

GREEN CLEANING:

The green cleaning movement in the food service industry



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It is only a matter of time before the green cleaning movement hits the food service industry. There are a couple of interesting trends that will see operators of foodservice facilities take a proactive role in implementing sustainable cleaning solutions.

First, the restaurant industry is beginning to see signs of a green movement with the increasing popularity of organic food; environmentally friendly take out packaging; and energy and water saving equipment. However, the industry remains largely untapped by the green movement. As the largest consumer of electricity in the retail sector, this industry has a large impact, not only on the food we eat, but also on the water we drink, and the air that we breathe. Therefore, there is great potential for greener practices and policies in this industry.

Secondly, going green is no longer a fad. Rather, it is the responsible approach taken by businesses in a variety of industries. Education (schools, colleges, universities); health care (hospitals, nursing homes); government (federal, provincial, municipal); and property management (office towers, apartment buildings, condominiums, shopping centres) are significantly ahead of the foodservice industry when it comes to the green movement.

There is no better time than now to take advantage of the green movement in the foodservice industry providing it will bring operators greater efficiencies and cost savings while improving the health and well being of their employees and consumers.

1. The Benefits of Going Green

A green restaurant creates opportunities to position itself as a responsible business committed to sustainability. Ultimately, going green allows your establishment to differentiate itself from the competition. Nearly 30% of consumers agree or strongly agree that they are more likely to patronize a restaurant that promotes itself as a green operation, in comparison to only 6.5% who strongly agree that green practices "have little to do with restaurants."¹ Consumers are increasingly educated and seeking to patronize businesses who are responsible environmental citizens. Consequently, going green not only helps restaurants attract new customers, but it also serves to increase customer loyalty. The process of going green also tends to have a positive impact on the morale and productivity of your employees. By taking the initiative to improve your business practices, employees feel inspired and become invested in the goals of your company. Environmentally friendly products were once considered too costly or not potent enough to meet the needs of restaurants. However, going green is no longer an expensive process, but a financially viable one. Cost savings may even result from the process, for example through the implementation of energy conservation programs and recycling/waste reduction systems. It is becoming clear that going green has numerous benefits for your business, employees, consumers, and the community.

¹ *Restaurants & Institutions*, September 1, 2007
Special Report: Green and Growing,
[www.rimag.com/archives/2007/09/going-green .asp](http://www.rimag.com/archives/2007/09/going-green.asp)

2. Where to begin?

The first step in going green is to make it a priority and goal for your organization as a whole. Owners and/or managers should have an understanding of what's involved in the process, and make a commitment to provide the leadership and support needed to change its business processes over time. The process may take up to 3-5 years to fully implement. Start small. Realize that every step that you take is valuable. Begin by implementing simple steps, and once successful, move on to bigger things. The whole organization, from the management to the staff must work together to make going green a reality. The goal then becomes part of your culture.

Teaming up or working with an organization also helps. Associations like the Green Restaurant Association can help restaurant operators find and navigate through environmental friendly products and practices, providing support and invaluable resources. Enlist the help and advice of your dealers and manufacturers.

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3. Green Cleaning for the Food Service Industry

Sanitation and cleanliness are primary concerns for food service operators. Yet, the products that most restaurants use for cleaning and insect control are toxic to the environment and unhealthy for both employees and customers. Restaurants use a wide range of cleaning products containing chlorine (in sanitizers, drain and toilet bowl cleaners), ammonia (in window and floor cleaners), caustic soda (in oven cleaners) and volatile organic compounds. Prolonged contact with these cleaners can cause skin problems. Also, the fumes emitted by these products can cause respiratory diseases. Indoor Air Quality (IAQ) is becoming an increasing problem as people are spending more time indoors. Poor IAQ has been linked to a variety of health issues, including many respiratory problems such as asthma. In addition, when toxic materials from these products are flushed down drains, they enter the sewage system and ultimately affect water quality. What's more, packaging could have a significant environmental impact. For all these reasons, viable alternatives to traditional chemicals should be carefully examined.

A comprehensive green cleaning program entails more than just the use of non-toxic chemicals. A good program covers all areas of cleaning, from maintenance and recycling to training. Not all green cleaning products are created equal. Therefore, it is important to do your research in order to ensure that you have chosen the best products to suit your needs. The products you choose should meet the following criteria:

- ✓ **Performance** – Saves time while cleaning effectively and ensures the pristine appearance of your food service institution
- ✓ **People** – Safeguards the health and safety of your employees and customers
- ✓ **Planet** – Raw materials should be biodegradable and meet the highest environmental standards for safe storage, transportation and disposal. More specifically, materials used should be safe on our water systems and aquatic life.
- ✓ **Price** – Priced competitively when compared to conventional cleaning products in the same categories.



a. Green cleaning technologies

When choosing green cleaning products, it is important to be aware of the different options on the market, as well as the advantages and disadvantages of each method. Below is a quick review of biological and chemical green cleaning technologies.

Biological Cleaning: A biological cleaning solution uses biological decomposition to clean and deodorize. These solutions harness nature's own processes to recycle waste into simple and essential substances. They meet today's demands for cleaning, odour control, and waste elimination without the use of potentially harmful chemicals.

There are four main advantages to using biological cleaners and odour control products:

- ✓ They are better for the environment and safer for the users and occupants when compared to traditional products;
- ✓ They use highly specialized enzyme producing microbials to clean and control odours by eliminating the soils that traditional chemical products alone cannot treat;
- ✓ They provide residual cleaning up to 80 hours after application and therefore reduce overall labour costs by continuing to work long after application;
- ✓ They help to displace unknown, potentially disease causing bacteria with known, healthy microbials and in this way contribute to our better health.

Chemical Cleaning: Chemical based products can also offer an environmentally responsible method for effective cleaning. For example, hydrogen peroxide is particularly attractive because it can break up organic matter and then prevent grease from sticking onto the surface. Other benefits of hydrogen peroxide are:

- ✓ Creates no toxic or hazardous by products – it breaks down into water and oxygen
- ✓ Is safe for hard surfaces and textile finishes
- ✓ Biodegradable
- ✓ Has excellent stain removal properties
- ✓ Eliminates odours
- ✓ Improves wastewater quality in sewer systems
- ✓ Helps reduce biochemical oxygen demand (BOD) and chemical oxygen demand (COD)
 - key parameters in measuring water quality
- ✓ Can detoxify cyanide, nitrogen compounds, chlorine, bisulfate, phenol and a host of other toxic based waste

Although biological and chemical technologies differ from one another, they can safely complement each other. An ideal sustainable cleaning program will take advantage of the strengths of each technology in order to help obtain an effective and more complete clean.

i. Dilution Control

Dilution control allows the cleaning products you purchase to perform at their optimal level. By looking for products which provide dilution control, you are not only maximizing their effectiveness and



preventing waste and residues, but you are substantially reducing ready-to-use (RTU) costs while making cleaning easier and less dangerous for your employees.

ii. Customer service, support, and training

Good customer service, support, and training can be as important as the right cleaning solution. Look for a company who can offer added value and support in the form of hands-on training, sanitation programs, wall charts, proper labels and MSDS sheets. These tools are an integral part of the process of going green because it is crucial that the products you choose are being used properly for optimal performance.

iii. Certifications

Not all green cleaning products are created equal. Some products may claim to be "green", without having been certified by a reputable organization. Therefore, look for certified cleaning chemicals, by organizations such as:

- Environmental Choice Program (ECP): organization based in Canada that offers third-party certification of many different products including cleaners and janitorial paper products. The Ecologo label is widely known as the premiere mark of environmental standards.
- Green Seal (GS): offers certification on a wide range of products. The GS label is used for purchasing standards.



iv. Cleaning Programs and Best Practices

Many organizations have started green cleaning programs, either based on a standardized system or built from scratch. For example, INFORM, a sustainable business and industry advocate has also created a green cleaning report called "Cleaning for Health." This report outlines specific practices and tips for cleaning and suggested cleaners. This organization provides helpful documents, which may be downloaded, such as checklists, best practices and sample policy statements.

Below are some specific tips to keep in mind when creating a green cleaning program:

- Keep the variety and amount of cleaners to a minimum. Stick with just a few that accomplish the tasks you need.
- Most things can be cleaned with a general cleaner or no cleaner and a little elbow grease.
- Properly dispose of unused and unneeded cleaners and chemicals. www.earth911.org lists chemical disposal options for most communities.
- If you cannot find a certified or environmentally preferable choice for a particular cleaner, contact the manufacturer for more detailed information on ingredients, use, disposal, and toxicity. Avoid products containing dangerous chemicals.



- Avoid products with labels of "danger," "poison" or "caution."
- Focus on entryways to reduce the amount of dirt coming into a building.
- Minimize chemicals in the air. Spray cleaners on a cloth rather than a surface and use direct sprays rather than misters.
- Use green certified machinery.
- Use micro fiber cloths and mops to reduce airborne particles.

4. On the Road to Being Green

In addition to choosing products which are non-toxic and not harmful to the environment, there are additional steps that you can take, both in your home and company, to protect your health and your surrounding environment for future generations. Being green also takes into consideration reductions in energy use, water use and waste disposal, in addition to improvements in indoor air quality. Here are some ideas from Green Cleaning Services²:

- **Energy Efficiency & Conservation:** Energy efficient technologies and conservation practices exist for lighting, heating, ventilation, air conditioning, foodservice appliances, office equipment, and transportation. Electricity and power is available from renewable resources such as wind, solar, geothermal, small hydro and biomass. These energy sources cause dramatically less air pollution and environmental damage compared to fossil fuel, nuclear, and large-scale hydroelectric energy sources.
- **Water Efficiency & Conservation:** Water efficient technologies and conservation practices exist for foodservice appliances, equipment, and landscaping. Reducing water use not only protects our water sources but delays the need to expand existing treatment plants and prolongs the life of systems. Here are a few steps to reduce water consumption: regularly check that all valves are operating properly, inspect for and repair leaks on a monthly basis, do not run water longer than necessary.
- **Recycling & Composting:** Recycling services exist for many waste products such as glass, plastic, metal, cardboard, mixed paper, grease, ink & toner cartridges. Food waste can be diverted from landfills and made into nutrient-rich soil through the use of a composting service or an on-site system.
- **Sustainable Food:** Sustainable food products support the long-term maintenance of ecosystems and agriculture for future generations. Organic agriculture prohibits the use of toxic synthetic pesticides and fertilizers, irradiation, sewage sludge, and genetic engineering. Locally grown foods reduce the amount of pollution associated with transportation primarily by fossil fuels. Plant-based foods require fewer natural resources and create less pollution per calorie consumed.
- **Recycled, Tree-Free, Biodegradable & Organic Products:** Recycled products are made from materials that are collected from post-consumer or post-industrial waste sources. Tree-free

² *Cleaning Consultant Services, Inc.*
Greening Your Restaurant (2005)
Wm R. Griffin, President



products are made from alternative plant sources such as hemp or kenaf. Biodegradable products are capable of being decomposed by biological agents, especially bacteria. Organic products are grown without the use of toxic synthetic pesticides and fertilizers, irradiation, sewage sludge, and genetic engineering.

- **Chlorine-Free Paper Products:** Chlorine-free paper products are unbleached or whitened with alternatives such as hydrogen peroxide, oxygen, and ozone. The term Process Chlorine-Free (PCF) identifies recycled paper that is unbleached or bleached without the use of chlorine compounds. The term Totally Chlorine-Free (TCF) identifies virgin paper that is unbleached or bleached without the use of chlorine compounds. The term Elemental Chlorine-Free (ECF) identifies paper that is bleached without the use of elemental chlorine (but may use chlorine compounds).
- **Green Building & Construction:** Green design and construction practices significantly reduce or eliminate the negative impact of buildings on the environment, occupants, and the local community.

5. The Impact of Going Green

The use of green cleaning products, sustainable food, coupled with other proactive measures to reduce energy and water use, will undoubtedly have a positive impact on your health, the health of your employees and customers, as well as on the environment. When each of us takes on the responsibility of switching to green cleaning and implementing other green practices, we can make an enormous improvement to our surrounding environment.

Taking steps towards becoming a greener restaurant will pay off in a number of ways: First, you will differentiate your business as one committed to sustainability. Second, you will improve the working and dining environment for employees and customers. Third, cost savings will come from reduced energy and water use. Most of all, your actions will have an impact on sustaining the environment for future generations. When you take these proactive measures at home, you are making a difference. However, when you take them with your business, you are multiplying that impact by the number of customers you serve each day.

The greening of restaurant and food service operation is a new concept that will continue to find wider acceptance in the future. The time to bring cutting edge concepts and processes to your organization is now. Start by educating yourself about the process of going green and the resources that are available to help you. Continue the process by educating others about the benefits of environmental awareness and stewardship and how common sense principals can be applied in your organization and the food service industry as a whole.



Schedule

List of Common Harmful Chemicals, Ingredients and Products

ACETONE - A neurotoxin, acetone may cause liver and kidney damage, and damage to a developing fetus. It is a skin and eye irritant. Found in spot treatment cleaners, mark and scuff removers, and other products.

AEROSOL PRODUCTS: Aerosol propellants may contain propane, formaldehyde, a carcinogen, neurotoxin and central nervous system depressant, methylene chloride, a carcinogen, neurotoxin and reproductive toxin, and nitrous oxide. Products applied with aerosol sprays are broken into minute particles, which can be more deeply inhaled than larger particles, thereby increasing their toxic effect.

AIR FRESHENERS: Interfere with your ability to smell by releasing nerve-deadening agents or coating nasal passages with an oil film, usually methoxychlor, a pesticide that accumulates in fat cells. Known toxic chemicals found in an air freshener are formaldehyde, a highly toxic, known carcinogen, and phenol. When phenol touches your skin it can cause it to swell, burn, peel, and break out in hives.

AMMONIA: A very volatile chemical which is very damaging to your eyes, respiratory tract and skin. Ammonia irritates the respiratory system when inhaled, is poisonous when swallowed and can cause burns to the skin. Undiluted, ammonia is a severe eye and respiratory irritant that can cause severe burning pain, and corrosive damage including chemical burns, cataracts and corneal damage. It can also cause kidney and liver damage. Repeated or prolonged exposure to vapours can result in bronchitis and pneumonia. Found in a wide range of cleaning products. Ammonia will react with bleach to form poisonous chlorine gas that can cause burning and watering of eyes, as well as burning of the nose and mouth.

ANTIBACTERIAL CLEANERS: May contain triclosan, which is absorbed through the skin and can be tied to liver damage.

BLEACH: A strong corrosive. It will irritate or burn the skin, eyes and respiratory tract. It may cause pulmonary edema or vomiting and coma if ingested. Never mix bleach with acid toilet bowl cleaners or ammonia. These mixtures may produce fumes which can be deadly.

CARPET AND UPHOLSTERY SHAMPOO: Most formulas are designed to over power the stain itself; they accomplish the task but not without using highly toxic substances. Some include perchlorethylene, a known carcinogen that damages liver, kidney and nervous system damage; and ammonium hydroxide, a corrosive, extremely irritable to eyes, skin and respiratory passages.

CHLORINE: Chlorine is the number one cause of breast cancer and can be lethal. Scientists won't handle chlorine without protective gloves, facemasks, and ventilation, yet it is in most store-brand cleaners, including dishwasher detergents. The harmful effects are intensified when the fumes are heated, as in the shower. It is in our drinking water, swimming pools, Jacuzzis, and more.

DIETHANOLAMINE (DEA): A suspected carcinogen. This chemical is a skin and respiratory toxicant and a severe eye irritant. Used in a wide range of household cleaning products.

D-LIMONENE: This chemical is produced by cold-pressing orange peels. Used as a "natural" alternative because it's derived from oranges, d-limonene has been found to react with high levels of indoor ozone and create formaldehyde, as well as a variety of related chemicals that have been linked to respiratory conditions. On its own, it may be irritating to skin, eyes or airways and although not conclusively proven, some suspect it may cause cancer. There is some evidence of carcinogenicity. D-limonene is the active ingredient in some insecticides. It is used as a solvent in many all-purpose cleaning products, especially 'citrus' and 'orange' cleaners. Also listed on labels as citrus oil and orange oil.

DISHWASHER DETERGENTS: Most products contain chlorine in a dry form that is highly concentrated. The #1 cause of household poisoning is dish detergent. Dishwashing liquids are labelled "harmful if swallowed." However, each time you wash your dishes, some residue is left on them, which accumulates with each washing. Your food picks up part of the residue, especially if your meal is hot when you eat it.

ETHOXYLATED NONYL PHENOL: Nonyl phenols are hormone disruptors and some contain traces of ethylene oxide, a known human carcinogen. They are eye and skin irritants. Used in laundry detergents and other cleaning products.

FORMALDEHYDE: In lab tests, formaldehyde has caused cancer and damaged DNA. Formaldehyde is also a sensitizer, with the potential to cause asthma. Several laboratory studies have shown it to be a central nervous system depressant. Exposure to formaldehyde may cause joint pain, depression, headaches, chest pains,



ear infections, chronic fatigue, dizziness and loss of sleep. While formaldehyde naturally occurs in the human body in minute amounts, it is estimated that 20% of people exposed to it will experience an allergic reaction. Used in a wide range of products, including some furniture polishes. Formaldehyde may be released by other chemicals, eg. quaternary 15.

FRAGRANCE: Fragrance on a label can indicate the presence of up to 4,000 separate ingredients, most of which are synthetic. Many compounds in fragrance are human toxins and suspected or proven carcinogens. The US National Institute of Occupational Safety and Health's evaluation of 2,983 fragrance chemicals for health effects identified 884 of them as toxic substances. Synthetic fragrances are known to trigger asthma attacks. The US Environmental Protection Agency found that 100% of perfumes contain toluene, which can cause liver, kidney and brain damage as well as damage to a developing fetus. Symptoms reported to the FDA from fragrance exposure have included headaches, dizziness, rashes, skin discoloration, violent coughing and vomiting, and allergic skin irritation. Clinical observations by medical doctors have shown that exposure to fragrances can affect the central nervous system, causing depression, hyperactivity, irritability, inability to cope, and other behavioural changes. Fragrance is a common skin irritant.

FURNITURE POLISH: Contains petroleum distillates, which are highly flammable and can cause skin and lung cancer. They contain nitrobenzene, which is easily absorbed through the skin and extremely toxic.

LAUNDRY ROOM PRODUCTS: Laundry detergents contain phosphorus, enzymes, ammonia, naphthalene, phenol, sodium nitrilotriacetate and countless other chemicals. These substances can cause rashes, itches, allergies, sinus problems and more. The residue left on your clothes, bed sheets, etc. is absorbed through your skin, as is everything else you touch.

LYE: (sodium hydroxide, caustic soda) is corrosive and causes burns on contact.

METHYLENE CHLORIDE: Methylene chloride is a carcinogen, a neurotoxin and a reproductive toxin. On inhalation, it can cause liver and brain damage, irregular heartbeat, and even heart attack. It is a severe skin and moderate eye irritant. Used in stain removers.

MONOETHANOLAMINE: This chemical may cause liver, kidney and reproductive damage, as well as depression of the central nervous system. Inhalation of high concentrations - when cleaning an oven for example - can cause dizziness or even coma. The chemical can also be absorbed through the skin. It is a moderate skin irritant, and a severe eye irritant. Found in many cleaning products, including oven cleaners, tub and tile cleaners, laundry pre-soaks, floor strippers and carpet cleaners.

MORPHOLINE: This corrosive ingredient can severely irritate and burn skin and eyes, and can even cause blindness if splashed in eyes. It can cause liver and kidney damage, and long-term exposure can result in bronchitis. It reacts with nitrites (added as a preservative in some products, or present as a contaminant) to form carcinogenic nitrosamines. Morpholine is a moderate to severe eye, skin and mucous membrane irritant. Used as a solvent in a number of cleaning products, including some furniture polishes and abrasive cleansers.

NAPHTHALENE: This registered pesticide is a suspected carcinogen and is most commonly found in mothballs, and some other pest repellents, as well as in deodorizers. As a reproductive toxin, it is transported across the placenta and can cause blood damage. It can cause liver and kidney damage, and corneal damage and cataracts. Skin exposure is especially dangerous to newborns.

OVEN CLEANER: One of the most toxic products people use. They contain lye and ammonia, which eat the skin, and the fumes linger and affect the respiratory system. Then there is the residue that is intensified the next time you turn your oven on. Use sea salt and baking soda instead.

PARABENS: Parabens are hormone disruptors. Widely used in cleaning products as preservatives, paraben is usually preceded by the prefixes methyl-, ethyl-, butyl-, or propyl. Parabens may cause contact dermatitis in some individuals.

PARADICHLOROBENZENE: This highly volatile registered pesticide is in the same chemical class as DDT. It is a suspected carcinogen, and may cause lung, liver and kidney damage. It is used in mothballs and some washroom deodorizers and urinal blocks.

PBT: Organic compounds that are resistant to environmental degradation through chemical, biological, and photolytic processes. Because of this, they have been observed to persist in the environment, to be capable of long-range transport, bioaccumulation in human and animal tissue, biomagnifies in food chains, and to have potential significant impacts on human health and the environment. Pollutants are chemicals that are toxic, persist in the environment bioaccumulation in food chains and, thus, pose risks to human health and ecosystems.



The biggest concerns about PBTs are that they transfer rather easily among air, water, and land, and span boundaries of programs, geography, and generations.

PETROLEUM DISTILLATES: Health Hazards- Cardio-vascular, Neurotoxicant, Respiratory Toxicant.

PHOSPHATES: When excess plant nutrients, especially phosphorous, enter our rivers and lakes they increase the amount of nutrients available for plant growth; a process known as eutrophication. This causes excessive growth of plants such as algae, causing what is known as algal bloom and appearing to turn the lake green. This results in a very unhealthy lake incapable of supporting plant and animal life. The lake dies. In powders/liquids that utilise phosphates to carry out these functions, the phosphate content can be up to 25% of that detergent.

PHOSPHORIC ACID: Extremely corrosive, it can severely irritate and burn the skin and eyes. Breathing vapours can make the lungs ache, and it may be toxic to the central nervous system. Found in some liquid dishwasher detergents, metal polishes, some disinfectants, and bathroom cleaners, especially those that remove lime and mildew.

SODIUM DICHOROISOCYANURATE DIHYDRATE: This corrosive chemical is a severe eye, skin and respiratory irritant. It may cause liver and gastrointestinal damage, and may be toxic to the central nervous system. It will react with bleach to form poisonous chlorine gas that can cause burning and watering of eyes, as well as burning of the nose and mouth. It is found in some toilet bowl cleaners and deodorizers, as well as industrial detergents and some institutional dishwashing detergents.

SODIUM HYPOCHLORITE (BLEACH): A corrosive chemical, sodium hypochlorite is an eye, skin and respiratory irritant, as well as a sensitizer. It is especially hazardous to people with heart conditions or asthma, and can be fatal if swallowed. It may be a neurotoxin and toxic to the liver. Found in a wide range of household cleaners.

SODIUM LAURYL SULFATE: Sodium lauryl sulfate (SLS) is used as a lathering agent. This chemical is a known skin irritant. It also enhances the allergic response to other toxins and allergens. The U.S. government has warned manufacturers of unacceptable levels of dioxin formation in some products containing this ingredient. SLS can react with other ingredients to form cancer-causing nitrosamines

TOILET BOWL CLEANERS: Usually contain hydrochloric acid, a highly corrosive irritant to both skin and eyes that damages kidneys and liver; and hypochlorite bleach, a corrosive irritant that can burn eyes, skin and respiratory tract. Toilet bowl cleaners also may cause pulmonary edema, vomiting or coma if ingested. Contact with other chemicals may cause chlorine fumes which may be fatal.

TOLUENE: Exposure to toluene may cause liver, kidney and brain damage. It is also a reproductive toxin which can damage a developing fetus.

TURPENTINE: This chemical can cause allergic sensitization, and kidney, bladder and central nervous system damage. It is an eye irritant. Found in specialty solvent cleaners, furniture polish and shoe products.

XYLENE: Xylene has significant neurotoxic effects, including loss of memory. High exposure can lead to loss of consciousness and even death. It may damage liver, kidneys and the developing fetus. It is a severe eye and moderate skin irritant. Used in some spot removers, floor polishes, ironing aids and other products.

