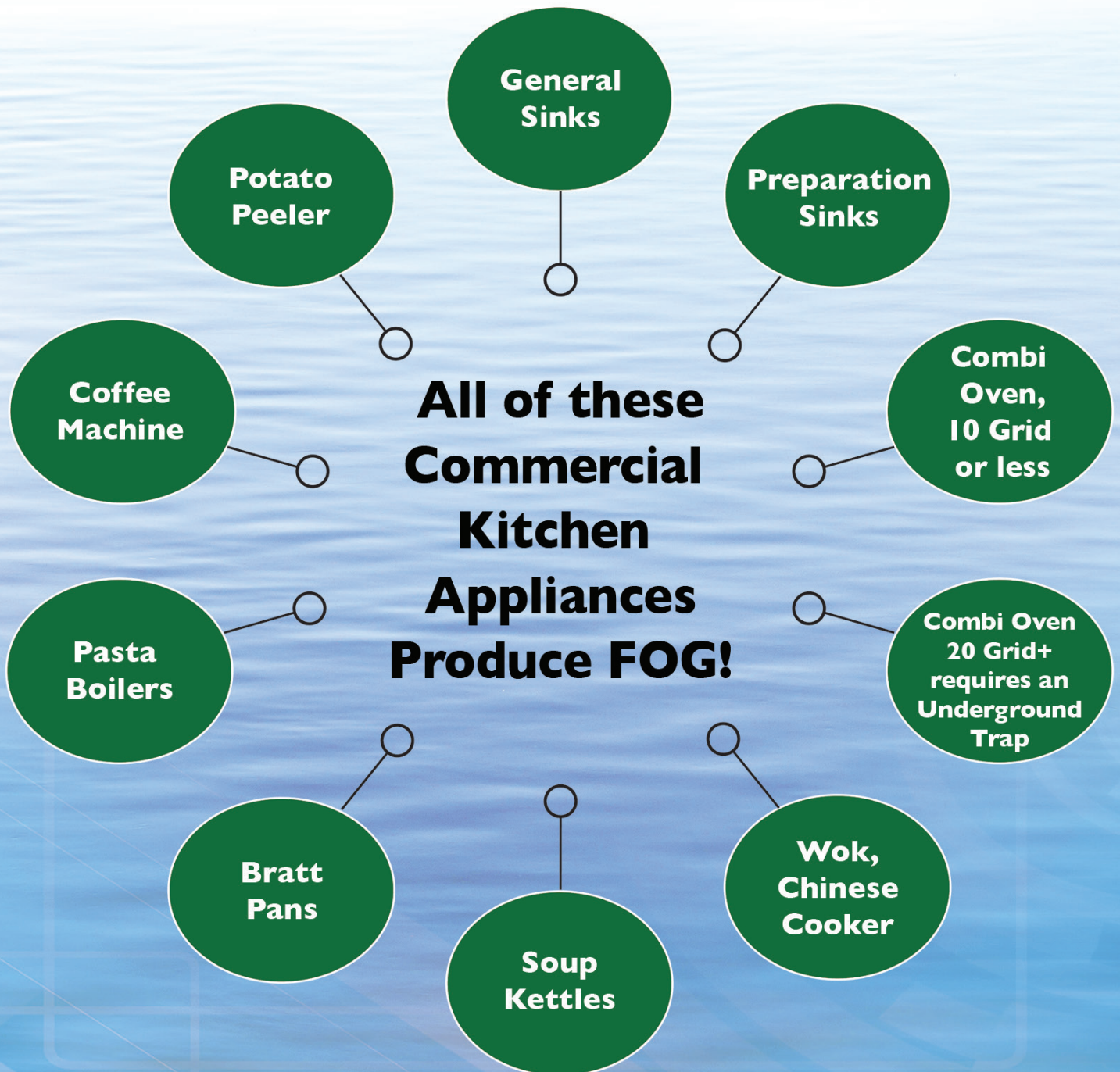
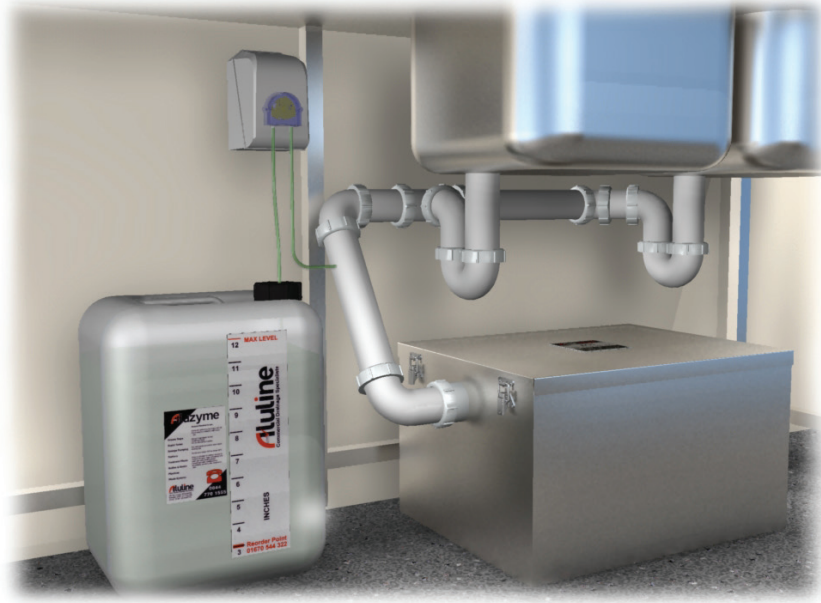


## Grease Trap Selection Guide



## Is Your Grease Management System fit for Purpose?

**Love them or hate them, they are a necessary evil in today's hospitality and food industry – yet there is confusion. Even within the regulatory bodies. The more information you seek, the more confusing it can be. In this feature we will try and help owners and staff working in commercial kitchens gain a basic understanding of Grease Management Systems (GMS).**



### What is the aim of a GMS?

The purpose of a GMS in basic terms is to prevent the drainage or sewage system blocking with Food, Oil and Grease (FOG). Why should you care? Fatbergs found in drain systems can end up costing water companies millions of euros/pounds to address. These costs are passed on to their customers. Furthermore, if your business is found to be allowing FOG to enter the drainage system you could be looking at a court appearance.

### What is a GMS?

A GMS is fixed between the kitchen and the sewer to collect the FOG you produce from your kitchen. If Best Kitchen Practice (BKP) is followed properly, little FOG would enter the drainage system and the necessity of a GMS would be reduced. However in the real world, whether by accident or by design, some FOG does end up going down the sink.

Talking with kitchen managers, the BKP recommendation of Scraping and Wiping is simply not feasible during busy times. It could be argued therefore that the food industry has created the need for GMS solutions.

There are a number of different types of GMS on the market, with the main piece of equipment commonly being referred to as a grease trap. Of course all manufacturers claim that their solution is the best, the most efficient and that it meets with all industry required standards. It is up to each owner to ensure that a correct system is installed and maintained. The relevant regulation observed HACCP regulations and all food hygiene rules adhered to.

However, in towns and cities across Europe you will find many systems that do not meet all the relevant regulations. A tendency to pick and choose which regulations to adhere to has led to the units of many manufacturers being “unfit for purpose”.



## Does Bacteria Dosing only work?

Regulation EN 12056-1:2000 states: drainage systems shall be designed and installed so that Health and Safety of the users and occupiers of the building are not affected by amongst other things, the penetration of toxic or noxious odours into the building. Drainage pipe work systems installed inside buildings shall not release vapours and foul air into the building.

Quotation taken from British Water FOG document, page 24 paragraph 3.

Going on the above EN Regulations it seems essential that your grease trap must be sealed so as to prevent the emission of odours, or even worse, odourless & possibly dangerous airborne toxins.

## Have you got one?

If you can smell your drains, then the answer is probably 'yes'. This could likely cause a problem and raise serious health and hygiene issues. If a member of staff claimed that the smell caused them to be unwell you could be looking at very serious litigation problems. Ignorance is obviously not a valid excuse. As an employer you have a **'Duty of Care'**.

Some advocate dosing, or the gradual administering of aerobic bacteria. However, in a kitchen environment, this provides no protection to the pipe system. Oil creates a micro film on the surface of water and any surface touched, this covers the surface of the pipes that bacteria must attach to. Aerobic bacteria require air to survive and a surface to cling to. If the pipe surface is coated with oil, the bacteria are unable to get a grip and are washed into the sewer.

The oil film basically smothers the bacteria; reducing the ability of the bacteria to act and to survive. We have some strains of bacteria that can adjust to anaerobic conditions but again this bacteria needs to find a hold and in reality will not digest sufficient quantity of food stuff to make it a removal device, it may assist solids to enter the sewer but this is not a practical solution.



## What is a Passive Trap?

Some commercial kitchen installers suggest a passive trap and the bacteria dosing to take place at the furthest point away from the trap, e.g. the sink itself. This can help keep the drainage free-flowing, but there are advantages and disadvantages to passive systems. They are normally found outside the building due to their large size (often over one thousand litres) and they are not usually air tight. One main disadvantage to this is that there can be quite a distance from the source of FOG. Due to the nature of FOG it changes its form from liquid to semi solid as it cools, which can create blockages within the building. Every right angle bend can cause liquid to slow by thirty percent; this can cause major problems for the operator, with blockages under the floor etc.

Your GMS should never have a dishwasher discharging into internal traps this is because when a dishwasher flushes, it deposits a large quantity of hot water and chemicals that will flush through system and compromise or destroy the aerobic bacteria that is needed to be active to keep traps healthy. If your passive system is outside, it is likely the last point before the sewer and is usually large. The chemical will be diluted in the volume of water so is less of a problem as this trap catches all the waste from kitchen. The trap must be checked and maintained on a regular basis.

**So what is the Solution?** The ideal solution therefore seems to be a combination of a sealed, air tight grease trap in the kitchen and a dosing system. That sounds complicated but really it is not. A stainless steel and air tight unit with baffles that create a settlement tank can catch the oil as it floats and the solids at the base as they sink. The Bio Hydro Mechanical System incorporates the introduction of bacteria. The more one researches the topic of Grease Management Systems the more it becomes apparent that there isn't one system that ticks all the boxes. Individual designs and sizing methods can be confusing.

The objective is to stop Food, Oil and Grease (FOG) from entering the drainage system and causing blockages.

That is the purpose of a Grease Management System. It is important to prevent FOG, Food, Oil and Grease entering the drainage systems, causing blockages, damage to treatment plants, blocked pumps, pollution of the water ways and beaches.

There are numerous systems in the market place with new concepts all the time. One interesting idea is using a plastic bag system for the FOG this is contained within stainless steel housing. Supplier empties on a regular cycle. [ No handling, no mess. ] But which is the system for you?

FOG is a potential source of energy, but its retrieval from the water network is challenging. Dr Phil Thomas from Thames Water Commercial Services described how the company are preparing to recover grease from FSOs using a proprietary under-sink FOG trap or grease interceptor, to be collected regularly for processing at their sewage treatment works into biofuel. Recovery is a complex and costly multi-stage process due to the impure nature of the waste and its high water content.

## Selection

If you approach Grease Management Systems (GMS) the way you would when buying a cooker or a car, you establish if it has the features for your particular needs. An absolute key is the warranty. You might appreciate the peace of mind that comes from a lifetime warranty and low running costs. A system that is easy to maintain & allows you to avoid unexpected extra costs. (Some manufacturers have a return to factory policy! yes send it for repair!)

A must for any GMS is that it meets all the current legislation. For example, it must be air tight if positioned inside a building. In today's litigious environment, breaking such rules could impair your operations because of Health & Safety issues for your employees.

Resulting in a visit from E.H.O.s?

### **“How do you select a system? Start by creating a checklist.”**

Research the company. Do they manufacture or import systems? Does the system have moving parts? If they stop moving this will cost you money to get them working. How long has the company been in the market? Are they aware of legislation? Check their literature, do they just sell the Grease Traps or do they offer a full survey? What is the warranty. Are they capable of designing and supplying a bespoke system? It will tell you pretty quickly if they're just trying to sell you what they supply. In many cases standard traps are not an option because of limited space. If a problem arises, is after-sales care available?

Ask them how they have established what your business needs? How did they arrive at their decision on the size of the trap you need? Keeping it simple... take a look at your sink. If the trap is smaller than the sink, then expecting it to trap the FOG is like expecting a shot glass to hold a pint of water. Try it. To be effective, the trap must be able to take an entire sink's content of fluid and allow settlement time.

If truth be known there is no absolute sizing method, due to the many varying factors in the kitchen environment - menu, cuisine, temperatures, pipe sizes... the list goes on and on. In reality, most systems prevent about 80% of the FOG that is produced; this is the average however. This is where research on your trap supplier is essential. Will they stand by you if the system they fitted doesn't meet these standards?

### **And finally, a reminder of criteria required for a system fitted within a kitchen is as follows:**

It must be air tight. If it is not, it must be in a separate room fitted with extraction to prevent airborne pollutants, not least from the sewage system to which it is connected.

The material used in the construction of the trap should be easily cleaned & scratch resistant. Stainless steel doesn't easily scratch, whilst scratched plastic can readily harbour bacteria.

All sinks in a kitchen must be trapped to stop F.O.G. Too many times one hears “prep sinks don't need traps” and this is simply not the case. If you are told this by your trap supplier, then he may just be trying to ensure his quote is the lowest and you could be leaving yourself open to problems.

Bacteria are introduced as close to the source of FOG as possible (before the trap) and are on a timer set to dose them into the drainage system when the kitchen is closed. This allows the bacteria the longest time to do its work. These systems would seem to tick all the boxes.

The Bio Hydro Mechanical System can be positioned inside the kitchen as it is air sealed. The physical trap size can be reduced by the introduction of bacteria. It can also go as close to any FOG source as possible. This could be expensive if there is a large number of FOG producing items. However in new builds, if the architects or designers are well informed they will design the drainage system to have the majority of sinks on the one run. This lowers the number of traps required, thus reducing the cost of the GMS. (Sink sizes also have a bearing on trap dimensions required).



## Is your Grease Trap fit for Purpose?

The Mechanical systems described as GRUs, (Grease Recovery Units) or GRDs, (Grease Removal Devices). A section from the British FOG Document raises serious concern on Health, Safety and Hygiene. All equipment connected a sewer or drainage system inside a building must be airtight.

Some Mechanical systems (GRU / GRD) are not airtight and this could be a contravention of Irish / European Building Legislation. It is recognised that these systems have internal moving parts such as immersion heaters / rollers run by electric motors or magnet switches.

The latter are fitted in lids or valves for emptying the daily waste. That involves removing a filter basket designed to catch larger particles & the complexity of the internals of these units does not encourage staff to set up regular cleaning schedules. Some staff have been led to believe the only maintenance required is to empty the filter basket on a daily basis, this is not acceptable.



When units are not maintained properly or go wrong, the failure to have them airtight / water tight can result in waste water flooding the kitchen. Closing kitchens costs businesses money. The availability and speed of supplier services to rectify problems is also critical.

Mayonnaise, sauces, emulsified oils and soups can contaminate workings and pipework. If a Water Company checks a manhole or inspection point and finds excess suspended solids, your business may suffer.

Even utilising a simple sink filter would reduce trap maintenance and pressure on the drains. The actions of identifying all equipment requiring a trapping system and training staff on waste management would enhance the positive action that came from implementing a compliance scheme no matter how flawed it has become.

Understanding how drains actually work is critical to understanding waste management in Hospitality premises. Water flushes organic matter into sewers, bacteria attach to organics and produce enzymes to breakdown these solids (liquefy). This assists bacterial digestion and assists flow through the pipe system. Sanitisers / Oil / Chemicals can kill or retard bacterial action. The reduction in use of all chemicals entering the drainage system would give bacteria a chance to multiply and work effectively. While bacteria act in separate ways and can adapt to differing conditions, on their own they cannot remove sufficient FOG from pipe systems to be considered, “an effective means of Oil/FOG removal”, as this is required by current regulations in force.



## Fit for Purpose?

Food for thought, the concept is to stimulate discussion and give the reader an insight into responsibilities on owners of commercial premises who may discharge FOG into public sewers. The water companies have been tasked with overseeing Public Sewers and ensuring that minimum pollution incidents can occur. Water Companies are preparing a system of requirements and charges to be imposed on any business discharging any waste (other than normal toilet discharge) into Public Sewers and penalties for anyone polluting surface water systems. Compliance teams and maintenance record keeping, as in the Dublin Experiment may soon be countrywide. Septic tanks and small treatment plants will also come under scrutiny as badly maintained tanks can damage the water table and cause serious hazards. (The water table this is the level below ground which is saturated with water.)

We have discussed **Passive** Type (Large outside Traps) **Mechanical** type (Rollers & Oil removal) now we discuss Bio-Hydro-Mechanical traps. (named to be politically correct!)

**Bio-Logical /Actimatic Traps** have been around for many years. The committee proposing EN: 1825 1 & 2, mentioned these traps, however as they believed their knowledge of these traps was insufficient to include in the EN: 1825, the onus was given to manufacturers to size and specify. The original idea to use Bacteria in traps came from America and the PDI Sizing was adopted. It should be remembered that before EN: 1825, PDI were the only organisation to give guidance using their member's knowledge and experience gained from years of designing and manufacturing Grease/Oil interceptors.

The image of **Bio-Hydro mechanical** Traps has been spoiled by salesmen eager for commission who would tell clients that this trap did not need cleaning as bacteria did it all! It is also a problem when customers are informed that traps require regular cleaning and maintenance. (This actually applies to all trapping systems)

Salesmen gain sales by claiming their products are self-cleaning! Some companies claim that with their superior bacteria, no traps are required! (Try that with compliance, no cleaning!)

In truth the use of aerobic bacteria helps to increase times between clean-outs but its main function is to ensure that anaerobic bacteria cannot colonize in pipes or traps as the resulting smell would cause serious issues in a kitchen environment. Anaerobic bacteria produces an acid. This can affect metal & pipework. It can also if mixed with some cleaning fluids cause a dangerous gas. This is why it is not advisable to use bleach in a commercial environment. (Health & Safety)

The myths regarding drains and how they operate is perhaps not motivating, however it is the most important public health issue facing us. The concept that water flushed into drains keeps them flowing, when in fact it is the bacteria found in all organic substances that are responsible for clean free flowing drains. Bacteria reduce organic solids to a liquid form initially on surface area; this allows solids to move in the pipe system on globules of CO<sub>2</sub>. If bacteria was not present, much of what is deposited into pipes would smear the surface and stick to the pipes, water alone would not move it. In fact the oxygen in the water is the life blood of bacteria as it extracts it to survive (aerobic). Pouring sanitisers into drains is the best method of causing blockages!

Selection of traps is important. The outside must be hygienic; the body must last many years. Steel traps leaking after only 7-10 years in situ or being replaced as moving parts wear, lids jam or screws corrode. It is important that manufacturers/suppliers have on site teams available to maintain their products as using third parties can be costly to the customer.

The most important component in Grease Management Systems is **TRAINING** staff / managers / chefs. If not informed or trained in how to look after Drainage it will not matter what expensive equipment is fitted problems will still happen. We are in an age where "Polluter Pays Principle" is in force this can be very costly if ignored. Environment law states: "ignorance is not a defence".

Premises that are closed due to pollution / drainage problems can lose more than money. Reputations are difficult to gain but simple to lose!

**Bio aerosols** the pressure of water from sinks can flush and generate microbial aerosols which are carried and dispersed by air movements. Inhalation of these particles may cause allergic responses but whether or not infectious disease ensues depends in part on the viability and infectivity of the inhaled microbes and their landing sites. Desiccation is experienced by all airborne microbes; gram-negative bacteria and lipid-containing viruses demonstrate phase changes in their outer phospholipid bilayer membranes owing to concomitant changes in water content and/or temperature.

These changes most likely lead to cross-linking reactions of associated protein moieties principally at mid to high relative humidity (RH). For lipid-free viruses these reactions of their surface protein moieties occur most rapidly at low RH. Radiation, oxygen, ozone and its reaction products and various pollutants also decrease viability and infectivity through chemical, physical and biological modification to phospholipid, protein and nucleic acid moieties. The extent of damage and the degree of repair together with the efficacy of host defence mechanisms largely controls whether the causative microbes take hold and spread disease via the airborne route. At least indoors, where desiccation is the predominant stress, the general reversibility of membrane-phase changes by vapour-phase rehydration when coupled with efficacious microbial enzymatic repair mechanisms under genetic control, virtually ensures the spread of disease by the aerobiological pathway.

**Bio-aerosols** are airborne particles that are living (bacteria, viruses and fungi) or originate from living organisms. Their presence in air is the result of dispersal from a site of colonization or growth. The health effects of bio-aerosols including infectious diseases, acute toxic effects, and allergies.

**Coronavirus** - Coronaviruses are a large family of viruses that includes viruses that may cause a range of illnesses in humans, from the common cold.

**Enterovirus** - Non-polio enteroviruses are very common viruses that cause many millions of infections. **Group A Streptococcus** - A bacterium often found in the throat and on the skin. People may carry group A streptococci in the throat or on the skin and have no symptoms of illness. Most GAS infections are relatively mild illnesses such as "strep throat," or impetigo. Occasionally these bacteria can cause severe and even life-threatening diseases. **Invasive Group B Streptococcal (GBS)** - A bacterium that causes illness in new-born babies, pregnant women, the elderly, and adults with other illnesses, such as diabetes or liver disease. GBS is the most common cause of life-threatening infections in new-borns. **Haemophilus influenza** - Invasive disease caused by **Haemophilus influenza** type b can affect many organ systems. The most common types of invasive disease are pneumonia, occult febrile bacteraemia, meningitis, epiglottitis, septic arthritis, cellulitis, otitis media, purulent pericarditis, and other less common infections such as endocarditis, and osteomyelitis. **Legionellosis** - An infection caused by the bacterium *Legionella pneumophila*.

**Meningococcal Disease** - The leading cause of bacterial meningitis in children and young adults. Symptoms of meningococcal disease include fever, headache and stiff neck in meningitis cases, and sepsis and rash in meningococemia.

**Strep pneumoniae** - a Gram-positive encapsulated coccus that often colonizes the human nasopharynx, where it can be carried asymptomatically.

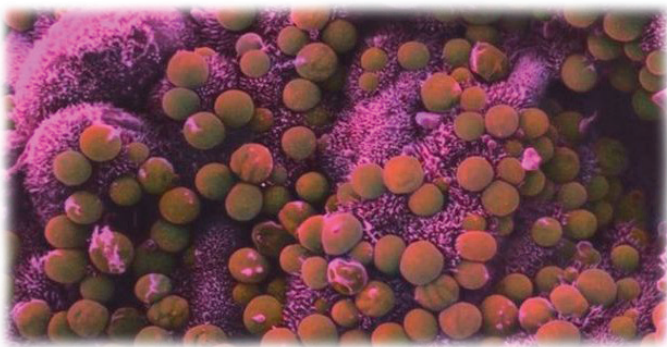


## Cryptosporidium

The Organism *Cryptosporidium* is a microscopic single celled parasite somewhat smaller than a red blood cell, which, if swallowed, can cause gastroenteritis. It is not a bacterium or a virus, but belongs to a group of micro-organisms known as protozoa. It infects humans, animals such as cattle and sheep, and sometimes, dogs, cats, rodents, birds etc. Most of the infections in man and livestock are with just one species, *Cryptosporidium parvo*.

*Cryptosporidium* can grow only in a living host and does not multiply in the environment. The parasite develops mainly in the cells lining the gut where it goes through a complex life cycle. The last stage of this cycle is the production of oocysts, the infective stage.

These are passed out of the body in the stools and can survive (but not multiply) in the environment, especially in cool moist conditions. Oocysts contain four motile (free moving) banana-shaped bodies known as sporozoites. When oocysts are swallowed, the sporozoites are released and attach to the cells lining the gut and start the life cycle over again.



**The Disease in the United Kingdom.** Infection is most common in children aged 1-5 years; younger adults are the next most commonly affected group. Infection is less common in infants under 6 months of age or adults over 45 years.

The incubation period may be as short as two days but is more usually about a week. Symptoms may start with the loss of appetite, nausea and abdominal pain.

This is usually followed by profuse, foul smelling, watery diarrhoea, vomiting (especially in children), and there may be mild fever and noticeable weight loss. In healthy people the symptoms usually persist for 1 to 3 weeks but some symptoms can recur for longer periods (usually not more than a month).

There is no effective specific treatment (e.g. antibiotics) available. As with any form of gastroenteritis, it is important to take plenty of suitable fluids. Patients may sometimes be admitted to hospital, usually because they have become dehydrated.

In patients with seriously deficient immunity, including those with AIDS, the infection can be more severe and the symptoms may persist for much longer, occasionally resulting in death.

### Laboratory Diagnosis

This depends upon the detection of oocysts in the stools, usually by microscopic examination of a stained preparation of the patient's specimen submitted to the laboratory by their doctor. The patient may then be contacted, for example by an Environmental Health Officer to help identify the most likely source of the infection and to offer advice to help limit further spread.

## **Transmission**

The size of the infective dose (i.e. the number of oocysts which need to be swallowed to start an infection) is not known, but is thought to be small, probably 10 to 100 oocysts but perhaps as few as one.

The infection may be passed either directly from an animal or from person to person. It may also be passed indirectly through the environment, especially in water; un-pasteurised milk, offal and occasionally undercooked meat such as sausages. Further transmission may then result in secondary cases, for example in families or play groups. This is especially so between children who are not toilet trained or adults caring for them. The risk of this happening is lessened through careful attention to personal hygiene and care with food handling and preparation. Symptomatic infection is uncommon among rural adults who are regularly exposed to livestock, and therefore maintain high levels of immunity. Visitors (on holiday or to open farms), are less likely to have immunity and may become infected by contact with bottle fed lambs or calves, or by hands soiled from the farm environment.

## **Control of transmission**

Oocysts are highly resistant to most disinfectants including bleach. They are killed by some strong chemical solutions such as hydrogen peroxide, ammonia, or caustic soda, and by desiccation, prolonged freezing and moderate heat (as in pasteurisation).

Despite the resistance of the oocysts to disinfectants, the risk of passing on the infection can be considerably reduced by good personal and domestic hygiene. This includes thorough washing of hands followed by complete drying (especially if you are preparing food which will not be cooked). Contaminated surfaces should be washed down with a soapy disinfectant solution followed by allowing the surface to dry thoroughly.

It is important for farm visitors to warn children not to eat sweets or suck their fingers. Visitors should wash their hands before eating food and again when they leave. Remember that footwear may re-contaminate hands when boots are removed back at the car or at home.

Some patients considered by their doctor to have very poor immunity may be advised that they should try to limit or avoid contact with livestock and children in nappies. They should not drink un-boiled water from a tap or bottle.

## **Cryptosporidium and water**

**Drinking water:** In recent years there has been increasing recognition of outbreaks of cryptosporidiosis arising from contamination of water supplies. Although resistant to many chemical disinfectants, including chlorine used to treat water, properly functioning water treatment systems are usually able to deal with the small numbers of oocysts which are present from time to time in water sources such as rivers. However, water treatment may occasionally fall below the required level of efficiency because of operational problems at the treatment works, especially following particularly heavy rain or agricultural contamination.

In this event, the public may be advised by the water company or health officials to boil their tap water. Prolonged boiling of water is not required - simply raising water to the boil in a kettle is sufficient.

Boiled, cooled water should be used for food preparation, making ice cubes etc. The water directly from the tap should still be satisfactory, however, for other general purposes such as washing hands, dishes, clothes and for bathing or showering.

## Public Health

The more one researches the topic of Grease Management Systems the more it becomes apparent that there isn't one system that ticks all the boxes. Individual designs and sizing methods can be confusing. **Our aim is to stop Foods, Oil and Grease (FOG) from entering the drainage system and causing blockages.** The possibility of blockages causing sewer spillage is real. The Public Health implications and the dangers posed if pipe systems are unable cope with flow during inclement weather is why the polluter's, causing contamination of Public Sewers are dealt with in criminal court. The real possibility of kitchen staff / Company Directors / Food and Beverage Managers, facing a criminal record, should be a concern to all in the Hospitality Industry.

If you have a blockage in your kitchen with any trap that isn't airtight, the kitchen should be closed until the blockage / spillage is cleaned and sanitised. [Example: Dublin City Council in their wisdom employed a compliance team which championed Mechanical Systems. This team selected regulations to impose, ignoring others. The fact that many premises now have problems with smell and spiralling maintenance costs appears to be ignored!] At least until HSE and EHOs Investigate! Ignorance of regulations leaves owners open to litigation. That is an interesting thought. At the end of the day, it is you the owner who is responsible to make sure that the system abides fully with all legal regulations! It has wrongly been suggested that current legislation is only guidance.

This raises the question, are the Regulations / Certifications fit for purpose? Who is certifying these in the UK, Ireland or even Europe. Where is the building control advice? These systems seem to contravene existing building legislation.

Best Kitchen Practices is not being enacted. These practices if followed are to prevent the food getting into the sink outlet / pipe system.

We know that if staff wiped the food off all utensils and bowls with paper towels and put the debris and towels in a waste bin, we could ensure no **oil entered the drainage systems.**

## Handling or disposing of catering waste

Any waste food (including used cooking oil) that comes from restaurants, catering sites, commercial or household kitchens is defined as catering waste. If your site has a cafe or restaurant, or sells sandwiches that are made in store, any waste you produce from this is also considered catering waste. You can send catering waste to landfill sites, provided they are licensed or permitted by the Environment Agency.

You must never send catering waste to be used as farm animal feed or to be used as pet food. If you are sending medium and low risk foodstuffs or non-ABP food products to landfill, you must make sure you have a system which excludes raw meat, raw fish and any high risk foodstuff. The temptation to use waste disposals / food compacting devices not connected to a separate storage tank for disposal should be studied and the effluent discharge checked to ensure no contaminants especially oil can enter the drainage system.

The bans in place on disposing of foodstuffs is important. This is to help stop the spread of notifiable diseases in animals, like foot and mouth disease, swine fever, or avian influenza.

(The reference "Love or Hate" Grease Management). If premises have an adequate G.M.S. System in place, documents, maintenance procedures recorded can be handed to water companies compliance inspectors, when they are delivering a pollution incident letter. Love may be a strong term but the protection against any action from authority charged with protecting our environment can be a reason to care for this added burden. Hate is when no system is in place and an expensive retro-fit is required with added threat of prosecution.

Water Companies are investigating the possibility of charging licensees for the installation of G.M.S. and any costs incurred by them in implementing "Compliance" procedures.



We have been subject to sewer/drainage blockages from as far back as Roman times. The recent problems (in the last 20 years) have been the cause of much debate. The consensus being the changes to our diet, the amount of food we can afford, our careless attitude to food waste disposal, the failure of councils to impose regulations that existed. The Water Companies have been given the “poison chalice”. On one hand Food & Beverage companies are valuable customers for the water / sewage side of business. On the other side, Public Health is part of their remit and duty of care is a must. A duty to their stakeholders is also a priority.

It is clear that the Hospitality Industry has a clear mandate, a choice of following voluntary compliance, or similar to (The Dublin Experience) having it imposed on them by Compliance Inspectors. In reality the cost of voluntary compliance could prove more cost effective to both the food industry and Water Companies. We tend to produce spiel on how our companies protect the environment, how we are environmentally aware, how we have EN 14001 Compliance certificates! A prosecution under the Water Industry Act could blot that copy book?

Users of the Public Sewage System are required to have a sampling point. This is for water companies to check out flow from premises. Sometimes a manhole is adequate. If this is contaminated, extra charges / legal action can be imposed. If a pollution incident occurs, the LAW is quite clear. If you have contributed, you have no legal defence!

The cost of Grease Management is now a reality and prudent premises owners and tenants will sensibly include this within their budgets. The onus on providing adequate protection to the sewer system falls on the landlord, tenant, premises manager and all staff involved in kitchens. If an incident occurs, Compliance Officers, Insurance, Legal, Health & Safety, HSE and EHOs may all be involved. The term Polluter Pays should not be taken lightly.

- There are 366,000-plus blockages in the UK sewer network costing more than £88 million a year.
- Majority of pumping station failures are the result of blocked pumps (not included in the above).
- More than 50 per cent of blockages are avoidable; caused by ‘non-flushable’ products.
- 80 per cent of sewer flooding incidents are as a result of a sewer blockage.

Source: 2012/13 Ofwat /Water UK data.



WRc reported the UK Water Industry Research (UKWIR) investigation into the effectiveness of biological dosing solutions used in the water industry at Cranfield. The objective of the study is to produce standards that could be developed and applied to biological products.

Anglian Water looked at the wider challenges of FOG and domestic disposal of non-flushable products in the UK. They drew attention to the difficulties in providing consistent training in the food service industry due to high staff turnover as well as the fact that FOG management is not specifically included in Food Standards Agency (FSA) guidelines. It was also pointed out that it is difficult to enforce the Water Industry Act regarding sewer blockages unless water companies can prove the offender was responsible "beyond all reasonable doubt". However the serious nature of the Offence and consequence of successful prosecution encourage compliance rather than conflict.

The solution to this serious Waste Management / Environmental / Public Health problem is for all in our industry (Water & Hospitality) to halt their lust for gain from this situation and sit down together to provide an answer that will be fair and honest to all involved. Business in the UK has become too used to allowing quangos to manipulate situations to the benefit of individuals / companies and to the detriment of all business and add to cost of any company operating or exporting from our country. The cost is these "expert" companies inventing and in some instances influencing legislation to back up claims. As a nation we will soon have to stand in line for permission to exist, if one of these organisations can extract a profit from this?

It is interesting to calculate the cost of non-production on the costs a business pays to satisfy, Legislation, Insurance, Health & Safety, Electrical Safety, Statistics, Agency Costs for Compliance, DEFRA, Waste Disposal, HR, / Fire Safety / Intruder Alarms / Pressure Testing/ Vehicle / Transport / Asbestos / Environmental / Rainwater Charge / Highways Water / Sewage Charge / Exporting Briefs / Bid / Rates/Council Charges / Legal Fees / Licence Fees/ Memberships / ISO Certificates / Purchasing Group Costs / Postal Charges / CSCS Cards + H&S Test.

A point to consider, is that you as the operator / Landlord is wholly responsible to make sure the Grease Management System used in your premises is fit for purpose. Compliance Teams / E.H.O s / Planning Engineers / Consultants / Contractors / Kitchen Suppliers / cannot remove the responsibility from you in law. It may be that you have a case in civil law to seek redress against a person giving you advice. If you are taken to criminal court with violations to public sewers, then demand the defendant has no defence if equipment installed or maintenance procedures fail and a sewer incident occurs.

Due to the complexity of systems available, the differing levels of food, oil and grease in each restaurant, the staff involved, the age of existing pipe systems, the actual testing for Grease Removal Equipment is still to be finalised. The existing E.U. Regulations prepared under auspices of the larger tank manufacturers are not fit for purpose as the interpretation and methodology is open to many interpretations, (the PDI). The American method using an open lid test is the long established sizing design and while the actual sizing protocol is acceptable, the open lid test is not. As traps are not checked for air tightness, this can allow Bio-Aerosols to escape into the kitchen environment if equipment is not sealed.

The regulation governing equipment fitted to sewer pipes is quite simple, it must not allow any evacuation of air into building. It must not allow any contamination to enter the public sewer.

Fitting equipment to drains in kitchens while acceptable to planning, drainage officials, they should also consider the Maintenance access / Food & Health Safety requirements. The Duty of Care to staff should also be a factor in equipment selection.

While the protection of Public Sewers is an important undertaking, the actual specification of equipment or methods used inside premises would seem at odds with the existing confusion in market place. While the imposition of particular methods by the Compliance Team would appear to be laudable, it might leave them open to action by proprietor's. Encouraging them to fit particular equipment which in hindsight may not be fit for purpose.

The Duty of Care to Customers, Staff and Management, is to ensure that food premises are a place where all Food Hygiene, (HACCP) regulation procedures are adhered to and food produced and sold to customers is free from any harmful bacteria or virus. In turn, the practice of disposing of the waste water in kitchens including Foodstuff / Oil / Fats / Chemicals / Sauces / Soups, etc. into the Public Sewer must also come under this Duty. Once in the sewer it mixes with human / rodent waste and any virus or infection that it is subject to. While quite safe when contained in the pipe system, blockages can cause manholes to overflow on to streets, even into surface water drains, spreading possible contamination into streams and waterways.

The safety of workers in the drainage industry is also controversial, and must be taken into account. The equipment in some smaller treatment plants can be overwhelmed with waste FOG; this in turn can affect the water table which can run into ponds or streams. We all have a responsibility to protect the environment. If we destroy this, it will in some way revert back to each of us and our families.

This is a cost to you the owner, not just the initial purchase but in the maintenance costs and maybe more if everyone keeps on ignoring the legislation. Open to interpretation like the Bible / Quran we adopt what suits us and ignore the rest. It is a case of cherry picking to suit our pockets or some manufacturer profit?

Here's the issue if you the business owner is responsible at the end of the day to have your GMS Compliant and you must make a choice which system is suitable to your application. You make a choice and put it forward to water company (in Dublin area, the FOG team) and the proposal is accepted / installed. You would assume that it is compliant with all the Regulations / laws involved with the requirements of compliance. If perhaps you end up in court through a Health and Hygiene issue as a result of the GMS installed, have you a safety net! You have gone through the correct channels and your GMS has been accepted by the compliance team.

The Question, to water companies / compliance officers, if the issue above happened, are they ultimately responsible as they approved the system and the supplier was on their accepted list. The question to Building Control, H&S, Environmental Health, EPA, is have they as a body been involved in creation of (Dublin type) compliance issues. You may experience the quickest hand wash ever!

Where does that leave the business, we all realise smell equals air from traps fitted, we know this could be a health hazard, (Insurance?) if the worst happened and the outlet has a potential health and hygiene issue? Where does it leave the owner? On your own? (with your risk assessment?) Is this just scare mongering, no not at all. Everyone is hiding behind the wall, waiting for someone else to raise this issue, why risk your neck?

## **Phosphorus**

Grease Trap waste can contain this valuable mineral. Using waste as compost removes a portion of this mineral from the sewage stream, helping to control Algae production as Phosphorus is food for these plants.





**Brussels Legislation (EU Standards) BS Specifications  
EN1825-1:2004 & EN1825-2**

**The Water Industry Act, Part H Building Regulations  
& BS EN 1825-2: 2002, BS EN 1825-1 2014, EN 124:1994 & EN1253-4**

### **Grease Separators**

shall be fitted with access covers which  
comply with EN124:1994, EN1253-4

Grease Separators inside buildings shall have  
**odour tight covers.**

For example Mechanical Grease Traps due to their construction do not have  
odour/airtight covers. Therefore they **should not** be used inside a Kitchen.

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# Aluzyme Dosing System

## What is Aluzyme

Aluzyme is an extremely efficient system to remove grease and degrade organic food waste, providing ideal conditions to maintain clean and free flowing drainage using nature's own resources. The Aluzyme Biological Dosing System uses negligible electricity. Active media containing specially selected cultured bacteria works 24 hours a day, 365 days a year converting waste fats and grease into harmless compounds.



### Aluzyme is used for:

- Abattoirs
- Food processing
- Leisure industries
- Food courts
- Bakeries
- Business and Office Canteens
- Hotels and Restaurants
- Water Treatment Plants

### Dosing Stand

Aluzyme 20 litre drum can be suspended on a Stainless Steel stand at an extra cost. The stand is easily fitted to the kitchen wall freeing floor space.

### Dimensions:

H 635mm D 290mm W 290mm

## How the Aluzyme System works

Selectively cultured bacteria are regularly fed into the drainage system via the Aluzyme Dosing Unit. The bacteria naturally colonise the surface areas within the drainage pipes/system (e.g. a 10 metre length of 4 inch drainage pipe would provide approx. 34 sq. ft of internal surface area). a potential home for billions of cultured bacteria. The bacteria colonising the internal surface area form a bio film within the drainage system.

- **Aluzyme optimises the performance of pipe systems/treatment plants/drainage systems and Grease Management Systems.**

