negative impact on their reputation, but also because some of them are transmitters of microorganisms. These cause diseases, which can cause a problem to public health.

Flick has over 100 years of experience in pest control with a team made up experts. This has allowed us to conduct a study on the main pests that can affect food retailers and producers, highlighting the most common among them and those that represent the greatest danger both to the reputation of brands and businesses, and to consumer health.

CONTENTS

4 OBJECTIVE

- 4 Protect Your Business Reputation
- 4 Prevention and Early Detection

7 AREAS VULNERABLE TO THE PRESENCE OF PESTS IN FOOD RETAIL AND PRODUCTION

10 RODENTS

- 11 Types of Rodents
- 12 Reproductive Biology of Rodents
- 13 Eating Habits
- 13 Structural Damage
- 13 Food Contamination
- 14 Tips for Early Detection of Rodents
- 15 What to Do if Rodent Presence is Detected
- 16 Treatments for the Prevention and Control of Rodents

17 COCKROACHES

- 17 Types of Cockroaches
- 20 Reproduction
- 20 Eating Habits and Behaviour
- 21 Cockroaches are a Health Risk
- 21 Detecting Signs of a Cockroach Presence
- 22 Tips to Prevent Cockroach Problems
- 23 Treatments to Control Cockroaches

24 FLIES

- 24 Types of Flies
- 25 Reproduction
- 26 Eating Habits
- 26 Health Risks
- 27 Preventing Flies
- 28 Treatments to Prevent and Control Flies
- 28 Light-Pheromone Traps, the Best Solution for Interiors
- 28 Essential Factors to Maximise the Efficiency of Light-Pheromone Traps
- 29 Osprey - The Range of Light-Pheromone Traps from Flick

30 INSECTS IN STORED PRODUCTS

- 31 Weevils
- 31 Other Pests of Stored Products
- 32 Tips to Detect Insects in Stored Products

33 24/7 DIGITAL PEST CONTROL

- 33 SMART Pest Control is Smart Business
- 34 SMART - Your New Workplace Protector
- 35 Transforming Pest Control from a Reactive Guessing Game into a Fact-Based Science
- 36 Main Benefits for Food Retailers and Producers
- 37 SMART Devices

39 HOW DATA-DRIVEN PEST CONTROL WILL FUTURE-PROOF THE FMCG SECTOR

- 39 SMART Food Retail and Production Facilities Require SMART Pest Control
- 40 A Changing Regulatory Environment
- 40 Higher Demands on Sustainable Practices for Food Retailers and Producers

41 CONCLUSIONS

42 WHO WE ARE

43 OUR COMMITMENT TO SUSTAINABILITY

OBJECTIVE

PROTECT YOUR BUSINESS REPUTATION

Food retailers and production facilities are especially vulnerable to pest attacks. Here, they find a large amount of food and other potential areas to reproduce and proliferate. In addition, the constant flow of merchandise and/or customers represents a direct access route that facilitates their entry.

“Food retailers and producers are commercial establishments that are especially vulnerable to pest attacks.”

The presence of pests in food retailers and producers not only causes a loss of customers — which inevitably causes a loss of profits — but also puts the business reputation at risk. Even if it's a single and isolated occurrence, the presence of pests in just one establishment can damage the company's reputation. In addition, the potential danger to public health that most pests represent can lead to the closure of the establishment for non-compliance with current food hygiene regulations.

PREVENTION AND EARLY DETECTION

Because most pests can contaminate food with disease-causing microorganisms such as Salmonella, control of such pests is especially necessary. It should not be forgotten that pests have an extraordinary capacity to reproduce and survive. For this reason, their populations can multiply enormously over a short period of time, exacerbating the health problem and making it difficult to control. This is why it's so important to act at the first sign of infestation, since early detection can greatly increase the chance of eliminating the pest.

“Prevention is the best tool to fight pests.”

The keys to good pest prevention for food retailers and producers are based on the following points:



Guarantee a design of the facilities that will aid cleaning, inspection and control.

Even though many pests traditionally related to poor hygiene — such as cockroaches — are not associated with this factor, it's true that lack of cleanliness facilitates their reproduction and subsequent expansion. Therefore, it's essential to have facilities that allow for quick cleaning and inspection, especially the areas that are contact with multiple ingredients and fresh food, such as meat, fish or prepared food and food production

Take extreme care when cleaning under shelves to avoid food accumulation and creating a source of food and shelter for pests.

Eliminating food and water sources.

Food retailers and producers are an endless source of food for pests. One of the best forms of prevention is to prevent access. To this end, it's advisable to store fresh food in airtight containers so that pests cannot get inside, clean grease and food debris from walls, floors, sinks, machinery and electrical appliances on a daily basis, and perform good waste management (close containers tightly, do not allow bags to accumulate over many days, keep the containers clean, aired and dry). In addition, all areas where food has been spilled must be cleaned as soon as possible, paying special attention to difficult to access areas where food or drink may have fallen since it can end up being a source of food for pests.

Likewise, it's important to fix any leaking taps or pipes and eliminate puddles of water on floors and corners, especially in areas where fresh food is present,

Limiting the presence of areas that can be accessed by pests.

Maintaining open spaces is one of the main ways to avoid the creation of areas that can be accessed by pests.

Food from warehouses should be kept in sealed boxes or containers, kept away from walls and about 15cm off the floor.

The wooden or cardboard boxes in which the products arrive must be removed as soon as possible, since they can serve as shelters for pests. These materials should be left in containers outside the establishment.

Preventing their entry.

In some cases, the presence of pests in food retail outlets and production facilities is compounded by external factors to them, such as the presence of vegetation or landscaped areas, abandoned lots, nearby works, or the accumulation of waste. All these factors attract pests to the location and increase the probability that they will end up entering the building. To minimise the probability of external pests entering, it's important to try to keep the exteriors free of waste, as well as to seal any cracks or holes that give access to the outside, or to use meshes that prevent the entry of pests into drains and pipes.



Another way that pests enter is through the accidental introduction of contaminated material. To minimise the probability of pests entering through this route, a thorough inspection of any external element that enters the establishment must be performed. This is especially important in the case of fresh food brought into warehouses, kitchens or the different sections of the sales area. Boxes, bags and sacks should be inspected thoroughly each time they are brought in from outside.

Employees should perform periodic review procedures.

Another key element to prevent the appearance of pests is to conduct periodic reviews of the facilities to guarantee that they are free of pests, and if not, detect them early. This is why, it's essential that specific training is conducted for business employees, bearing in mind that these activities must always be conducted by experienced trainers in pest control.

AREAS VULNERABLE TO THE PRESENCE OF PESTS IN FOOD RETAIL AND PRODUCTION

There are numerous areas that are vulnerable to the presence of pests because they have a series of characteristics that attract them to these spaces.

1 Outside. The outside of the food retail outlet or production facility can favour the presence of pests due to numerous factors, such as: the presence of abandoned lots nearby, abundant vegetation, the accumulation of waste, or the presence of rivers, ponds, fountains or landscaped areas with continuous water flow. All these areas can serve as safe places for pests that might then enter the premises searching for food. The presence of construction works near the establishment can also favour the presence of pests, since they have been displaced from their usual areas.

2 Food processing facilities. Pest management in food processing facilities can be challenging due to the varied entry points. Floor drains can be problematic as they provide a route into the facility, as are malfunctioning doors. Pests can also enter through the supply chain of incoming shipments of raw ingredients and/or packaging. The presence of odours and lighting and the sheer size of the facility provides shelter, warmth, food, water and safety from predators making them perfect harbourage sites for pests.

3 Food preparation areas. The food preparation areas include all the spaces where food is handled or cooked. For example, the bakery/patisserie, butchers, fish counter or delicatessen. These areas are especially vulnerable to the presence of rodents, flies and cockroaches because there are numerous unpacked foods that can attract these pests. Likewise, the food preparation areas can accumulate small pieces of food in difficult to access areas that are unnoticed by people but are, however, attractive to pests. In addition, refrigerators and ovens are another risk factor in these areas, since they attract insects due to the heat they emit.





4 Sales area. Food-filled shelves and displays are also areas especially vulnerable to certain pests. These areas offer a large number of places for insects to breed due to the heat generated by cold equipment, such as fridges or freezers. Likewise, shelves, displays and counters present a large number of breeding grounds for insects, such as the space below the shelves. Accumulated dirt, especially from food buildup in hard-to-reach places, humidity or poor sealing of cracks in the sales area can pose a significant risk because they offer shelter to insects from stored products, flies, rodents or cockroaches. Another potential risk in these areas is the introduction of infested food that can contaminate the rest. This is especially important in the case of unpackaged foods, such as sausages, cheeses, or fruits and vegetables.

5 Sales area – fish counter. The fish counter is one of the area's most vulnerable to the presence of pests. If thorough cleaning is not performed, moisture and accumulated water, open drains and, the buildup of organic remains is a great draw for rodents and insects. In addition, due to the smell given off by fresh fish, the fish counter has a high capacity to attract flies.



6 Shelves and sales area for fruit and vegetables. This area presents a series of factors that can attract rodents and insects due to the presence of fresh, unpackaged food, the accumulation of food debris in areas that are difficult to access (for example under shelves) and the presence of shelters (under boxes or fridges). In addition, the smell given off by ripe fruit, such as bananas or strawberries, can attract large numbers of fruit flies.

7 Package-free areas or the discount aisle. Increasingly, food retail outlets are betting on package free sections for bulk food products, such as tea and coffee, cereals, pasta, or nuts. These areas are sensitive to the presence of pests since the lack of packaging of the products exerts a powerful attractant to certain pests. Rodents, cockroaches, ants, and moths or other pests from stored products can use these areas to feed, or in the case of insects, to lay their eggs. The accumulation of food debris in the collection drawers is a great risk factor as the drawers themselves can function as a refuge area for such pests.

8 At the checkout. The presence of dimly lit spaces located under the checkout provides pests with places to breed. In addition, if these areas have an accumulation of waste and food, the attraction to pests increases even more. The most frequent pests under the checkout are rodents, ants and cockroaches.

9 Warehouses. Warehouses are another vulnerable area to the presence of pests, mainly due to three factors:

- the presence of a large amount of stored food
- the presence of many potential pest locations (empty packaging or a large accumulation of stored material)
- the presence of low-light spaces, especially attractive for pests such as cockroaches.

Additionally, warehouses are very susceptible to the entry of pests through contaminated food from abroad. The poor condition of the facilities (poor sealing of cracks, dirt, humidity, etc.) can greatly increase the risk of pests in these areas.



10 Unloading platforms. Organic material and waste accumulate in the unloading platforms, which can function as sources of attraction for pests. In addition, dirt and clutter, and a poor state of repair (dirt, humidity, poor sealing of cracks, etc.) can contribute to an increased risk of pests. Also, be aware that these are areas with little light and are open to the outside. This increases the attractiveness and ease of entry for pests in these areas.

11 Staff and office areas. The poor condition of staff areas or offices (humidity, poor sealing of cracks) together with dirt and clutter, are risk factors for the installation of pests in these areas.

12 Ceiling panels. The lack of accessibility and the accumulation of heat and darkness above the ceiling panels provide the ideal conditions for pests such as cockroaches or rodents to settle and live. Ceiling panels located near feeding areas are most likely to function as pest shelters.



A pair of rats
can produce
1,000+
offspring in
one year.

RODENTS

Rats and mice cause economic losses by damaging the stock of stored products, in the sales area, as well as the structures of the building itself. They can also transmit diseases by contaminating food and damaging the reputation of the business.

They are one of the most common pests in the FMCG sector. They enter these types of establishments through holes in the roof or cracks in walls or windows. Another very common way of entry is through poorly sealed drains that connect to the sewer system. They can also be introduced from pallets of food boxes from infested warehouses.

"A mouse can pass through a 6-millimetre hole."

Once inside, if they find food and shelter, they reproduce quickly. If action is not taken in time, rodents can become difficult to control.

TYPES OF RODENTS

In Australia and New Zealand, there are three main species of rodents that can be classified as pests:

The Norway / Brown Rat (*Rattus norvegicus*) has a strong body, rounded forehead, small eyes, and small ears. The tail, covered with short, stiff hairs, is shorter than the head and body combined. They have underground nests and live mainly in abandoned lots and in the sewage network. They build burrows, where they live and store food. They reach sexual maturity between 2-5 months of age. Females are fertile every 4-6 days over a period of 20 hours and can have between 4 and 6 pregnancies per year. As a result, a pair of rats can indirectly breed 800 to 1,000 offspring in one year. Adults generally live between 6 and 12 months.



The Roof / Black Rat (*Rattus rattus*) has a long body and forehead, large black eyes and large ears. The tail, with no hair, is longer than its head and body. Individuals living outside have a seasonal cycle, while individuals living inside buildings have constant sexual activity throughout the year. Outdoors, they prefer to nest in high places (trees, hanging plants, roof cornices). Inside buildings, they prefer to nest in the upper parts (ceiling voids, holes in roofs and walls, etc.), but they can also be found in the lower parts. They reach sexual maturity between 3-5 months of age. A female can have between 4 and 6 pregnancies a year. Adults generally live between 9 and 12 months.



House Mice (*Mus musculus*) live inside the walls, in ceiling voids and underground. They have a length of 8-9 cm, not including the tail, which is approximately 9 cm long. They reach sexual maturity at 35 days of age and they are sexually active all year round. This means that a female can have 7 to 8 births a year. To breed, they build a nest with consists of paper or hair in any corner that is quiet enough (an old closet, a drawer, inside a box, etc.). They have an omnivorous diet, although it is determined by the availability of food at all times. They prefer cereals, sugary substances, fruit, milk and particularly cheese. When a mouse finds a food source, it only eats a small amount and will continue to search for new food sources. Under natural conditions, adults generally live for less than one year.



REPRODUCTIVE BIOLOGY OF RODENTS

Rats usually reproduce in spring and autumn, although they can also reproduce throughout the rest of the year, if the temperature and food conditions are favourable. After mating and a gestation period of about 20 days, rats give birth to about 4-12 offspring. The Norway rat is the most prolific, giving 6 to 12 offspring per litter, while the Roof rat generates a smaller litter, giving birth from 4 to 8 offspring.

Despite this, the reproductive potential of rats is based on the speed of gestation and how quickly they can become pregnant again. Thus, for example, the Norway rat goes into heat for 4 or 5 days after giving birth to the offspring, and mates in just 1 or 2 days. This implies that a single rat can give birth to up to 20 offspring in a year. If we also add the fact that the offspring reach sexual maturity in 3 months, the reproductive potential of this group of rodents is overwhelming, being able to generate a large infestation in a short period of time.

“Unlike rats, mice produce less offspring when giving birth.”

Generally, a female produces between 4 and 7 offspring per litter in a gestation period that lasts about 19 days. However, they reach sexual maturity earlier than rats (5 to 8 weeks) and can reproduce throughout the whole year. This means that a single female can produce up to 35 offspring in a single year.

Rats, like mice, are social rodents that live in colonies. However, each species has its own characteristics in terms of nesting. The Norway rat nests in underground burrows, usually located outdoors, although they can also nest inside buildings, farms, warehouses, and all kinds of food facilities. Inside the burrows, the rats are distributed by families, and as they grow older, they dig new tunnels and living spaces. In this way, in large populations, burrows can end up being a complex network of interconnected tunnels, with a main entrance and one or two exits to escape in an emergency.



“Unlike the Norway rat, the Roof rat tends to nest in high areas, such as roofs, ceiling voids, beams, above ceiling panels or trees, although they can also nest in underground burrows.”

Mice can create their nests in a wide variety of places. If they nest inside buildings, they usually do so in ceiling voids, walls, inside cabinets or drawers, inside furniture, in boxes, or inside appliances and machinery such as the base of ovens, refrigerators or freezers. Mice are territorial. Nests are always made up of alpha males, who lead a group of one or two females with which they reproduce, and a variable number of subordinate young males and their offspring. Thus, a system of continuous struggle between males is established for the position of leader in which young males either fight with others for a pre-established territory or disperse in search of a territory not dominated by any other leader. This is the main way mice spread out from one part of a building to another.

“Rodent activity is primarily nocturnal, with peak activity at dusk and dawn, but when there is a large population and food is scarce, they can also be seen during the day.”

EATING HABITS

Both rats and mice follow an omnivorous diet. However, depending on whether it is one species or another, they will have preferences for certain foods. For example, the Norway rat shows a great preference for meat, while the Roof rat has a liking for foods of plant origin. On the other hand, the common mouse prefers grains and cereals.

“Unlike mice, rats cannot survive for long without water. In food retail outlets and production facilities, they can obtain this from areas where water is required or from the condensation of cold equipment. Also, from laundry water, sinks or water tanks.”

STRUCTURAL DAMAGE

Rodents cause millions of dollars in losses caused by damage to materials, structures, and food. Their behaviour, based on the constant eating of materials causes the destruction of many structural elements, such as pipes, walls, doors, beams, or electrical cables, which can cause breakdowns, floods, fires or equipment malfunctions. In addition, when feeding, they damage the stored product or contaminate it with urine or feces.



FOOD CONTAMINATION

Rodents are great transmitters of various diseases that affect people and pets. The greatest concern of a rodent infestation is the potential of these pests to contaminate food with microorganisms that cause multiple diseases. The problem then takes on a new dimension, with a risk to public health.

“Rodents can be carriers of viruses, bacteria, and parasites, including those that cause serious diseases such as tularemia, leptospirosis, listeriosis, bubonic plague, murine typhus, Escherichia coli infections, or salmonellosis.”

Rodent contamination of food occurs by contact of the rodent with food, contact of the food with water or instruments contaminated by urine or feces.

TIPS FOR EARLY DETECTION OF RODENTS

The best way to detect pests is by involving all employees so that they remain alert to any presence of rodents. To achieve this, each and every employee, from staff in the workrooms, fruit and vegetable sections, butcher and fishmonger, to maintenance or warehousemen, must have specific knowledge about rodents: what they are, how they are identified, where they are, what signs reveal their presence, etc. To receive such training, it is highly recommended to contact a pest control company specialised in rodents.

“To detect the presence of a rodent infestation as early as possible, it’s essential to conduct a regular trade inspection.”

There are five signs that indicate the presence of rodents in an establishment:

- 1 Faeces.** This is the most frequent sign of an active infestation by rodents since they defecate regularly.
- 2 Pawprints and biting damage.** The presence of rodent tracks when there is dust on the ground is very easy to see. Paw prints from the hind legs, which have five toes, are usually seen. Biting damage is an obvious sign. Mice often leave small holes in food, packaging, or in food boxes.
- 3 Grease and urine stains.** Rodents usually follow a marked routine, so they always tend to move along the same route to obtain food or water. Due to having greasy fur, both rats and mice leave grease marks on the areas they frequent. Detecting these traces can aid in early detection of a problem. Likewise, these rodents usually urinate throughout the route, as well as in the same food source, so the presence of urine, or the characteristic smell of ammonia that it emits, should also be a warning sign.



- 4 Noises.** The noises when they move through the ceiling or fight each other are indicative of their presence. Rodents concentrate their period of activity mainly at dawn and dusk, the period in which it is easier to hear them.
- 5 Observation of live or dead rodents:** The most unequivocal presence of an infestation is direct observation. In addition, observation can give an idea of the degree of infestation, as well as the areas that they usually frequent.

WHAT TO DO IF RODENT PRESENCE IS DETECTED

Employees attempting to resolve the infestation on their own should be avoided. Rodents are extremely intelligent and suspicious animals, capable of evading traps placed for their capture. In addition, being social animals, the presence of a single rodent implies that there will surely be many more around. For this reason, trying to eliminate a rodent infestation without prior knowledge about their biology and behaviour usually does not have good results. On the other hand, one of the food safety standards that the food sector in Australia and New Zealand must follow is to guarantee that a certified pest control company performs pest control and prevention tasks. As a result, the best advice after detecting an infestation is to leave the problem in the hands of a specialised pest control company.



TREATMENTS FOR THE PREVENTION AND CONTROL OF RODENTS

To conduct rodent control treatments, a situation diagnosis is prepared, detailing the plan. This plan includes both the preventive recommendations and the inspections and treatments of the areas or points identified in the diagnosis, with the appropriate intervals, products, and work methods.

The program is designed according to the characteristics of the establishment, aimed at controlling rodents that affect the facilities as well as detecting and preventing a future infestation that could affect the different facilities under treatment.

SMATRT Digital Pest Control is an intelligent monitoring system with constant control and an instant response that prevents pests while respecting the environment. This service includes constant digital monitoring and control, which allows us to follow the situation in real time without using products that are harmful to the environment.





German cockroaches
can produce easily
30,000+
offspring in one year.

COCKROACHES

These are unsanitary insects that multiply rapidly. Their great ability to adapt and survive in almost any habitat make them a difficult pest to control.

TYPES OF COCKROACHES

From the 3,500 species of cockroaches that exist in the world, the three main ones that infest commercial premises in Australia and New Zealand are:




German cockroach: These are light brown, small (12-15 mm long) and have long, non-functional wings. They are characterised by having two dark lines on the pronotum (dorsal plate behind the head). Females always carry the ootheca, a kind of elongated capsule that contains the eggs and that is inserted in the back of the insect.

Australian Cockroach: These are brown with a clearly defined yellow border around their pronotum and foremargin of wings, similar looking to the American cockroach although smaller in size (30-35 mm long). This species can fly. Females have rudimentary wings, unlike males that have well-formed wings, although neither sex can fly. Females only carry the ootheca for about 30 hours without waiting for the eggs to hatch.

American cockroach: This is the largest species, being able to reach 40 mm in length. They are reddish in colour. In males, the wings can extend beyond their body. This species can fly. Females carry the ootheca until they find a safe place to drop it.



COCKROACH IDENTIFICATION TABLE

			
	German cockroach <i>(Blattella germanica)</i>	Australian cockroach <i>(Periplaneta australiasiae)</i>	American cockroach <i>(Periplaneta americana)</i>
LENGTH	12 to 15 mm	30 to 35 mm	35 to 40 mm
COLOR	Light brown with two black stripes on the pronotum (behind the head).	Brown with a clearly defined yellow border around their pronotum.	Brown, with light marks on the pronotum.
WINGS	They cover the tip of the abdomen.	Only in adults. Yellow colour on foremargin of wings. Wings cover abdomen.	Only in adults. In females, it's the same length as the abdomen. In males, it extends beyond the tip of the abdomen.
REPRODUCTION	Yellow brown ootheca. Incubation time: 14-28 days. A female can produce about 5 ootheca throughout her life, with an average of 30-40 eggs per ootheca. The time it takes to complete its lifecycle ranges from 54 to 215 days.	Dark ootheca. Incubation time: 50-55 days. A female can produce about 12 ootheca throughout her life, with an average of 16-24 eggs per ootheca. The time required to complete the entire lifecycle is influenced by temperature, ranging from 6 months to over 24 months.	Dark ootheca. Incubation time: 50-55 days. A female can produce about 10 ootheca throughout its life, with an average of 14-16 eggs per ootheca. The time it takes for an egg to develop into an adult is highly influenced by temperature and ranges from 6 months to over 24 months.
EXCREMENT	Particles like pepper on the wall, near the shelters.	Similar to the mouse, with a rounded end.	Similar to the mouse but flattened and ribbed.
HABITAT	Warm and wet areas (optimal at 33°C). They prefer kitchens and bathrooms. They like to get into tight fissures.	Prefers outdoor areas with decaying vegetable matter, subfloors, wall and roof voids and shed. The optimal temperature is between 21-33°C.	They prefer warm and humid basements (optimal between 21-33°C) and sewers. They search for food mainly on the first floor.
LONGEVITY	3 - 6 months	6 -12 months	14 - 15 months

REPRODUCTION

After fertilisation, the cockroach lays the protected eggs inside a resistant capsule called the ootheca. Incubation time varies by species and environmental conditions, ranging from 2-4 weeks for the German cockroach to 50-55 days for the American cockroach. After the first moult, the nymphs are very similar to adults. An American cockroach female and her offspring can produce approximately 800 individuals in one year. A female Australian cockroach and its offspring can produce about 1000 offspring in one year. The German cockroach is the most prolific and common in food retail outlets. A female and its offspring can produce more than 30,000 offspring a year.

EATING HABITS AND BEHAVIOUR

During the night, their activity is based on searching for food or water and this is the time when they leave their colonies. During the day, they often hide in cracks or crevices that offer warm temperatures and humidity, as well as environmental protection. Although they are not social insects, they live in large groups depending on the degree of infestation in the area.

“Cockroaches usually have nocturnal behaviour.”

The presence of cockroaches during the day is indicative of a large infestation.

Although they feed on almost anything, they show a clear preference for decomposing organic matter, grease, starch, sugar, or fermented beverages like beer.

When the degree of infestation is high and food is scarce, they can even eat hair, cosmetics, soap, and even clothes or paper.

“Cockroaches hide in hot, humid places.”

A cockroach's body is fully adapted to cracks and crevices. Its oval and flattened dorsoventral area allows it to squeeze into almost any place.

The cockroach's favourite shelter provides both heat and moisture, for example garages, warehouses, boiler rooms, or basements.

Cockroaches also have a special preference for ovens, drawers, pipes and the underside of washing machines and refrigerators, since these areas often give them shelter and heat at the same time.



COCKROACHES ARE A HEALTH RISK

“The presence of these insects can represent a significant health risk.”

Cockroaches can transmit different diseases caused by the microorganisms they carry on their legs and body, contaminating food.

In addition, the presence of cockroaches can result in customer complaints, affecting the reputation and image of the business in the market.

DETECTING SIGNS OF A COCKROACH PRESENCE

Cockroaches are one of the most persistent and unpleasant pests. Furthermore, their high reproductive potential, ability to adapt to changing and hostile environments, and ease of hiding in inaccessible places allow them to reach high populations in a very short time. For this reason, early detection of a cockroach infestation is vital to be able to eradicate them successfully, since the probability of elimination decreases as the population grows.

“When a cockroach infestation is suspected, the best proof of its presence is when one of them can be seen.”

To find them, it is very important to keep in mind that cockroaches can be located both on the ground and in high places, as they can run on almost any surface, including ceilings and walls.

Night inspection is the most effective since most species are active at night and are easier to see during this time. Because cockroaches often leave their colonies primarily to search for food and water, nighttime inspection should focus on places close to food or water sources such as pantries, sinks, or garbage.



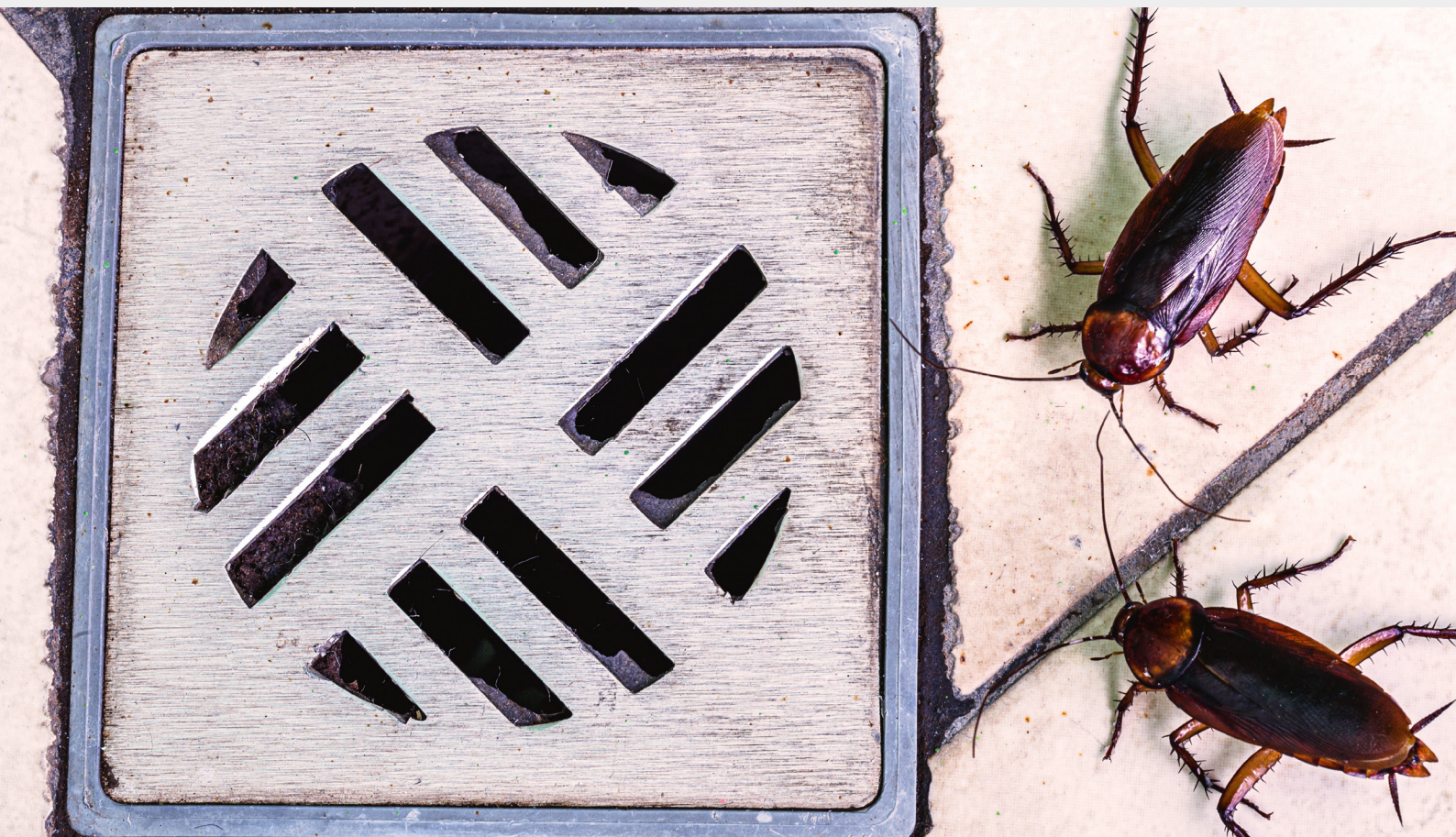
TIPS TO PREVENT COCKROACH PROBLEMS

Cockroaches enter through the street or drains. Another route of entry may be through the accidental transportation of infested material.

“Once in your facilities, cockroaches multiply very quickly and their elimination is very difficult, so prevention is the best strategy to avoid future problems.”

Efforts should focus on eliminating factors that may contribute to their proliferation, sealing off pathways and eliminating their sources of food and water:

- 1 Avoid sources of humidity.** Leaks in pipes and sinks, humidity produced by condensation of refrigerators, etc.
- 2 Seal cracks and crevices** so that cockroaches cannot hide.
- 3 Inspect food products** before storing them to detect an infestation in its place of origin.
- 4 Keep doors and windows closed.**
- 5 Periodically run water from sinks and toilets** to prevent access of cockroaches through dry siphons.
- 6 Keep shelves clean, both underneath and behind.**
- 7 Deep-clean the floors.**
- 8 Empty garbage cans frequently.**





TREATMENTS TO CONTROL COCKROACHES

We develop quick, effective, and discreet solutions that are adapted according to the needs of each client, complying with all legislative requirements.

Situational diagnosis

The initial inspection of the facilities allows the initial diagnosis of the condition and pest situation so that an action plan can be prepared. It also allows for evaluation and assessment of those aspects that may enable the appearance or spread of a pest. In short, locate and identify the areas with the highest infestation risk and define the preventive measures and structural adaptations necessary to improve treatment results.

Treatments to control cockroaches

Treatments for cockroaches are based on using gel baits, liquid sprays, or dusts to treat cracks and crevices and other harbourage sites. A recent development in cockroach control involves the installation of a monitoring system using adhesive traps placed in areas identified as having the highest risk. This system allows the necessary information to be obtained about the degree of infestation, evolution, and distribution of the pest on the premises and thus planning the necessary actions.

“For around the clock peace of mind from pests, you can count on SMART Digital Pest Control.”



An adult fly
can produce
2,000+
eggs in a
few days.

FLIES

Flies are another frequent pest for food retailers and producers, especially in fresh food areas such as butchers, poultry, delicatessen, fruit or fish counters. Special attention should be paid to this group of pests, as flies can contaminate food with microorganisms that cause serious diseases.

TYPES OF FLIES

There are many different species of flies, but the most frequent in food retail outlets are the housefly (*Musca domestica*), the lesser housefly (*Fannia canicularis*) and the fruit fly or vinegar fly (*Drosophila* spp).

Housefly. The housefly is a pest present worldwide. Adult individuals are characterised by a silver chest crossed by 4 dark longitudinal lines, the end of the abdomen being yellow or orange, and a pair of red eyes.

Lesser housefly. This is smaller than the housefly and has horizontal lines that cross the thorax. In addition, it has a black abdomen, giving a darker general appearance than the housefly.

Fruit fly. The fruit fly, also known as the vinegar fly, is small, not more than 3 mm in length. It has red eyes, a bronze chest, and a black abdomen at the top and grey underbelly.



REPRODUCTION

The lifecycle of flies comprises of 4 stages: egg, larva, pupa, and adult. The larvae hatch from the eggs, develop into pupae that perform metamorphosis, and the adult flies hatch from the pupae.

“Flies are tremendously prolific insects.”

Females can start laying eggs within a few days of reaching adulthood, laying a total of about 5-6 batches of 75 to 150 eggs. The larvae hatch from the eggs in 12-24 hours. Larvae feed on decomposing organic matter. In 4-7 days, the larvae pupate and enter the metamorphosis phase. At the end of the metamorphosis, the adult fly emerges from the pupa, and in a few hours begins looking for other flies to mate with.

Fruit flies are among the most prolific fly species. Each female can lay up to 500 eggs that hatch within 30 hours, adults will emerge in just 9-12 days. Adults are sexually active in a couple of days, and females can save sperm from multiple males to inseminate their eggs. This way, enables fruit flies to establish large populations in just a few days.

EATING HABITS

The eating habits of flies vary depending on which phase they are in. Thus, during the larval phase, flies feed on almost any decomposing organic matter, but during the adult phase, they feed only on liquids. In the case of the housefly and lesser housefly, the larvae feed on the organic matter from where they were born when the eggs hatch. The females always look for humid and warm areas to lay the eggs. These areas can be excrement, garbage and any type of decomposing plant or animal matter. Adult houseflies have a straw-like proboscis that only allows them to feed on liquids. Fruit flies, on the other hand, tend to show a preference for decomposing fruits and vegetables and in general, for any material in fermentation, both in the larval and adult phase.



HEALTH RISKS

Due to the strong attraction that flies have to decomposing matter, they usually settle in unhealthy places such as garbage, excrement, drains or other sources of dirt where there are many microorganisms that cause diseases such as typhoid fever, cholera, anthrax, tuberculosis, dysentery, salmonellosis, E. coli gastroenteritis or intestinal parasites such as trichinosis or tapeworms. After landing on the infected areas, flies coat their legs and proboscis with these pathogens which are then transmitted to new surfaces when they land again, contaminating them.

"In a study conducted in the United Kingdom, it was shown that the bluebottle fly can carry up to 6 million bacteria on its legs, and another study in the United States showed that the housefly is capable of transmitting up to 100 different pathogens."

This transmission is especially dangerous since there is a great risk of contamination of fresh and pre-cooked products that are then consumed by customers. Contamination by contact is not the only way in which flies transmit diseases. They can also contaminate food or utensils through contact with the

excrement they produce while eating, or the vomit they generate to liquefy solid food. In any case, the presence of flies is not only a threat to the reputation of the business, since their presence is usually associated with a lack of hygiene, but they also pose a clear threat to customer health.

PREVENTING FLIES

To prevent flies in food retail outlets and production facilities, efforts must be focused on three key points:

1 Eliminate breeding grounds. Flies often frequent areas with abundant organic matter. These areas can easily be found in waste containers, drains, as well as inside the machinery used for the preparation of food and beverages. Therefore, deep cleaning of these areas is essential to prevent flies from reproducing. The refuse area and garbage containers should be cleaned regularly, and bins should always be kept closed to prevent flies from entering. Likewise, it's essential to clean all machinery and equipment thoroughly on a regular basis to eliminate all remains of decomposing organic matter that may create breeding grounds.



2 Eliminate sources of attraction and make it difficult to enter. The smell of decomposing matter is one of the main factors that attracts flies. In addition, they have a very well-developed sense of smell. Therefore, the housefly can detect odours from 6-8 kilometres away. The main sources of odour that attract flies are the fresh food sections, such as the fish counter, butchers, fruit aisles or pre-cooked food sections. The best way to prevent their appearance is to keep these areas clean, therefore avoiding the accumulation of decomposing organic matter. Another alternative to reduce odours in these areas is through odour control systems. Flies can also enter through windows or doors. The use of barriers such as fly screens or air curtains is a great help to hinder their entry.



3 Prevent flies from encountering food, surfaces or utensils that are in contact with food. Due to the high risk of contaminating food with disease-causing microorganisms, this point is especially important to avoid risks to consumer health. The best way to prevent food contamination is to prevent flies from encountering food. To this end, avoid storing food, such as cold meats, cheese, fruit, cakes and pastries or cooked dishes, in the air without protection, and always keep food well covered when it is not going to be used at the time. It's also important to keep any surface and utensils clean, such as knives and meat slicers. These utensils should be kept in closed places where flies cannot reach them, such as drawers or cabinets.



TREATMENTS TO PREVENT AND CONTROL FLIES

Due to their enormous reproductive potential, it's not possible to eradicate a fly infestation completely, but it's possible to reduce their number greatly by applying a good control treatment.

Since the origin of the flies is usually outside, the treatment of these areas can reduce their entry to the establishment.

Outdoors, you can place flytraps with a protein attractant, granulated baits that contain a sexual pheromone as an attractant, or spray external surfaces with insecticidal products that act by contact as soon as flies land on them.

These are some of the measures to take into account, but the best solution for every type of food retail outlet and production facility is the placement of light-pheromone traps indoors.

LIGHT-PHEROMONE TRAPS, THE BEST SOLUTION FOR INTERIORS

The effectiveness of light-pheromone traps is remarkable and their advantages over electrocution insect light traps are unquestionable. The main difference between the two is that the electrocution of flying insects carries a very high risk of direct and cross-contamination of food, in addition to the noise and bad smell that is given off.

Design is another strong point of the light-pheromone trap, which can simulate a light fixture so that they are difficult to identify by customers, ensuring maximum discretion as well as being the best way to eliminate the risk of pathogens in food.

ESSENTIAL FACTORS TO MAXIMISE THE EFFICIENCY OF LIGHT-PHEROMONE TRAPS

The correct choice of the light-pheromone trap is as important as its correct maintenance. An essential factor for their correct operation is to perform proper maintenance.

Maintenance of light tubes: People wrongly tend to think that if they are "shining", they are working, when they are not. Ultraviolet light tubes become less effective over time, and after one year, they are no longer visible to insects, losing 90% of their power of attraction, resembling normal light. Therefore, if they are not changed regularly, their effectiveness is reduced to zero.

Changing the glue board: The glue board should be changed regularly for 2 reasons:

If the surface of the board is full of insects, the insects attracted later will not be trapped, causing it to lose its effectiveness.

Although there is enough space in the trap, the glue contained on the plate loses its sticking properties, therefore losing effectiveness.

Another basic factor to achieve maximum efficiency of light-pheromone traps is their location, by studying the past problems of each installation and finding the best possible situation for each of them.

OSPREY - THE RANGE OF LIGHT-PHEROMONE TRAPS FROM FLICK

Combat flies in indoor and outdoor areas with Flick's range of Flying Insect Units. Our Osprey Flying Insect Unit attracts flying insects through LED light rather than traditional fluorescent lamps. The powerful eco-LED UV-A light attracts flying insects without the use of harmful pesticides. They're safe to use in food retail, processing, preparation and storage areas.

Designed specifically for food retail, food production, kitchens, hotels, cafés, and restaurants, the Osprey Flying Insect Units take up little space and can be easily mounted on the wall. Best of all, one unit will cover an area of 100m².

The Osprey Flying Insect Unit has a 30% improved performance over conventional units due to its unique attraction grid, which reflects the light onto the landing spot thereby stimulating the landing behaviour of flying insects.

Glueboards are used to trap insects, employing a tackifying resin and a softener for premium trapping. The unit is HACCP compliant making it perfect for food retailers.



Coverage: 100m²

Degree of protection: IP 21 Drip Proof

Catch Type: Glue board

Mount: Wall

Size: 470 x 325 x 100mm

Consumption: 32w





INSECTS IN STORED PRODUCTS

There are
89,000+
different species
of weevils.

Insects in stored products can affect various types of products, such as nuts, pasta, spices, and animal feed. These pests can originate from the crops themselves before food is collected; others can infect the products during processing and storage and can sometimes contaminate the products by accessing them directly. There are many pests that affect stored products.

The most frequent stored product pests in food retail and production facilities are weevils, moths, and beetles.

WEEVILS

Weevils are beetles. Both adults and larvae feed on grains and legumes, although they can also affect finished products such as pasta. Larvae are the most damaging because they develop inside the grain until only the husk is left. Adult females infect the grain by piercing their surface and inserting the eggs inside. Under favourable temperature and humidity conditions (26-30°C and 70% humidity), the larvae go through every stage of larval and pupal growth in a period of less than a month. When the adult emerges, it pierces the grain to go outside. The presence of adults is the undeniable sign of an infestation. When this point is reached, the entire batch of the infested product should be discarded.

“Apart from weevils, there are other species of beetles that infest stored products.”

Unlike weevils, they feed on the outside of the product, making it easier to detect their presence, since larvae or adults are usually seen in the product and on the shelves.



OTHER PESTS OF STORED PRODUCTS

There are other pests of stored products. The most frequent for food retailers are beetles, moths, mites and psocids.

Beetles. There are several types of beetles that are pests of stored foods including the Cigarette, Grain, Hide and Flour beetles. Both adults and larvae can affect stored products. Adults range in size from 1 - 5mm long. Their ability to fly allows them to move easily. The larvae are the ones that cause the most damage, since they penetrate the food and bore inside it as they feed, creating holes and tunnels.

The adults, on the other hand, feed only from the outside. Food retailers and producers should pay special attention to the presence of these pest and the entire batch must be eliminated or rejected.

Moths. Moths are nocturnal butterflies. Among the different families of moths, there are some that are attracted to stored products. Adults do not damage stored products because they do not feed on them, but the larvae can be very harmful. Adults range in size from 10 - 25mm long.

Psocids. Are soft bodied insects about 1 - 2mm long and light brown in colour. Common in grain stores, mills, and processing plants. Typically found on slightly damp products.

Mites. The Flour and Cheese Mite are small insects about 0.5mm and are clear to creamy white / white in colour. These scavengers are common in grain storage products e.g. grain, flour, oilseeds, and cereals.

TIPS TO DETECT INSECTS IN STORED PRODUCTS

The detection of their presence will prevent populations from expanding to different sections of the facility, warehouse and the sales areas. Detecting insects in products stored in food retail outlets is possible if you pay attention to the signs of infestation.

- 1 Holes in vegetables, cured meats and products made with flour.** The presence of holes in these products is an unmistakable sign of weevils and other insects. When the larvae move from the larval to adult stage, the adult beetles inside the product dig a hole in its surface to leave. This hole is obvious at first glance and is the main indication of a weevil infestation. In the same way, the presence of holes in hams or other cured meats and in dried fish is also a clear indication of ham mites.
- 2 Presence of silk.** Moth larvae, like butterfly caterpillars, can make silk. The presence of silk threads in unpackaged products for sale in bulk (refill stations), such as tea, spices, or nuts, is an indication of a moth infestation.
- 3 Presence of adult individuals or larvae in stored products.** The most unmistakable sign of an insect infestation in stored products is the presence of adults or larvae in or nearby these products. In food retail outlets and production facilities, it is ideal to be able to detect these insects before the customers themselves to remove the damaged products as soon as possible and thus protect the reputation of the establishment. Periodic inspection of products vulnerable to attack by these pests is essential in this regard. Many of the insects in stored products can be found around infected food packages. Sometimes, the presence of flying beetles or moths is easily noticeable and should be taken as a warning sign to act as soon as possible.



24/7 DIGITAL PEST CONTROL

SMART DIGITAL PEST CONTROL IS SMART BUSINESS

SMART Digital Pest Control is an intuitive, digital pest control system that keeps a continual eye on your business.

SMART technology in your workplace will monitor rodents, cockroaches and moths around the clock. On detection, the technology instantly reacts, records and reports activity, using non-toxic methods trapping pests in an environmentally friendly way.



A pest infestation can cause a stop in food production and a loss of more than 10 working days.



A rodent scandal can impact your business and damage your reputation.



A failed **HACCP** audit often means a potential closure and product recalls.

If this happens, it is too late!



SMART
DIGITAL PEST CONTROL

SMART - YOUR NEW WORKPLACE PROTECTOR

SMART Digital Pest Control is an intelligent monitoring system that keeps an eye on things you do not want to see. By constantly monitoring and instantly reacting, it prevents costly infestations in an environmentally friendly way.



1 We Analyse

2 We Activate

3 We Monitor & Protect

TRANSFORMING PEST CONTROL FROM A REACTIVE GUESSING GAME INTO A FACT-BASED SCIENCE.

With SMART Digital Pest Control you will stay ahead of rodents and insects, secure healthy, pest-free environments, where people want to live and work. Here is what you will get:

The most precise pest control solution

Thanks to the traps being self-sufficient and monitored digitally with reports sent to the SMART data hub, we are able to live monitor, analyse and react when needed.

Use data instead of poison

Flick helps you to improve your sustainability performance. All SMART traps are 100% non-toxic and pesticide free. Good for your reputation, good for the environment.

Total tracking can bring more business

Use the digital reports to show results and prove that you are ahead of every detail to ensure better quality and reduce risks, to regulators, auditors, customers, and management.





MAIN BENEFITS FOR FOOD RETAILERS AND PRODUCERS



24/7 remote surveillance

Most pest solutions today depend on quarterly or monthly physical inspections. SMART, on the other hand, monitors constantly, reacts instantly, and reports directly.



Easy reporting

SMART is an intelligent system connected to our SMART data hub, which allows us to analyse and react when needed. Export the data you need to present results.



Avoid costly problems

Solving an infestation takes time, and the damage done to your business can be substantial. With SMART installed, we can act fast on early warnings and deal with potential issues before they turn into costly problems.



Detect blind spots

Pests excel at hiding in places where they're hard to detect. With SMART and our innovative sensors, we can detect activities in hidden places and relocate traps and or sensors to that specific area.



Non-toxic pest control

All SMART traps are 100% non-toxic. It's better for the environment, it creates a healthier work environment, and it means no pesticides ending up where they aren't supposed to be.



Peace of mind

Constant monitoring minimises the risk of an infestation that could harm your business or your relationship with your customers/partners. Rest assured you have the most efficient rodent, cockroach or moth control available.



SMART CONNECT

SMART Connect, the system's master unit, receives information from all other SMART units on your site and instantly reports back to our SMART data hub.

The product consists of a single master control box, which connects and controls the SMART units installed on your site. The system creates its own wireless network without interfering with other existing networks at the site.



SMART EYE

SMART Eye is a small sensor that detects and reports movement. Thanks to its small size, it can be placed in narrow spaces typically favoured by rodents.

The product is both a monitoring device and a range extender. However, its primary use is as a monitoring device to detect rodent activity. It's ideal for server rooms, cable runs, electrical cabinets, ceiling and or voids, or other areas that are difficult to inspect.



SMART SENSE

Smart Sense detects insect activity and traps the insects on a glue board. It is for indoor use and can be placed in many different locations depending on whether it is intended for moth or cockroaches.

For cockroach-monitoring, Smart Sense can be placed in various locations where cockroaches usually frequent: Industry kitchens near refrigerators, stoves or inside cabinets etc.

Smart Sense can be wall-mounted for moth-control, where glue boards can be used in combination with pheromone.

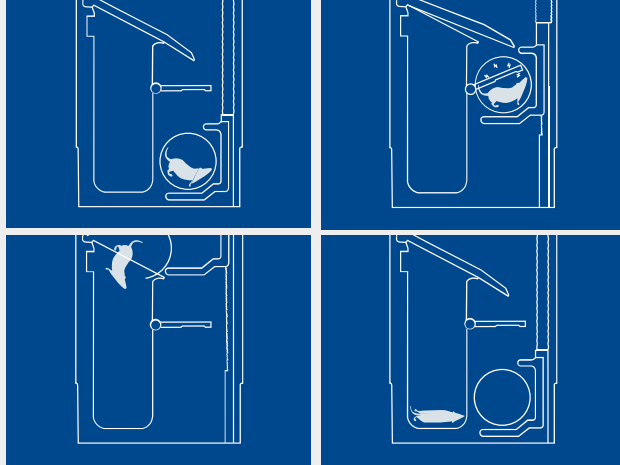
Besides detecting insect activity, Smart Sense acts as a range extender for other products in the Smart Connect series.



SMART BOX

SMART Box is a multi-catch unit that deals with rodents above ground. Attractants lure the rodent into the box, exterminating it efficiently and without any use of toxins.

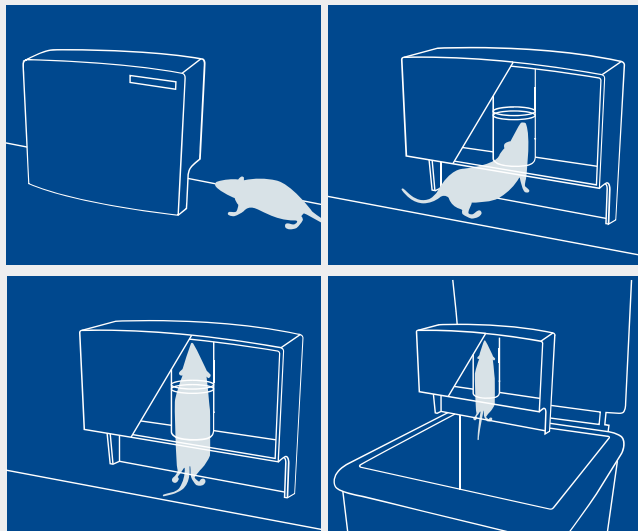
When the rodent enters the trap, sensors detect movement and body heat. A catch function is then activated, euthanising the rodent without the use of toxic bait.



SMART CATCH

SMART Catch is a single catch unit that detects and deals with rodents above ground. Attractants lure the rodent into the trap, exterminating it efficiently and without use of any toxins.

The trap can catch and euthanise both mice and rats quickly, humanely and efficiently. At the same time, it can detect and monitor any rodent activity in close proximity from the trap.



HOW DATA-DRIVEN PEST CONTROL WILL FUTURE-PROOF THE FMCG SECTOR

Within the food industry the introduction and implementation of automation and AI technology has been felt, discussed, and analysed. It has perhaps never been more important to be on top of business risks. What are the most urgent challenges for food retailers and producers today and how can a data-driven pest control system secure that you stay ahead?

Though the focus has been on short term risks and quick responses, some already ongoing industry shifts have accelerated. Shifts that will continue to re-write the business landscape and challenge food producers going forward.

Let us dive into three opportunities that can set you on the course for success and understand how data-driven pest control can help to build back a more resilient, safer and forward-leaning business.



“Every year, pests cause huge economic losses for food retailers and producers.”

SMART FOOD RETAIL & PRODUCTION FACILITIES REQUIRE SMART PEST CONTROL

Challenge

Digital transformation will continue to accelerate businesses within food retail and production. Automated, IIoT connected and data-driven food retail and production operations enable food producers to stay ahead of their competition. But as operations become more advanced, the stakes become higher and operations become more vulnerable to issues such as pests. Although new technologies are becoming a prerequisite for success, they are also more expensive to run and fix. In order to future-proof your business at high speed, all disruptions and risks need to be eliminated.

Opportunity

Invest in a pest control solution to match the standard of food retail and production facilities of tomorrow, and make sure that your high-tech operations are not compromised by easily avoidable pest problems. Proactivity is key to save costs in the long run. A data-driven pest control system enables early detection through automation, proactive planning and maintenance with the use of data to increase efficiency in operations. With up to 70% less visits by the control technicians, remote control and automation helps you to minimise human presence. This limits the risk for further contamination.

A CHANGING REGULATORY ENVIRONMENT

Challenge

Regulations are becoming stricter in an already adamant sector. There is increased pressure and focus on food safety in food retail and production, which implies that a lack of control can lead to both reputational and financial losses. Transparency towards consumers at each step of the process will be crucial going forward.¹ Failure to comply to hygiene regulations and practices could harm both current and future business potential or at worst result in legal repercussions.

Opportunity

In an industry where guessing is not good enough, there is a need for a data-driven pest control system that can act fast on early warnings and deal with potential issues before they escalate into costly problems. An intelligent system offers analysis of the situation and can export data needed to present status to an external part. It provides easy documentation that simplifies reporting and audits. A proactive and data driven pest-control solution that is compliant to regulatory demands lets you focus on what really matters.

HIGHER DEMANDS ON SUSTAINABLE PRACTICES FOR FOOD RETAILERS AND PRODUCERS

Challenge

Sustainability is top of mind for most companies today, but perhaps even more for companies within food retail and production that need to limit food waste and stay ahead of tighter regulations on toxins. Each year, rats contaminate and destroy enough food worldwide to feed 200 million people.² The connection between food waste and recalls is often ignored, however biological contamination by pests is the most common reason behind product recalls. Not only does it pose a huge financial risk, it could make or break a customer relationship. 21 % of people at the centre of a recall would not buy any product from the same manufacturer again.³ What used to be an area deemed as a hygiene factor is increasingly thought upon as business critical⁴ – an essential part of the decision-making process of the food company of tomorrow.

Opportunity

A key way to minimise waste and product recalls, and thereby sustain customer relationships, is by keeping pests out. In contrary to some sustainability measures that could take years to showcase results, implementing an intelligent pest control system can present improvements within days. Constant monitoring minimises the risk of infestations that could harm the business. Invest in a greener solution to be prepared for increased demand on sustainable practices in the future.

WHEN GUESSING IS NOT GOOD ENOUGH

The tale is as old as the book – the defining moment is not about whether you fall, but if and how you stand back up. The same can be said about businesses building back better tomorrow – let the challenges make way for a more sanitary, safe and attractive environment. Safeguarding competitiveness, compliance and audit performances and ensuring a no product recall status will help you to future-proof your food retail and production business – make sure that it is not pests that will compromise your success.

¹<https://foodindustryexecutive.com/2020/12/4-mega-trends-that-will-define-the-food-industry-in-2021/>

²<https://www.foodsafetymagazine.com/magazine-archive1/augustseptember-2012/sanitation-pests-everyday-threats-to-the-human-food-supply/>

³Rise in Food Recalls is a Costly Business – Ravenwood Packaging

⁴<https://foodindustryexecutive.com/2020/10/the-food-company-of-tomorrow/>

CONCLUSIONS

Food retail and production facilities are businesses that are especially sensitive to pest attacks due to the large quantity of food, both fresh and packaged, that are stored inside. The most frequent pests in this type of establishment are rodents, cockroaches, flies and other insects in stored products. In all four cases, the detection of this problem can cause serious reputational problems, stop in production, damage to machinery, contamination, loss of customers and economic loss; which has a direct impact on the business performance.

On the other hand, food retailers and production facilities nowadays handle a large quantity of unpackaged and raw food in their prepared dishes, bakery/patisserie, fruit stalls, delicatessen, butchers, fish counters and processing facilities. These areas are especially attractive to rodents, cockroaches, stored product pests and flies, all of which are pests capable of contaminating food due to their ability to transport microorganisms that cause food poisoning such as salmonellosis or escherichia coli.

Not ensuring a pest-free environment not only affects the business in economic terms, but is also harmful to public health.

Sustainability is on top of the agenda for many companies today. Two of the most significant sustainability challenges of our time are something many of us might not be aware of; securing a sustainable food supply and access to food for a growing population. In addition, the reduction of biocides and the adoption of more eco-friendly practices are placing food retailers and producers under additional pressure to limit waste and adopt more sustainable practices in their operations.

Finally, it should not be forgotten that food retailers and producers must comply with all food safety laws, rules and regulations, whilst ensuring that a certified pest control company performs pest prevention and control tasks at the establishment.

WHO WE ARE

Flick is a strong established brand within the pest control industry in the Australian and New Zealand marketplace. Commencing operations in 1918, we now service over 58,000 commercial sites and more than 225,000 residential customers.

Part of the Anticimex Group founded in Sweden in 1934, we offer specialised pest management services in 18+ countries. We manage complex, multiple-service contracts in the Pacific Region.

Our premium, integrated hygiene and pest management service solutions are underpinned by the provision of staffing levels that meet the requirements, effective supervision, innovative equipment and products that comply with leading-edge standards.

Our aim is to proactively prevent and reduce the risk of pest problems. We are regarded as Australia's leading pest control and hygiene service provider, and New Zealand's modern pest control company.

*We'll provide a **pest-free and hygienic environment**, so you can focus on creating a better experience for your **staff, clients and customers**.*



OUR COMMITMENT TO SUSTAINABILITY

We are committed to sustainable economic, environmental and social development to produce a positive impact on our society, as well as the health of our employees and the community. Since pest control often takes place locally, most of our sustainability efforts are applied at a local level, in close cooperation with the local community and relevant public agencies. Our sustainability goals are tangible targets and compliance tracked at a corporate level. Our key sustainability focus areas:



REDUCING THE USE OF BIOCIDES

The majority of potentially harmful biocides that Flick deals with are pesticides. While they will continue to be an essential part of the service for some time, our focus is on reducing the use of biocides through actively converting customers to our SMART biocide - free pest control service.



REDUCING CARBON DIOXIDE EMISSIONS

We service multiple locations requiring a large vehicle fleet which emits substantial amounts of carbon dioxide. Our focus is on optimising routing to minimise emissions. Where possible, we're changing the type of service vehicles to hybrid and electric models. Increasing the use of our SMART solutions also serves to reduce the amount of driving required.



BEING A PREFERRED EMPLOYER

The delivery of modern pest solutions that match customer needs ultimately rests on the skills and motivation of our employees. Competence development and attractive career opportunities, irrespective of background, are crucial to attract and retain the best people. Our decentralised model allows direct contact with decision makers impacting their everyday. An annual Employee Net Promoter score survey is carried out to measure performance.



PROMOTING A SAFE & HEALTHY WORKPLACE

Actively working with training and workplace conditions to secure industry leading safety standards, ensuring employees can perform their jobs in a safe fashion. Most common workplace injuries are preventable through regular and mandatory training. Our decentralised model allows employees to receive suitable and relevant local safety training.



GET SMART

ACTIVATE 24/7 DIGITAL PEST CONTROL
BOOK YOUR FREE SITE ANALYSIS TODAY!

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